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1. Pre-organized Session Summaries – the overview describes the intent of the session and lists the abstract ID numbers for the included abstracts.
2. Abstracts accepted within the pre-organized sessions
3. Roundtables
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Track 1 – Anti-Racism in Planning

Track 1 Pre-Organized Session Summaries and Abstracts for the Sessions

MARGINALIZATION AND RESILIENCE: IMMIGRANTS IN URBAN COMMUNITIES
Abstract ID: 1112.0.0.570.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.830.2024, 1108.0.0.659.2024, 1108.0.0.676.2024, 1108.0.0.750.2024, 1108.0.0.919.2024

Cathy Liu [Georgia State University] cyliu@gsu.edu, organizer

Understanding the experiences of immigrants, workers and businesses in urban and suburban communities remain a daunting task for planning. This pre-organized session examines this question through a collection of articles drawing from five case studies in different parts of the U.S.: Dayton, Ohio, Atlanta, Georgia, Los Angeles, California, Washington, DC., as well as Salem Massachusetts. Through various mixed methods approaches, the papers look into several aspects of immigrants' marginalization and resilience amidst recent economic, social, political, and environmental changes which include their "welcome" in local communities, labor force participation in the informal economy, their struggle in the gentrifying suburbs, their location mobility along ethnic corridor, and women's weathering of external risks. In particular, this collection emphases the importance of community leaders and local agencies in the process of planning for immigrant inclusion.

Learning Objective(s):

- Understanding immigrant experiences and planning efforts in urban areas

WELCOMING IMMIGRANTS IN A SEGREGATED CITY: CASE OF DAYTON, OHIO
Abstract ID: 1108.0.0.830.2024
Pre-Organized Paper Presentation

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Many U.S. cities have become “immigrant-friendly” as a humanitarian effort and local economic development strategy. These progressive local government initiatives encourage multiculturalism, promote inclusion, and even re-invigorate neighborhoods. How are these local initiatives received by the residents and implemented in cities with long histories of racial segregation? If we don’t question who engages in these activities and where they occur, we perpetuate an uncomplicated multicultural imagination that blinds us from structural inequalities. We used a mixed-method approach to examine this research question in Dayton, Ohio, a nationally recognized immigrant-

friendly city. We explore community attitudes about local immigrant-friendly initiatives and racial segregation through content analysis of 100 interviews with public officials, neighborhood leaders, community activists, focus groups, and public documents. Using US Census data, we conducted cluster analysis (Moran's I) to understand the spatial pattern of segregation and geospatial distribution of foreign-born (including country of origin) and native-born. Finally, we mapped out where immigrant welcoming activities occur. Putting all these narratives in conversation with each other begins to unfold a complex and nuanced story of embracing immigrants and neighborhood revitalization. At the same time, we found glaring omissions and contradictions about welcoming in a historically segregated city.

The vision of an immigrant-friendly town assumes that including immigrants will increase access and improve the quality of life for everyone because they are risk-takers and innovative drivers of economic growth in technology and science. This then justifies the entrepreneurial activity facilitated by the state, including risk-taking with public resources and giving the private sector more power to stage consensus, depoliticize social relations, and neutralize dissenting voices…" (MacLeod, 2011). Rust belt cities desperate to see economic growth, have jumped on the "welcoming" immigrant bandwagon; however, missing from the welcoming is any critical discussion about inequality, racial-ethnic segregation, social-spatial inequality, and poverty. This research project argues that the welcoming vision reinforces spaces of conflict and exclusion. Others have found such contradiction in state-led efforts. Centner (2009) explains that the contradiction between intentions and outcomes "result in a quagmire of neoliberal logic tangled and quarreling, which creates an environment quite unlike what the local state originally aimed.

Citations:

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Keywords: immigrants, segregation, welcoming, Dayton, Ohio

COMMUNITY-LED DISASTER RELIEF FOR EXCLUDED IMMIGRANT WORKERS IN LOS ANGELES

Abstract ID: 1108.0.0.659.2024
Pre-Organized Paper Presentation

AJ Kim [San Diego State Univeristy] anna.kim@sdsu.edu, presenter

The COVID-19 pandemic exposed the precarious lives of many immigrant workers in the global city. Unable to do paid work during government-mandated shutdown periods and excluded from multiple sources of pandemic relief, immigrants who worked in low-paid, informal jobs–many of whom are undocumented and live in mixed-status households–were without access to the most basic forms of social protection. In Los Angeles, one of the largest immigrant-based economies in the United States, daily risks to livelihood and personal health took multiple forms. Immigrant workers faced hunger, the threat of eviction, and the inability to access essential medicine and other PPE provisions. This paper examines the role of CBOs in providing daily care for poor immigrants in the city.

Citations:

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Keywords: disaster relief, mutual aid, immigrant workers, pandemic, non profit organizations

LEAVE OR STAY: IMMIGRANT SMALL BUSINESSES ALONG BUFORD HIGHWAY

Abstract ID: 1108.0.0.676.2024
Pre-Organized Paper Presentation

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Immigrant small businesses in emerging gateway cities in the Sunbelt region are more likely to cluster along inner-suburban corridors where they contribute to economic development and the social and cultural capital of growing immigrant groups. These businesses also face numerous challenges in accessing government services and traditional financing, withstanding market shocks, and overcoming language and cultural barriers. This research examines immigrant retail patterns on the international corridor of Buford Highway in metropolitan Atlanta in order to better understand these trends. Through analysis of data regarding in/out migration patterns as well as in-depth key informant interviews and discourse analysis of economic development policies, we found that the interethnic concentration of businesses, long-standing demand, and cultural cache of the international retail corridor of Buford Highway has provided for a strikingly stable retail landscape despite changing population demographics and economic challenges (including during the pandemic). These findings demonstrate the continued possibility for place-based planning strategies to fortify immigrant small businesses against development pressures. This research

contributes to literature on immigrant entrepreneurship and place-based strategies for supporting economic development in immigrant commercial corridors.

Citations:

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Keywords: immigration, small businessses, minority-owned businesses, economic development

THE RIGHT TO SUBURBIA: COMBATING GENTRIFICATION ON THE URBAN EDGE

Abstract ID: 1108.0.0.750.2024

Pre-Organized Paper Presentation

Willow Lung-Amam [University of Maryland, College Park] lungamam@umd.edu, presenter

In recent decades historical patterns of Black and Brown suburban settlement have been met with rapidly rising immigration and spiking poverty rates. At the same time, a slate of forces calling for the remaking of sprawling suburbs into more dense urban landscapes have converged. While presumably marginalized groups might benefit from more compact suburban neighborhoods, they often rightfully fear the impact of large-scale redevelopment. Projects that many urban planners and policymakers see as needed investments in underdeveloped neighborhoods are often experienced by communities as a recipe for displacement that spurs heated backlash and debate.

The Right to Suburbia investigates battles primarily waged by Black and Latinx communities in the Washington, DC, suburbs over the uneven costs and benefits of redevelopment. In case studies of three neighborhoods that have recently undergone a suburban renaissance, the book asks how those most likely to bear the weight of suburbia's transformation have tried to balance the scales. To what extent have the processes and products of suburban redevelopment disadvantaged marginalized groups? And how have these groups mobilized to assert a more equitable stake in their suburban futures?

The Right to Suburbia argues that the new urban renewal, which references the latest period of gentrification in US cities, does not fit tightly within the narrow bounds of our urban imaginary. Similar processes are also at work in suburbs, producing and reproducing patterns of uneven, racialized development. But the new suburban renewal has not simply added a prefix onto an old concept. With a new cast of characters and spatial dynamics at play, suburbia has reshaped urban redevelopment processes and politics. Suburbia's unique brand of redevelopment has added to, rather than alleviated, the challenges that marginalized communities, especially Black and Latinx

Americans, face.
It is also a highly disruptive process in which marginalized communities hold little power. Suburbia's consolidated and privatized land uses facilitate redevelopment processes that are often large in scale and deep in impact. Political fragmentation, increasing suburban segregation, and sprawl isolate communities and render the struggles of one neighborhood invisible to and unconnected to others. Struggling suburbs often lack high-capacity, established nonprofits and advocacy organizations that can readily engage residents in sustained redevelopment battles. Organizing and coalition building is further hampered by suburbia's changing composition. Compared to their urban counterparts, gentrifying suburbs tend to have more diverse residents dispersed across larger areas.

Black and Latinx suburbanites, particularly immigrants, often lack well-established organizing platforms. They often hold less political power and representation suburbia's traditional civic and business elite, and less than that which has been built over decades of struggle in central cities. When redevelopment arrives, residents in neighborhoods originally designed to exclude them, face an uphill battle to build the politics and policies to remain in place. But just as Black and Brown communities have always done, they are fighting not only for access to suburbia and its opportunities but also for more just and equitable communities in suburbs.

The Right to Suburbia reveals the vigorous organizing efforts emerging in one of the most rapidly and intensely gentrifying metropolitan regions in the United States. It tells the tale of how grassroots activists, community groups, and political leaders mobilized across race, ethnic, and class lines to fight for communities right to suburbia—their right to stay put and benefit from new neighborhood investments. This right, I argue, recognizes marginalized communities as important constituents in shaping suburbia's future. It advances a more equitable distribution of the risks and rewards of redevelopment and prevents vulnerable groups from being pushed farther beyond the urban edge.

Citations:

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Keywords: gentrification, suburbs, organizing, equitable development, Washington, DC

WEATHERING: MIGRANT WOMEN FACING VIOLENCE IN MULTIPLE CLIMATE CRISES

Abstract ID: 1108.0.0.919.2024
Pre-Organized Paper Presentation

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In the context of our ever-worsening climate crisis and the simultaneous socio-political crisis caused by racist, xenophobic, hetero-patriarch and neoliberal capitalist systems, migrant women are paying a heavy price with their bodies which are weathered by it all. Scholars suggest weathering is a situated phenomenon embedded in social and political worlds (Walker 2023) and as a process that encompasses the physiological effects of living in marginalized communities, which bear the brunt of violence linked to racial ethnic, religious and class discrimination and environmental degradation (Geronimus 2023). Christina Sharpe (2016) uses the notion of weather as the totality of the physical and socio-political climate, which in-itself is anti-Black and documents how Black bodies weather such climate. In general, the weather is an important signifier of climate change. As a concept, it can indicate both deterioration/erosion as well as strength/endurance (Geronimus 2023).

In this paper, we are interested in viewing weathering as a framework to better understand the multiple types of violence associated with the socio-political and climate change crises, and its impact on migrant women's bodies. We use data from a study that documented the effect of climate change on the bodies of migrant women in the town of Salem, Massachusetts through body and community mapping (Sweet et al. 2022), to propose that weathering could be a useful way for planners and urban scholars to understand violence against women and to help move toward the creation of feminist cities. For instance, in their body maps about climate change, participants highlighted "physical pain and discomfort from the built environment, intense emotional distress linked to social and economic issues they faced including crime and police mistreatment . . . [but also] strength through individual abilities, and comradery through caring" (Sweet et al. 2022, P. 26). Here adopting weathering as a framework would not only highlight the negative impact of the environmental and socio-political systems on migrant women/marginalized population but simultaneously signal strength for repair/healing. Therefore, our paper is an opportunity to tease out the theoretical value weathering can add to our knowledge about the ways excluded communities are being impacted by the compounding violence of climate change and socio-political systems. In addition to the study in Salem, we engage with scholarship that discusses weathering as bodily experiences of constant stress and the associated health inequities faced by marginalized communities lining in a rigged and exploitative system (Geronimus 2023), material and affective impact of immigration politics on targeted communities (Walker 2023), and climate induced gender-based violence (Memon, 2020). Upon such engagement, our goal is to further develop the framework of weathering for urban scholars and planners to add to the understanding of violence against women located at the nexus of socio-political and climate change crises and ways such violent phenomena can be addressed.

Citations:

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Keywords: weathering, violence, climate crisis, socio-political climate, migrant women

RACIALIZED HOUSING AND CREDIT ACCESS: MEASURING CONTRIBUTORS TO DISPARITIES

Abstract ID: 1112.0.0.251.2024

Pre-Organized Session Summary

Session Includes: 1108.0.0.1152.2024, 1108.0.0.369.2024, 1108.0.0.257.2024, 1108.0.0.1156.2024

Tyler Haupert [NYU Shanghai] tyler.haupert@nyu.edu, organizer

Access to housing and credit is stratified across racial/ethnic lines in the United States in part due to racial discrimination and policies perpetuating inequities. The resulting uneven distribution contributes to differences in socioeconomic resources including wealth building, neighborhood amenity quality, and small business development. This session includes research on several underexplored contributors to stratification in housing and credit access. One study links eviction rates in Georgia to how credit and debt's use in predatory landlord-tenant relationships evolved through the institution of sharecropping in courts. Another explores detailed race/ethnic categories and access to brick-and-mortar banking. A third focuses on Asian mortgage applicants' likelihood of receiving subprime loans from different lender types, including ethnic group differences. A final study explores predatory practices targeting homeowners to enroll in solar panel programs in the Rio Grande Valley.

Learning Objective(s):

- The audience will learn about the connection between historical processes of dispossession and contemporary disparities in housing access
- The audience will learn about discrimination and disparities in access to credit and homeownership among members of under-studied racial and ethnic groups
- The audience will be able to identify potential planning interventions designed to reduce racial and ethnic stratification in housing and credit access

FROM SHARECROPPING TO EVICTION

Abstract ID: 1108.0.0.1152.2024

Pre-Organized Paper Presentation

Seumalu Elora Raymond [Georgia Institute of Technologhy] elora.raymond@gatech.edu, presenter

The summary eviction process in the US south is characterized by high volume, short case duration, and few of the turn-of-the century statutory tenant protections that were put in place in regions that urbanized in the 19th century. Where tenant protections exist, tenants are rarely able to exercise these legal rights (Summers, 2020), and court culture and judicial discretion are important contributors to high eviction rates (Sudeall & Pasciuti, 2021).

We draw on racial capitalism and critical legal scholarship of property to explore the historical antecedents to contemporary eviction systems in the US South. If the racialization of labor and property were integral to the formation of early capitalist systems in the colonial United States, subsequent capitalist accumulation grew by developing these racial formations (Robinson, 2000). We join this framework with institutional theory in order to understand how modern institutions carry and preserve these apparatuses. Legal scholars have argued that America's modern system of property exchange, for example, reflects the racialized colonial context from which it emerged (Park 2023; Bhandar 2018). We extend this critical legal scholarship on property to the practice of eviction.

In the US south, state courts and landlord-tenant law developed through the institution of sharecropping. The abolition of slavery left a vacuum in southern credit markets which was quickly filled by the crop lien system (Priest, 2022; Foner, 1982). The emergence of a distinctive, racialized system of sharecropping led to the legal and cultural erosion of common law landlord-tenant concepts such as tenant possession, and forestalled advances in tenant rights such as the implied warrant of habitability. Southern courts institutionalized the criminalization of rent debt to control African American labor mobility, and created a hierarchy of claims that minimized landlord risk for crop failure (Woodman, 1995).

Extra-contractual forms of control rooted in local custom and criminal law were commonly used in southern states to ensure agricultural landlords a secure return and a restricted rental base/labor force. We argue that these extra-contractual procedures were incorporated into the Georgia courts summary eviction process. The result is a set of contemporary courts which prioritize the security and efficiency of landlord returns and re-possession while diminishing ability of Georgia tenants to exercise statutory legal protections.

We examine these findings using mixed methods. In a series of regression models, we link the intensity of sharecropping in the 1920s to contemporary eviction rates, finding that counties with high rates of sharecropping in 1920s are associated with a 31% higher eviction filing rate a century later. In a separate analysis, we generate codes from histories on southern courts, including categories of rent debt, efficiency, security, possession, and hierarchy of claims. Using these codes, we analyze contemporary interviews with courts personnel. After identifying courts with practices, policies, and attitudes linked to these themes, we will perform a regression analysis examining the effectiveness of federal tenant protections extended during 2020 and 2021.

Citations:

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Keywords: eviction, racial capitalism, courts, housing, displacement

WHO HAS ACCESS TO PHYSICAL BANKS? A DETAILED ANALYSIS OF DISPARITIES

Abstract ID: 1108.0.0.369.2024
Pre-Organized Paper Presentation

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Andrew Van Leuven [Oklahoma State University] andrew.vanleuven@okstate.edu

Local brick-and-mortar financial institutions—banks, credit unions, and their respective branches—are valuable for residents of low-income neighborhoods and communities of color in the United States. Given their physical location, permanence, and stability within the community, physical lenders are better equipped to form interpersonal relationships and tailor their services to the needs of the local community (Lux and Greene, 2015). This approach, referred to as "relationship lending," allows financial institutions to consider soft information about local market conditions and borrower preparedness, often leading to the approval of loans that may not have been considered solely based on hard data (Scott, 2004). Thus, the presence of a local bank can be most beneficial to community members with low incomes or credit scores. In addition, local financial institutions are valuable for small businesses that rely extensively on cash transactions need a physical location deposit cash, reducing the risks and inconvenience associated with indefinitely holding large sums of cash (Federal Reserve Board, 2019).

Given the benefits with local brick-and-mortar financial institutions, it is vital to understand which communities have access to a local bank or credit union than others. These disparities have historical roots in policies and practices like redlining, which excluded communities of color from financial access and perpetuated concentrated poverty (Derenoncourt et al., 2022). Moreover, racial/ethnic disparities in banking persist, with higher rates of unbanked individuals among Black, Latinx, American Indian, and Alaskan Native communities (FDIC, 2021). Yet, few studies have assessed smaller racial/ethnic group access such as Indigenous groups with challenges such as geographic isolation and varying title statuses impacting banking on reservations. Asian Americans, as a whole, appear to have access to banking; however, more data is required to understand potential group differences given that low-income Asian Americans are more likely to rely on cash and are disconnected from financial institutions.

Our study seeks to understand the spatial distribution of access to financial institutions based on racial/ethnic, income, and neighborhood composition. First, we developed a neighborhood typology, which uses local Moran's I to identify statistically significant concentrations of racial/ethnic groups by census tract and captures smaller racial/ethnic clusters (Black, Latinx, Asian, American Indian and Alaska Native, Native Hawaiian and Other Pacific Islanders, and white). We then categorized tracts by income and nativity. This categorization allows detailed comparisons of what types of racialized neighborhoods have access to banks.

After, we used logistic regressions to model the relationship between neighborhoods and the likelihood of being located within a lending desert. After controlling for socioeconomic and demographic factors, Black neighborhoods are underbanked compared to racially integrated areas—regardless of class and income. High income Latinx areas had a positive relationship with banking locations, while low-income Latinx enclaves were underbanked. High income Asian areas and low-income Asian enclaves had access to banks. Native Hawaiian and Other Pacific Islander neighborhoods and American Indian and Alaska Native areas had a marginally negative significant relationship to banked areas. With a nuanced approach to understand the intersections of racial/ethnic concentration, income, and nativity, our results show granular differences and where groups have the highest gaps in banking access. The

findings also help to understand inter- and intra-community socioeconomic disparities within and between racial/ethnic groups and the importance of tailored approaches that focus on the intersections of race/ethnicity, class, and nativity.

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Keywords: banking, race/ethnicity, immigration, segregation, lending

SUBPRIME LOANS, ASIAN BORROWERS: TRADITIONAL, FINTECH, AND MINORITY LENDERS

Abstract ID: 1108.0.0.257.2024
Pre-Organized Paper Presentation

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Subprime lending in the United States has long been unevenly distributed across racial and ethnic groups, and these patterns remain in the post-foreclosure crisis lending environment (Faber 2018). Stratification existed in the lending outcomes of Asian borrowers from different ethnic groups during the subprime boom and foreclosure crisis (Rugh 2015). The ensuing tightened regulatory oversight of subprime lending as well as the emergence of online mortgage lending alternatives changed the options available to minority borrowers, including Asians. However, recent research suggests subprime lending rates remain unevenly distributed across Asian communities depending on factors such as borrower immigration status and whether a lender operates online or in-person (Haupert & Lee 2024).

Against this backdrop, the role of Minority Depository Institutions' (MDIs) in subprime lending remains underexplored. MDIs, whose missions include providing credit and financial services to traditionally underserved communities, expanded mortgage credit access to non-white and immigrant communities during the subprime lending boom, but also suffered closures and a disproportionate amount of borrower defaults during the subsequent foreclosure crisis. While the majority of Asian borrowers utilize non-MDI lenders, research suggests Asian-owned MDIs play an important role in providing mortgages to the rapidly growing and highly segmented Asian community (Rugh 2015). This study contributes to a small but growing body of work investigating subprime lending by online fintech lenders (Haupert & Lee 2024) and Asian-owned MDIs (Zonta 2012) to Asian borrowers

and neighborhoods in the post-foreclosure crisis era. Specifically, we answer the research question, “What is the relationship between subprime lending to Asian borrowers at Asian-owned banks relative to traditional and online fintech mortgage lenders in 2018 and 2019 in the United States?”
To answer this question, we use loan-level Home Mortgage Disclosure Act (HMDA) data, the Federal Deposit Insurance Corporation’s MDI classification, and an original dataset categorizing lenders as fintech or traditional. In 2018, the HMDA was updated to include additional loan characteristics such as borrower age, loan to value ratio, and racial and ethnic differences. We leverage these updated data to specify a series of logistic regression models that control for borrower, lender, and neighborhood covariates to assess rates of subprime lending to Asian borrowers at traditional lenders, fintech lenders, and Asian-owned MDIs.
Preliminary results suggest Asian-owned MDIs offer significantly higher rates of subprime loans than traditional or fintech lenders to similarly qualified Asian borrowers. We also uncover variation in subprime lending rates to different Asian ethnic groups, with Chinese and Vietnamese borrowers receiving more subprime loans than other ethnic groups. Finally, we determine that fintech lenders offer Asian borrowers the most favorable loan terms relative to Asian-owned MDIs and other traditional lenders. These findings offer planners, advocates, and policymakers insights into the modern landscape of mortgage lending for Asian borrowers, informing Fair Housing law, mortgage lender regulation, and the administration of local support such as credit counseling offered to minority borrowers.

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Keywords: Subprime Mortgages, Asian borrowers, Minority banks, Ethnic banks, Fintech lending

PREDATORY PRACTICES IN THE ENERGY TRANSITION: INDEBTEDNESS AND COMMUNITIES

Abstract ID: 1108.0.0.1156.2024
Pre-Organized Paper Presentation

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In spring 2023, a U.S. Department of Energy delegation arrived in the Rio Grande Valley, an increasingly urbanizing region along the U.S.-Mexico border. Officials discussed their commitment to remediate longstanding energy disinvestment in the Rio Grande Valley through clean energy initiatives that can spur equitable community economic development. A Resource In Serving Equality (ARISE) Adelante, a community-based organization, had

news: yes, the investments were needed, but the solar market roll-out was already causing some residents major harm. ARISE Adelante empowers residents living in colonias, or unincorporated communities that have long struggled with disinvestment, and the clean energy transition was repeating patterns of financial exploitation. Fueled by clean energy investments, businesses are enrolling homeowners in solar panel programs. Through high-pressure sales pitches and misinformation, residents were promised reduced electricity costs and rebates. They entered predatory contracts that them in insurmountable debt and sometimes even without any energy at all.

Many low-income residents in Central Pennsylvania are also facing increasing levels of energy debt. OnTrack, a fixed payment plan administered by the electric utility PA Power and Light and mandated by the PA Utility Commission for users behind on electricity bills, aims to protect so-called "responsible" bill paying customers from delinquent customers. Missing a payment or exceeding usage limits can lead to removal from the program and accrued debt (Marx, 2023). Residents, many of whom are tenants on fixed incomes or working in service jobs, experience a common debt narrative: enrollment in repayment plans with their electric utility, struggles to keep up with deliverable fuel payments, and the threat of disconnection or eviction due to unpaid bills that can total to tens of thousands of dollars. Some residents exceeded their allowance due to having inefficient baseboard electric heating, constantly running the heat to avoid frozen water lines, or shifting from costly kerosene or propane to plug-in electric heating. These reasons challenge the state narrative of "responsible" vs. "delinquent" ratepayers, and the linear natural gas-to-electric heating transition model.

This article draws on insights from exploratory research in the Rio Grande Valley and interviews with OnTrack participants to examine the local consequences of energy transitions. Environmental justice research and practice have long pointed out how sweeping environmental initiatives have created and reinforced inequalities. This argument is echoed by just transition scholars who caution against a low-carbon future that reinforces racial and economic inequalities. Labor movement leaders coined the phrase "just transition" to call for higher environmental standards for those employed in polluting industries, as well as for workforce supports for them to enter new lines of employment (Córdova, 2023). Although initially focused on the energy domain, just transition efforts have broadened in scope to respond more effectively and accurately to intersecting priorities held by working-class communities (Mulvayney, 2014; Kojola and Agyeman, 2021). The pursuit of a just transition is also contingent on reimagined states, ones that "move from technocratic, neoliberal actions to more globally focused, democratic institutions responsive to people's material needs" (Cha et al. 2022, pg. 80). Case study findings highlight the current role of predatory financing practices that have historically harmed communities, as well as the need for large-scale energy reforms to be informed by the experiences of local communities.

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Keywords: Energy, Economic Development, Equity, Diversity, Inclusion

Track 1 Roundtables

CONSTRUCTING PLACE: A CONVERSATION ABOUT CULTURAL LANDSCAPES AND PLANNING

Abstract ID: 1109.0.0.562.2024
Roundtable Submission

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This roundtable will discuss the theoretical constructions of "place" in planning, and ways that these different perspectives influence how and with whom planning sees, preserves, and memorializes cultural landscapes. Drawing on their research and practice, participants will share areas of tension in this work, specifically around questions of process and outcomes in centering cultural landscapes in the construction of place.

Discussion topics will explore challenges to and the critical nature of community engagement - including with descendants of sacred places, approaches for disseminating knowledge, and opportunities to inform changes to planning practice and policies (i.e., community-based decision-making, historic preservation, redevelopment, affordable housing, etc). Roundtable participants will consider the roles of scholars and planning educators in the understanding and social construction of place, and implications for how (certain) cultural landscapes in planning are made visible or invisible in practice. The roundtable will conclude with participants offering specific strategies for integrating socially constructed place identities and definitions (from local, grassroots leaders) into formal planning and preservation processes.

Citations:

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Key Words: Place, Cultural Landscapes, Justice, Preservation,

MOANA URBANISM: LAND, MOBILITY, AND RELATIONS

Abstract ID: 1109.0.0.1040.2024
Roundtable Submission

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Pacific Islander communities are poorly served by formal state planning processes in the United States, Australia, and Aotearoa New Zealand. The housing, transportation, labor and environmental injustices that Pacific Islanders face in settler colonial cities are well documented. These injustices emerge out of the legacy of militarization, imperialism and colonization of the Pacific. Planning processes are often conducted with frameworks that are not culturally specific or appropriate to the indigenous and diaspora communities; and are organized into categories that defy an indigenous, or genealogical understanding of community and belonging (Hau'ofa, 1994).

Categorization and identity of Pacific Islanders within diaspora are defined by the legacy of colonial relations. For example, Kānaka Maoli in the continental United States are citizens, Kānaka Maoli in Aotearoa are foreigners. Samoans from one island of Samoa are indigenous to the US, and are US Nationals; Samoans from another island are foreigners to the United States. COFA act migrants from the Federated States of Micronesia, The Republic of the Marshall Islands and the Republic of Palau fall into yet another liminal legal status. Nonetheless, urban planners' definitions of the disparities Pacific Islanders face; and the remedies urban planners offer, such as access to resources, policies and programs, are governed through these categorizations and colonial identities.

This roundtable seeks to resituate our understanding of the urban planning challenges of Pacific Islanders by referencing indigenous Pacific ways of knowing, being, and planning. Within Pacific Studies, scholars have used indigenous concepts of travel to understand the complex mobilities of the transnational diaspora (Lilomaiava-Doktor, 2009; Thompsen, Lopesi & Lee, 2022); and have uncovered the linkages between indigenous understandings of place and shelter to describe how social housing has been used to secure Pacific Islanders' right to the city (Walker & Barcham, 2010). Other communities and scholars have delineated Pacific Islander intimacies, radical refusal, and world building.

This roundtable on Moana urbanism explores the issue of Pacific Islander identities, and the challenges of

reconceptualizing urban planning from the perspective of diasporic communities with strong ties to indigenous land. Bringing together Kānaka Maoli, Māori, Samoan and Chamoru scholars and bridging the fields of architectural history, urban planning, design, and geography, we draw on Pacific Studies approaches to understand the challenges that Pacific Islanders face within traditional urban planning, and explore ways to conceptualize land, mobility, and interrelatedness. We hope to address these questions:

How are Pasifika planners transforming practice?
How do we, as Pacific Islanders, see ourselves within urban planning across roots and routes?
What does it mean to plan for indigenous mobilities?
How do Pacific Islanders find solidarity across communities, and/or organize for liberation around categories of oppression?
What are the differences between Pacific frameworks of land?

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Key Words: pacific islanders, indigenous planning, decolonization, mobilities, land

Track 1 Individual Paper Presentations

BANK-SPONSORED PLANNING & LIBERAL ANTIRACISM: A CASE OF STUDY
Abstract ID: 1108.0.0.471.2024
Individual Paper Presentation

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Historically, financial institutions have played a major role in the economic domination of racialized groups in the U.S. Through racist lending policies and practices, often made legal under U.S. law, financial institutions have economically excluded or exploited Black and Brown people and the places where they live (Taylor, 2019; Wyly et al., 2009). More recently, financial institutions and their philanthropic subsidiaries have become frequent sponsors of planning initiatives in these places. Some literature suggests that banks have been pressured into sponsoring these planning initiatives by social movement efforts and government regulations attempting to achieve a form of

distributive justice (Schwartz, 1998; Squires, 1992). However, more recent literature on philanthrocapitalism proposes that they sponsor plans in order to ensure the continuation of market practices in places where the market is failing (Mitchell & Sparke, 2016). This paper attempts to resolve these contrasting interpretations by asking what financial institutions achieve by sponsoring planning initiatives in places where Black and Brown populations reside. In order to address this question, I conduct a case study of the WORTH initiative, a Wells Fargo-sponsored planning initiative meant to increase BIPOC (Black, Indigenous, and People of Color) homeownership. I focus specifically on the planning process as it played out in Chicago from 2021-22. In order to describe the case in detail I use participant observation during planning meetings, key informant interviews, press releases, and documents produced from the initiative. Through an analysis of the case, I identify three achievements of Wells Fargo. First, by publicly promoting its goals of increasing BIPOC homeownership and its planning efforts through WORTH, Wells Fargo is able to present itself as an antiracist institution despite data and legal settlements that suggest otherwise. Second, by offering planning grants to regional collaborations competing for implementation grants, Wells mobilizes local community reinvestment expertise to create strategies that competitors think will appeal to Wells Fargo. Third, by sponsoring the planning process, Wells re-oriented the behavior of leaders of community development organizations to comply with bank interests rather than make more radical demands for reparations. Ultimately, this case demonstrates that by promoting liberal antiracist rationalities through planning grants, powerful financial institutions can avoid the type of reparative planning that Williams (2024) argues will truly produce just cities. Planners must be wary of participating in bank-sponsored plans that claim to be antiracist and instead focus their efforts on plans that begin by problematizing the policies and practices of institutions like Wells Fargo that result in the expropriation of surplus value created by Black labor.

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Keywords: Liberal Antiracism, Planning, Financial Institutions, Philanthropy

BEYOND TRADITION: CO-CREATING AN ANTI-RACIST MENTORSHIP BLUEPRINT

Abstract ID: 1108.0.0.502.2024
Individual Paper Presentation

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Academics and practicing planners have long grappled with fostering inclusivity, especially in attracting and retaining BIPOC individuals, to improve outcomes in planning education and practice. For example, Black planners have been pivotal since the civil rights movement to planning education and the profession (Mitchell et al, 1970; Thomas & Ritzdorf, 1997), yet, recent planning scholarship (García et al, 2021) indicates BIPOC faculty and practitioners continue to be underrepresented in planning practice and higher education environments. Specifically, Black individuals comprise only six percent of full-time faculty in degree-granting post-secondary institutions, despite constituting 13 percent of the overall population in the U.S. (NCES, 2023). This underrepresentation is partly attributable to predominantly white institutions, where the climate is often unsupportive and even hostile towards BIPOC individuals. Consequently, faculty mentoring programs become key in supporting the planning profession's landscape.

This work aims to describe the framework for a Multilevel Faculty Mentoring Program (MFMP). The MFMP is rooted in anti-racist mentoring models, emphasizes group mentoring, peer connections, and multilevel support, and is facilitated by a BIPOC faculty director. This equity-focused multi-leveled mentoring-partnership model redefines traditional mentorship in higher education while championing collective care, empowerment, and the intentional dismantling of hierarchical relationships (Endo, 2020; Chapman, 2018). The MFMP embraces mutuality and transformative relationships (Hinsdale, 2016), fostering dynamic networks of support within a community.

By prioritizing collective care, empowerment, and the intentional dismantling of hierarchical structures, the program fosters transformative relationships and mutual support networks. The adoption of dynamic networks within a community framework aligns with the evolving landscape of urban planning, where collaboration and inclusivity are paramount. Central to the program's success is the role of leaders across campus as conversation facilitators, guiding discussions around shared values, principles, and goals. The program cultivates a culture of trust and collaboration among faculty members and leaders.

The research questions that the work addresses are 1) how does the MFMP address the challenges faced by BIPOC faculty in academia, and 2) what are the implications for fostering inclusive environments and advancing social justice for faculty in higher education? This paper explores a conceptual model for how this innovative approach can reduce social isolation, enhance sense of belonging, and promote participant well-being, particularly within the context of planning faculty new to an institution of higher education. The conceptual model proposed in this project explores the interconnectedness between mentorship, community building, and individual well-being.

The work utilized a mixed-methods approach to comprehensively understand the Multilevel Faculty Mentoring Program (MFMP) and its impact on addressing challenges faced by BIPOC faculty. Three data collection methods were employed: semi-structured interviews with MFMP participants and program administrators explored their experiences, perceptions of effectiveness, and observed changes in sense of belonging and well-being; document analysis of program-related reports, emails, and other written materials to understand program goals, implementation strategies, and outcomes; and surveys to collect quantitative data on demographic characteristics, satisfaction with the program, and perceived changes in sense of belonging and well-being. Additionally, quantitative data on program metrics such as retention rates and participation levels were gathered.

The MFMP exemplifies a novel approach to mentorship in higher education, with profound implications for faculty with marginalized identities. By prioritizing equity, community, and collective empowerment, the program redefines traditional mentorship paradigms and fosters inclusive environments where faculty members can thrive. As urban planning faculty navigate complex challenges and opportunities, this model offers actionable strategies for fostering a sense of belonging, reducing isolation, and promoting holistic development. This paper serves as a call to action for leaders in higher education and faculty to embrace transformative mentorship practices and advance social justice within our academic communities.

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Keywords: Anti-racist, Mentoring, Faculty development, Community-building

BEYOND WICKED PROBLEMS: HOSPICING WHITE SUPREMACY FOR JUST TRANSITIONS

Abstract ID: unequal power relations
Individual Paper Presentation

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As a field, we planners wrestle with our relationship to progress and creative, utopian visions (Sandercock, 2023).

On one hand, we understand that our past pursuits of "progress" - hindered as they have been by paternalistic hubris and adherence with modernist, technocratic rationality - have left a host of "wicked problems" in their wake (Rittel & Webber, 1973). Over time, we have increasingly defined our field by our responsibility to address the wicked problems of socially, ecologically, and technologically complex urban environments. Gone is the mirage of a singular public interest.

On the other hand, we know we cannot afford to give up on possibilities of progress. From our origins in the social and ecological crises of the 19th century, our field is deeply rooted in pragmatic reform traditions and social movements inspired by visionary possibilities for expanding social and ecological wellbeing. Today, Indigenous scholar-activists and other leaders of intersectional movements for social and environmental justice saliently observe that despair is a luxury of the privileged, while active hope is a life-giving discipline in apocalyptic times.

This paper explores two interrelated questions arising from these tensions:

(1) How can we move beyond wicked problems to dream and enact alternative hopeful visions together, responsibly?

(2) How can we cultivate the power and wisdom required to support just and enlivening transitions toward liberatory and regenerative futures for all?

This paper approaches these questions through two key tasks.

First, it explores the mutually reinforcing entanglement between "wicked problems" and "white supremacy." This includes a review of the 10 characteristics of wicked problems through the lens of the 15 characteristics of white supremacy culture (www.whitesupremacyculture.info/). This analysis concludes that our capacity to address wicked problems is directly related to our capacity to hospice white supremacy culture. Building on the work of Vanessa de Oliveira Andreotti, hospice is a verb referring to "acting with compassion to assist systems to die with grace and to support people in the process of letting go – even when they are holding on for dear life to what is already gone." (Machado de Oliveira, 2021).

Second, this paper draws upon Indigenous scholarship and thought leaders from intersectional movements to identify practices and processes that cultivate the kinds of wisdom and power required to support just and enlivening transitions, both through hospicing of dying systems and midwifing liberatory and regenerative futures into being (Walsh & Abell, 2023). Andreotti observes that formal education does not "prepare us well to address wicked challenges and the complexities

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Keywords: climate justice, wicked problems, white supremacy, just transitions, regenerative futures

BLACK COUNTER-NARRATIVES OF DISASTER AND DEVELOPMENT: NEW ORLEANS

Abstract ID: April 9th 2024, 3:37 pm
Individual Paper Presentation

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After Hurricane Betsy swept through New Orleans in 1965, inundating the Lower Ninth Ward, widespread allegations circulated in the nearly all-Black neighborhood claiming the levees had been intentionally destroyed at the direction of powerful white elites. While the allegations have been dismissed by elites and academics alike for decades, more recent scholarship has argued that such claims-making played an important discursive role at the time, constituting at times a strategy of rhetorical resistance and a perceptive analysis of structural power in the region. In emphasizing the rhetorical and the analytical, however, these readings leave unexamined the material life-worlds to which Black discourse is connected. This article, by contrast, situates residents' post-disaster response within the history of their community's tradition of autonomous development, its Blues development tradition, by

reconstructing the many geographies of one unexceptional resident of the neighborhood named Lucy Thomas (1923-2004). Reconstructing this historical geography reframes Black claims-making in the wake of disaster as a part of a robust and ongoing counter-narrative of development in the region, rather than reactive rhetoric alone. Moreover, this micro-historical perspective provides a tight-focused analysis of the concrete practices individual Black communities undertake in the region to create and maintain an alternative sustainable development tradition.

This analysis draws centrally upon an oral history provided to local community organizers by Thomas in 2003 in which she describes not only the story of her own life but also the story of the three all-Black village communities of which she was a member over the course of her life. These communities include two freeholder villages formed during Reconstruction, Fazendeville and "the Cutoff," as well as a latter-day community formed in the Lower Ninth Ward by those displaced from these villages. I pair this oral history data with a range of archival sources that both corroborate and enrich this account, expanding it from a narrative of one individual to a more complex analysis of practices of community development and resilience strategies of survival among a unique set of autonomous Black communities in the U.S. South. These data include Freedmen's Bureau records and reports, a systematic analysis of manuscript census records, plantation crop reports, the reported results of archaeological investigations, as well as present-day resident interviews. The strategies of autonomous Black organization and sustainable development discussed in this paper encompass a century-long process. In the first section of the paper, I demonstrate the ways that recently freedpeople organized to develop independent political, economic, cultural, and spiritual institutions during Reconstruction that, in turn, they used to gain control of land for themselves, despite the re-imposition of the plantation system in Louisiana after the Civil War.

In the second section, I demonstrate how dozens of nascent independent Black communities like Thomas' began, in the twentieth century, to forge constellations of connection with one another and, thereby, to develop the structures of a broader regional pattern of autonomous Black development. In the third section, I then demonstrate how, building on the strength of these constellations of community development, Black communities like Thomas' have succeeded in maintaining their political and economic autonomy well into the twenty-first century — even despite displacements by environmental catastrophe and state intervention. Even after Lucy Thomas' community was displaced from its original land titles into the Lower Ninth Ward, and even after that subsequent community was displaced in 1965 by Hurricane Betsy, the structures of her autonomous Black community persist still in the present. These strategies of autonomous, regionally specific Black planning pose, for planners, a potential basis on which to form the structure of more just and sustainable community development in an era of increasing climate catastrophe and injustice.

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Keywords: Blues development tradition, Hurricane Betsy, New Orleans, plantation development. Black geographies

BLACK DEVELOPERS IN DETROIT: CHALLENGES COMPARED TO WHITE DEVELOPERS

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Individual Paper Presentation

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Pockets of residential and commercial development have sprouted in Detroit since the bankruptcy of 2013. Some of these are visible and sizeable developments and they have been completed by established, large well-capitalized, White developers. However, there has always been and still is a smaller constituent of Black developers. Not much is known about these Black developers.

The paper aims to establish a primarily qualitative, understanding of African American developers in Detroit. While we expect to learn enough from this exploratory work to support tentative policy suggestions, the primary objective of this paper is to understand the factors that hinder the ability of African American developers to succeed and how they approach development differently from White developers.

Our approach to obtaining data is interviews with developers. A reporter from Crains Detroit helped in making initial connections with developers. We also reached out to industry groups and a recommendation from a community group that has been engaging with developers. From these contacts, we used snowball referrals to speak to other developers. We interviewed 14 developers, nine Black and five White. We stopped our interviews when further interviews yielded no new information relevant to our research. After completing our analysis of the interviews, we interviewed an additional Black and White developer to confirm that our findings from the initial 14 interviews remained the same.

We present three major findings:

1. Black developers gain expertise from public service or private sector experience, whereas White developers enter through legacy connections to entrepreneurship, or direct connections to legacy real estate developers, or happenstance indirect real estate connections.

None of the Black developers we spoke with came with family connections to real estate, wealth, or upper middle-class parentage. In every instance, the nine Black developers we spoke with took a circuitous route to the business, building experience working for local elected officials, as public servants, as employees of other developers, in the banking sector, or some combination of these experiences, and leveraged these experiences to launch their businesses. On the other hand, White developers entered the industry through a traditional route of social capital. Four of the white developers came from upper-class backgrounds of either business or professional lineage. One entered the business through happenstance interaction with wealthy investors.

2. Bias in financing and incentives remains a challenge for Black developers.

Based on previous research about Black entrepreneurship, we expected that Black developers would face more constraints with respect to obtaining financing. Our research bore this out. Eight of the nine expressed frustration

obtaining financing from banks, and never being sure whether it was because of the color of their skin. On the other hand, the White developers had access to financing whether through banks or investors.

3. All developers seek profits, but Black developers are more likely to link their work to community. All developers we spoke to seek profits, but for all the Black developers this was accompanied by an interest in the betterment of communities in Detroit. This interest in communities was not shared by White developers. A representative quote from a Black developer is: “Many of us are Detroiters … we are active in our neighborhoods”. While White developers spoke about the potential to have a positive impact on the city or a neighborhood, their responses also focused on individual accomplishments of themselves.

In summary, our findings are part of a larger academic literature about the challenges that Black entrepreneurs face. Our findings point to the need to provide a more level playing field for Black developers in Detroit.

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Keywords: Developers, Black, White, Real estate development

BUFFALO’S BLACK COMMUNITY POST-SHOOTING: INSIGHTS FROM TWITTER AND CHATGPT

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Individual Paper Presentation

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"In five years, there will be a dramatic difference that you will see," Mayor Brown said. "Not only will the community look different, but opportunities for the people that live in East Buffalo will be different."

After the racially motivated supermarket mass shooting on May 14, 2022 in Buffalo, New York that killed 10 people and wounded three others, the mayor of Buffalo anticipated a significant transformation within the predominantly black community on the East Side (Yin et al., 2022). Governor Kathy Hochul enacted legislation to bolster New York's gun laws. Once the camera departed, have the concerns regarding this community undergone any changes? If so, what were they and how did they manifest?

Social media data is now a valuable alternative to studying the topics of concern and their associated sentiments. It empowers planners and policymakers to expand their reach in communities and serves as "a new way of supplementing traditional methods of public participation that are often face-to-face and engage small groups of participants" (Lin & Geertman, 2019, p. 77). Large language models like ChatGPT can provide valuable insights and assist in the interpretation of social media data by extracting discussion topics and sentiments.

This paper investigates the prevailing semantic topics that have garnered the most discussion about Buffalo's East Side neighborhoods on Twitter since the mass shooting. We aimed to find out the major concerns or interests and associated sentiments expressed about this racially segregated neighborhood (Yin, 2009). Are there any changes and potentials evident within the communities? Are people there still struggling with racial segregation, gun violence, poverty, and limited grocery options? What sentiments and perceptions on these topics are? Whether and how sentiments have changed?

We carried out topic modeling and sentiment analysis on about 55,000 tweets after preprocessing and cleaning for posts between May 14, 2022 and June 1, 2023 within the United States that are related to this mass shooting. The latent Dirichlet Allocation (LDA) model (Blei et al., 2003) was applied to detect topics based on collected tweets. The OpenAI API was used to conduct multi-class sentiment analysis in eight emotion categories: anger, fear, sadness, surprise, hopefulness, solidary, advocacy, and neutral. The ChatGPT also helped categorize discussions into relevant topics or aspects.

The findings from the multi-class sentiment analysis and topic modeling will shed light on the community's apprehensions regarding this predominantly black community, which has faced decades of challenges. Additionally, it will reveal whether the public has seen any positive developments and opportunities, aligning with the promises made by the mayor. This study will further showcase the potential of the ChatGPT application in urban planning and contribute to advancing discussions around its use for planning and designing cities and communities.

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Keywords: racial, community, Twitter, ChatGPT

DO SPEED CAMERAS DISCRIMINATE?

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Individual Paper Presentation

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Speed cameras are widely implemented in urban planning efforts to improve safety, with automated enforcement systems often considered impartial alternatives to human policing. Despite their prevalence, there remains a gap in assessing the geographic distribution of speed camera installations through the lens of equity in planning. Employing spatial analysis across all census tract areas in the District of Columbia, Maryland, and Virginia, this study reveals a disproportionate concentration of speed cameras in predominantly black neighborhoods. The findings highlight correlations between socioeconomic factors and speed camera placement, notably with a twofold higher concentration observed in black neighborhoods in the District of Columbia. These results underscore persistent structural inequities within urban planning frameworks, necessitating proactive measures to address systemic disparities. Recommendations are proposed to integrate principles of equity and inclusivity into planning strategies.

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Keywords: speed camera, equity, anti-racism in planning, urban planning, spatial analysis

EMBODYING JUSTICE IN THE BUILT ENVIRONMENT: CIRCULARITY AND PRACTICE

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Individual Paper Presentation

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The building sector is responsible for nearly 37% of the world's carbon emissions and offers significant opportunities for mitigating climate change. Many local governments are working to reduce operational carbon, but fewer have begun to address the challenge of embodied carbon, which refers to the greenhouse gas emissions produced in the lifecycle of buildings and infrastructure. This lifecycle includes the extraction, processing, manufacturing, and transportation of building materials; the construction, maintenance, and adaptation of buildings over time; and eventual removal, disposal, or disassembly at the end of use. An alternative to this linear pattern is achieving circularity (Circularity, Reuse and Zero Waste Development, 2023). To effectively and equitably achieve carbon neutrality, considerations of justice and equity are essential.

The Embodying Justice in the Built Environment: Circularity and Practice guide and workbook was created to aid local governments and community organizations who seek to center justice and equity in their work toward building carbon-neutral futures to address climate change. To develop this workbook, a team of university researchers, with the assistance of community leaders, analyzed the City Policy Framework for Dramatically Reducing Embodied Carbon (Carbon Neutral Cities Alliance and One Click LCA, 2020). While the report provides critical information for achieving carbon reduction, it does not explicitly address opportunities for developing justice and equity goals. Injustices and inequities pervade the built environment, including efforts to achieve carbon neutrality. This guide aims to disrupt this pattern by centering and operationalizing embodying justice in the built environment.

Unjust practices have shaped the built environment, from land dispossession to discriminatory planning, to harmful material extraction and toxic production processes, to wasteful construction and consumption practices. From manufacturing to the end of life, the extraction, production, and use of materials have continued to cause harm to entire communities. Injustices take the form of exploitative labor practices, lack of local economic support, reduction in community hiring practices, loss of local material use, and lack of transparency in material development, transportation, and landfill management. Unjust displacement and disruption through manufacturing facilities, brownfield growth, and off-gassing of materials within the supply chain perpetuate injustices globally, as does material extraction, harvest, manufacturing, and assembly.

Injustices are not limited to the first stages in the building lifecycle but affect how buildings are maintained and preserved over time. The racial wealth gap and lack of access to capital mean that building maintenance, lead abatement, and access to weatherization and building energy retrofits are unequal, affecting the health of inhabitants and potentially the lifespan of buildings (for example, see Avrami, 2022). At the end of life, buildings are typically removed through demolition, which releases toxins into the surrounding neighborhoods. Critics of federal and local demolition policies point to the role that they play in reinforcing patterns of racial segregation and accelerating cycles of disinvestment (Hackworth, 2019).

The Embodying Justice framework requires cities to carefully and comprehensively examine regulations, programs, and practices that affect the built environment's design, construction, maintenance, repair, replacement, and end-of-life approaches and their impacts on justice. It can serve as a reference for policymakers and practitioners in developing, implementing, and evaluating initiatives related to circularity, waste diversion and recycling, climate justice, and action, and in considering regulations and city permitting, long-range planning, economic development, and historic preservation programs. It can also be useful for government agencies at all levels when addressing the reuse and construction sector. The workbook is also intended for community organizations to help identify opportunities for engagement and change in their cities, as transitions to more just, equitable, and circular cities will require action beyond what local governments can accomplish on their own.

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Keywords: Justice, Equity, Built Environment, Carbon-Neutrality, Climate Action

EQUITY IN POLICE STOP OR USE OF FORCE?

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Individual Paper Presentation

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Despite the safety benefits of traffic enforcement, more than 1,000 US residents die each year in police encounters, and Black people are 3 times more likely to be killed than their white peers. Research efforts on understanding the key drivers of sociodemographic differences in police stop and use of force are in great need for new ways to improve policing equity. This study addresses the issue by asking and answering the following research questions: (1) What are the scope and scale of sociodemographic differences in police stops for a traffic reason (vs. others)? (2) What is the heterogeneity of sociodemographic differences in traffic stops by result of stop and action taken during stop, after controlling for other factors? (3) What are the associated stop, agency, and area characteristics of sociodemographic differences in police stop and use of force?

To answer the research questions, we analyzed more than 10 million police stops occurred in California from 2019 to 2021. We used indicators of whether one being stopped for a traffic or nontraffic reason, being cited, being searched, and being removed from a vehicle to evaluate sociodemographic differences in police stops by result of stop and use of force. We measured the police stop, person, and area characteristics using four data sources, the California’s Racial and Identity Profiling Act, the American Community Survey 5-Year, the California Statewide Integrated Traffic Records System, and the National Household Travel Survey. We used the descriptive summary statistics and multilevel logistic regression modeling.

The results reveal new evidence on sociodemographic differences in police stop, result of stop, and use of police force, after controlling for other factors. Compared to males, females are 1.5 times as likely to be stopped for a moving violation (vs. equipment) but are 70% less likely to be searched during traffic stop. Black and Hispanic populations are 2.5 times and 1.5 times as likely as their white peers to be searched during traffic stop, respectively, despite they are 50% and 30% less likely to be stopped for a moving violation (vs. equipment),

respectively. Age has an inverted U-shaped relationship with the likelihood of being stopped for a moving violation (vs. equipment). Compared to their younger peers (aged 18-24), people who are aged 25-34 and 35-44 are 1.5 times and 1.3 times as likely to be stopped, while elderly (aged 65+) are 10% less likely to be stopped for a moving violation (vs. equipment). People with limited English fluency are 1.2 times as likely as their peers to be stopped for a moving violation (vs. equipment).

Our findings highlight the police stop, person, and area characteristics that are associated with sociodemographic disparities in police, traffic stop, and use of police force, which merit attention and targeted policy interventions to improve equity in policing practices – for instance, traffic enforcement under the umbrella of safe system approach.

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Keywords: Policing Equity, Racial Profiling, Enforcement, Traffic Safety

EXPOSING DISPARITIES IN FLOOD ADAPTATION FOR EQUITABLE FUTURE INTERVENTIONS

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Individual Paper Presentation

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As governments race to implement new climate adaptation solutions that prepare for more frequent flooding, they must seek policies that are effective for all communities and uphold climate justice. This requires evaluating policies not only on their overall effectiveness but also on whether their benefits are felt across all communities. We illustrate the importance of considering such disparities for flood adaptation using the FEMA National Flood Insurance Program Community Rating System and its dataset of ∼2.5 million flood insurance claims. We use CausalFlow, a causal inference method based on deep generative models, to estimate the treatment effect of flood adaptation interventions based on a community's income, racial demographics, population, flood risk, educational attainment, and precipitation. We find that the program saves communities $5,000–15,000 per household. However, these savings are not evenly spread across communities. For example, for low-income communities savings sharply decline as flood-risk increases in contrast to their high-income counterparts with all else equal. Even among low-income communities, there is a gap in savings between predominantly white and non-white communities: savings of predominantly white communities can be higher by more than $6,000 per household. As

communities worldwide ramp up efforts to reduce losses inflicted by floods, simply prescribing a series flood adaptation measures is not enough. They must be accompanied by necessary technical and economic support to strengthen communities' resilience amid historical disenfranchisement, racism, and inequality. Furthermore, future flood adaptation efforts should go beyond reducing losses overall and aim to equitably support communities in the race for climate adaptation

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Keywords: Flood planning, Climate Justice, Inequality, Disaster Risk Reduction, planning evaluation

FLYING UNDER THE RADAR: TRANSIT POLICE AND TRANSPORTATION SEGREGATION

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Individual Paper Presentation

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The negative impacts of racialized policing practices have been well documented by scholars from across almost all social and humanistic disciplines, as well as from community organizers and private news agencies. Focus on crime and punishment has resulted in a thoroughly fleshed out body of research around the machination of the carceral state, with contributions from sociologists, historians, psychologists, political scientists, and criminologists. Recently, urban planners have also meaningfully engaged with research on policing, reparative justice, and abolition, advancing beyond older outmoded fixation on crime and safety. Yet these analyses are traditionally leveled at the larger structure of racialized policing, or in more local terms at the neighborhood level or within particular communities.

A commonly racialized practice of policing that remains understudied in these approaches is the role of Transit Police agencies. I argue these agencies, which exist in a unique and particular bureaucratic context, have largely flown under the proverbial radar of scholars investigating issues of racialized, and sometimes deadly, police encounters. In January 2009, San Francisco Bay Area Rapid Transit Police officers were involved in the fatal shooting of an unarmed Black man, Oscar Grant III, at the Fruitvale transit station while responding to a call about a fight on the train. They also are uniquely urban in their operation, usually within large metropolitan areas and decently funded infrastructural contexts. These usually public Transit Police often operate across wider geographies than local city agencies, stretching authority into any jurisdiction in which their agency operates, at a county-level, or even across state lines in the case of the MTA, WMATA, or Amtrak Police. Despite their extremely wide-ranging authority, which at times can rival federal policing agencies, there is shockingly little scholarship into their operation, and even less transparency and accountability or reporting for stops, arrests, and action. In 2020, NY Attorney General Letia James launched an investigation after preliminary, partially redacted data showed that 70% of fare evasion tickets, and 90% of arrests, were targeted at people of color on the NY Subway. 75% of those police

encounters were male, and more than half were under the age of 25 (Carter and Johnson, 2023). Data on racialized traffic stops is also correlated with higher percentage of incarceration, even for minor offenses (Detroit Justice Coalition, 2020).

I argue in this paper that the relative secrecy, and lack of study of Transit Police represents a unique opportunity to explore racialized transportation planning, and further probe the state-supported structure of transportation segregation. Urban Planners, and especially transportation planners, should more closely scrutinize transit policing, and agencies should be both accountable and transparent in their operations. This research advanced antiracist aims because data show that Black Americans experience elevated risk and likelihood for police encounters, especially while moving through predominantly white spaces. Public transportation is also a space where residents of different age, class, and ethnic background mix and meet, and has also been a site of racial struggle and protest. Understanding the impact of policing in this medium for mobility is paramount to advancing antiracist aims in urban planning, and ultimately dismantling structures that disproportionately target underrepresented communities.

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Keywords: Policing, Public Transit, Racial Segregation, Transit Police

IDENTITIES OF DISPOSESSION

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Individual Paper Presentation

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Title: Identities of Dispossession: Political Subjectivities at the Intersection of Deportation and Displacement

Immigrants with precarious legal status living in global cities are positioned at the intersection of three forces of dispossession: ethnonational deportation, criminalization, and displacement from gentrification. This triple threat structures the everyday lives of immigrants, shaping the ways they engage with the built environment and their

activism. Immigrant communities adopt routines and countless tactics to avoid deportation, contend with rapacious landlords, and organize to protect their communities from police violence, while watching their cities underwrite gentrifying amenities. Studies have demonstrated that despite increasing inequality and ongoing hostility, immigrant communities have traversed gentrifying urban contexts (Dávila 2004; Pérez, 2004; Pérez et al., 2010) and have served as important contributors to urban social movements (Nicholls, 2013; Nicholls & Uitermark, 2016; Nicholls, 2019). Under these circumstances, activists forge new identities to make sense of their urban contexts and strategies of resistance to dispossession.

This study explores how community organizers construct political identities in the Boyle Heights neighborhood of Los Angeles. In this predominantly working-class Latinx immigrant barrio, community organizers are often from immigrant families or immigrants themselves and engage in neighborhood activism in the face of ongoing territorial dispossession and forge new identities that elucidate such conditions. Drawing from forty extensive interviews and participant observations of Boyle Heights organizers, we suggest that under such conditions, they articulate an "identity of dispossession" that amalgamates experiences of displacement, criminalization, and deportation into a singular yet multivalent collective threat. Though housing precarity, gentrification, evictions, police repression, and deportations are different forms of repression, they are experienced as a common force of dispossession. This fosters a political subject whose identity and grievances mirror the multifaceted overarching process of territorial dispossession. This is exhibited in one organizer's reflection: "If you displace me from my hood, you might as well deport me."

Examining the ways in which organizers articulate and mobilize communities against the various issues they face offers important lessons as to how such threats work in relationship to belonging, activism, and political representation in the built environment (Beltrán, 2010). Rather than understanding inequalities in isolation from one another, this paper asserts that communities often have sophisticated frameworks and subjectivities that analyze and reflect the conditions under which they live in tandem. We argue that understanding communities also means understanding how they articulate the threats they face in their daily urban lives. These lessons have larger implications on the integration of marginalized voices in planning processes and civil society at large.

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Keywords: Immigrant Communities, Activism, Gentrification, Displacement, Disposession

IN THE GAP: PROCEDURAL DUE PROCESS, REPARATIVE PLANNING, AND OUR FUTURE

Abstract ID: 1108.0.0.1144.2024

Individual Paper Presentation

Harley Etienne [The Ohio State University] etienne.21@osu.edu, presenter

Provocations for reparative planning and anti-racist planning futures present the field with new directions for creating vibrant and just communities. This paper explores the question: to what extent is reparative planning possible within the U.S.' current legal frameworks and jurisprudence? While recent work has brought the links between racism, zoning, and land use to the fore, the conclusions of that would suggest that large scale systemic change is needed. In the gap between the present precarious moment and the future is the reality that one of the underlying logics of the U.S. legal system, white supremacy, and capitalism is private property rights. The thesis of this paper is that constitutional interpretations that enable planning are not currently under attack but could become so in the very near future given recent decisions that roll back the power of government agencies and expand the power of private property owners from government regulation and intervention. Planning and legal scholars have paid scant attention to what current trends at the high court could mean for reinterpretations of long-accepted precedents such as Euclid and Kelo. This threatens to not only weaken planning but make the project of achieving an anti-racism future through reparative planning more challenging. To the extent that the U.S. Supreme Court has redefined substantive due process through the Dobbs decision, planning scholarship has yet to determine what this may portend for reinterpretations of the jurisprudence that underlies planning and land use regulations. In this presentation, the author will summarize what the Roberts Court's recent decisions could mean for procedural due process and explore the confluence of reparative justice with procedural due process and justice. To the extent that planning can be shielded from threats by the reinterpretations of canonical legal precedents, the real challenge is to determine if and how the law can be reconceptualized to help fulfill the promise of anti-racist futures and reparative planning. The paper concludes by revisiting the work of Derrick Bell and his proposition that the U.S. legal system may be incapable of reform and calls for greater engagement with legal scholarship and Supreme Court jurisprudence within planning scholarship.

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Keywords: reparartive planning, law, procedural due process, social justice, anti-racist futures

INDIGENOUS COMMUNITY RESILIENCY IN THE COVID AGE AMONG TONGAN SAINTS

Abstract ID: 1108.0.0.860.2024
Individual Paper Presentation

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Application of indigenous ways, worldviews and values to disaster planning and management within post-welfare settler colonial contexts can be tricky and difficult. In better understanding how to plan with vulnerable indigenous communities though is needed in attempts to decolonize and apply indigenous knowledge and ways to practice. I apply Critical Race Theory (CRT) and Indigenous Planning Theory (IPT) as broad conceptual theoretical frames in understanding broader third sector civil society indigenous community-based faith-based organizations' place in society. I specifically use Brown Church Theory that stems from CRT, and indigenous Tongan theoretical approaches that include Hauofa's Oceanic Philosophy and Okusitino and Ka'ili's Tā-Vā (time space) theory as conceptual, theoretical frames of understanding the social interactions by Tongan Latter-day Saint (LDS) Mormon ward and stake faith communities in response to the COVID-19 pandemic. Vā is the space between, but not an empty space that separates, rather a social space that relates. In the geography of vā (space), distance does not separate kainga (kin, family), but only provides further interconnection social pathways. Nor does greater distance translate into diminishing commitment to families, because social connections constitute a significant part of identity and self-esteem. Nor does greater distance translate into diminishing commitment to families, because social connections constitute a significant part of their identity and self-esteem. Rather than geographical boundaries, vā (space) is a space that connects and relates people to one another. Tauhi vā (good socio-spatial relations) emphasizes the need for nurturing, sharing of, and caring for the human space and relationship between two or more persons or among groups. It (tauhi vā, good socio-spatial relations) is looking after the space between people – the relationship; it is nurturing the social space that relates people to one another. If space is a social product, the vā as it concerns the physical/mental, material/economic, educational, and social/spiritual health in the COVID age among indigenous Tongan LDS congregations overwhelming showcased community resiliency. Qualitative methods of talanoa (informal conversation, interviews), archival documents, and participatory observations were used to examine the vā (space) of Tongan LDS congregations in the COVID age. Existing faith-based and indigenous community infrastructure buttressed by varying socio-spatial support mechanisms (social, cultural, financial and spatial) enabled Tongans in the LDS Church the space to organize in the COVID age. This has implications for disaster preparedness, relief and recovery policies and practices in which faith-based organizations can play a more central and collaborative role with state-sponsored state agencies and efforts.

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Keywords: Indigenous Planning, Community Resiliency, Faith-based Organizations, Race

THE BAMBOO CEILING AND ASIAN DOCTORATES IN POST-DOCTORAL CAREER

Abstract ID: 1108.0.0.222.2024

Individual Paper Presentation

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While Asian Americans may have achieved high educational attainment (J. Lee and Zhou 2015; Nunes 2021), the completion of college degrees does not warrant larger social or economic success. Evidence has been emerging that Asian Americans are underrepresented in leadership positions in the private sector (Yu 2020; Chow 2023) and at law schools and legal professions (Lu 2021; Lu et al. 2022). The same issue applies to academic careers in which people obtain the highest educational degree and are supposed to be evaluated on a merit basis. Even though Asian Americans are overrepresented in general faculty positions at universities compared to their composition of the population in the U.S. (Wang, 2008), they have lower tenure rates despite higher research productivity and report lower levels of job satisfactions (Yan and Museus 2013). Multiple studies from nationally representative surveys also demonstrate that Asian Americans are less likely to serve in leadership positions (F. Lee 2019), such as endowed chairs and distinguished professors even within fields that Asian American are concentrated, such as science, engineering, and mathematics (Hartlep et al. 2016; Freeman and Forthun 2019).

While these findings are insightful, we shift our conversation from over- or under-representation to the process of selecting careers with particular attention to individual experience and thoughts over time. Our analysis with the process is critical because decision making for career is not a static decision at the end of the doctoral training, but evolves over time based on learning and experience in each year of doctoral training. We focus on Asian doctoral students and their career choice afterwards first because Asians are the largest group of doctoral students in urban planning, engineering, and science fields, and second because Asians are distinctively different from Asian Americans. Asian Americans are likely to find jobs in the U.S., while Asians face an important decision to stay in the U.S. or go back to home countries or else. Our main question is whether and how discriminatory or racial experience during the doctoral training have affected the career choice for Asians.

We conducted 20 semi-structured interviews with three stratified groups: 1) those who went into the U.S. academia, 2) those who got non-academic jobs in the U.S., and 3) those who went back to their home countries. We sampled graduates from University of California, Berkeley, University of Southern California, Ohio State University, Georgia State University, and other universities to make sure that our findings are not constrained to a specific university environment.

We found that most Asian students enjoyed a liberal environment during the doctoral programs, and did not find any evidence that negative experience during the doctoral programs forced their career choice. They made their career choice about staying in academia or not, or whether in the U.S. or home country based on social or personal reasons. However, their racial experience started to emerge in subtle forms after they landed on jobs and accumulated over years. All women reported some form of discriminatory experience, while one third of men did not. The most common type of discrimination was not being recognized for their ability or accomplishments in a context of publications, going through tenure review, serving as the department chair, or services to the department or university. Interviewees additionally reported that they were not identified as minority or their voice did not carry weight in the recent debates over diversity and inclusion initiatives.

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Keywords: Asians and inclusion, Academic career and exclusion

THE STATUS OF SOCIAL AND MINORITY GROUPS IN PLANNING LONDON

Abstract ID: 1108.0.0.804.2024
Individual Paper Presentation

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Political theory extensively explores the relationships between the state and social and minority groups, yet the impact of these interactions on urban planning remains overlooked. This paper investigates the coevolution between the development of British constitutional rights and the status of social and minority groups in planning London since its first post-WWII comprehensive plan. The study employed a historical document analysis by scrutinizing major London urban plans, pertinent British legislation, and constitutional rights enactments since the 1940s.

Findings demonstrate that London's planning approaches to social and minority groups have evolved with Britain's constitutional attitudes toward minority rights. The early post-war British citizenship reflected libertarian values of individual freedoms. London's post-war city plans maintained the same libertarian discourse of “free choices” while defining minorities as "scattered other religions" and advocated for separated "self-contained communities." As the state embraced models of colorblind citizenship and individual equality from the 1970s to the 1990s, London's urban planning shifted to emphasize free-market regeneration and the well-being of the “Individual Londoner,” a change initiated by the 1976 London Plan. During the first decade of the 2000s, new British laws and policies enhanced liberal multiculturalism, reflecting London's 2004/08 plans emphasis on "ethnic and racial groups" within sustainable development policies. The recent decade's focus on civic cohesion in British rights has influenced the focus on the "socio-economic mixing" of "disadvantaged groups" in the 2011/16 London plans while evolving to prioritize intercultural inclusion of "equality groups" in the latest 2020 plan. The study concludes that the status of social and minority groups within London's urban planning is not solely a product of planning approaches but is significantly shaped by the prevailing political and constitutional frameworks regarding minority rights.

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Keywords: minorities, planning practice, state-minority relations, London planning

WILDFIRE, RESTORATION, AND STRUCTURAL INEQUALITY IN FORESTRY CONTRACTING

Abstract ID: 1108.0.0.935.2024
Individual Paper Presentation

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Studies of labor markets in forestry have consistently found that white workers tend to fill better paying, higher quality jobs with higher social status than workers of color. Interviews we conducted with contractors and workers in a case study of forestry services contracting in southern Oregon and northern California echo these findings and suggest that there are not only segmented labor markets, but also a racially defined segmented contracting market in the case-study area in which the racial division of labor occurred at the scale of industry sector. Latino contractors and workers we interviewed were confined to the less prestigious, less lucrative reforestation sector of the forestry industry while white interviewees worked in better-paying, higher status technical forestry and heavy equipment operation. We identified three mechanisms of the state at work in this segmentation of the contracting market: production and reproduction of differential value, contracting practice, and immigration policy. Government policy contributed to the devaluing of reforestation work and relegating Latino contractors and workers, who are devalued as human beings, to that industry sector. While race may be the major social category around which capitalism is structured as an institutionalized social order (Fraser 2016), our case study included an instance of the state creating intra-racial divisions along the lines of immigration status. The resultant legal formalization of unequal power relations between Latino employers with secure legal immigration status and Latino workers with more precarious statuses (undocumented and viséd) creates conditions conducive to intra-racial expropriation of surplus value from vulnerable workers. In its capacity as a political actor the state produces and reproduces social structure, and in its capacity as an economic actor it cements and exacerbates inequities that it built into those social structures in the first place.

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Keywords: Low wage labor, Latino workforce, Climate justice, Forestry, Wildfire Prevention

Track 1 Research in Motion (RiM)

CRITICAL RACE STUDIES: CONTENT, COMMUNITY, AND PLANNING PEDAGOGY

Abstract ID: 1110.0.0.720.2024
Research-in-Motion (RiM)

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As planning education evolves, the increasing number of courses focused on race in planning is an exciting step in both advancing anti-racism and training planners to champion just, equitable, diverse, and inclusive cities. However, there are opportunities to complement race-focused courses and amplify class content by identifying the ways in which a course like Critical Race Studies allows us to hone a distinct approach to planning pedagogy. In this presentation, I explore what it looks like to use Critical Race Studies as both content and as informing planning education pedagogy and argue that training planners in critical topics requires pedagogies that reject the very hierarchy and power that created academic institutions that weren't designed for students and faculty of color. Indeed, we can't prepare future planners to address social challenges connected to race, spatial inequities, and communities unless we train them on critical analysis, offer chances to directly connect this analysis to their own communities, and give them in the skills necessary to make progress on these issues with the public and within the profession.

In this context, pedagogy begins with the syllabus and intentionally centering the voices of Scholars of Color each week. This course includes concepts such as Kitchen Table Planning (Sweet, 2015), Indigenous feminist planning (Dorries & Harjo, 2020), Cultural Humility (Sweet, 2018), as well as collections that draws on imagination (Bates, et. al., 2018) and scholarship about loving attachment (Porter, et. al., 2012). During class sessions we learn about and use dialogic methods versus lecture (Freire, 1970) to examine concepts in context of racialized experiences while also deepening rigor through intensive systemic analysis and engaged pedagogies (hooks, 2010). In terms of class structure, this means rejecting traditional academic hierarchies by sharing power with students through co-construction of syllabus topics and training them in session facilitation. It is imperative that students leave courses like Critical Race Studies with the ability to apply what they learn about spatial inequities to their academic, professional, and personal spheres, and as such the assessments in this course are based on several forms of application. Assessment includes a mix of action-oriented, personal reflection, and public writing assignments to intentionally move academic concepts from the classroom to the community, as well as using un-grading methods

that focus on qualitative feedback on student work instead of points. Importantly, this pedagogy relies on creating a collaborative class setting in which students can try on new ideas without fear.

This RIM presentation is based on six years of experience teaching a graduate-level Critical Race Studies planning course, student feedback, and instructor reflections during the course and following each term. The course was first developed 14 years ago, and in the six years I've taught it, my goals include advancing students' critical interrogation of race and planning, 2) making connections between their lived experiences and the course content, and 3) ensuring that they leaving with practical tools to apply this new knowledge in a variety of settings (i.e. skills in OpEd writing, critical dialogue, and designing and facilitating sessions about sensitive topics).

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Key Words: Pedagogy, Planning Education, Critical Race Studies, Critical Race Theory, Anti-Racist Education

EQUITY IMPLICATIONS OF THE DIGITAL DIVIDE IN THE CITY OF DALLAS

Abstract ID: 1110.0.0.616.2024
Research-in-Motion (RiM)

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As the city of Dallas is addressing the Digital divide under the smart city umbrella, there needs to be a better understanding of the equity implications of the 3rd level of the digital divide. The 3rd level of the digital divide refers to "who benefits from the internet" (DiMaggio et al., 2001, Hampton 2010; Van Deursen et al., 2015; Scheerdet et al.,2017). This dissertation examines the strategies of inclusiveness Dallas City is using to bridge the 3rd level of the digital divide and achieve its smart city goal of creating an inclusive and equitable community and offering a better quality of life to its citizens utilizing Fainstein's just city theory, along with other theories of the digital divide using the public libraries in Dallas city as physical locations of internet access to the public to better understand the consequences of the 3rd level of the digital divide on the social and economic inclusion of poor low-income communities.
My research methodology includes semi-structured interviews, survey and content analysis of the city of Dallas's official documents. This dissertation proposes that planners engage early in the process of locating internet access points, such as public libraries and community centers, in

neighborhoods to ensure inclusiveness. The findings of this research reveal- will be added later once the research is completed.

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Key Words: Digital Divide, Just City, Smart City, Socioeconomic inclusion, quality of life

HARMFUL BELIEFS AMONG URBAN PLANNING DECISION-MAKERS MAY REINFORCE INEQUITY

Abstract ID: 1110.0.0.1063.2024
Research-in-Motion (RiM)

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Various systems of power, including urban planning elites (e.g. planning department heads, transportation department heads, planning commissions, transit agency executive leadership, city/county managers, elected officials, and planning scholars), have created unfair living conditions marked by segregation, auto-dependence, the concentration of poverty, underperforming schools, housing cost burden, food deserts, childcare deserts, limited employment opportunities, and inadequate transportation options (Turner and Greene, 2020). These living conditions contribute to inequities in social, economic, and health outcomes (HHS, 2020). Although urban planning elites often claim benevolence and rationality, they have done little to reverse unequal living conditions in U.S. cities (Spina, 2013).

Lack of action is partially related to debate among decision-makers regarding the status, causes, and consequences of unequal living conditions (Jost, Federico, and Napier, 2006; Kluegel and Smith, 2017). Political ideology explains some differences in acknowledgment of unequal living conditions and belief about change explains some differences in preferred solutions (Klein et al., 2022). However, while there is evidence of harmful beliefs and attitudes, such as biased beliefs and attitudes, in various other professional fields (Alexander, 2010; Liu, 2011; Maina, et al., 2018), there is little evidence regarding harmful beliefs and attitudes in the field of urban planning or how harmful beliefs and attitudes among urban planning elite may reinforce inequity and hinder equitable reform.

In this qualitative study, I used data from seven semi-structured interviews with urban planning elites in one mid-sized city. I conducted the three-step coding process in grounded theory research, open coding, selective coding, and theoretical coding (Jones and Alony, 2011), to explore what knowledge and harmful beliefs urban planning elites demonstrate when explaining inequity in their community.

Preliminary data analysis led to the identification of two emergent themes and one basic social process. The first emergent theme is despite acknowledgment of "good" neighborhoods marked by quality schools and housing and access to opportunity and of "bad" neighborhoods marked by underperforming schools, substandard housing, and limited opportunity, the urban planning elite did not acknowledge the root causes of these separate and unequal neighborhoods. The second emergent theme is harmful beliefs and attitudes regarding which groups of people deserve to live in which types of neighborhoods (i.e., beliefs regarding who deserves to live in a "good" neighborhood). The overarching basic social process I identified is the process by which local-level urban planning elites expect individuals to make enough money to escape "bad" neighborhoods rather than expect their profession and peers to support equitable reform to prevent separate and unequal neighborhoods.

These findings suggest that urban planning elites are susceptible to cognitive dissonance, system justification, belief in meritocracy, class-based social dominance orientation, moral disengagement, and/or lack of basic planning history. This study is also important because it points to potential pathways for future research to identify and prevent justifications rooted in the harmful manifestations of beliefs and attitudes and to modify education and information campaigns and profession-specific training, pedagogy, and learning competencies. Because urban planning stakeholders are in positions of power to change policies and practices that perpetuate inequity and to influence public perception regarding the policies and practices that perpetuate inequity, we need to understand the knowledge, beliefs, and attitudes. This study is important because it explores what is at the essence of how urban planning elites justify their work and decisions, particularly in the context of persistent social, economic, and health inequities and increasing polarization of urban planning issues.

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Key Words: beliefs, attitudes, decision-makers, equity

PLANNING, VALUES, AND PRAXIS WITH THE CLOCK(S) OF THE WORLD

Abstract ID: 1110.0.0.332.2024
Research-in-Motion (RiM)

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At its best, planning aims to intervene in present systems to envision better futures. Ethical, transformative urban planning interventions integrate the aims and visions of the Right to the City, Black Lives Matter, Climate Justice, Land Back, Reproductive Justice, and other social movements into its practices. Consequently, the profession must assess the current moment regarding the myriad histories and trajectories these movements seek to transform. This exploration will critique the imperial-capitalist conceptions of time upon which planning relies and deeply engage frameworks originating from these progressive social movements, to challenge planning's relationships with time.

Detroit-based community activists, James and Grace Lee Boggs often began conversations with the question, "What time is it on the clock of the world?" This question both invited assessment of the emergent contradictions in the rapidly changing context of late modernity, and "recognized that these changes were creating new contradictions demanding that we think anew." (Boggs, 2011, p. 354) Drawing on their question, we investigate time in planning thought through consideration of clock(s) of the world. We consider how cyclical/ecological time, deep time, queer time, reparative time, diasporic time, racial time, and multiversal time interact with, challenge, or complicate frameworks around time commonly under the professional consideration of plannerly practice and teaching. We explore what thinking and expansion of the concept of time itself might offer a field currently bound by the time frames of municipal budget cycles, comprehensive planning processes, funding cycles, fiscal years, etc., in terms of expanded possibilities for systems change and transformation. This paper draws Bogg's framework into the present and the world of planning practice and education.

We argue that this capacious consideration of the world's clocks should inform the conceptualization and practice of "thinking anew" about the future in planning. We find that agitation in the current systems serves as a precondition for liberatory change. In James Baldwin's words, planners are situated at the intersections of complex systems, witnessing:

An old world is dying, and a new one . . . announces that it is ready to be born. This birth will not be easy, and many of us are doomed to discover that we are exceedingly clumsy midwives. No matter, so long as we accept that our responsibility is to the newborn: the acceptance of responsibility contains the key to the necessarily evolving skill (1972, p. 196)

How does planning's operating assumptions about time inhibit or advance re-birth? How should consideration of the clock of the world shape urban planning's appropriate role in birthing a new world? We look to thinking about systems change to find leverage points - places in complex urban systems where a small shift in one thing can yield big changes in everything (Brown 2017; Meadows 1999). We interrogate contemporary practice, including our respective approaches to planning and planning pedagogy, to detect possible leverage points that might enable us to shift patterns toward more just futures, offering the potential to change or transcend the "rules" of planning systems. Subfields in focus during our discussion include historic preservation, participatory planning, housing, and radical planning pedagogy.

Citations:

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Key Words: Time and temporality in planning, social movements, agitation in planning

RACIAL EQUITY AND TDR PROGRAMS FOR AGRICULTURAL PRESERVATION

Abstract ID: 1110.0.0.402.2024
Research-in-Motion (RiM)

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Montgomery County, MD, a rapidly urbanizing “suburb” of Washington, DC, is known for innovative use of Transferable Development Rights (TDRs) along with zoning to protect agricultural land at its outer border while encouraging development in the parts of the county closer to DC. Other jurisdictions have modeled their programs on Montgomery County. This TDR program was born, in part, to address a perceived potential loss of financial equity by landowners caused by the complementary downzoning done to protect farmland. Now, recent memoranda from the legislative and executive offices have raised questions of another meaning of equity; specifically, racial disparity in its Agricultural Reserve (AR). In addition, data-based research has found that TDRs don’t adequately protect farmland, citing Montgomery County as a case study (Fang, et al., 2019).

This ongoing graduate school independent research project was inspired by this dichotomy in Montgomery County, MD. The first phase consisted of a literature review that initiated a broad look at TDRs and other agricultural land preservation and how to redefine their success using an updated definition of equity, marrying TDR literature, that does not directly address racial inequity, with racial justice planning theory that is more commonly applied to urban areas.

In addressing the dual questions of evaluating success and equity of agricultural land preservation policy and programs, the literature review concluded that evaluation of both must expand to include racial equity analysis and suggested looking to racial justice theory for guidance on adding this into the existing agricultural preservation policy frameworks. The general failure to incorporate racial equity into these analyses to date is surprising and should be remedied. How it should be remedied is the subject of continuing research, looking at the inverse questions: what is the impact of racial equity analysis on understanding TDRs and other agricultural preservation easements?; and, what is the impact of TDRs and other agricultural preservation easements on racial disparity in agriculturally protected areas?

Using legal research, document analysis, content review, and eventually interviews, this next phase of research will address some of these questions surrounding racial equity concerns--particularly given that TDRs might not even

be successful in protecting farming. The sub-areas for further research to better understand and answer these questions include whether TDRs can still be useful and usable in supporting equitable and resilient communities and if so, how; the equity and legal ramifications of terminating or sunsetting a TDR program; how TDRs and other easement and agricultural land preservation tools might or might not differ in result in relation to racial equity; the history of land tenure that informs current ownership; the best alternative means of preserving farming in an equitable way; and current legal issues creating barriers to racially directed reparative programs.

In addition to research into the intersection of racial equity and TDRs and other agricultural preservation methods and their ongoing utility and fairness, this project seeks to spark further conversation into smart growth's effects on rural areas more broadly, highlighting the needs and inequities in the TDR sending areas. The scope of the literature review only allowed for brief mention of the opportunity for smart growth to consider how a variety of issues—housing, transportation, climate, health, immigration, demographics, and more—impact the rural areas that are the flip side to the more urbanized areas that smart growth principles of growth management focus on. These are also questions deserving of further research. Further, this research is relevant to areas that have TDR programs in place or who are considering implementing them.

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Key Words: racial equity, land use planning, transfer of development rights, farmland preservation, right to the city

RESILIENT PLACE NARRATIVES AND ENVIRONMNTAL JUSTICE

Abstract ID: 1108.0.0.1007.2024
Research-in-Motion (RiM)

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“It is not difficult to sense the liveliness while walking in the vaulted stone alleyways, the low tunnels and the labyrinths of narrow lanes of the old town of Nablus. It is a sensual, interactive and mixed experience of optics, acoustics, and aromatics. … Since the invasion, people cautiously start every day with the fear and uncertainty that they might be unable to enjoy any of what used to be a normal day. (Bleibleh, 2012). Places are both heritage and lived experiences for those who call them home, encompassing geography, history, culture, flora and fauna, stories, and decisions made over time. They are remembered and imprinted into the collective consciousness, shaping group identity and individual well-being. Indigenous communities worldwide emphasize the intrinsic healing properties of their surroundings. They speak of a medicinal quality inherent in their places, where “food is medicine,”; “ritual is medicine,” and “stories are medicine.” Essentially, the land is medicine, providing a foundation for cultural resilience and representation.

This presentation focuses on what happens when the relationship between people and their homeplace is disrupted and the transformations of the narratives to maintain a connection to home. It seeks to nurture community empathy towards “everyday fundamentals” of heritage landscape practices, planting a seed of appreciation for the authentic and inherited wisdom embedded within these traditions and fostering a stronger bond with indigenous cultures and their profound connection to the land. Methods include presenters and audience participation, icebreaker activities, foundational premise, contextual Palestinian narratives, audience lived-experience reflections, and discussions.

An ethic of care, as places become intertwined with people’s lives, a legacy of inherited habits emerges—ways connecting land, plants, seasons, and memories, along with acceptable “habits/rituals/behaviors” that promote stewardship, land-people relationships, and harmony with the place. These attributes manifest in seasonal behaviors, rituals, and economies, persevering authenticity and integrity of the lived experience and ensuring continuity of culture and relational practices between community and place/land. The participants are prompted to explore and connect with the indigenous experiences of “making-do” and their everyday practices, deepening their understanding of the intersection between place, culture, and resilience.

In a time of massive change, global movement, migration, gentrification, infringements, and connectivity, the community (people)-Culture (ritual)-Place (land and its treasures) continuum is disrupted, targeted, and undermined. In many cases, access to the home place is restricted or denied. What was once a source of identity, resilience, and continuity now evokes pain, dissonance, and resistance. Gentrification, while having significant authentic potential, can inadvertently prioritize neglecting the collective perspective, enduring tapestry, and the cultural lens while it focuses on the singular goals and alters the relationship between people and place.

Healing and reconnection take many forms. Stories and sensorial experiences trigger memories of place and lived experience, despite the passage of time and geography, bringing us home to another time. In “We Are Water Protectors," inspired by Indigenous environmental justice and resistance, the story begins with the quote, "Water is the first medicine, Nokomis told me…It affects and connects us all.” (Lindstrom & Goade, 2020). Engagement in community, in place knowing and place keeping authentically across generations offer multiple venues for potentials for enduring sprit of place and resilience (Awwad-Rafferty, 2018). This interactive presentation offers a layered visual and storytelling narrative that emphasizes the significance of place, identity, and community in stewarding integrative cultures of resilience, responsibility, and authenticity in the face of massive change, exploring ways that honor people-environment relationships amidst complex, ever-changing world.

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Key Words: Spatial justice, Ecology of Place, Cultural heritage, resilience, decolonization

SOCIAL AND SPATIAL DISPARITY OF FEDERAL PAYCHECK PROTECTION PROGRAM

Abstract ID: 1110.0.0.695.2024
Research-in-Motion (RiM)

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The global pandemic severely affected small businesses across the U.S. with disproportionate effects on communities of color. Black, Indigenous, and People of Color (BIPOC) small businesses suffered disproportionately, especially when located in communities of color (Couch et al., 2020; Montenovo et al., 2020; Ong et al., 2020). During the pandemic, small business employees experienced disproportionately high unemployment rates, especially among lower-wage workers (Cajner et al., 2020). In the trillion-dollar Coronavirus Aid, Relief, and Economic Security Act (C.A.R.E.S) initiated by Congress, the Paycheck Protection Program (PPP) provided financial support to qualifying small businesses. Black-owned businesses are nearly 50% less likely to receive PPP loans compared to White-owned businesses, especially during the early phase where private lenders have yet to join the program based on zip-code level demographic analysis in the U.S. (Atkins et al., 2022). Although early evidence shows procedural equity concerns (Fairlie & Fossen, 2022; Liu & Prilla, 2020), no study has yet to identify social and spatial disparity of loan distributions among small businesses with regard to neighborhood characteristics. In this work, we ask: did the type of neighborhoods with small businesses receiving higher loan amounts vary? Based on a set of geographically weighted models using negative binomial and logistic regression using PPP loan distribution point data in the U.S. Northeast region, we find that small businesses within Black and Hispanic/Latino neighborhoods were disproportionately underfunded unless located within an Opportunity Zone. Neighborhoods with better walkability, transit accessibility, and employment density were associated with better loan performance. The association between loan-receiving performance, place-based policy, built environment, and racial/ethnic disparity shows a mismatch with the primary program incentive in helping those with the greatest needs for economic opportunity. Based on the research findings, cities should pay more attention to historically disadvantaged neighborhoods outside opportunity zones to ensure parity. Planners can and must advocate for the Black and Hispanic/Latino neighborhoods in accessing financial aid and economic opportunity beyond the areas of designated opportunity zones, especially during the time of crisis.

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Key Words: Small Business, Paycheck Protection Program, Opportunity Zone, Place-based policy

UNSETTLED ACCOUNTS

Abstract ID: 1110.0.0.116.2024
Research-in-Motion (RiM)

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"Unsettled Accounts" is a participatory action research project that seeks to advance understanding of Black land ownership and unjust takings in 20th-century Boston. Collaboratively undertaken by university-based urban history and planning researchers and Boston-based anti-racist and reparations activists, the oral history component gathers stories from Black Bostonians whose family homes, businesses, and lands were unjustly taken by government authorities through urban renewal and highway projects—as well as those who lost their properties as a result of tax liens, speculative lending, and bankruptcy court proceedings.

The research uncovers past events that have critically shaped contemporary urban landscapes of racial segregation and inequality, captures stories and memories of community resistance and resilience, and invites reflections and discussions on what repair and redress could and should look. In addition to sharing the oral history accounts with the City of Boston Task Force on Reparations (more specifically the research teams that are leading the study on the legacy of slavery in Boston and its present impact on descendants), the project is developing a digital archive and cohosting public programming with community-based partners to share the data and findings with most-impacted communities and advance reparative policy initiatives.

This research-in-progress presentation on "Unsettled Accounts" overviews the research design and methods, and shares initial results and analysis of the oral history interviews with 11 individuals from six families (all of whom arrived in Boston from the southern states in the first half of the 20th century). It additionally presents the digital archive and public programming components, the latter incorporating youth engagement and developed in collaboration with a restorative housing program that seeks to leverage affordable housing ownership

opportunities to enable Black Bostonians, who have disproportionately experienced housing discrimination, to build intergenerational wealth.

The research not only connects past and present injustices but also seeks to inform planning for anti-racist futures—for instance, addressing racial homeownership and wealth gaps, gentrification and displacement, and the suburbanization of poverty. It also bears on reparative planning theory and practice, whether related to the formation and deliberation of reparations commissions, task forces, studies, and pilot measures at local, state, and national levels or infrastructure planning and construction projects such as Reconnecting Communities. Both require firsthand accounts from disproportionately-impacted groups and frontline communities—whether to trace the cumulative drivers, forms, and impacts of harms over time or determine needed recourse.

Citations:

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Key Words: Reparative planning, Anti-racism, Community archiving, Participatory research

Track 2 – Community Development

Track 2 Pre-Organized Session Summaries and Abstracts for the Sessions

BUILDING SUSTAINABLE COMMUNITIES
Abstract ID: 1112.0.0.260.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.541.2024, 1108.0.0.444.2024, 1108.0.0.997.2024, 1108.0.0.1241.2024, 1108.0.0.1081.2024

Lin Lin [Xi'an Jiaotong - Liverpool University] lin.lin@xjtlu.edu.cn, organizer

The rising interest in 15-minute city concepts and walkable neighborhoods underscores the urgency of building sustainable communities. This pre-organized session at the ACSP delves into the multifaceted nature of this endeavor, fostering scholarly exchange, innovation, and the sharing of best practices.

Our aim is to contribute meaningfully to the ongoing dialogue and practical efforts in this field. We encourage a holistic approach to sustainable community development, welcoming submissions that reflect the rich tapestry of perspectives and experiences in building a more sustainable future.

Learning Objective(s):

- To showcase cutting-edge research and innovative practices in the development of sustainable communities.
- To foster interdisciplinary dialogue among researchers, practitioners, and policymakers in the field of sustainability.
- To highlight the challenges and opportunities in implementing sustainability initiatives at the community level.

OPEN SPACE EVALUATION METHOD USING HUMAN EMOTIONS BASED ON SNS ANALYSIS
Abstract ID: 1108.0.0.541.2024
Pre-Organized Paper Presentation

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Open spaces play a crucial role in creating vibrant and interactive urban spaces. They function as places for gathering, relaxation, and community engagement. However, the planning of such spaces frequently overlooks the direct consideration of the emotions of users.

The proliferation of platforms for social networking services (SNSs), such as Instagram, has revolutionized the manner in which people express feelings and experiences. Through social networking posts, emotions related to various aspects of life are easily communicated and visually represented. This wealth of data can be used to gain insight into the emotional states of people and explore the connection of such states to urban open spaces.

Among the existing SNSs, Instagram offers a unique combination of visual and written contents. Users share not only engaging photos of cities and landscapes but also descriptive text, which provides a rich dataset for analysis.

This study aims to quantitatively evaluate open spaces that evoke positive perceptions in people using a large collection of Instagram posts. Toward this objective, we used Instagram post data about AKAPLA Plaza in Sapporo, Japan, as a case study.

First, the study uses KH Coder to extract and categorize positive emotion words from the posted text data to create six groups of emotion words (beauty, good, great, happy, like, and enjoy).

For each posted photo belonging to each group of emotion words, the study used Google Cloud Vision API to extract the spatial elements as labels, which represent features such as light, tree, road surface, and building.

Using KH Coder, the study then conducted co-occurrence analysis of the spatial element labels for each group of emotion words to elucidate the co-occurrence relationships among the labels in the network.

Afterward, the relationship between positive emotions and spatial elements at Sapporo AKAPLA Plaza was elucidated. The study identified four items as spatial design elements of the open space that induces positive emotions.

(1) Blue and purple illumination on tree branches in winter is strongly related to beauty, great, like, and enjoy. Sapporo is a city with a cold and snowy climate; thus, designing spaces that are attractive at night during the winter season is important. (2) The combination of buildings and green trees is strongly related to emotion words good, like, and enjoy. (3) A view with good visibility and a wide view of the sky and ground surface is strongly related to emotion words like and enjoy. In Sapporo, the spatial design of streets (trees arranged in a straight line to emphasize the axial line according to the grid pattern of the city) is considered related to emotion words good, like, and enjoy. (4) Eating and drinking behaviors are strongly related to the emotion word happy. Installing street furniture that can be used for eating and drinking and improving eating and drinking functions adjacent to the plaza are considered related to the emotion word happy.

This study contributes to an in-depth understanding of the influence of urban open spaces on well-being and satisfaction. By incorporating the emotional considerations of users into urban planning, further user-friendly and enjoyable environments can be created for everyone.

Citations:

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Keywords: Public open space, Co-occurrence analysis, Instagram, Urban emotions, Urban design

CREATING WALKABLE CITY THROUGH THE TSUNAMI DISASTER RECOVERY PROCESS

Abstract ID: 1108.0.0.444.2024
Pre-Organized Paper Presentation

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In this paper, I want to introduce the Naiwan area(=inner bay) which is the central city of Kesennuma City, Miyagi Prefecture, where Walkable City was implemented through the reconstruction of an urban area damaged by the 2011 Great East Japan Earthquake and Tsunami. I have been directing the urban design of this reconstruction as a coordinator of the council where citizens and the local government have discussed about reconstruction plan after the earthquake.

After the relocation of the fish market in 1956, industry and commerce moved out from Naiwan area, and the population began to decline. On the other hand, many commercial facilities with parking lots and easy access by car have built in the suburban area, located about 15 minutes by car from the Naiwan area, and the population tended to increase accordingly. However, the beautiful scenery of the harbor town ”Naiwan”, where the sea and the town are in continuity, was still present and an attraction for tourists to visit.

In 2011, the tsunami up to 7.0m high swept away Naiwan’s 344 buildings out of 410 (population of 1,080 people). The Kesennuma mayor’s idea was to take this opportunity to move the center of Kesennuma to a suburban area that was not damaged by the tsunami. However, the residents of the central city opposed this idea. They demanded that the Naiwan area continue to be positioned as the central city area and be rebuilt after the disaster. In the Naiwan area, a council was established to discuss between citizens and the government, and recovery policies and projects were planned. First, a central facility was built in the waterfront, and the street as central axis connected the waterfront to public facilities on the top of the mountain. Secondly, a network of existing shopping areas, city hall, and other urban functions were to be networked together to rebuild the area into a walkable town. However, the Naiwan area was inundated by the tsunami, the question arose as to whether public housing for disaster victims should be built here. In many other disaster areas, public housing was built on top of mountains or in suburban areas that could only be accessed by car. But in Naiwan, they wanted to build public housing in a place that could be accessed on foot. Therefore, in the Naiwan area, public housings were built in flooded areas, but the ground floor, which was at risk of flooding, was used as stores, and a total of 150 dwelling units were built on the second floor and above. In addition, although the citizens were initially opposed to the construction of a seawall that would obstruct the view to the sea, a minimum height seawall was designed as a landscape to minimize the damage from flooding.

Since the completion of the reconstruction project, the Naiwan area has been conducting social experiments to realize a walkable city. For example, events utilizing open spaces such as the waterfront quay and parks, shut out vehicular traffic on the central axis street, and small mobility such as bicycles and electric scooters for touring around the Naiwan area and surrounding tourist facilities.

Kesennuma City has become a car-oriented society, but in the Naiwan area, an environment is being created where tourists visiting there and local residents living there can live conveniently on foot.
The key points for implementing a walkable and sustainable city in disaster recovery are as follows: first, in order to solve the problems of population decline and ageing that existed before the disaster, the reconstruction plan concentrated on the central city area instead of unnecessarily expanding the target area; second, reconstruction was rushed to secure housing and jobs for the affected people, but reconstruction was carried out slowly and carefully, with more than 100 workshops and discussions with people living in the inner bay area; and third, even after the completion of the reconstruction project, social experiments were carried out to promote the use of public space and sustainable management.

Citations:

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- Method and Practice” Routledge, 2020"
- The key points for implementing a walkable and sustainable city in disaster recovery.

Keywords: walkable city, tsunami, disaster recovery, public space, waterfront

EXAMINING THE SPATIAL EFFECTS OF PSFS FROM THE PERSPECTIVE OF EQUITY

Abstract ID: 1108.0.0.997.2024
Pre-Organized Paper Presentation

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Shanghai has proposed the planning principle of the "15-minute community living circle" to actualize the ideology of "people-oriented" and "fair sharing". Existing researches have primarily focused on the spatial distribution of public service facilities (PSFs) to achieve uniformity, while neglecting the responsiveness to individualized resident needs. The discrepancy between the public service supply and diverse demands has not been effectively addressed.
This study selects the central urban area of Shanghai with 104 subdistricts as the basic units to analyze the spatial pattern of PSFs and shed light on disparities in PSFs equity and accessibility among different age groups to explore the optimal spatial configuration patterns of PSFs.
The population data is raster data with a spatial resolution of 100m x 100m sourced from WorldPop, depicting the age structure of the Chinese population in 2020. We obtain street boundaries and Point of Interest/Area of Interest (POI/AOI) data, including cultural facilities, sports facilities, medical health facilities, elderly care facilities, and others, from the AMap API Network Open Data Platform.
Firstly, based on the distribution of three groups of people (children, adults, and the elderly) , we use kernel density

estimation and Riley's K function to analyze the spatial correlation between PSFs and elements such as population and public space. Furthermore, based on the spatial correlation features and strengths, we classify the spatial pattern of PSFs across the 104 subdistricts.
Moreover, we employ the enhanced Gaussian two-step floating catchment area method to conduct an analysis on the accessibility of PSFs. Referring to existing research conclusions, we set children and the elderly's walking distance of 900m and adults' walking distance of 1500m as spatial buffering thresholds. We calculate the sum of weighted supply-demand ratio to obtain the accessibility rating for PSFs.
Thirdly, We employ the Lorenz curve and spatial Gini coefficient to quantitatively analyze the relative inequality to the same PSFs among children, adults, and elderly individuals. This analysis serves as a measure of fairness in facility allocation.
Fourthly, We select representative subdistricts(Jiaxing Road Subdistrict, Juyuan New Area Subdistrict, and Xinhong Subdistrict)to validate the aforementioned quantitative research conclusions. We conduct questionnaire surveys and in-depth interviews to authenticate the quantitative analysis results regarding the accessibility and equity of PSFs.
Finally, we use Spearman's correlation analysis to explore the association between different spatial patterns and the equity of PSFs. Combining qualitative research content, we analyze the social mechanisms, influencing factors, and pathways of spatial effects of PSFs.
The research findings reveal the following insights:
(1)The spatial effect of PSFs objectively demonstrates an augmentation corresponding to population concentration, gradually diminishing from the urban core outward on count of the transformation of individual mobility within high-density urban areas. (2)Elderly individuals demonstrate a heightened specificity in their perception of the provision of PSFs, frequently evaluating the availability of PSFs lower than the average ratings observed among children and adults. (3)A spatial nesting phenomenon exists among PSFs of different hierarchical levels. When higher-tier PSFs are situated within subdistricts, they tend to attract a larger number of non-local residents. Consequently, examining the accessibility, mobility, and equity of PSFs across multiple spatial scales presents greater challenges.
This study systematically summarizes the spatial configuration patterns of PSFs,examines spatial effects in neighborhoods, and delves into optimal configuration strategies to cater to the diverse needs of residents. As China's mega-cities experience pronounced trends towards aging and declining birth rates, there arises an increasing imperative for the allocation of PSFs to consider the differing needs of various age groups. This study is dedicated to aligning with the concept of "longevity-ready cities" and initiates preliminary attempts towards a more thorough exploration of these issues.

Citations:

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Keywords: public service facilities, spatial effects, spatial equity, aging cities, Shanghai

15-MINUTE NEIGHBORHOOD AND HAPPINESS OF SENIOR RESIDENTS

Abstract ID: 1108.0.0.1241.2024
Pre-Organized Paper Presentation

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Enhancing happiness is essential for improving the overall well-being of the population, especially for seniors. The concept of the 15-minute neighborhood has gained widespread recognition and promotion worldwide. However, limited studies have examined the association between the 15-minute neighborhood and the happiness of senior residents. This study aims to bridge this gap by focusing on the concept of the 15-minute neighborhood as a manifestation of geographic factors affecting the happiness of the elderly.

This study leverages the Social Satisfaction Survey conducted in Qingdao City, China, in October 2023, to explore the subjective and objective measures of the 15-minute neighborhoods for individuals aged 60 and above. Subjective assessments were derived from survey responses, capturing personal demographics such as gender, income, education level, household registration, housing situation, and frequency of exercise, alongside self-reported happiness and health status. Objective measurements were obtained using Point of Interest (POI) data, through the geocoding of respondents' home locations, to evaluate the infrastructure within their 15-minute living circles, including but not limited to bus stops, community service centers, and green parks. Employing a binary logistic regression model, while controlling for individual socio-demographic characteristics, this research investigates the impact of perceived and objective attributes of the 15-minute neighborhoods on seniors' happiness. Our methodological innovation lies in the integration of subjective survey data with objective POI data, offering a comprehensive framework for assessing the determinants of urban senior citizens' happiness.

A total of 894 respondents, with 53.1% of females aged 60 and above, were included in the study. 81.6% of respondents are reported to be happy and very happy. The preliminary survey findings reveal that the proximity to bus stations and access to parks and open spaces significantly contribute to the happiness of the elderly. The regression model results underscore the positive relationship between the 15-minute neighborhood design and elderly life satisfaction.

These findings highlight the potential and limitations of the 15-minute city concept as an effective urban planning strategy to improve living environments and elevate happiness among the elderly, offering significant insights for guiding future urban planning and policy formulation.

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Keywords: 15-minute neighborhood, seniors, life satisfaction, neighborhood perception

20-MINUTE CITY, SPATIAL LABOR AND JOB RELATIONS IN AUSTRALIA

Abstract ID: 1108.0.0.1081.2024
Pre-Organized Paper Presentation

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Most 20-minute city studies focused on livability and neighborhood accessibility to local services but rarely included primary employment. This paper extended the scope of the studies by examining the urban employment structure and transport dynamics of an Australian city under the 20-minute city concept framework. Specifically, the paper posed three principal research questions: 1) What was the status of employment access in a large dispersed city under a 20-minute planning model; 2) How would the 20-minute city model work under spatial economic settings in an exemplar large dispersed city; and 3) What spatial strategies could support a 20-minute city planning agenda for employment in a large dispersed city?

We developed comprehensive method to model residents' job access time using the census-based journey to work (JTW) data, and detailed household activity and travel survey. The main datasets used to assess the time duration of worker job access at the neighborhood scale were the 2016 journey to work (JTW) origin-destination matrices obtained from the Australian Bureau of Statistics (ABS). The assessment of residents' job access time was carried out by analyzing worker commuting patterns. The datasets reported the number of commuting trips from an origin to a destination, sorted by travel mode (car, bus, tram, train, walk, or cycle)
Analyzing JTW time stepping down to diverse industry and occupation sectors and transport modes allowed profound insight into the disparity in residents' job and housing locations and transport choices. By evaluating the distribution of working residents, types of employment, and transport performance, this paper examined possible policy responses and challenges of change in achieving the 20-minute planning target.

It was suggested that housing infill development could be a more feasible approach to reduce JTW time for residents experiencing longer time for work travels. The advancement of the research lied in the following aspects: workers' commuting time was modelled using Journey-to-Work data and a household travel survey; the analysis of diverse labor markets provided insight into residents' locations and transport costs; the opportunities of achieving

20-minute job access would be challenging but practical.

This paper contributed to the knowledge of international planning, transport and urban economic geography literature. It extended the 20-minute city discussion to include employment access. More importantly, we developed the first-ever comprehensive dataset to evaluate residents' job access through a novel 20-minute city lens. The research offered an innovative method to model journey to work time using the census-based JTW data combined with detailed travel survey data. The findings of this research could be applied, when considering more effective approaches, to government investment in transport and housing infrastructure, and to inform policy debates and investment decisions to optimize employment and housing locations and minimize transport costs.

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Keywords: 20-minute city, journey to work, labor sub-market, job decentralization, housing infill development

INDIGENOUS COMMUNITY PLANNING IN THE NORTHWEST

Abstract ID: 1112.0.0.485.2024

Pre-Organized Session Summary

Session Includes: 1108.0.0.1160.2024, 1108.0.0.789.2024, 1108.0.0.1227.2024, 1108.0.0.1188.2024

James Miller [Western Washington University] james.miller@wwu.edu, organizer

Indigenous community planning in the Northwest focuses on building healthy communities through Indigenous planning frameworks. In this session we will cover a range of studies with Indigenous communities in the region that foreground strength. These studies demonstrate the importance of Indigenous planning frameworks in addressing critical issues communities are facing today, such as climate change, housing shortages, and the opioid crisis. Coming from a strengths-based approach, the session illustrates the significant contribution Indigenous community planning provides to the broader field of community development. In the session, participants will learn how Indigenous governance provides value-based systems that guide community planning and development that support wholeness. We provide examples that demonstrate how an approach to coastal adaptation or housing reflects the importance of overall community wellbeing. Indigenous Community Planning in the Northwest

provides holistic approaches that consider social, cultural, and environmental factors to support thriving communities.

Learning Objective(s):

- Communicate strengths-based approaches to community development.
- Identify how Federal Indian Policy informs Tribal Planning.
- Understand the role of language revitalization in community wellbeing.

MANAGED RETREAT VS. UPLAND EXPANSION: UNDERSTANDING AN INDIGENOUS APPROACH

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Pre-Organized Paper Presentation

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People associate “managed retreat” -- the prevailing term for community adaptation in the face of coastal hazards and shoreland loss -- with the surrender of local autonomy to insensitive bureaucracy, and an adversarial relationship with natural forces. Actual implementation is dominated by a narrow set of property buyout-based strategies that fragment communities, worsen social inequality and vulnerability, and reduce collective adaptive capacity. In discourse and impacts, these problems have hampered just, sustainable coastal development. For Indigenous communities restricted to territories much smaller than those that supported their cultures prior to colonization – typically on land that is especially hazard-prone – the term ‘managed retreat’ and its property-focused implementation also evokes historical trauma, and expresses a colonizing attitude towards human-environmental relations. What planning practices and developmental policies would be more supportive of socially just, long-term, culturally informed, and collectively adaptive anticipation of changing coastlines?

Of the very few cases in the U.S. of communities acting to ‘relocate together’, as opposed to vacating vulnerable land piecemeal with individual buyouts, the largest concentrations are in Washington and Alaska, where Tribal and Indigenous communities have taken the lead. We present observations from over a decade of values-driven community planning for coastal change in the Pacific Northwest, most recently an on-going partnership between the Shoalwater Bay Indian Tribe (SBIT) and the University of Washington.

SBIT planners promote ‘upland expansion’ as the community’s best response to coastal hazards. The Tribe is extremely vulnerable: its reservation includes the most rapidly eroding stretch of Pacific coastline in the lower 48 states; storms and landslides threaten its access and power supply; and its only currently buildable land will be inundated by a Cascadia megaquake tsunami. SBIT has responded to the tsunami threat by building the first free-standing vertical evacuation tower in North America. SBIT has also purchased higher elevation land back from timber interests adjacent to the reservation and put it in trust for upland development. The land will provide sites for housing and services including elder assisted living, a justice center, administrative buildings, museum, health clinic, and “edible trails” for food sovereignty, active living, and retention of cultural traditions according to the principles that “culture is health” and self-reliance is key to their resilience. The planning does not assume the immediate abandonment of low-lying houses or shoreline activity, but instead prepares a space for refuge and recovery should a disaster strike quickly; guides the gradual transformation of coastal function and relocation of

the community as shoreland is lost; and treats "home" as spanning multiple sites, recovering and reinhabiting previously expropriated upland forests. Housing is being designed both for minimum impact on ecosystems and for disassembly and reassembly on multiple sites.

These approaches highlight how SBIT's indigenous approach brings multiple co-benefits, turning a bad situation into a positive one; emphasizes local agency; and holistically views resilience as well-being. While "managed retreat" may express what coastal communities ultimately must do when the shoreline itself is "retreating," the term does not adequately express the indigenous recognition that all habitation exists with, and in, a dynamic environment. Beyond the Tribal context, "upland expansion" better expresses a planning that accommodates the nuances of place attachment, community cohesion, and social-ecological relationships, through evoking the redirection of growth. It presents directions for policy, including programs and funding to put land in trust for collective relocation and affordable housing; design infrastructure and building systems that are modular and disaggregated to minimize impacts on sites and ecosystems and be capable of relocation themselves; and allow for gradual incorporation of activities on new sites into daily community life, prior to vacating existing home sites as they become uninhabitable.

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Keywords: coastal, hazards, relocation, resilience, adaptation

PLANNING WITH CONTEXT AND THE ALASKA NATIVE CLAIMS SETTLEMENT ACT

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Pre-Organized Paper Presentation

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In this paper, I unpack the many narratives surrounding the 1971 Alaska Native Claims Settlement Act (ANCSA) to understand the challenges of teaching Indigenous sovereignty and planning to diverse classrooms and audiences. The largest land claims settlement in the United States, ANCSA involved the titling of 45 million acres of land and the transfer of nearly 1 billion dollars by the U.S. government to Alaska Native organizations. A new approach to land claims in the U.S., ANCSA created 13 regional for-profit Native corporations that hold the cash settlement from the 1971 act, subsurface land rights for the greater region, and the potential for ongoing return of profits to shareholders. ANCSA also created 245 for-profit village corporations with surface rights to land within community boundaries at the time of ANCSA. All reservations in Alaska, except Metlakatla, were extinguished.

How is the story of ANCSA told, why, and by whom? This paper opens a series of considerations developed through the author's learning to teach and share about the Alaska Native Claims Settlement Act. I include reflections on my work as a practicing planner in Alaska and the relative lack of knowledge and ability to articulate this complexity in planning processes. This paper looks at multiple stories of ANCSA and what this means for teaching, planning, and communicating research about Alaska and beyond. The stories about the history and implications of ANCSA intersect and conflict and include narratives such as:

- ANCSA as part of a global circumpolar north movement for Indigenous self-determination in the 1960s and 70s
- ANCSA is a necessary departure from the American Indian reservation system
- ANCSA as a product of the residential schooling system
- ANCSA as a product of the increasing neo-liberalization of the welfare nation-state

Sandy Grade defines "Red Pedagogy" as "not a method or technique to be memorized, implemented, applied or prescribed. Rather, it is a space of engagement. It is the liminal and intellectual borderlands where indigenous and non-indigenous scholars encounter one another, working to remember, redefine, and reverse the devastation of the original colonialist "encounter" (Grande, 2008, page 234). I hope to use my ongoing understanding of ANCSA to contribute to a "space of engagement" for planners working or hoping to work with Indigenous communities and organizations in both practice and academic spaces.

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Keywords: Indigenous, Land, Context, Alaska, Teaching

INTERSECTIONS OF COMMUNITY PLANNING, HEALING, AND LANGUAGE REVITALIZATION

Abstract ID: 1108.0.0.1227.2024

Pre-Organized Paper Presentation

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Indigenous communities face unique challenges that stem from historical and colonial trauma and ongoing systemic inequities, resulting in displacement and loss of traditional lands. This influences the physical spaces and landscapes as well as the cultural and linguistic continuity, cultural identity, and spiritual connections of individuals, families, and Nations. Trauma healing and language revitalization are critical and interconnected components of Indigenous community planning, as they offer pathways to address historical injustices and empower communities to reclaim their identities, ancestral knowledge, and (re)connections to land.
This research paper explores how the process of language reclamation and revitalization in Indigenous communities contributes to resilience and wellness, and how these processes may be systematically incorporated into the planning and development of healthy, vibrant Indigenous communities. Grassroots examples of First Nations community wellness initiatives that embed language revitalization and ancestral healing practices to promote trauma recovery will be shared. Specifically, a Kwakwaka'wakw example will be used to describe a tribal-specific Indigenous Research Paradigm to highlight strategies and wise practices for engagement, multigenerational collaboration, and leadership from Kwak'wala-speaking elders, women, and language practitioners.
Preliminary findings share community-centered applications, underscoring the importance of safe spaces for transformative changes that prioritize Indigenous voices and knowledge. The paper aims to provide insights and recommendations to inform the co-creation of land-based, language education, as well as wellness programs through culturally responsive, strengths-based, and healing-centered community planning approaches with Indigenous communities.

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Keywords: Indigenous community planning, Language Revitalization, Community Wellness, Trauma Recovery, Cultural Reclamation

INDIGENOUS HOUSING: HOLISTIC APPROACHES TO MEETING MULTIPLE CRISES
Abstract ID: 1108.0.0.1188.2024
Pre-Organized Paper Presentation

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In the Pacific Northwest, we are seeing a surge of growth among the unhoused population with few resources available to help break the cycle. However, Indigenous communities are providing innovative solutions that address these issued head-on and provide models for all to learn from. The need for safe, supportive housing among Native American Tribes in Washington State is immediate. Native Americans comprise 3% of the overall population in Whatcom County but make up over 15% of the identified houseless population. The opioid epidemic adds an additional layer of complexity to the existing housing crisis, and Lummi Nation recently declared a fentanyl crisis. On the Lummi Nation reservation, housing supply is insufficient to provide adequate and safe housing to all tribal members; this is due in part to the legacy of colonial systems of oppression and Federal Indian Policy (Zaferatos 2015).

Responding to the growing number of unhoused tribal members, Lummi Stepping Stones (LSS) initiated proposal for addressing individuals and families that were not being serviced through the Tribal Housing Authority's program. The largest barrier for entry to housing was the requirement to be clean and sober in addition to agreeing to abide by strict rules. LSS, a program of the Lhaq'temish Foundation, began to develop a program focused on creating housing solutions for the Lummi Community. Currently, Lhaq'temish Foundation, a Lummi Nation nonprofit, is developing Eagle Haven Village, a permanent supportive housing project that will serve Lummi tribal members and other Native Americans in the region who are experiencing houselessness. Eagle Haven establishes partnerships with Lummi Health and Human Services to create a true wrap-around supportive village for Native Americans who have struggled to attain stable housing through traditional options and for tribal members with co-occurring mental health and substance-use disorders. The development places Lhaq'temish values at the heart of housing policy.

This paper provides a policy analysis of Tribal Housing Policies and Federal Indian Policy to demonstrate the continued influence of settler colonial systems on the sovereignty of Native American Tribes. Through the policy analysis, it is evident that land-use governance, building codes, and housing finance have significant impacts on the housing availability within Lummi Nation and equitable access to housing. Through a case study analysis of the Eagle Haven Village development in addition to comparative analysis of other Tribally led housing projects among Coast Salish communities in Washington State, the paper demonstrates how Native American Tribes are leading the way in innovative housing solutions that provide models for other communities. Indigenous, value-centered approaches provide holistic solutions to the housing crisis, seeing it as a complex whole, inclusive of people, the environment, and culture.

Indigenous housing is an asset that supports the cultural practice and ontology of the community. In conclusion, Eagle Haven Village exemplifies how Indigenous housing can positively impact the wellbeing of individuals, families, and communities. By prioritizing cultural values, community connections, and sustainability, this project serves as a beacon of hope for Indigenous Americans facing housing challenges, fostering resilience and healing within the Lummi Nation.

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Keywords: Indigenous Planning, Housing, Policy, Sovereignty, Federal Indian Policy

SETTLER STATES' (MIS)RECOGNITION AND INDIGENOUS PLANNING RESPONSES

Abstract ID: 1112.0.0.200.2024

Pre-Organized Session Summary

Session Includes: 1108.0.0.219.2024, 1108.0.0.302.2024, 1108.0.0.423.2024, 1108.0.0.201.2024, 1108.0.0.439.2024

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This session explores the multiple spaces in which Indigenous People(s) experience planning and its colonial legacy. On the one hand, it analyzes the efforts that settler states are developing to reconcile the colonial entanglements of planning and the limitations that result from prescribed frameworks that do not respond to Indigenous People(s) needs, priorities, or claims. On the other hand, it explores how Indigenous People(s) respond and challenge settler state planning while reasserting their forms of sovereignty and self-determination. By discussing experiences in Canada, the US, Aotearoa|New Zealand, Chile and Guatemala, the presenters provide a critical perspective on the colonial narratives of public interest, sense of belonging and identity, Indigenous legal orders and decolonial praxis that unveil the complexities Indigenous People(s) navigate within settler state planning.

Learning Objective(s):

- To understand how Indigenous People(s) reinvent and adapt their planning systems under the coloniality of power
- To critique the colonial legacies of planning and how they impact Indigenous People(s) from different geographies

RECONCILING RECONCILIATION WITH THE PUBLIC INTEREST?

Abstract ID: 1108.0.0.219.2024

Pre-Organized Paper Presentation

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Settler-colonial planning is challenged to reconsider and repair its relationships with Indigenous peoples. In the Canadian context, this challenge is often framed as one of reconciliation, in reference to the work of the Truth and Reconciliation Commission of Canada. The Commission's final report described reconciliation as "not an Aboriginal problem" but "a Canadian one", in which "[v]irtually all aspects of Canadian society may need to be reconsidered" (2015, p. vi). For the planning profession, this reconsideration will demand quite foundational shifts in how it conceptualizes its work. As Campbell and Marshall (2002) observe, the normative foundation and justification for professional planning have long been the 'public interest' – a concept that is difficult to pin down in all contexts but that is particularly vexing in an era of reconciliation.

Our paper begins by examining how the professional planning institutes across Canada (the Canadian Institute of Planners and provincial/territorial institutes) are publicly framing their commitments to reconciliation and the relationship to their various codes of ethics, conduct, and practice. We find that, despite growing discussion of reconciliation as a key element of 'responsible planning practice', it has not yet translated into any formal changes to the ethical principles and values that are meant to guide Canadian planning practice. Issues related to reconciling the planning profession's relationships with Indigenous peoples presumably fall under broader commitments to the public interest, which is defined to include respect for diverse peoples and values. This finding aligns with the lead author's own experience as a former member of the Ontario Professional Planners Institute's Indigenous Planning Perspectives Committee, where discussions about revising Ontario's Code of Practice centred on expanding the concept of the public interest to include issues related to reconciliation.

Having established the empirical context, we then move to a more conceptual discussion of the inherent limits of attempts to reconcile Indigenous interests within existing constructs of the public interest. We develop this argument in two parts. First, we outline a methodological concern with how the public interest is determined. We examine how both utilitarian and procedural approaches are ill-positioned to produce just outcomes for Indigenous peoples. The deontic, or rights-based, approach is equally flawed as it centres the settler-state as the bestower and arbiter of rights and, thereby, reproduces the "colonial politics of recognition" (Coulthard, 2014). We use critiques of recognition to transition to the second part of our argument, which is a more discursive interrogation of the words "public" and "interest" and the deeply colonial onto-epistemologies that underlay them. Having established the methodological and conceptual problems with the public interest, we conclude that it is an inappropriate tool for establishing the ethical foundations for responsible planning practice for Indigenous peoples. Instead, ethical planning practice needs to be based on a more relational form of reconciliation that holds space for Indigenous resurgence and nationhood, or what Tully (2018) has termed "transformative reconciliation".

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Keywords: reconciliation, Indigenous peoples, planning ethics, public interest

CARING FOR LIFE: REFRAMING LEGALITY THROUGH GRASSROOTS TERRITORIAL CONTROL

Abstract ID: 1108.0.0.302.2024
Pre-Organized Paper Presentation

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Since 2018, a team of Mapuche and Chilean researchers of which I am part has partnered with a Mapuche association in order to explore questions of Indigenous planning, land-based knowledge, and territorial reconstruction in Tirua, coastal Mapuche territory. Through an approach similar to Participatory Action Research (PAR) adapted to Mapuche knowledge production protocols (Melin, Mansilla, and Royo 2019), the work is premised on the continued existence of Mapuche forms of planning the territory that the state has attempted to subjugate and eradicate. The goal is to gather systematize, and visibilize this planning knowledge base that still lives in the collective memory but is at risk of being lost, reinstating such practices as a political statement and praxis that confronts the legitimacy of dominant forms of spatial organization and existence (Ugarte, Melin, and Caniguan 2022).

This paper discusses one of the projects emerging from this ongoing collaboration, which at the request of community members documented audio-visually the spontaneous rise of community checkpoints led by Mapuche and civil society organizations in Tirua at the beginning of the COVID-19 pandemic. For six months, Indigenous communities, civil society organizations, and the local government collaborated to restrict access to the area through strict protocols defined locally. Thanks to these measures – labeled by the Chilean government as illegal– the community was able to keep the spread of the disease under control and prevent COVID-related deaths, particularly among Elders.

The paper considers this experience – both the establishment of the community checkpoints and the process of documenting it through community-engaged digital ethnography (Sandercock and Attili 2010) – through the lenses of radical planning (Beard 2003, Miraftab 2009), legal pluralism (Ugarte 2019), and Indigenous planning and resurgence (Harjo 2019, Jojola 2008, Matunga 2013, Simpson 2014). Although they emerged as an emergency response during a public health crisis, the deeper driver for the community checkpoints had to do with ensuring the territory as a whole was protected according to local forms of territorial control grounded in Mapuche legal orders and local knowledges, which exceeded and challenged dominant state parameters. In doing so, this initiative is an exercise of self-determination.

Through in-depth interviews with people directly involved in the actions and analysis of official public health data, the documentary sheds light on the rise, evolution, and effectiveness of this local response, reframing questions of legality, authority, and wellbeing in planning by centering Mapuche notions of caring for life in all its forms. Better understanding experiences of this kind not only sheds light on the power of community-led public health efforts

that are culturally relevant in places where state action is insufficient or inadequate. More deeply, in a context of internal colonialism and Indigenous dispossession, the project begins to shed light on how/if these kinds of responses strengthen community cohesion, both among Indigenous communities and with non-Indigenous people in the area, which might have implications for Mapuche struggles for Indigenous territorial control and justice more broadly.

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Keywords: Indigenous planning, territorial control, insurgent planning, legal pluralism, digital storytelling

INDIGENOUS KINSHIP, IDENTITY, PRACTICES: REPLANNING SETTLER-COLONIAL CITIES

Abstract ID: 1108.0.0.423.2024
Pre-Organized Paper Presentation

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Urban environments worldwide are dynamic landscapes symbolizing progress and innovation. However, these sites of human significance are also commonly steeped in rich histories of genocide, displacement, and dispossession of Indigenous populations. Contemporary settler-colonial cities not only occupy Indigenous lands but effectively alienate the notion of Indigeneity that inherently exists within them. Aotearoa New Zealand cities are no exception. In Aotearoa, cities continue to reinforce colonial narratives through the fragmentation, dilution, and exclusion of Indigenous Māori geographies and identities (Puketapu-Dentice et al., 2017). Colonialism and urbanisation in Aotearoa have engendered the atrophy of everyday Māori traditions, practices, and social structures, resulting in disproportionately negative health, education, and economic impacts (Ryks et al., 2014).
Urban spaces profoundly impact the identity and experiences of the people occupying them. In Aotearoa New Zealand, our urban milieu might reasonably be expected to reflect the Treaty based biculturalism shared between New Zealand Māori and non-Māori cultures. However, urban spaces, alongside policy and decision-making, continue to deliver a one-sided Western narrative that does not reflect the diversity in the nation (Akena, 2012). This research paper critiques such Western oversight within settler-colonial cities. It does so by exploring the

experiences of New Zealand Māori young people, both those living within and beyond their tribal territories, in two urban locations: Dunedin and Gisborne. These small cities offer unique case studies that are distinct from larger urban areas. By focusing on the smaller urban centres, the research articulates potential opportunities and insights to inform more inclusive and equitable approaches to urban planning in a settler-colonial context on the global periphery. In addition, the exploration of how Māori young people perceive and encounter their respective urban environments provides insights into identity and sense of belonging for Indigenous citizens. This investigation contributes to a nuanced understanding of Indigenous experiences within place and how place attributes can be conducive to facilitating identity formation and contemporary placemaking.
A Kaupapa Māori methodology (Smith, 2012) has been used to ensure that the research, from its inception to its dissemination, is firmly grounded in Māori philosophy, epistemology, and ontology. Upholding a Kaupapa Māori perspective provides an avenue to mainstream Indigenous knowledge and aspirations alongside Western-based research, while also ensuring that the research is conducted by Māori, with Māori, and for the potential benefit of Māori.
Throughout the research, iterative engagement with Indigenous research collaborators and Indigenous communities about the initial work and preliminary findings has enhanced the ongoing direction of the research and its relevance and accountability to Indigenous people. The research outcomes create new understandings and applications of Māori practices and innovations to help transform urban environments in ways that Indigenous communities of various types prioritise in terms of living well and sustainably in globally peripheral towns and cities.

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Keywords: Indigenous-led planning, settler-colonial cities, Indigenous identity, Indigenous wellbeing, Indigenous sovereignty

DECOLONIAL CRACKS IN PLANNING: BETWEEN NAVAJO AND IXIL RE-EXISTENCES

Abstract ID: 1108.0.0.201.2024
Pre-Organized Paper Presentation

Joaquin (Am'aj Q'in) Lopez-Huertas [University of Utah] joaquin.lopezhuertas@utah.edu, presenter

Indigenous People(s) experience daily challenges with the legacy of colonization and modernity/coloniality, including dispossession and denial to control their territories, rejection of their forms of knowledge, and circumscribed forms of development that do not recognize their needs, values, or priorities. As a result, they are one of the most vulnerable global minorities suffering extreme poverty, malnutrition, diseases, discrimination, and

high rates of landlessness. The struggles Indigenous People(s) face to reclaim their lives, Land, and Knowledges under the oppression of the settler states have induced the reinvention of forms to exist and re-exist in different aspects of life, including planning.

In this research, I focus on decolonial praxis to understand the mechanisms Indigenous People(s) draw upon to challenge, refuse, and transform settler state planning. Forms of re-existence occur in the decolonial cracks, namely, spaces provided by settler states or taken by Indigenous communities. Farther from being a solution to decolonizing planning, decolonial cracks are alternatives to redefine Knowledges, relationships, and identity with the Land from the community terms. To place a decolonial journey in a spatiotemporal window where cracks are noted and used to disrupt planning, I follow the instances where Indigenous People(s) challenge settler states: within, against, and beyond. I study the applicability of re-existence and decolonial cracks as a conceptual framework to understand the conditions of two Indigenous communities in contrasting geographies, epistemologies, and identities: Tolikan (Diné, Navajo) in the US and Chajul (Maya Ixil) in Guatemala. The particularities of each community enhance a better understanding of the conditions that create or dissolve decolonial cracks, including policy framework, forms of governance, and access to Land. I apply a relational approach through critical place inquiry as a form of data collection of the Knowledges continually shared and maintained by Indigenous People(s) describing how space is experienced, understood, and practiced. I conduct an iterative process between data collection and data analysis through member checking and relational validity. Then, I apply narrative analysis to present stories depicting the successes and struggles the communities consider essential to report and the elements that enhance maintaining and advancing their ways of being, thinking, feeling, and doing.

This research advances the literature on Indigenous planning while presenting novel forms of understanding how Indigenous People(s) crack the coloniality of settler state planning in their own terms. Moreover, it expands the boundaries of planning theory and practice by paying attention to re-existences emerging from conditions of struggle and crisis, but also from a place of celebrating life, dignification, restoring relationships with Land and being sovereign. Planning in re-existence through the decolonial cracks unveils the processes of adaptation and reinvention through the accumulated inter-generational Knowledge systems that inform Indigenous People(s) in their decolonial journey.

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Keywords: Decolonial Praxis, Planning In Re-Existence, Decoloniality, Indigenous Futurities

MUNICIPAL PLANNING FOR RECONCILIATION? REFLECTIONS FROM TWO CANADIAN CITIES

Abstract ID: 1108.0.0.439.2024
Pre-Organized Paper Presentation

Margaret Ellis-Young [University of Waterloo] margaret.ellis-young@uwaterloo.ca, presenter

Following national-level dialogue on Indigenous-settler reconciliation, Canadian municipalities are increasingly involved in efforts to redefine their relationships with Indigenous communities and respond to growing recognition of past and present colonial injustices. Although state-led reconciliation efforts often favour symbolic or performative actions that maintain the settler colonial status quo, Indigenous scholars underline the need for conceptions of reconciliation that uphold Indigenous political authority, land rights, and connections to place (e.g., George, 2020). This imperative positions urban planning, which concerns "the use, management and future of place", as a crucial domain for municipal actors to engage with questions of reconciliation (Porter & Barry, 2016, p. 2; Sandercock, 2019). While state-led planning within settler colonial contexts consistently fails to reckon with the reality that settler urban development has taken place, and continues to take place, on Indigenous lands (Porter & Barry, 2015), planning is also a site where new types of relationships and mentalities may be fostered to disrupt settler colonial continuity (Porter & Barry, 2016; Sandercock, 2019).

Building on this premise within a new context of municipal-Indigenous reconciliation, this paper examines how municipal planning staff understand their responsibilities and opportunities to advance reconciliation while planning for urban change at different scales. I analyze how these planners implicitly and explicitly connect municipal planning practice to reconciliation and position their roles and abilities therein, and those of their planning projects, at the nexus of colonial continuity and disruptive possibility. To explore these questions, I focus on four long-range planning projects in Vancouver and Montréal: two municipal comprehensive plans (the Vancouver Plan and Montréal's Land Use and Mobility Plan 2050) and two area redevelopment plans (Vancouver's Broadway Plan and Montréal's Lachine-Est eco-neighbourhood). I draw primarily on interviews with municipal planning staff (n=17) significantly involved in at least one of these four projects. I also analyze project documents, engagement reports and transcripts, and interviews with other planning actors involved in the projects (n=2) to supplement and contextualize municipal planners' reflections.

I use critical discourse analysis (e.g. Fairclough, 2003) to identify how municipal planners portray approaches to planning practice in a context of reconciliation in ways that express, reproduce and/or challenge state-led planning's normative modes of representing and being. While there are important contextual differences between the two cities and planning scales, planners consistently recognize the importance of reconciliatory action within their field. However, some avoid unsettling their practices by placing this action outside of their role and/or project, including through discursive siloing of reconciliation work, deemphasizing an Indigenous stake in the project, and invoking particular understandings of a "reconciliation project". Other planners position reconciliation action as a more widespread responsibility grounded in planning's central preoccupation with (Indigenous) land, emphasizing shifts to normative planning mentalities, approaches, and relationships while recognizing constraints therein within the context of their projects. These findings identify both structural (political, procedural) barriers and mental barriers that limit municipal planners' ability to disrupt settler colonial planning norms toward "a practice and ethic of coexistence" (Porter & Barry, 2016, p. 5).

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Keywords: municipal planning, Indigenous-settler reconciliation, urban development, settler colonialism

SHIFTING GROUNDS FOR COMMUNITY LAND TRUSTS

Abstract ID: 1112.0.0.191.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.684.2024, 1108.0.0.199.2024, 1108.0.0.202.2024, 1108.0.0.490.2024, 1108.0.0.915.2024

Margaret Haltom [MIT] mhaltom@mit.edu, organizer

This session explores the evolving dynamics of the Community Land Trust (CLT) movement, spotlighting new strategies for CLTs to support indigenous autonomy, prevent evictions, and achieve scale and financial solvency while preserving grassroots governance. Action research projects collaborate with CLTs that are acquiring affordable housing at risk of gentrification, advancing decolonial land-back efforts, and establishing regional networks for strategic capital access and simultaneous neighborhood control. The session also scrutinizes CLT financing, comparing CLT financial health relative to other community development entities and identifying pathways for CLT funding. Taken together, the research initiatives tackle the ethical dilemmas and financial challenges facing CLTs as they pursue housing decommodification amid escalating land values and historical land dispossession.

Learning Objective(s):

- Understand strategies CLTs are employing to build community control by 1.) advancing indigenous self-determination and land back movements, 2.) safeguarding the lowest-income housing and preventing tenant displacement, and 3.) mobilizing for national capital investment to bolster neighborhood governance.
- Learn about avenues for CLTs to achieve financial stability and scale, drawing from new financial health analysis. Understand the investment needs expressed by CLT organizers nationally, such as patient capital, flexible financing, reduced barriers to state funding and enhanced government subsidies tailored to the CLT model.
- Examine the ethical conflicts that arise between building community control and pursuing financial solvency and scale, including the challenges of assimilating into traditional affordable housing finance networks and operating on land dispossessed from communities of color and from indigenous people. Understand how CLTs preserve their core values of neighborhood control and racial justice amidst their efforts to broadly decommodify housing.

Financing CLTs
Abstract ID: 1108.0.0.684.2024
Pre-Organized Paper Presentation

James Defilippis [Rutgers University] jdefilip@rutgers.edu, presenter

The financing of community land trusts (CLTs) is complicated and defies easy descriptions, but this talk will summarize the diversity of funding and lending options typically used by CLTs for housing and commercial development, as well as organizational administration. To some extent the diversity of funding options is due to the variety of the types of developments and activities that happen on CLT lands. Like most forms of community practice, CLTs get much of their funding from various kinds of direct or indirect public subsidies. The talk begins by discussing those sources, but these are fairly well known in affordable housing circles, and thus the talk is not specifically focused on them. But CLTs are also becoming more innovative in their approaches to financing developments. CLTs such as Oakland CLT, East New York CLT (Brooklyn), and others have created forms of community crowd sourcing and private securities offerings to finance their work. As such, CLTs are part of a much larger embrace of forms of non-extractive finance that has emerged in the last decade (Armeni and Lyon, 2021; Shatan and Williams, 2020), as well as new forms of community ownership that are providing inspiration for CLTs (Abello, 2023; Theodos and Edmonds, 2020). The talk therefore discusses these new forms of finance and how they are being utilized, and often created by CLTs. Finally, although the CLT model in the US emerged with the principle of self-determination, the talk will discuss the question of whether or not CLTs could ever become "self-sustaining" by virtue of their ground lease fees and, for homeownership CLTs, sales of the homes already in their portfolios. This a scale question that directly impacts the financial well being of CLTs (Martin, et al., forthcoming).

Citations:

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Keywords: Community Land Trusts, Non-Extractive Finance, Scale

EXAMINING THE FINANCIAL HEALTH OF COMMUNITY LAND TRUSTS
Abstract ID: 1108.0.0.199.2024
Pre-Organized Paper Presentation

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As communities across the United States face increasingly entrenched housing affordability crises, community land trusts (CLTs) – entities aimed at keepings homes and other types of spaces permanently affordable and community controlled (Davis, 2010) – have seen a surge in interest, evidenced by an increase in the number of CLTs in operation (Wang et al., 2023). CLTs offer an innovative model for affordable housing, sustainable development, community engagement, and long-term stewardship of land, contributing significantly to the field of urban planning (Ehlenz & Taylor, 2019). The effectiveness of CLTs, along with their potential for scaling, hinges on financial sustainability and requires a comprehensive understanding of the factors that affect CLT finances. This study contributes to that knowledge by exploring the conditions and determinants of the financial health of CLTs. Specifically, it addresses two research questions: (1) How does the financial health of CLTs compare with that of broader community-based development organizations (CBDOs)? and (2) What organizational and environmental factors are associated with the financial health of CLTs?

Using Internal Revenue Service From 990 information from 2000 to 2019, I will construct a longitudinal dataset for 144 CLTs that participated in the 2022 national CLT survey (46% of all CLTs in the U.S.). I plan to develop a set of financial health measures based on a recent study by Lo et al. 2022, which examined the financial health across the entire sector of CBDOs. The first research question will examine critical financial measures for the CLT field, such as debt-to-equity ratio, self-sufficiency ratio, asset change, and current ratio, and compare these with those for the broader CBDO sector. To address the second question, I will employ the methodology from a widely cited paper on nonprofit financial health by Prentice (2016), applying principal component analysis to develop a CLT financial health index. This index will serve as the dependent variable in a multivariate regression model, with independent variables including organizational characteristics derived from both the Form 990 data and the national CLT survey data (Wang et al., 2023). Additionally, I will adopt a more open-systems approach to the study by incorporating several environmental variables, such as median household income, population density, and state, regional, and national revenue shares.

Preliminary data analysis finds that CLTs outperformed other CBDOs in 2018 in key financial health indicators, such as being less likely to report negative net income, face insolvency, or experience financial disruption. The empirical evidence generated by this study will be fundamental in ensuring that CLTs can continue to effectively fulfill their missions, delivering essential services to communities amidst the complexities of funding, regulation, and operational challenges. This evidence will also guide the practices of various stakeholders, including policymakers, funders, lenders, and administrators of CLTs, aiding in the expansion of the field. Successful expansion will ensure the provision of essential, permanently affordable housing opportunities and other community assets to lower-income communities.

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Keywords: community land trust, nonprofit financial health, community development, affordable housing, sustainability

COMMUNITY LAND TRUSTS: AN EMERGING MODEL FOR DECOLONIAL PRACTICE?

Abstract ID: 1108.0.0.202.2024
Pre-Organized Paper Presentation

Maggie Low [University of British Columbia] maggie.low@ubc.ca, presenter

In collaboration with the Canadian Network of Community Land Trusts (CNCLT) and the Balanced Supply of Housing Node at the University of British Columbia (BSHN), this paper explores land governance through emerging Indigenous-led Community Land Trust (CLT) models in Canada. By remaining in community control, CLT model(s) provide more equitable access to land and housing, especially for low-income and marginalized communities. CLTs are becoming an important part of addressing the housing crisis and supporting rural and urban Indigenous housing needs. At the same time, CLT's operate on land with complex histories, including lands stolen from Indigenous peoples through colonial planning processes. However, in recent years Indigenous governments and organizations have turned attention and resources towards adapting the community land trust model to support Indigenous self-determination, including advancing the land back movement. This research asks: How can CLT's support the development and growth of Indigenous-led community land trusts, and build better relationships with Indigenous peoples, communities and organizations? What tensions and opportunities arise from CTL models in the context of decolonization and reconciliation efforts in Canada?

Given Indigenous Nations' strength and persistent calls on Canada to fulfill its commitments to the Truth and Reconciliation Commission of Canada's Calls to Action, housing scholars and practitioners are beginning to realize their role in supporting reconciliation, decolonization and Indigenous self-determination in their work. Drawing on interview data with Indigenous and non-Indigenous CLT and housing practitioners (n=8), initial findings tell us CLT's have the potential to redefine the concept of 'land ownership' to better align with Indigenous worldviews that emphasize the intergenerational responsibility to protect and steward the land for future generations. Further, CLT's have the potential to address historical injustices by facilitating dialogue and partnership between Indigenous and non-Indigenous organizations.

Citations:

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Keywords: Indigenous, community land trusts, land stewardship, Canada, decolonization

PLANNING CONDITIONS FOR COMMUNITY-LED HOUSING PRESERVATION BY CLTS

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Pre-Organized Paper Presentation

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The financialization of housing has resulted in heightened pressures of eviction, displacement, and homelessness among low-income and racialized communities. Financialized landlords have targeted existing affordable rental housing—often unsubsidized with no affordability covenants—for acquisition and asset consolidation (August and Walks, 2018). In response, community-led housing preservation has gained considerable attention from grassroots organizers and progressive planners (Crowder, Schidt, and Jacobus, 2021). Above all, community land trusts (CLTs) mobilize housing preservation as a strategic terrain from which to promote anti-displacement and produce community-controlled non-market housing. CLT's housing preservation thus has the potential to serve as a progressive alternative to the mainstream response to the housing crisis that revolves around market-led housing supply (Kipfer and Sotomayor, 2024).

Despite this transformative potential, housing acquisition in a competitive real estate market is a complex undertaking that requires CLTs to develop technical capacities and access to financial resources. In doing so, they could run a risk of undermining overall goals of anti-displacement and racial justice as they are pressured to prioritize organizational financial health and project feasibility (Williams, 2018). This becomes more challenging for CLTs in cities and regions where supportive public policy and programs for acquisition are absent. Against this backdrop, this paper asks: what planning strategies and community-based action can CLTs use to create enabling conditions for community-led housing preservation? What are ethical conundrums and limits of community-led housing preservation to pursue anti-displacement and housing justice?

To answer these questions, this paper uses the case study of the Parkdale Neighbourhood Land Trust (PNLT) in Toronto and their work on the preservation of at-risk rooming houses, the least expensive housing option for low-income and racialized tenants and people with the experience of mental health in the Parkdale neighbourhood. This paper is based on the action research project that includes the analysis of policy documents and PNLT's organizational documents, as well as over 20 interviews and focus groups with PNLT staff, tenants, board members, stakeholders and city staff.

Specifically, this paper examines two cases of successful preservation of rooming houses at-risk of conversion, upscaling and gentrification. In doing so, it shows how PNLT developed a three-pronged approach to rooming house preservation: tenant-led eviction prevention organizing; acquisition planning; and policy advocacy. Three activities constitute the basis of PNLT's community-driven policy making that contributed to the creation of City of Toronto's non-profit acquisition program in 2021. The paper concludes with reflection on how housing preservation

can contribute to broader objectives of housing and racial justice in light of tensions between project feasibility and tenant needs, and government programmatic constraints on tenant selection. These findings are of relevance to crucial debates on the transformative potential of CLTs (DeFilippis et al, 2019).

Citations:

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Keywords: Community Land Trusts (CLTs), Community-led housing preservation, Anti-displacement

SHIFTING GROUNDS: GROWTH, GOVERNANCE, AND GRASSROOTS VALUES IN CLTS

Abstract ID: 1108.0.0.915.2024
Pre-Organized Paper Presentation

Margaret Haltom [MIT] mhaltom@mit.edu, presenter

How can Community Land Trusts (CLTs) scale to promote widespread housing decommodification while preserving community control? Community Land Trust (CLT) advocates aim to boost their market share beyond their estimated .03 percent of U.S. housing (Wang et. al, 2023) to address national housing affordability. But CLT expansion and assimilation into traditional affordable housing finance networks paradoxically risks weakening their core values of neighborhood control and racial justice (DeFilippis, 2017). This research explores changes happening within the CLT movement and promising policies for action as CLTs seek scale and financial solvency while remaining true to their grassroots values. We employ a mixed-methods, community-engaged approach, combining data from the Grounded Solutions Network and the Lincoln Land Institute Census of CLTs and Shared Equity Housing Entities with insights from fieldwork and semi-structured interviews with 36 actors across 17 CLTs nationally. Shaped in partnership with CLT organizers and resident researchers at the emerging Klondike Community Land Trust in Memphis, Tennessee, the action research includes observations of CLT board meetings, network dialogues and community events. We also facilitated national CLT “learning circles,” bringing together 15 CLT practitioners to discuss challenges and strategies most salient to CLTs seeking to access capital and build community power.

We find CLTs are innovating within their tripartite dimensions–community, land and trust–to address broader housing needs while preserving the ethos of the model. In the context of community, CLTs are expanding from neighborhood-based to city and county-wide coalitions to improve access to land, capital and government partnerships. Efforts to establish citywide CLTs have encountered resistance from residents and organizers, who fear diminished grassroots involvement in CLT decision making. As an alternative, robust CLT networks are facilitating collective organizing and advocating for favorable financing, while maintaining neighborhood CLT

governance structures. In terms of land, CLTs are shifting from single-family homes to multi-family rentals, addressing rising land costs, but introducing new maintenance issues and imbalanced power dynamics. We highlight promising practices from CLTs building tenant control and improving property management. Regarding trust, a gradual shift from ground-lease models to alternatives including deed restrictions and co-ops is expanding financing and addressing distrust in historic communities of color, where external ownership of land echoes legacies of racialized land control.

As CLTs shift to scale, each change introduces new challenges for maintaining community control. Still, we find CLTs are striving to both scale and preserve grassroots governance by organizing coalitions, transitioning to multifaceted forms of tenure and trust, and building power among tenants. But scaling demands equally innovative and flexible financial support from lenders with the capital needed to support CLT growth. We surface requests from CLT organizers seeking access to investment, including patient capital and flexible financing, along with reduced barriers to state funding and enhanced government subsidies tailored to the CLT model. We spotlight examples of CLTs and CLT coalitions who have successfully organized to access acquisition financing and new forms of credit. While some view these adaptations to the CLT model with concern, we argue that these shifts are part of a longstanding evolution within the CLT movement. Just as CLTs have progressed from securing cooperative farming to addressing urban real estate speculation (Davis, 2010; Cahen et al., 2022), so are they now responding to the demands of financialization and the need for widespread housing decommodification. By spotlighting promising policies for action, we aim to show how these changes can be navigated without losing the core principles of the CLT movement.

Citations:

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Keywords: community land trusts, housing decommodification, community control, capital access, grassroots governance

UPHOLDING INDIGENOUS KNOWLEDGES AND PRACTICES THROUGH PLANNING

Abstract ID: 1112.0.0.278.2024

Pre-Organized Session Summary

Session Includes: 1108.0.0.746.2024, 1108.0.0.331.2024, 1108.0.0.368.2024, 1108.0.0.556.2024

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Indigenous knowledge systems are grounded in place-based and reciprocal relationships with lands and waters. Each Indigenous nation has its own distinct knowledge system developed over thousands of years. Today, although colonialism has disrupted these systems in many ways, Indigenous peoples continue to assert their rights and responsibilities to make decisions about their lands and communities, and to pass on their knowledge systems to future generations. Moreover, these knowledge systems are integral to Indigenous planning practice and to what Harjo (2019) has called "community futurity work" (p.11). This session highlights various ways that Indigenous and Western planning can support Indigenous knowledge systems. It offers applied and theoretical engagement with themes relating to land-based and intergenerational knowledge, ethics and pedagogy. It asks "How can planners and planning contribute to the upholding of Indigenous knowledge systems?"

Learning Objective(s):

- This session will identify challenges and opportunities for planners who are working with (or would like to work with) Indigenous knowledges and knowledge systems.

PLANNING FOR INDIGENOUS FOOD PRACTICES & FOOD SOVEREIGNTY IN URBAN SPACES

Abstract ID: 1108.0.0.746.2024
Pre-Organized Paper Presentation

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Indigenous Māori communities are bound to their environment through genealogical relations, and thus are deeply tied to the natural world (Huambachano, 2024). Such connections between Indigenous peoples and their environments shape practices and ways of life. Of significance for Māori in relation to the environment are a variety of Indigenous food practices (Hanna & Wallace, 2022). However, since European colonisation of Aotearoa New Zealand, access to food sources and practices has been limited or completely eradicated due to large scale land loss and dispossession. Tollan et al. (2023) explain that this has had intergenerational impacts on Māori, contributing to poor physical and mental health, as well as increasing stress levels. This begs the question of how Māori might re-gain the ability to access and revitalise food sovereignty, particularly in the urban spaces where most Māori live.

Concomitantly, contemporary unsustainable food production methods, coupled with the climate crisis, deepen issues of food security and food sovereignty for Māori (Tollan et al., 2023). Thus, notions of reinvigorating Indigenous food practices in urban spaces is gaining traction in various Māori communities. For Māori, food is regarded as part of the 'woven universe', and therefore maintaining reciprocity between lands, waters and humans is fundamental (Hanna & Wallace, 2022; Hutchings et al., 2020). Māori knowledge and worldviews underpin such holistic appreciation, alongside ideas of environmental guardianship, spiritual health, self-determination, vitality, and enlightenment (Hanna & Wallace, 2022; Tollan et al., 2023). These understandings of the world manifest in Māori food systems, meaning that the related food practices are strongly focussed on sustainability and wellbeing. Genealogical connections to physical and metaphysical elements beyond humans are reinforced through place-based food cultivation, which is tied to intense obligations to the environment. In comparison to the general notion of food sovereignty, Indigenous food sovereignty takes a more interconnected and relational ethic of care towards food. Indigenous Food Sovereignty highlights a recognition of non-human relatives and environmental personhood, and the need for human kin to love and nourish the non-human. Understandably, as Miltenburg et al. (2023)

explain, introducing Indigenous food sovereignty initiatives into urban settings can also aid in reclaiming a sense of belonging and cultural identity in the city. In this overall context, investigating Indigenous Māori food sovereignty opportunities in urban environments is a priority as part of decolonising the planning of urban spaces.

In undertaking this research, we have adopted a Kaupapa Māori approach. A Kaupapa Māori approach uses a methodology that is founded in Māori culture, history, knowledge, language, values, and worldviews. It facilitates the research being focussed on Māori interests, with an aim of the research being of direct benefit to Māori communities. Our research has been centred on the activities of Māori communities in the city of Ōtepoti Dunedin, New Zealand.

Taken as a whole, the topic of Indigenous food sovereignty is still in its infancy. Research is needed to extend the knowledge base. Hence, our investigation of Māori food sovereignty, through the use of Indigenous food practices and how this can inform spatial planning and planning systems in Ōtepoti Dunedin, is a welcome contribution to reconfiguring planning futures. Knowledge generated from our research is assisting a variety of Indigenous communities to work alongside each other to encourage urban restoration, enhance urban biodiversity, and fulfil Indigenous urban futurities. Furthermore, this research informs planning practitioners and local, regional, and national authorities as to how they can transform ways of thinking about urban spaces through the integration of Indigenous-led planning practices.

Citations:

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Keywords: Indigenous food sovereignty, Indigenous futurities, Indigenous-led planning, Decolonisation, Urban planning

(K)NEW SPACE FOR RECONCILIATION? ETHICAL DILEMMAS FOR PLANNING CONSULTANTS

Abstract ID: 1108.0.0.331.2024
Pre-Organized Paper Presentation

Joelle McNeil [University of Waterloo] jcmcneil@uwaterloo.ca, presenter

Across Canada, Indigenous communities are planning, and many First Nations hire planning consultants to support diverse planning needs. Changes in policy and legal frameworks, growing populations, funding opportunities and

capacity deficits influence this growing area of planning practice. Planning firms across the country offer services to First Nations, and some firms specialize in planning with and for Indigenous peoples. Although many consultants support Indigenous engagement and consultation on behalf of industry or settler governments, this paper focuses on the work of planners who are hired by and represent the interests of First Nations clients. The Canadian Institute of Planners, an organizational body that represents professional planners across the country, recently integrated reconciliation with Indigenous peoples into its strategic priorities. Yet, little is known about the impact and approaches used by consultants in their relationships with First Nations clients, and the implication of this growing field of practice on reconciliation at the individual and organizational scales.
What are the unique ethical challenges and frameworks used by consultants in this field? Through a series of interviews with "exemplar" consultants and key informants, this paper examines the ethics of planning consultants that work for First Nations in Canada. The initial findings show that while consultants actively engage in a communicative ethics that prioritizes respectful and trusting relationships with their clients, few have developed rigorous ethical frameworks to address the unique ethical considerations of Indigenous sovereignty, structural racism, and Indigenous legal and ethical frameworks. This paper considers the implications of these findings through the theoretical frameworks of Indigenous/non-Indigenous relationality (Maddison & Nakata, 2019) and robust and transformative theorizations of reconciliation to provide insight into the opportunities for the planning profession to (re)develop approaches to reconciliation with Indigenous peoples.

Citations:

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Keywords: reconciliation, planning ethics, Indigenous peoples

SAFEGUARDING INTANGIBLE CULTURAL HERITAGE WITHIN INDIGENOUS PLANNING

Abstract ID: 1108.0.0.368.2024
Pre-Organized Paper Presentation

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In 2003, member states of the United Nations Educational, Scientific and Cultural Organization (UNESCO) overwhelmingly passed a new international treaty aimed at combating the homogenizing effects of globalization on the world's living cultural diversity through the Convention for the Safeguarding of the Intangible Cultural Heritage (hereby Convention). This new normative instrument focuses on Intangible Cultural Heritage (ICH), or "the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize…" as embodying living cultural heritage (United Nations Educational, Scientific and Cultural Organization, 2003), building on UNESCO's historical efforts in protecting tangible cultural heritage as in the case of its World Heritage List program (Kurin, 2007). In 2006, the Convention became international law and signatory member states accepted

the responsibility to safeguard ICH by working with cultural communities to ensure their traditions flourish and are transmitted to future generations (Kurin, 2014).

The United States was one of the few countries that abstained from passing the Convention and is not obliged to follow the requirements outlined therein. However, it has developed a series of laws, policies, and programs that set out to accomplish similar goals as part of its internal historic preservation activities (Kurin, 2014), albeit with an emphasis on historic structures and properties. Tribal Governments have expressed their sentiments that while historic sites and structures are indeed important to ensure the integrity of their cultures, other cultural components such as language revitalization, traditional uses of plants and lands, and other forms of Intangible Cultural Heritage are essential for their communities' sense of cultural continuity and survival (National Park Service, 1990). As a matter of tribal historic preservation interest, ensuring the preservation and retention of Indigenous ways of life includes both the expansion of existing efforts that protect historic sites and structures, and safeguarding intangible cultural heritage. Without domestic or international requirements to safeguard ICH by/with Indigenous communities, I ask: How can planners and other cultural resource professionals contribute toward safeguarding intangible cultural heritage within Indigenous Planning?

Drawing from Native American and Indigenous Studies, Historic Preservation, and Indigenous Planning, I offer three interdependent elements to help guide communities and practitioners in safeguarding intangible cultural heritage within Indigenous planning. These three elements are Personhood, Place, and Practice, representing key considerations in developing planning and preservation activities that support communities' work in practicing and transmitting their cultural forms to the next generation. I also expand on the interdependent relationships among these elements as well as implications for safeguarding intangible cultural heritage more broadly within planning practice.

Citations:

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Keywords: Community Revitalization, Community Engagement, Historic Preservation

DECOLONIZING PLANNING AND DESIGN PEDAGOGY THROUGH CEREMONY

Abstract ID: 1108.0.0.556.2024

Pre-Organized Paper Presentation

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Many scholars and advocates have pointed to the importance of transformation in addressing planning's colonial histories and presents (Dorries & Harjo, 2020; Walker et al., 2013). For planners, this means learning to plan in ways that respect Indigenous self-determination and the nation-to-nation relationships between Canada and Indigenous nations. It means planning in ways that uphold treaties, that ensure that Indigenous rights are addressed, and that recognize and support Indigenous planning knowledges and practices.

Many Canadian universities have launched Reconciliation Action Plans, or begun to undertake actions to recognize and address the historical and contemporary harms caused by settler colonialism. Although the concept of reconciliation has often been applied in limited and even neocolonial ways in the academy (Lavallee, 2020), the recent attention to reconciliation has also opened possibilities for transformation through new ways of research, teaching and learning. At the University of Manitoba's Faculty of Architecture—where the Department of City Planning is located—a group of Indigenous and non-Indigenous faculty, staff and students, led by Elder-in-Residence Valdie Seymour (Hollow Water First Nation), has been working to re-envision teaching and learning through ceremony. Through a process of collaborative autoethnography (Chang et al., 2016), we are examining and reflecting on our own experiences as emerging and practicing professionals and educators working to find new ways of teaching and learning towards reconciliation.

This paper asks "How can ceremony inform teaching and learning about planning and design?" Elder Seymour teaches us that ceremony is both a process and a practice; it is grounded in relationships between people, and between people and the more-than-human world. It reminds us of how we should be in the world, and of our gratitude for the world that sustains us (Seymour, 2022). Through this project, we are developing new pedagogies and processes that seek to transform how emerging planners and designers learn about the lands on which they live, as well as how Canadian universities relate to the Indigenous nations on whose lands they sit. This requires critical attention to how individual and collective experiences are shaped by external systems, including privilege and marginalization generated through settler colonialism, and to creating new systems and ways of doing that centre Indigenous knowledges and practices.

Citations:

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Keywords: Pedagogy, Teaching and Learning, Indigenous Knowledges, Planning Practice

CARE AS REFUSAL: INDIGENOUS VALUES IN PLANNING

Abstract ID: 1109.0.0.734.2024
Roundtable Submission

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Indigenous values represent an intrinsic component of Indigenous planning systems. In this roundtable, Indigenous planning scholars and practitioners will use a facilitated discussion to explore the application of cultural values practiced within Indigenous communities to foster, protect and maintain forms of sovereignty. Particularly, we pay attention to the politics and practices of care and activism as acts of refusal in settler state planning systems. With experience grounded within their work with communities from different geographies, the participants discuss the importance of care while engaging in social movements, trauma healing, governance, community engagement, and health and well-being planning. After the facilitated discussion the audience will be invited to participate in a broader discussion about "care as refusal" in planning.

Citations:

- Ambo, T. (2018). Caregiving as refusal in the academy*. International Journal of Qualitative Studies in Education, 31(3), 215–222. https://doi.org/10.1080/09518398.2017.1401148
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- Sandercock, L. (2023). Mapping Possibility: Finding Purpose and Hope in Community Planning. Routledge. https://doi.org/10.4324/9781003325451

Key Words: Indigenous, planning, care, refusal, refusal

IMAGINATION AND INNOVATION IN UNIVERSITY-COMMUNITY PARTNERSHIPS

Abstract ID: 1109.0.0.597.2024
Roundtable Submission

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University–community partnerships have been recognized for their potential to advance urban innovation by leveraging institutional resources to address real-world challenges while facilitating immersive service learning experiences for students (Schlossberg et al. 2018), building community capacity (Whittaker et al. 2017), and increasing participant agency (Meyer et al. 2018). However, university-community partnerships are not without their challenges, which include conflicting partner timelines, lack of adaptability, unrealistic objectives, inadequate accountability structures, and mismatch of resources to purpose (Baum 2000). In this roundtable session, we explore the promise and challenges of university-community partnerships in building community capacity and enhancing community resilience. Specifically, we address the following questions: 1) What kinds of partnership structures best address the challenges of university-community collaborations?, 2) How can such partnerships leverage innovative planning methods and technologies to foster knowledge sharing and co-creation?, and 3) What are best practices for designing service learning opportunities in the context of university-community partnerships?

We frame this discussion by drawing upon scholar and action researcher Leonie Sandercock's 2004 JAPA essay entitled "Towards a Planning Imagination for the 21st Century." In the essay, Sandercock identifies four key qualities of an approach to urban planning that could respond meaningfully to an increasingly pluralistic society and the diversifying communities comprising 21st-century cities. In her appeal to practitioners and educators to exercise the planning imagination, Sandercock challenged planners to conceptualize a planning culture that aspires beyond the acquisition and application of technical skills and regulatory modes of practice. Such a culture would embrace the political nature of planning, with intentionality toward for whom and for what to work; it would be audacious in its invitation of the public into the decision-making process; it would be creative in its use of methods that encourage lateral thinking and foreground lived experience; and it would be therapeutic in its ability to bridge differences and enable transformation (Sandercock 2004). Twenty years following Sandercock's call to action, these four overlapping and intertwined qualities of political, audacious, creative, and therapeutic remain relevant to the challenges faced in urban planning practice, research, and education.

The roundtable panelists comprise community-engaged researchers who serve as leaders in facilitating university-community partnerships and service-learning opportunities at their respective institutions. Participants will share their perspectives as illustrated through a series of place-based case studies involving collaboration across research, practice, and pedagogy: a Texas Target Communities initiative to engage communities in mitigation planning to address air pollution and future flooding; an application of augmented reality to engage a more diverse public in the design of streets for people; public engagement in food system policy development through the Food Systems Planning and Healthy Communities Lab; and a public policy hackathon event organized in the context of an interdisciplinary NSF-funded research project examining resilience and public space. While the panelist case studies will be leveraged as illustrations of different partnership models and foci, the session will be structured as a forum for discussion. We invite audience participants to share their own experiences with community-university

partnerships and will reserve substantial time for facilitated Q&A and discussion.

This session will explore the innovative potential of co-creative partnerships facilitated by institutions of higher education and their potential to expand the planning imagination to be more political, audacious, creative, and therapeutic. Participants will learn about best practices for ethical community-engaged research, creative methods for facilitating public engagement in the planning process, and different models for developing opportunities for place-based service learning. In our focus on university-community partnerships that seek to enhance community capacity and resilience, we examine innovative methods of integrating research, practice, and pedagogy to meet the urban planning challenges of the 21st-century.

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Key Words: university-community partnerships, community engagement, innovation, planning methods, co-creation

THE ARTS AS A PLANNING RESEARCH METHOD

Abstract ID: 1109.0.0.618.2024
Roundtable Submission

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Planning scholars employ a range of research methods to understand questions of importance to the planning field. While some methods have a robust and documented tradition of use, arts-based research methods are less formalized and often deeply personal. How do planning scholars integrate their creative practices into their research? Inspired by the facilitator's own exploration of the role of her creative practice as a circus artist, this roundtable asks panelists to reflect on their creative practice and how it has informed their research questions, methods, and relationships. We will also discuss how and if the arts intersect with their interpretation and communication of findings and the role of the arts in community-based research. The panelists represent scholars at multiple career points, from PhD student to full professor. Their creative practices include filmmaking, community theater, textile art, dance, zine-making, and photography. We will also discuss how panelists and audience members have brought the arts into teaching planning and the theoretical implications of this approach.

Attendees are encouraged to bring their reflections, projects, and ideas to the discussion. Panelists include Bjorn Sletto, Luciana Barretto Lemos, Magdalena Novoa Echaurren, and Riah Joseph Lange

Citations:

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Key Words: Arts, Methods, Community engagement, Research design, Right livelihood

Track 2 Individual Paper Presentations

A YOUTH-CENTERED FRAMEWORK FOR COMMUNITY ADAPTATION AND CLIMATE RESILIENCE

Abstract ID: 1108.0.0.1126.2024
Individual Paper Presentation

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Nisha Botchwey [University of Minnesota] botchwey@umn.edu

Youth are among the most exposed to climate change's short- and long-term impacts on physical and mental health as well as the erosion of social support systems. This is a compounding effect for youth who are also from frontline communities disproportionately comprised of indigenous peoples and people of color. Yet, planners and policymakers frequently exclude youth during climate and disaster planning processes. This paper examines the impact of climate change on youth and the importance of integrating youth perspectives in fostering community resilience. By incorporating international research from a broad set of disciplines, including planning, social work, and public health, we develop a conceptual framework that provides a structured approach to understanding the dynamic role of youth in climate change adaptation and argues that youth act as more than vulnerable community

members. Due to their experiences and local knowledge, they should be seen as vital contributors to broader community resilience.
The framework finds that both adult-led and youth-led initiatives that emphasize the importance of education, resources, and support systems help support youth dealing with the fear of future disasters and those living post-disaster. Key inputs such as peer-to-peer programs, partnerships, and youth leadership programs empower individuals that foster youth proximal outcomes like healthy behaviors, optimism, leadership, and participatory competence. These youth outcomes, in turn, support inputs necessary for community resiliency, including preparedness for future events, strengthened local knowledge, and expanded community networks.
By developing a youth-centered conceptual framework, this paper advocates for a holistic approach to climate resilience involving youth in both learning and leading roles. It underscores the importance of a balanced partnership between adults and youth in shaping resilient communities capable of responding to and proactively preparing for the challenges posed by climate change. By reframing youth as indispensable community assets rather than merely as passive recipients of adult-led initiatives, this paper contributes to participatory planning scholarship and practice. Our framework emphasizes the need for an integrated approach in resilience planning, recognizing the inclusion of youth must move beyond placation to the higher levels of citizen partnership and power. By recognizing youth perspectives and contributions to disaster planning, planners expand their capacity to build more sustainable and just communities in an era of climate change.

Citations:

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Keywords: Participatory Planning, Youth Empowerment, Climate Change Adaptation, Disaster Planning

AN INNOVATIVE GOVERNANCE MODEL FOR CHILD-FRIENDLY COMMUNITY DEVELOPMENT

Abstract ID: 1108.0.0.550.2024
Individual Paper Presentation

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Background: Since China proposed the goal of building 100 child-friendly cities by 2025, many Chinese cities such as Shanghai, Beijing, Shenzhen, Changsha and other places have focused on creating child-friendly urban environments for children. Due to the characteristics of children's physical and mental development, the community space environment is often an important carrier of children's daily activities. In Shanghai's central

urban areas, where the characteristics of high-density human settlements are prominent, many built community environments have entered the stage of being old and waiting for renovation. In response, in the new round of urban renewal actions of local governments, letting child-friendly concepts drive community environment improvement is currently one of the highly recommended practices. At the grassroots level in Shanghai, agencies like neighborhood offices and community committees lead child-friendly community development efforts. However, these entities often lack professional expertise, highlighting the crucial role of local "community planners" with specialized knowledge. At the same time, in order to return to true humanistic design and avoid "government authoritarianism" or "planner dictatorialism", children's voices should be listened to and children should be fully involved in all aspects of child-friendly community creation.

Methods: Existing international research emphasizes that effective governance is essential to translating children's rights into tangible environmental improvements. This study aims to: (1) explore a multi-stakeholder collaborative governance approach integrating local government, planners, and child participation for child-friendly community development, offering innovative toolkits; (2) to use local governance in specific communities in Pudong New Area, Shanghai Practice, prove and explain how this collaborative governance method and tool can help communities achieve refined spatial problem diagnosis, assist in the prioritization of child-friendly projects, local decision-making and evaluate project effectiveness; (3) Optimize and extend this multi-faceted collaborative governance model , returning community space creation to humanism and realizing the transformation of children's rights into a child-friendly material environment.

Results: Based on the on-the-ground practices in Zhoujiadu Community, Pudong New Area, Shanghai, this study introduces an innovative framework, methods, and technical tools for multi-stakeholder collaborative governance in child-friendly community development. On the professional guidance front, a novel " Child-Friendly Neighborhood Microscopic Built Environmental Audit Tools " is proposed. Unlike traditional environmental assessments, this tool includes aspects of supervising and evaluating the effectiveness of public policy implementation. Its focus on micro-level built environment elements within communities, such as pedestrian and cycling path designs and children's activity space layouts, facilitates precise identification of spatial issues and suggests more practical renewal measures. On the child participation front, methods such as children's cognitive maps, photovoice, and child-friendly workshops empower children as "junior community planners," involving them in the early planning, mid-stage construction, and post-implementation management of child-friendly community initiatives. Local grassroots governments have clearly defined the leading role in the construction of child-friendly communities, coordinated the efforts of all parties, and were supervised by all stakeholders to ensure the implementation of public policies.

Conclusions: The study presents a multi-stakeholder collaborative spatial governance model that tightly integrates local government, planners, and children, aiming to transform children's rights into tangible child-friendly environments. At the same time, making "creating child-friendly cities" no longer a hollow slogan, enabling the construction of community spaces to return to humanism, holds illuminating and promotional significance for urban areas with similar high-density living environments to Shanghai.

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Keywords: child-friendly, Multi-Stakeholder Governance Model, Community Development, Child Participation, Built Environment Audits

ANALYSIS OF THE LEGAL FRAMEWORK OF FLORIDA'S CRAS

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Individual Paper Presentation

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On July 5th, 1969, the Florida Legislature passed the Florida Redevelopment Act of 1969 (Act). This law allows counties and cities to create community redevelopment agencies (CRAs) to identify, plan, and remove or reduce slums, blighted areas, and crime, provide low to moderate-income housing, revitalize coastal resort and tourist areas, and rehabilitate or conserve a redevelopment area with the legislative CRAS having helped shape economic development in the state of Florida.

There are two hundred and twelve CRAs across the state that, according to a 2015 Florida Legislative survey, collected $594.4 million in revenues and held $714.5 million dollars in debt. Despite the prolific use of these special districts, Florida redevelopment critics question CRA's ethics, outcomes, equity, politics, and accountability. Criticism of CRAs has come from the heavily conservative state legislature which sees CRAs as a waste of taxpayer money.

Understanding the criticism that is foisted upon CRAs as an economic and real estate development driver this study looks to see if these criticisms hold merit. In looking to answer this criticism in this paper we present 7 main questions that look at the structure of CRAs and how they administer the funds they have at their disposal. To get at these questions we employ a qualitative content analysis of the websites of CRAs in the state of Florida. We follow that with a random sample of interviews with CRA directors in the state.

The importance and implications of this study is embedded in the ideas of public private partnerships and affordable housing. If it is shown that CRAs are economic development and affordable housing drivers the programs should hold steady. If it is proven otherwise that will give continued fodder to an anti-tax, anti-spend and anti-subsidization of developer wing of the Legislature thus enabling grounds to disband CRAs in the state of Florida.

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Keywords: Blight, CRA, Real Estate Development, Public Private Partnership, Affordable Housing

ASSESSING THE ROLE OF CBOS IN CULTIVATING CHILD-FRIENDLY COMMUNITIES

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Individual Paper Presentation

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Dallas-Fort Worth (DFW) stands out as the largest and one of the fastest-growing metropolitan areas in the United States. Between 2010 and 2020, DFW witnessed higher inbound migration than any other metropolitan area in the country, and this surge in population included a significant influx of young families (Kotkin & Clark, 2021). This demographic shift underscores the necessity for strategic planning efforts aimed at cultivating environments conducive to child-friendly living. Globally, as cities strive for inclusivity and diversity, there's a growing recognition of the importance of crafting urban spaces to meet the distinct needs of children. By prioritizing children's needs in urban planning and governance cities can create an inclusive, supportive, healthy, and democratic society for all residents (UNICEF, 2013).

Building child-friendly communities necessitates the mobilization and connection of existing agencies and actors. While local governments hold primary responsibility for realizing children's rights in urban environments, it is crucial to involve a broader network of non-governmental actors, including children themselves (Cordero-Vinueza, et al. 2023). Riggio (2002) stresses that collaboration between diverse stakeholders such as local government, children, families, community-based organizations (CBOs), civil society organizations, media, and academic institutions is critical to effectively address the multifaceted needs of children and families in complex urban environments. CBOs, in particular, are essential stakeholders in implementing child-friendly planning and policies, as they strive for the highest level of community involvement, in contrast to the tendency of local governments to focus on lower levels of citizen participation (Arnstein, 1969). Despite their significance, the specific role of CBOs in cultivating child-friendly communities remains largely unexplored in the literature. This research aims to fill this gap by addressing the lack of attention given to the pivotal role of CBOs in establishing child-friendly neighborhoods in the DFW Metroplex.

We argue that CBOs have a great potential to serve as intermediaries among stakeholders, facilitating collaboration and coordination to address the complex challenges related to urban development and children's rights. Our study investigates the impact of CBO involvement on various outcomes, including community engagement, access to

resources, and the overall well-being of children and families. Additionally, we examine how CBOs are either enabled or undermined by government entities in their efforts to safeguard children's rights. This study addresses the following research questions:

1. How do nonprofits contribute to the creation of child-friendly communities in the DFW Metroplex?
2. What strategies and programs do nonprofits employ to engage and serve families with children?
3. In what ways do nonprofits collaborate with local stakeholders, including government entities, to advocate for child-friendly urban policies and projects?

We aim to comprehensively understand CBOs' contributions in establishing child-friendly communities in the DFW Metroplex. To achieve this, we will conduct a comparative case study analysis of three cities in the DFW metroplex: Dallas, Fort Worth, and Arlington. We will utilize a purposive sampling approach for CBO selection to ensure diversity across CBO sectors, sizes, and their focuses within the community. We will employ qualitative content analysis (Yin, 2009) and semi-structured interviews with representatives from selected CBOs. Specifically, we will critically analyze CBOs' mission statements, annual reports, impact reports, and interview transcripts to gain insights into the multifaceted contributions of CBOs, including the nature of their programs, collaborations with local stakeholders, challenges faced, and the overall impact of their initiatives on children's well-being. Our findings will demonstrate how CBOs build community connections and how their specialized services can complement efforts by government and other stakeholders. This study will serve as a valuable resource for various stakeholders involved in advocacy efforts for child-friendly urban planning and community development, including CBOs, local government, urban planners, policymakers, researchers, and community members.

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Keywords: Community-Based Organizations (CBOs), Nonprofits, Child-Friendly Communities, DFW Metroplex, Community Engagement

COMPARISON OF CITY STRUCTURES, FUNDING, AND TOOLS FOR COMMUNITY ENGAGEMENT

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Individual Paper Presentation

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Achieving equitable and robust community engagement remains a challenge for most cities in the U.S. Despite the availability of online tools, guidebooks, consultants, and greater awareness of its importance, most cities find they reach the same few people with their outreach. City agencies and elected council members also struggle to

facilitate two-way communication with neighborhoods for routine administrative processes or city services, such as minor zoning variances, alcohol permits, building permits, road closures, and trash pick-up. Some cities with official neighborhood organizations have invested in their official or registered neighborhood organizations (RNOs) to help facilitate notifications and input into planning processes. Conversely, others have disbanded their long-standing neighborhood organizations, recognizing the outside influence of their white, wealthy, homeowners.

It remains unclear what the best practices are for large cities, but the need is increasingly important given the affordable housing and climate crises, constrained city budgets, and increasing distrust of, or disregard for, government. This study analyzes the results from a yearlong study for the City of Denver, Colorado on how to redesign their engagement processes, including whether to create a dedicated Office of Community Engagement, and how and if to reform and/or support their system of RNOs created in the 1970s.
The study used multiple methods, including a citywide survey of RNO members; 144 interviews with 13 city council members, 70 city staff, RNO leaders and members, nonprofits, and small businesses; geospatial statistics of the RNO boundaries relative to resident demographics and RNO resources; participant observation of 25 RNO meetings; a focus group of BIPOC and LGBTQ+ members of small organizations; and case studies of 13 other cities.

The results show an underfunded and disconnected system of engagement within the City of Denver, for many reasons, yet a strong desire to do better. There are also deep inequities across Denver's 190 RNOs, from RNOs with thousands of dollars in their bank accounts, active websites, and highly active and professional boards, to RNO in less resourced neighborhoods with no funding, few outreach mechanisms, and struggling volunteer leaders, and everything in between. While some council members and survey respondents wanted to "blow up" the RNO system, even RNO members with fewer resources were strong believers in the system's value. They argued for better governance, funding, and staffing, rather than destruction. Across the 13 case studies, no city has discovered the magic pill in terms of a centralized Office of Engagement with adequate staffing, funding, and tools, or the perfect system of neighborhood organizations, each with sufficient finances, staff, meeting spaces, and communication tools. Still, there were useful strategies among the cases that could collectively fill the gaps and address the barriers to inclusive engagement.

The findings overall show major cities in the US continue to place the burden for engagement on neighborhoods. While some may argue this promotes neighborhood autonomy, allowing flexibility in design, participation, and voice, the ongoing result is those with financial resources and volunteer capacity continue to have more input and sway over neighborhood and citywide decisions. There was disagreement, however, among Council members whether a weak RNO translated into poor representation for a neighborhood and inequitable treatment. The paper explores these assertions and what other protections and opportunities allowed for equitable treatment.
To our knowledge, this study is unique in its rich mix of methods and the combined topics of internal and external systems of engagement. It is particularly relevant at a time of disengagement, misinformation, and threats to our democracy. We offer several high- and low-cost recommendations for how cities can improve their engagement structures.

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Keywords: public engagement, neighborhood organizations, governance, community development, organizing

CONSTRUCTIVE COMMUNITY-LED JOURNALISM IN RIO'S MARE FAVELA AMID COVID-19

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Individual Paper Presentation

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This research assesses the journalistic approach of the community-led newspaper Maré Online in Rio de Janeiro's Maré favela during the emergence of the COVID-19 Pandemic. We conducted a qualitative content analysis of the stories published by the newspaper to assess the framing orientation and development of their editorial coverage from March to August 2020, a defining period during the pandemic's emergence after the World Health Organization declared COVID-19 a pandemic on March 11, 2020. We employed Lindsay H. Hoffman (2006)'s framework for Constructive Journalism in Online Newspapers to analyze our data. We found that the stories portrayed in the newspapers proactively sought to mobilize information and promote residents' engagement to confront the challenges of the COVID-19 crisis, two roles defined as the essence of constructive journalism (Howley, 2009; McIntyre, 2019 and Wenzel, 2020). We argue these roles demonstrated the two newspapers' commitment to supporting community agency by providing residents with the knowledge necessary to navigate the emergency and encourage proactive behavior. This orientation reflected the newspaper's deliberate choice and organizational ethos to foster collective agency. We contend the journalism approach portrayed in the Mare Online community-led newspaper provides evidence of the community's efforts on continuous advocacy for changes that can reduce vulnerability and enhance social change over the long term. Our findings deepen our understanding of community-led practices' role in marginalized populations' struggles to assert their right to the city, particularly during crises such as COVID-19.

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Keywords: Community-led journalism, urban informality, agency, the right to the city, COVID-19

COVID-19, GENTRIFICATION, AND COMMUNITY INEQUITY: A CASE STUDY OF NANJING

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Individual Paper Presentation

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The COVID-19 pandemic, as a sudden public health crisis, has exposed and exacerbated existing structural inequalities, disproportionately affecting marginalized communities. These inequalities manifest in various forms, such as unequal access to healthcare, job insecurity, and housing instability, which have been further amplified by the pandemic. In the post-pandemic era, changes in work patterns, such as the rise of remote work, have altered the traditional gentrification model in central districts, where the concentration of commercial office buildings once drove the influx of gentrifying populations. This shift presents an intriguing research opportunity to explore the intensification of gentrification and the potential emergence of super-gentrification in such areas. This study investigates how the pandemic has unevenly impacted the process of commercial gentrification in the Xinjiekou central district of Nanjing, China, and its implications for community equity and inclusion. The research addresses the following questions: (1) How has the pandemic amplified the unequal effects of commercial gentrification on different socio-economic groups? (2) What are the mechanisms through which the pandemic has accelerated or reshaped the commercial gentrification process? (3) How have marginalized communities experienced and responded to the dual pressures of the pandemic and gentrification?

To address these research questions, the study employs a mixed-methods approach that integrates quantitative and qualitative data to provide a comprehensive understanding of the intersections between the pandemic, commercial gentrification, and community inequity. Quantitative methods include spatial analysis of changes in business composition, rent levels, and socio-economic indicators across pre-pandemic, during-pandemic, and post-pandemic periods. These analyses aim to identify the unequal effects of the pandemic on different socio-economic groups and the mechanisms through which the pandemic has accelerated or reshaped the commercial gentrification process. Qualitative methods, such as in-depth interviews with diverse stakeholders (low-income residents, minority groups, community organizations, and local businesses) and participant observation, capture the lived experiences and coping strategies of marginalized communities facing the dual pressures of the pandemic and gentrification. By triangulating the quantitative findings with qualitative insights, the study seeks to uncover the complex dynamics of the pandemic's impact on gentrification and its consequences for community equity and resilience.

The case study of Nanjing's Xinjiekou district is particularly suitable for this research. Not only has the area experienced significant impacts from the pandemic while undergoing intensified commercial gentrification, but the author has also conducted a seven-year longitudinal study (2012-2022) on the development characteristics and spatial displacement effects of commercial gentrification in Xinjiekou. This rich contextual knowledge and longitudinal data will provide a solid foundation for analyzing the pandemic's uneven impact on the gentrification

process and its consequences for community equity.

This research contributes to the critical understanding of how public health crises can compound existing urban inequalities and calls for anti-racist, equitable, and inclusive planning practices. By revealing the mechanisms through which the pandemic has unevenly affected communities undergoing gentrification, the study provides insights into developing targeted policies and community-driven initiatives that prioritize the needs of marginalized groups in the face of multiple crises. The longitudinal perspective on Nanjing's Xinjiekou district will offer valuable lessons for building resilient and inclusive communities in the post-pandemic era.

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Keywords: COVID-19, commercial gentrification, community inequity, inclusive planning

DISASTER MANAGEMENT AND CULTURAL ASSETS: INDIGENOUS PLANNING IN OAXACA

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Individual Paper Presentation

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In the face of escalating socio-environmental disasters globally, this study delves into the transformation from reactive disaster risk reduction to proactive disaster risk management. Emphasizing the need for integrated, interdisciplinary governance, we contrast conventional disaster risk planning with Indigenous-led insurgent risk management practices within Zapotec communities along the Los Perros River in Oaxaca, Mexico. Our research advocates for a paradigm shift that not only anticipates disasters but integrates risk management into everyday governance, highlighting the critical role of community-driven approaches and cultural assets in fostering resilience.

Through a participatory action research project, "Pasa La Voz," involving semi-structured interviews, surveys, and workshops, we collected qualitative and quantitative data on disaster risk planning. The contrasting approaches to the 2017 earthquakes (a failure of top-down disaster risk reduction) and the proactive flood risk management led by Zapotec communities illustrate the potential and efficacy of Indigenous knowledge and practices in disaster risk

management. The latter, characterized by communal work (tequio), collective decision-making, and sustainable environmental practices, represents a successful model of disaster risk management that leverages cultural strengths and community solidarity.

Our findings underscore the limitations of technocratic and specialized disaster planning, which often overlooks the socio-cultural dynamics and existing capabilities within communities. The Indigenous Zapotec approach to disaster risk management, rooted in insurgent and radical planning principles, exemplifies how cultural assets and community-driven initiatives can significantly enhance disaster resilience. By integrating these insights into planning scholarship and practice, we propose a reimagined framework for disaster risk management that prioritizes equity, community agency, and cultural integrity.

This research contributes to the broader discourse on advancing anti-racism in planning by demonstrating the importance of acknowledging and incorporating Indigenous and marginalized communities' knowledge and practices. It challenges the prevailing disaster planning paradigms by showcasing the effectiveness of community-based approaches in achieving just, equitable, diverse, and inclusive cities. Through this study, we aim to inspire critical conversations and collaborations that recognize the value of cultural assets in shaping resilient communities and fostering a more inclusive and equitable future in disaster risk management.

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Keywords: Disaster Risk Management, Indigenous Knowledge, Participatory Action Research, Community-Driven Approaches, Cultural Assets

ENVIRONMENTAL JUSTICE & INFORMAL HOUSING: SOLAR SUBSIDY BARRIERS IN PACOIMA

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Individual Paper Presentation

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Green public subsidies have become an important policy tool for confronting climate change in the US. Over the years, these programs have become more comprehensive in California, and more integrated with advances in

technology and through public investment such as with California's cap-and-trade program. These subsidies, however, are also routinely called out for disproportionately benefiting wealthy households. In Pacoima, a working-class neighborhood in Los Angeles, homeowners have access to generous solar panel subsidies, yet uptake has been minimal. Our research, conducted over three years in collaboration with community-based organizations working to implement a solar subsidy program in Pacoima, highlights the challenges residents face in accessing these subsidies.

We argue that in working-class neighborhoods like Pacoima unpermitted or informal housing units are common and make it difficult for homeowners to take advantage of available public subsidies which are oblivious to the prevalence of informal housing. Previous research has shown that Black and Latino households are less likely to have installed solar panels, but the disparity is attributed to differences in household income and homeownership rates. Homeownership does not explain the difference in Pacoima, where most of the housing stock is single-family housing and a majority of households are homeowners. Further, since solar panels are fully subsidized, household income should not make a difference. Pacoima is a moderate-income community of Latinx residents with predominantly single-family zoning. But Pacoima is significantly denser than most single-family neighborhoods because of the common prevalence of informal second and third units on single-family zoned lots. Such informal housing additions and conversions are common throughout working-class communities in Southern California. While they have transformed the fabric of urban neighborhoods to make housing affordable and more accessible, they are ignored by planners and policymakers. As a result of informality, most homeowners in Pacoima cannot take advantage of typical green public aid, including solar panels. Almost half the single-family-zoned lots in Pacoima have an unpermitted second unit, and several have more than one unrecorded dwelling. Many of the units are in poor structural condition and cannot accommodate a solar roof's extra weight. Even more significantly, since many of the units are unpermitted, homeowners are afraid of drawing enforcement attention to them and are reluctant to allow building and safety inspectors on their properties to approve the installation of solar panels.

Drawing from the Pacoima case, we also argue that the formal imaginary of single-family housing across Los Angeles is inadequate, misleading, and discriminatory. Neighborhoods like Pacoima need green public subsidies and investments but the prevailing subsidies privilege and direct support to more advantaged households. Policymakers need to acknowledge residents' informal additions and conversions, and public subsidy programs and policies need to change to support disadvantaged families.

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Keywords: Immigrant neighborhoods, Informal housing, Los Angeles, Pacoima, Climate investments

EQUITABLE ENERGY EMPOWERMENT: UNCOVERING CRITICAL NEEDS IN SEATTLE

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Individual Paper Presentation

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Energy infrastructure and systems support human health and well-being by providing us with the power needed to fulfill our basic needs, and these systems are not immune to disruption or even complete failure. Disruptions to our power supply will likely become more common moving forward as climate change increases the frequency and intensity of extreme weather-related events. However, marginalized communities are more likely to be impacted by climate change and energy disruptions, and disadvantaged groups are often disproportionately vulnerable to shocks and stressors.

Over the past several years, the City of Seattle has taken multiple actions to advance equitable development in the Duwamish Valley. Community members are exposed to air and noise pollution, and the area is also vulnerable to flooding and extreme heat. To address this environmental injustice and systemic inequity, community-informed energy planning could advance equitable energy provision and development. Therefore, this research employs equity-focused resilience metrics and uses surveys to understand residents' clean energy and critical needs and evaluate the social benefits of renewable-based investment in Seattle, Washington.

The survey is translated into six speaking languages, except English, and expects to engage 300 households across different household income, gender, racial and ethnic compositions, and language proficiency to participate. We expect our clean energy and critical needs survey to have three-folders of insights: firstly, households from different socio-demographic and socio-economic compositions would have different perspectives on the community goals and energy affordability. We assume the community members would care more about the financial impact on their spending and costs, rather than community engagement to enhance climate resilience. Secondly, the survey will have a deeper understanding of what are the important community locations from community members' life experience and daily needs, instead of top-down facility allocation planning. The research will identify the potential mismatches between public resource investments and residents' preferences and daily behaviors, and re-orient future community climate and energy investments. Thirdly, we expect that most of the households have experienced power outages but have little preparation for supplies and resource accessibility (such as water, food, money, and backup power).

Ultimately, we suggest that future resilience and just transition policy could improve community energy resilience and include diverse voices of residents using the SCORE equity-focused resilience metric, and have the opportunity to reduce the disproportionate burden of power disruptions while advancing sustainable development.

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Keywords: Social Vulnerability and Burden, Resilience, Infrastructure Planning, Adaptive Capacity, Energy Transition

ETHNIC BUSINESS PRECINCTS AND PLANNING IN THE MIGRANT SOCIETY OF AOTEAROA

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Like many cities around the world, ethnic communities in Auckland, Aotearoa New Zealand, have been advocated as catalysts for cultural diversity, economic vibrancy, and urban revitalisation. According to the report of the First EthnicBiz Forum organised by the Ministry for Ethnic Communities in 2023, about 30 per cent (NZ$ 33 billion) of Auckland’s economy can be attributed to ethnic communities. While achieving recognition as significant nodes of urban space over the past two to three decades, the poor integration of ethnic business precincts into the wider urban area, with particular disconnections at the cultural and social levels, and top-down development that neglected the needs of ethnic communities remain persistent in New Zealand. The ethnic business precinct spontaneously formed by immigrants may be viewed as an optimal example demonstrating the bidirectional relationship between the cultural landscape and ethnic communities. Despite the increasing assimilation of overseas immigrants and their dispersal into outer suburbs, the ethnic business precincts in the inner city or inner suburbs are still characterised by distinctive ethnic symbols, structures, amenities, social institutions, and businesses. The majority of Auckland’s ethnic business precincts include small-scale, low-rise buildings. These buildings are usually aged and located in inner suburbs, providing affordability and adaptability for emerging ethnic businesses.

As a unique typology of cultural landscape, an ethnic business precinct can be viewed as a dynamic and synergistic geo-system comprising interdependent economic, cultural, social, and environmental components. These components influence each other, co-evolving in a dynamic process of morphogenesis. Cultural landscape theory has been proposed for over 100 years as opposition to environmental determinist interpretations. The scope of the

cultural landscape concept provides a solid foundation for a comprehensive understanding of ethnic business precincts and supports comprehensive planning practices towards sustainable development without compromising spatial characteristics and historical traits. In the cross-cultural context, its morphogenetic framework comprises two main dimensions: tangible structural-generative and intangible lived-socialised. The structural-generative study defines spatial units and their generative models. It consolidates a deep understanding of the urban landscape by establishing structural relationships and contextual and processual transformations. The lived-socialised analysis clarifies the relationship between communities and ethnic business precincts in terms of the way that the two sides are intertwined and mutually shaped. It delves into the lived-socialised values of such landscapes and reflects on how they are perceived and promoted by social agents. Lending itself to a more synergistic alignment between the components of an ethnic business precinct, the effective morphogenetic approach provides a valid basis for place- and community-based community planning and design, such as the Business Improvement District (BID) programme.

Taking this physical and cultural complexity into account, this research adopts a people-centred and morphogenetic-based approach relating to space, time, and human society. It consists of two separate research paths: in-depth semi-structured interviews with involved social agents and detailed micro-morphological mapping of key streets and precincts. The former may contribute to identifying the relevant ethnic elements and their boundaries and how people's lived experiences translate a location into a meaningful place. The latter may capture the changes and adaptions in the micro-scale spatial setting, as well as the distribution and visualisation of spatial manifestations related to ethnic identity. Such fact-based research methods can compensate for the arbitrariness of the current top-down development model. This combined theory-practice framework can contribute to cross-cultural urban management by bridging interpretation and representation to tackle complex situations. The expected findings, which emphasise cultural diversity, social inclusion, and economic vitality, will contribute to better design and manage the cross-cultural urban landscape for an increasingly diverse multicultural society in both New Zealand and internationally.

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Keywords: Ethnic business precinct, Cultural landscape, Morphological analysis, Cultural diversity, Social inclusion

FROM ANTI-RACISM TO CAPITAL ACCUMULATION: CULTURAL PLANS IN THE US CONTEXT

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Individual Paper Presentation

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More and more cities are investing in developing cultural plans to outline the ways in which cultural planning plays a role in their community and economic development strategies. Using a range of frameworks including creative placemaking and creative economies, cities illustrate how art and community development play a range of roles in a city's strategic future (Kovacs, 2011; Ashley et al, 2021). Like master (comprehensive) plans, cultural plans present a formal public process with a range of data collection and community engagement methods, an official municipal vote, and a commitment to certain goals and objectives for a specific period of time. Previous research on art and cultural plans seeks to improve the current state of cultural planning and demonstrates the importance of inclusivity and social justice. Previous research shows that contemporary cultural plans (from 2016- 2019) and more diverse cities strongly emphasized diversity and equity, while cities with lower median household incomes more strongly emphasized equity and inclusion (Ashley et al, 2022). Cultural plans that did mention equity and diversity, often failed to specify what that meant or identifying the communities they referred to.

Originating from a partnership with a city's art and cultural council in search for more "socially just cultural plans," this research examines 65 comprehensive art and cultural plans from across the United States as extensions of the state's cultural planning discourses and their historic and political progression. Taking a critical planning approach (Marcuse 2009), this research builds on progressive planning to improve cultural plans, but also builds on critiques of municipal arts and cultural planning as a tool for inequitable development and achieving citizenship in terms of capital accumulation (Stevenson, 2004). Considering the limitations of studying a cultural plan as a political archive, this research analyzes the various discourses around ant-racism, diversity, inclusion, and equity considering the Movement for Black Lives and the murder of George Floyd, both of which have shifted the cultural and politics of diversity in cities. While previous research demonstrates that diversity and equity are seldomly a guiding principle that frames the engagement process, data collection, and community conversation, this research demonstrates how cultural plans are a reflection of the national "state of cultural planning" from the perspective of municipalities. This research shows how cultural plans can advance or deter equity and social justice and considers the various political and economic regional and national contexts. While some cities have started incorporating words like anti-racism and land acknowledgments as part of their cultural plans, for example, their explicit mention of displacement, inequality, unemployment, homelessness, has also changed."

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Keywords: cultural planning, anti-racism, equity

HOUSING FACTORS AND HEAT-RELATED HEALTH: MODERATING ROLE OF TREE CANOPY

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Individual Paper Presentation

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Background: Urban areas are facing serious health issues due to extreme heat (Lee and Brown, 2022). Housing factors such as homeownership and the year of construction, as key urban components, are related to access to air conditioning (AC), which in turn affects heat-related health. Renters typically have lower possession rate of AC compared to homeowners, potentially leading to an increase in heat-related health outcomes (Guirguis et al., 2018). Similarly, older housing, as indicated by the year of construction, often lacks central AC systems or efficient ventilation and cooling mechanisms found in modern buildings, thus increasing the risk of heat-related illnesses (Baniassadi et al., 2020). Meanwhile, urban tree canopies not only provide various ecological, social, and health benefits to urban residents but also help mitigate urban temperatures, serving as moderator variable that alleviate the impact of urban components on heat-related health (Graham et al., 2016). While numerous studies have investigated the relationship between heat exposure and health outcomes, few studies have paid attention to the impact of housing factors such as homeownership and year of construction on heat-related health. Furthermore, there is limited research on the impact of urban tree canopies on the relationship between housing factors and heat-related health.
Purpose: This study aims to investigate if 1) there is any association between housing factors (i.e. homeownership &year of construction) and heat-related health outcomes during the heat days and 2) urban tree canopies can moderate the relationship in the urban areas of Marin County, California.
Method: Negative binomial regression was used to identify block-based tree canopy cover associated with heat-related illnesses at the census block level (n=2,437). Additionally, spatially lagged variables were constructed based on the control variables. We created a row-standardized, distance-based spatial-weights matrix (W). This matrix was calculated within a one-mile radius of the focal blocks (with inverse-distance decay). The dependent variable was heat-related illnesses that occurred on heat days when the maximum temperature exceeded the 85th, 95th, and 97th percentiles between May and October (2013-2019), as determined using emergency medical services data. The potential heat-related illnesses included emotional upset, psychiatric disorder, cardiac arrest, chest pain, dehydration, dizziness, hyperthermia, respiratory distress, and stroke during these heat days. The major independent variables were homeownership and year of construction. Finally, urban tree canopy coverage, which was created at 1-meter spatial resolution from 2018 National Agriculture Imagery Program aerial imagery, was included as a moderating variable.
Results: Housing factors, such as homeownership and year of construction, were significantly associated with heat-related health. Specifically, areas with lower homeownership rates and higher old building rates exhibited significant associations with increased heat-related health outcomes. Additionally, urban tree canopy cover showed a significant moderating factor in influencing the relationship between housing factors and heat-related health. Although lower homeownership and higher old housing rates tend to typically pose lower access to AC, which can lead to more heat-related health outcomes, this finding suggests that greater urban vegetation in the areas with lower homeownership and higher old building rates can help offset the negative aspects of housing factors.

Discussion: These results have significant implications for the benefits of urban tree canopies as a means of neutralizing heat-related illnesses, especially the heat comfort that potentially prevents those vulnerable to excessive heat days. As tree canopies have the benefits of alleviating heat-related illnesses, more attention should be paid to those living in areas with lower homeownership rates and higher old building rates to maximize the buffering role of urban tree canopy cover against heat-related diseases.

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Keywords: heat-related health, urban tree canopy, homeownership, year of construction

HOW DOES SCHOOL CHOICE IMPACT COMMUNITY SOCIAL SUSTAINABILITY?

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Individual Paper Presentation

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Communities across the United States have adopted school choice programs which provide educational alternatives beyond the public neighborhood school. These alternatives are varied and ostensibly form a market-based system where schools compete for students, enhancing the quality of their services. While the educational merits of these programs are hotly debated, there have been few investigations into the impacts of such options (as distinct from school closures) on the social sustainability of surrounding neighborhoods. Makris (2018) presents a specific investigation of school choice and gentrification. The planning literature more broadly addresses schools as a destination in an urban design and/or in a transportation mode choice context. Good (2019) and others have considered the impact of school closures on community development and revitalization. Schools as a location for community gardens, and as a contributor to social capital more generally, have also been discussed in the literature. However, there has been little investigation into the question of how school choice systems affect measures of community social sustainability. In this research I explore the different bonding, bridging, and linking of social capital evidenced in communities with neighborhood schools/choice schools (Osborne et al. 2016). I also evaluate how schools shifted (or did not shift) their relationship with neighboring communities due to the pandemic.

Social sustainability as an element of the broader sustainable development concept is considered by many to be

the most nebulous of the three sustainability pillars. Even so, Shirazi and Keivani's (2017) meta-analysis of the social sustainability literature highlights a coalescing around seven defining principles among which are "social networking and interaction" and "livelihood and sense of place." These principles form the basis in this work for measuring social connectivity between schools and their surrounding neighborhood. Schools have held key positions in community engagement through athletics and arts performances, supporting a sense of place and providing opportunities for broad community interactions. These enhancements to social sustainability may provide lasting impacts with respect to school fundraising and levy support, as well as increased social capital supporting student achievement (Warren 2017). Additionally, heightened engagement and identity may increase broader sustainability efforts related to, for example, school-based community gardens benefiting the surrounding neighborhood.

This study uses the city of Columbus and its School District (CCS), the largest school district in Ohio, as the focus of inquiry. Columbus and CCS provide a somewhat unique opportunity to explore a variety of school choice alternatives. While traditional neighborhood schools remain in the CCS repertoire, the district also includes lottery admission (up to 100% of school enrollment) in traditional, alternative, and specialty schools. Lottery based schools, therefore, may have few if any students from the immediate surrounding community. Moreover, the state of Ohio has a school choice system where taxpayer-funded assistance means CCS students can attend private schools. There are twenty-one public and nine private high schools within the CCS district boundary.

This paper uses surveys of CCS high school principals as well as their private school counterparts to give a comparative understanding of the relationship of high schools within the CCS district boundary with their associated neighborhood. I also survey surrounding suburban high school principals whose school population is geographically bound though the state choice system remains. The surveys along with community demographic data are used to measure the school's identity and connections with the surrounding community as well as the perceived role the school plays in the surrounding community. Results of this work provide insight regarding how school choice influences social sustainability principles related to sense of place and social interactions and suggest fundamental issues of communication and trust provide policy directions moving forward.

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Keywords: neighborhood schools, sustainable development, school choice, community identity, social capital

INFRASTRUCTURES OF CARE AND SUSTAINING SAN FRANCISCO CHINATOWN

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Individual Paper Presentation

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Community development has predominantly emphasized physical infrastructure, overlooking the people whose human capacity and labor serve to bring these projects to fruition. Drawing from infrastructural labor as the 'work that creates, sustains, and performs infrastructure' (Gidwani, 2015; Stokes & De Coss-Corzo, 2023), this research examines the roles and contributions of people at the forefront of implementing key projects like the Central Subway, Ping Yuen, and Sustainable Chinatown, which taken together, contribute to the post-1990s era of sustainable urban infrastructure and a community-led vision of sustainability for Chinatown.

Drawing on twenty months of fieldwork involving interviews, participant observation, and archival research, I ask how individual motivations, identities, family backgrounds, and personal experiences of people involved with sustaining Chinatown have shaped their responses to these projects. Gendered expectations emerge as a prominent theme, influencing the types of roles these individuals undertake in the workplace and influencing their approach to their work. Many of the respondents were women employed by community development organizations, whose family histories of displacement compelled them to defend and protect Chinatown for clients who reminded them of their own family members. Their professional endeavors in Chinatown often blurred the lines between home and workplace, exacerbated by the gendered expectations they brought into their roles. Viewing Chinatown as an extension of home infuses their professional duties with a level of attachment that ultimately led to the project's implementation. While their labor achieved community goals and personal fulfillment, it also set the stage for individual burnout due to the demanding and unsustainable nature of these roles.

Findings suggest that this labor is a critical form of infrastructure to sustain societal well-being. Here, 'social infrastructure' encompasses not only people as inputs and labor driving such projects (Simone, 2004) but labor as an output and a form of infrastructure itself, including the maintenance of social life (Graham & Thrift, 2007) and as an infrastructure of care (Alam & Houston, 2020). Specifically, care as infrastructural entails providing mental and emotional labor to residents facing mental or medical challenges, as well as facilitating the relocation of such populations during rehabilitation. Despite its invisible nature, this form of labor is as vital, if not more so, than the physical aspects of project implementation. The success of such endeavors relies heavily on the degree of community support garnered during project execution. However, the emotional and mental labor required to establish the necessary social infrastructure for project success often remains overshadowed by the tangible outcomes, such as the preservation of housing units. These outcomes tend to take center stage in public narratives and press conferences, leaving the behind-the-scenes efforts largely unnoticed.

This research suggests that Chinatown's vision of sustainability may be unsustainable in the long-term without intervention to support the individuals whose labor constitute infrastructures of care and recognizing their vulnerability to burnout. For the community development field, it highlights threats to the overall pipeline of human capacity of those in the profession, as sudden departures exacerbate the loss of institutional knowledge

and hinder leadership development. This research highlights the importance of recognizing and supporting the human infrastructure necessary in sustaining community development as not to jeopardize the field's long-term sustainability. Preventing this fate requires acknowledging the people whose labor constitutes the social infrastructure that is needed to make the physical infrastructure possible.

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Keywords: Social infrastructure, Infrastructual labor, Chinatown

LOCATING EVERYDAY ENTREPRENEURSHIP WITHIN ASSET-BASED COMMUNITY DEVELOPMENT

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Individual Paper Presentation

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At first glance, many poor and minority neighborhoods in Kansas City seem to be entrepreneurship deserts. Fewer businesses appear within their boundaries. Disinvestment and population decline has left these areas with high rates of residential vacancy accompanied by vacant commercial corridors. Yet, we find that there is a reserve of entrepreneurial activity in these areas. An expanded entrepreneurship definition is necessary to capture this reserve. We define everyday entrepreneurship as inclusive of business activity that is both formal and informal (Salvi et. Al. 2023). Everyday entrepreneurs include folks whose businesses are less established – often without a brick-and-mortar location. Think of folks working a side-hustle out of their homes – in areas such as catering, building trades, consulting, hairdressing, etc. Most artists, creatives, and musicians fit into this category as well. Everyday entrepreneurship shares a fuzzy boundary with social enterprise and community entrepreneurship (Fortunato and Alter 2015). This paper explores the role of everyday entrepreneurship within a framework of neighborhood community development in Kansas City. We explore how businesses and entrepreneurs add to the assets of a neighborhood (Kretzmann and McKnight, 1996).

Our analysis is based upon a combination of quantitative and qualitative methods. First, we examined the data on entrepreneurs and enterprises at the local level. Then, we report on the results of a series of structured conversations about everyday entrepreneurship held with entrepreneurs operating or living in Black and Hispanic neighborhoods of Kansas City. These entrepreneurs were predominantly Black or Hispanic. Based upon the evidence from these sources we develop a series of policies to encourage entrepreneurship and to link business

development to neighborhood community development.
Established businesses add to neighborhoods by providing the typical economic development measures of earnings, jobs, and sales. Business directories and Bureau of the Census datasets such as Zip Code Business Patterns and Enterprise Statistics well capture these data. Aggregating establishment data mostly shows businesses with brick-and-mortar locations. Exploring the location, socio-economic characteristics, and industry of the self-employed is another approach (Markusen and Schrock 2006). Yet, this method is limited to the primary occupation of the survey respondent and will not capture the "side-hustle." We also checked local databases such a business licenses available from Kansas City and/or the State of Missouri. These include some of the home-based businesses – but it is hard to sort the location question from the initial enterprise filing.
Our discussions with everyday entrepreneurs provided a richer collection of evidence than the secondary data. We found that everyday entrepreneurs have motivations common to formal entrepreneurs: they want to control of one's own destiny, to provide for one's family/household and to make a difference in society. They are frustrated by the lack of capital available to start-ups. They are self-financing their businesses through their own familial networks and even using credit cards. The barriers and opportunities faced by everyday entrepreneurs in Kansas City align with those identified by Bates et. Al (2022).
We find that several local planning actions could assist everyday entrepreneurs. Everyday entrepreneurs need a path of forgiveness for operating without a license. Undercapitalized businesses need to operate to generate funds to support the formalization process. Neighborhood organizations might be able to assist in providing reputational standing for these formalizing businesses. In return, increased neighborhood connections might facilitate networking and market development. Cities need to invest in these commercial corridors while incentivizing owners to also reinvest. Planners may also work to focus the actions of business development intermediaries toward areas left behind.

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Keywords: Entrepreneurship, Community Development, Informal Economy

MEASURING THE EMBEDDEDNESS OF BUSINESSES IN GENTRIFYING NEIGHBORHOODS

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Individual Paper Presentation

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As housing costs and displacement pressures have risen in many urban core neighborhoods in the United States over the past several decades, housing activists and social scientists have pointed to the important role of consumption businesses in both signaling and accelerating processes of gentrification (Smith 1996, Newman and Wyly 2006, Lees et al. 2008, Zukin 2010). New retail businesses targeting affluent consumers are often contentious signs of change in the urban built environment, as fixtures of the neighborhood are replaced with upscale coffee shops or boutiques. The rate of growth in retail businesses has been particularly high in areas experiencing high housing price appreciation relative to their metropolitan context (Meltzer and Schuetz 2011). Tensions arise between municipalities dependent on property and sales tax revenue, businesses looking for new customers, and the multiple publics that live and work nearby, many of whom find that the new retail landscape does not meet their needs or anticipate their continued residence in the neighborhood (Zukin 2010, Brown-Saracino 2010, Burnett 2013, Tissot 2015). These businesses may be located spatially within a given community, but they are embedded in more far-flung networks of financial and cultural capital, serving first as "signaling hinterlands" (Rosen and Alvarez Léon 2023) for elites located elsewhere, before the process of residential gentrification can catch up to the upscaling of the local retail landscape (Ocejo 2014).

At the same time, the way that city dwellers access information about retail businesses has changed drastically during this period, especially for the younger, wealthier, and more educated demographic at the leading edge of gentrification (Gottlieb 2015, Hyde 2014, Zukin et. al 2017). Millions of people rely on location-based services (LBS), digital mapping and local review platforms that aggregate and display “crowdsourced” (Brabham 2012) reviews, to make decisions about where to spend time and money. The two main local review companies in the United States, Yelp and Google, each have hundreds of millions of user- contributed reviews of local businesses, with a focus on consumption businesses like restaurants, coffee shops, bars, and upscale grocery stores (Payne 2021), especially in gentrifying urban areas, which studies have shown are disproportionately targeted by urban digital platform companies and amenities (Leszczynski and Kong 2022). While social media data has become foundational to both scholarship and management of “smart cities” (Barns 2018, Rose and Willis 2018) and “sharing economy” and “platform real estate” firms like Airbnb (Wachsmuth and Weisler 2018, Shaw 2020, Payne et al. 2020), local reviews are still underexplored sources for studying urban redevelopment and conflict over space (Arribas-Bel 2014, Thatcher 2014, Wilson 2014, Silva et al. 2019).

Scholars still know relatively little about the broader temporal and spatial patterns of retail-led gentrification, and to what extent changes in the retail landscape of an area anticipate or follow changing demographics, though recent work on social media and gentrification can help to serve as a model for how to tackle some of these questions (Chapple et al. 2022). Untangling the complex problem of whether affluent new residents pre- or post-date the arrival of upscale new businesses can help cities and community groups shape equitable development. This paper uses previously unexamined data from the local review platform Yelp and novel spatial analytic methods to analyze the changing geographic distributions of customer-reviewers for consumption businesses across two urban neighborhoods in the United States from 2010 to 2020: Bushwick, Brooklyn and downtown Asbury Park, New Jersey. By demonstrating the extent to which businesses in these two settings draw outsiders into gentrifying neighborhoods, these quantitative localness metrics and cartographic consumption footprints can provide a more nuanced assessment of the impact of changing retail businesses on urban development than existing approaches.

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Keywords: Retail Gentrification, Platform Urbanism, Social Media, Spatial Data Science

NEIGHBORHOOD REVITALIZATION AND CRIME: EVIDENCE FROM WATTS’ REDEVELOPMENT

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Individual Paper Presentation

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Public housing in the U.S. has been a symbol of concentrated poverty and crime. Beginning in the early 1990s, large-scale federal housing programs sought to address these concerns by redeveloping distressed public housing into vibrant mixed-income, mixed-use communities. How such redevelopments would impact crime depends upon several factors, including the extent, duration, and location of displacement of original residents and how that relates to criminal activity; the crime-reduction features of the redeveloped housing and its surrounding community; and the social and economic conditions in the community. Evidence from the first generation of federal redevelopment grants (HOPE-VI) indicated a reduction in crime in the HOPE-VI sites over time, which was closely associated with large-scale displacement of public housing residents and gentrification of the redeveloped neighborhood. HOPE-VI’s successor - the Choice Neighborhoods Initiative (CNI) - was a new generation of federal-housing redevelopment grants that provide better safeguards for original residents and ensure investment in housing, people, and the broader neighborhood. Whether this new generation of public housing redevelopments had different impacts on crime than its predecessor is an open question.

We focus on the Jordan Downs Public Housing Redevelopment in Watts, Los Angeles (LA), and assess its impact on crime. Jordan Downs (JD) is one of the largest public housing sites in LA with high rates of crime. The redevelopment of Jordan Downs is a decade-long process initiated in 2018. A unique feature of this redevelopment is its “build-first” strategy, which effectively ensures zero displacement of residents. Two other key features of this redevelopment include the influx of new mixed-income neighbors and the mixed-use focus. The redevelopment encompasses the demolition and construction of housing for original residents as well as additional housing for new mixed-income neighbors, effectively doubling the housing density. Other built environment improvements included shared recreation spaces, walkable-tree-lined streets, cameras, and lighting. Lastly, the program includes a 120,000 square foot retail plaza with a supermarket, restaurants, gym, and other amenities.

We analyze crime data from the Los Angeles Police Department and LA County Sheriff’s Department from 2010 to

2022 to assess the impact of this redevelopment on property and violent crimes overall, as well as separately by offense type. Our paper makes two important contributions to the literature. First, assessing the impacts on crime prospectively as the redevelopment unfolds has been previously understudied and provides unique insight into how crime evolves during this process. And second, the focus on minimal resident displacement along with mixed-use focus is a departure from previously studied redevelopment efforts and may impact crime differently.

We employ an event study framework to analyze crime trends in Watts over 2010-2023, utilizing data from LA Police Department and LA County Sheriff. We construct multiple comparison groups, comparing crime (overall and by subcategories) in Watts to different groups of census tracts in rest of LA (e.g. all tracts, >40% poverty, have public housing). We also utilize the synthetic control method as robustness checks. To understand the mechanisms and heterogeneity in crime changes within Watts, we conduct a hotspot analysis to examine crime in JD versus rest of Watts pre- versus post-redevelopment. Preliminary findings indicate a significant reduction in property and violent crime rates in Watts in the 4 years following the redevelopment's groundbreaking. These findings are consistent across all the methodologies employed. The decline in property crime in Watts is predominantly attributed to reductions in burglary and motor vehicle theft.

Nevertheless, these findings mask considerable heterogeneity within Watts in crime changes. Prior to the redevelopment, crime rates in Jordan Downs were among the highest among all tracts in Watts. Yet, the crime improvements in Watts were concentrated in tracts other than Jordan Downs. After the redevelopment began, both property and violent crime rates in Jordan Downs increased, ranking it the top tract for property crime and the second highest tract for violent crime in Watts. Motor vehicle thefts, larceny theft, and robberies in Jordan Downs increased, and the reduction in burglaries was the smallest among all tracts. These results suggest potential displacement of crime from other tracts within Watts to Jordan Downs, coinciding with the opening of the new retail plaza in JD, which arguably presented more opportunities for crimes.

Our findings present a more nuanced picture of how redeveloping distressed urban neighborhoods may influence crime. In contrast to prior studies which linked reductions in crime to the dislocation of residents, our results show that maintaining the resident population alongside construction activities and the addition of several commercial/retail opportunities likely created significant opportunities for property and violent crimes, both which increased in Jordan Downs. But the increased crime in Jordan Downs was more than offset by crime reduction in the rest of Watts. This was possibly due to the spillover investments for infrastructure improvements in the rest of Watts, such as installing solar roofs, urban food gardens, public transport electrification, enhancing street safety for walking and biking etc. that may have made the other areas in Watts safer without creating opportunities for crime.

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Keywords: community revitalization, crime, displacement, public housing

PALACES FOR THE PEOPLE: REIMAGINING LIBRARIES AS MIXED-USE DEVELOPMENTS

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Individual Paper Presentation

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Public libraries are a unique form of social infrastructure. What distinguishes them from other organizations that provide similar services is that public libraries do so for free and are open to all. The services they provide are not means-tested benefits that are targeted to only those who qualify. Rather, their services and resources are available to everyone regardless of age, familial status, income, employment status, place of birth, citizenship status, race, ethnicity, religion, or any other ascriptive characteristics. They are third spaces that offer a place to relax or socialize without having to buy a coffee. Historically, public libraries in the US have been housed in stand-alone structures, thanks in part to Andrew Carnegie's funding of thousands of such public libraries across the country, but this is changing.

From Brooklyn to Chicago to Boston, cities are calling for the redevelopment of public library branches that are part of mixed-use developments. This research asks how cities are changing the development model when it comes to public library branches and how they are reimagining public libraries as forms of inclusive and accessible social infrastructure. Through a review of public library requests for proposals, development plans, and news media across the country, I document the evolving nature of public libraries and to what extent they advance planning goals of creating cities that are more equitable, diverse, and inclusive. I find that these mixed-use developments often combine public libraries with affordable housing, but the mixed uses also extend beyond this pairing. Similar to the first public library Carnegie built in 1890, which was located in a five-story building along with an art gallery and a twelve-hundred-seat music hall, cities are finding creative partners for public libraries, from health centers to retail. This research contributes to larger discussions within the field of urban planning about social infrastructure, inclusive and equitable development, and public services.

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Keywords: Public libraries, social infrastructure, mixed-use development, affordable housing

PERSPECTIVES AND PERCEPTIONS OF UNIVERSITIES' COMMUNITY ENGAGEMENT

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Individual Paper Presentation

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Universities' community engagement aims to generate mutually beneficial outputs and relationships, but actual impacts are often beneficial only to the university while harming the community (Hains & Hains, 2023). An assessment of the impacts of a university's community engagement initiative thus varies depending on the perspective. Previous research highlights the importance of community perspectives and perceptions in evaluating t university-led community engagement initiatives (e.g., Etienne, 2012). However, considering that a university is a decentralized and fragmented organization (Baum, 2000), individuals involved in designing, implementing, and managing the initiative would have their own perspectives and perceptions.

In this context, I ask two questions: (a) how do different stakeholder groups view the university's roles in its community engagement initiative in urban neighborhoods, and (b) how do these groups perceive the impacts of the initiative differently? I examine the cases of The Ohio State University's Partners Achieving Community Transformation and the University of Minnesota's University Northside Partnership, interviewing university leaders, community leaders, and community residents to document their perspectives and perceptions.

I demonstrate (a) disparities in perspectives regarding what universities can achieve in their community engagement initiatives, and (b) perception gaps regarding the impacts that universities have brought since their inception. In terms of the roles of universities, university stakeholders generally believe universities bring about neighborhood changes through research, collaboration with community organizations and residents, and place-based development. In contrast, community stakeholders tend to expect universities to act as social service organizations, directly addressing significant community issues and providing resources and direct aid to those in need.

The disparities in perspectives about the university's roles lead to different perceptions of the impacts, although participants overall agree on the value of the university's efforts and the long-term vision of the initiatives. University stakeholders emphasize metrics such as the number of research projects, faculty and student involvement, and the financial investment in infrastructure, retail, and housing development. However, community stakeholders may not recognize these projects or see them positively unless they are directly visible or may view place-based development as harmful, potentially causing displacement in some cases.

In joining conversations about how to assess a university's community engagement initiative, I highlight the value of subjective assessments and the reflection on various stakeholders by revealing diverse perspectives and perceptions among stakeholders. Beyond university-community partnerships, the variance in expectations of universities' roles in urban neighborhoods empirically confirms the multiple aspects of community development, casting the need for further discussion of what counts as community development. Practically, I provide comparisons of perspectives and perceptions among stakeholders so that the case universities and communities use them as a basis to discuss their achievements and challenges, calibrate current goals, and design future initiatives.

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Keywords: University-Community Partnerships, Community Engagement, Community Perspectives

PLANNING FOR WHOLENESS: YOUTH, BEAUTY, AND ENVIRONMENTAL JUSTICE

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Individual Paper Presentation

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Despite being often underestimated, youth possess a nuanced understanding of their needs that extends beyond basic necessities, encompassing elements of social, emotional, and cultural significance. In this article, we argue that the pursuit of a just community development, transcending the fulfillment of basic needs requires the integration of beauty, joy, and wonder, with youth being a central part of this transformative process.

While planning practices and discussions have traditionally paid less attention to concepts like beauty, joy, and wonder, research indicates the importance of incorporating these elements more frequently into practice (Elbaz and Alfasi 2023; O'Brien and Tranter 2006), as they are critical to the overall well-being of individuals. Rather than a utilitarian exercise, planning should adopt a holistic approach, considering not only fundamental requirements but also the aspirations of youth, fostering creativity, joy, and community flourishing.

This article is inspired by youth from the Rio Grande Valley in Texas who participated in a 3-day photovoice workshop as part of a larger community-based research collaboration between the University of Texas in Austin and a local coalition (including city staff, environmental nonprofits, social justice organization, and two high schools). In this article, we draw on the experience of a participatory inquiry exercise, that employed a walk-along method with the youth to experience and assess a local park's qualities. We also include reflections about participants' photo-narratives and experiences shared in focus groups with the research team to suggest that the youth's observations encompassed concerns about the planet's future, alongside a firm commitment to the significance of beauty and access to nature in promoting overall health and well-being.

Having done this work in a border community that has been historically deprived of the planning they need, we advocate for a reimagined environmental justice in planning that goes beyond correcting historical environmental

injustices to creating environments that engage the imaginations of the historically marginalized, in this case, those of the youth. Aligning with the ideas of Iris Marion Young (1990), planners need to move beyond a distributive approach into one of procedural justice (Mattila 2002) in which people have the ability to plan, design, repair (Song and Mizrahi 2023), and create the city they desire (Pinder 2002). In the spirit of advancing social and environmental justice in all its aspects, the article hopes to enrich discussions on community-engaged research and practice, proposing initiatives that transcend standard participatory methods which often place youth in pre-established frameworks of power and participation.

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Keywords: beauty, youth, participatory planning, justice

PLAYFUL PUBLIC PARTICIPATION OF UNDERREPRESENTED AND MARGINALIZED RESIDENTS

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Individual Paper Presentation

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Engaging underrepresented and marginalized communities in urban planning processes continues to be a challenge for the planning profession. These communities may include minorities, elderly, children, LGBTQQ, African American or other individuals. Currently used engagement methods such as city hall meetings or surveys do not attract many residents to participate. Planning profession experiences what has been described as rational ignorance (Krek, 2005). Residents rationally decide to ignore engagement processes due to the high investment needed to study the materials presented to them. Novel ways of community engagement and public participation are needed to attract underrepresented and marginalized residents and engage them in discussions about the future of their living environments.

This research reports the findings of a 3-years long collaboration between the city xy and the university research team. The focus is on methods, strategies and technologies that may attract more residents to contribute to urban planning related topics. Research questions are: Which engagement methods, strategies and technologies can attract more residents to participate in urban planning processes? Can playful public participation that includes

geogames be efficiently implemented? Geogames are games that focus on spatial representation and often strive for a realistic visualization of the real-world in the game environment. Theoretical principles of playful public participation (Poplin, 2012) and including games and playful activities in community engagement (de Sena et al. 2021; Poplin at al. 2020; Gordon et al. 2011) were tested and are summarized in this contribution.
The research team initially interviewed 34 community engagement experts across the nation collecting ideas of what constitutes successful engagement that can attract diverse communities in the dialog about the future of their living environments. The main findings suggest successful methods to be those that enable officials to meet the residents in their neighborhoods. They propose bringing engagement to the residents and to their living environment. An additional characteristic of successful engagement was found to be in offering a combination of engagement modalities that can target different preferences and abilities of the residents. A variety of multi-modal participation techniques needs to be developed for public officials to be able to reach diverse groups of residents. Based on these findings, the research group organized a community engagement festival at four locations in the city and developed a set of innovative, engaging, and playful activities. Some locations were selected in neighborhoods with low-income and low-educational levels of their population. The festival attracted over 250 residents and was very successful in engaging families with children. Some other underrepresented and marginalized groups attended mostly in the selected neighborhoods that brought engagement close to the place in which they live.
In the next step, a pop-up mobile community engagement idea was developed and tested. The engagement team set up tables and activities in the identified neighborhoods and presented innovative and playful engagement activities. This idea proved to be difficult to organize and did not lead to the expected results. In the last experiment, the team engaged the Korean community through their church and organized an engagement event tailored specifically for this community. Some materials were translated into the Korean language. Semi-structured interviews provided valuable information to the city officials, children played and contributed to a map-based discussion, and everybody could get engaged in the playful and creative activities. In the last step, the research team conducted a rational ignorance survey in the pre-selected neighborhoods to better understand why residents choose to not get involved in the community engagement activities organized by the city officials.

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Keywords: community engagement, marginalized residents, playful participation, geogames

POST COUNTERCULTURE COMMUNITIES: MILES FROM BOWLING ALONE

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Individual Paper Presentation

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Similar to Mark Twain's experience concerning reports of his death that have been "greatly exaggerated", so to American communities per Robert Putnam's "Bowling Alone" conclusion that their continued collapse for the last 50 years are equally exaggerated. Putnam defines community vitality as a function of social capital and makes the distinction that as social capital rises, so does community capacity and vitality (Putnam, 2020, p.49). Conversely, if social capital declines, so does community vitality. Per an extensive analysis of purposefully sampled longitudinal secondary data slices of membership in "social organizations" (churches, bowling leagues, bridge clubs), he measures the rise and fall of his data driven definition of social capital over time. He pin-points the "collapse" of American communities starting in the mid 1960s. "On average, across all of these organizations, membership rates began to plateau in 1957, peaked in the early 1960s, and began the period of sustained decline by 1969" (Putnam, 2020, p. 55). And, American communities have never recovered since.

Like Mark Twain, community advocates, planners, and progressive scholars mark the same mid 1960s moment in time as the beginning of a new era of community growth and development (Bach, 2020). How can American communities be both collapsing and thriving at the same time? Putnam's Bowling Alone research has been extensively vetted for over 20 years and his empirical conclusions are sound. So, if Putnam is not wrong in his conclusion, what is going on? The answer I posit in this paper is that starting in the mid 1960s, American communities started to evolve into a new post counterculture community organizational structure and started to fall through Putnam's empirical cracks of tracking. American communities are not declining, they are thriving and are showing up in different data slices not captured by secondary organizational membership data sets.

This paper is organized into four sections. It begins with an overview on how communities are connected (not defined) to social capital. Next, Putnam's "bowling alone" thesis is reviewed in relation to longitudinal variance of membership-based social capital data slices. Third, three characteristics that define post counterculture communities (communities after the 1960s) are introduced: a.) place specific (you know where it is), b.) individualized community identity (you know when you are there), and, 3.) small in numbers (you have a strong sense of we). Lastly, a review of longitudinal U.S. hippietown data is discussed documenting how they got started in the 1960s as "destinations" for individuals in search of community. Post counterculture communities; miles from nowhere, and too busy for bowling leagues.

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Keywords: 0, 0, Community

REGULATING THE EDGE: SHIFTING GEOGRAPHIES OF ROCK COMMUNITIES IN BEIJING

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Individual Paper Presentation

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In response to of 'creative turn' in the Global North, China has embraced a top-down approach of making creative cities as a key driver for urban renewal. However, the state-led creative industrialization risks the harsh institutionalization of marginalized cultural communities. Few empirical studies have studied transforming subcultural communities from a Global South perspective. In this article, we employed geovisualization and network analysis to examine the spatio-temporal dynamics of rock music communities in Beijing from 2000 to 2020. By GIS-based maps, we illustrated the venues' geographic shifts over two decades. Using UCINET, we analyzed the core-periphery structure of human-place network to identify core influential communities and their connectivity to specific places. To further reveal the underlying mechanisms, this paper analyzed how cultural and economic policies influenced these changes. The findings indicate that: 1) The locations of music spaces have changed from informal underground venues and urban villages to upscale areas due to gentrification; 2) Informal spaces once dominated by subcultural musicians have nearly vanished; while current spaces are planned or monitored by the government, preventing artists from claiming alternative identities; 3) The social network of local artists has been detached from specific venues over time. Our findings reflect how subcultural communities were excluded from urban areas through the collision of capitalism and state power. Specifically, to facilitate the commercialization of urban space under the guise of creative culture, government and private entities drive music venues to gentrified areas, boosting property values and closing core subcultural places. This process limits the space for self-expression and social gathering of grassroots communities, and denies low-income communities' equal access to cultural resources. As a result, it exacerbates social inequality and further marginalizes already disadvantaged groups. Our article contributes to the understanding of urban inequality from a cultural perspective. It also stresses the need for policy interventions that protect and cultivate marginalized cultural communities. By fostering grassroots participation in policy-making and changing development incentives, we can lessen the deleterious effects of gentrification and commercialization and develop a more inclusive and vital urban cultural landscape.

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Keywords: Social inequality, Subcutural communities, Grassroots, Creative cities, Urban renewal

SHIFTING ROLE OF COMMUNITY IN EQUITY AND SUSTAINABILITY PLANNING

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Individual Paper Presentation

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Urban planning for equity and sustainability has largely been theorized and operationalized in parallel, with notable intersections (Agyeman, 2013), particularly related to environmental justice (Anguelovski et al., 2016) and health (Pineo, 2022). Cities face complex challenges characterized by environmental and equity concerns, such as structural racism, insufficient housing and climate change. Given historic failures to garner positive development outcomes for low-income and BIPOC groups (Knapp et al., 2022), there is a new focus in many U.S. cities on equitable planning and community engagement, yet practitioners' knowledge on how to operationalize just, equitable, and anti-racist policies is low (Jackson et al., 2023).

This paper discusses research findings about current practices of sustainable and equitable urban planning, focusing on areas of strength and weakness at this time of change. We conducted semi-structured interviews with 23 individuals in community development, planning, transportation, housing, and other sectors (primarily in local government and non-profit organizations). Online interviews occurred with participants across 11 states (August to September 2022). Participants voluntarily reported their racial identities as White (12), Black or African American (5), American Indian or Alaska Native (2), Asian (1), and Some Other Race (3). Ethnicity was reported as Not Hispanic or Latino (15) and Hispanic or Latino (3). We used purposive and snowball sampling. Participants were primarily senior in their level of professional experience (19/23), assessed through job titles. Transcriptions were pseudonymized before an iterative process of thematic analysis.

We identified five themes through our analysis. First, U.S. cities are "designed for exclusivity," with numerous participants identifying redlining and more recent policies contributing to disparities across multiple outcomes. There was a notable shift in understanding among planners of the effects of their work on structural racism; one said, "frankly our down-zoning in the [year removed] map perpetuated that redlining. (…) We didn't realize it." A second theme related to participants' work was to change narratives, shift mindsets and enable solutions, a strategy particularly used by community and non-profit organizations. Participants identified cultural mindsets that ran counter to their work, highlighting the need for "dispelling some of the harmful prevailing narratives." Third, in the face of opposition (or lack of buy-in) to equity and sustainability initiatives, such as inclusionary zoning, participants described the importance of building trust to enable dialogue and collaboration, particularly with community groups previously harmed. One participant explained the perception of BIPOC communities as feeling that they have been "planned to death" and "over-promised", leading to "a massive trust deficit." Fourth, capacity-building ecosystems supported actors in overcoming obstacles. Organizations leading capacity building included community-based organizations (CBOs) supporting peers, and philanthropic or government funding used to support non-profits and CBOs. Working against the status quo to support equity was seen as difficult combative work. Individuals required support in terms of changing organizational culture, bringing people together in coalitions, and giving space and support for healing. The difficulty of advocating for equity was expressed through participants' use of warfare terms like "battle," "fighting," and "adversary." Finally, we identified that community-

led efforts are transforming possibilities for equity and sustainability. For instance, a public sector participant spoke of how new funding was made available after a community-led project “elevated it for them” and “showed what was possible”, notably claiming that “this wouldn’t have happened” without the community initiative.

Planners are increasingly aware of the need for equitable and sustainable planning approaches with meaningful community involvement, but there is a need for tangible examples of practice. This research demonstrates the need for planners to develop better ways of supporting community-led initiatives in service of equity and justice outcomes, including strengths and weaknesses of current practice to guide those efforts.

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Keywords: Anti-racism, Community-led development, Equity, Public Health, Sustainability

SOCIO-SPATIAL EFFECTS OF BASIC EDUCATIONAL FACILITIES IN MEGA-CITIES

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Individual Paper Presentation

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There are ten mega-cities in China with more than 10 million population. In densified urban areas, human behavioral patterns, spatial and temporal perceptions, and social interactions differ from other areas. The provision of basic education for school-age children becomes an important social link; it not only lays the foundations of human growth, but also reflects the city's approach to educational equity, which in turn has an impact on the distribution of population.

We choose the central city of Shanghai, one of the ten mega-cities in China as the scope, and explore whether the “Chinese school district system” creatively solves the educational inequity and enhances or dissolves spatial

segregation through the distribution of basic education facilities and school districts.

First, we take the central area of Shanghai and some peripheral areas (about 600 square kilometers area within the A20 expressway road) as the study area, which covers the most central and densely populated area of the Shanghai, and parts of the peripheral districts. There are about 638 elementary schools and 506 junior high schools.

Second, basing on AOI and high-resolution satellite imagery data, we identify the campus boundaries of the schools above. The latest school district boundaries, district boundaries, street boundaries and neighborhood boundaries are obtained based on information from official government websites.

Third, we analyze and cluster 1,144 schools according to educational stage, school nature and educational resource level. Schools are divided into two categories, public and private, based on the main fund source for construction and operation. There are 573 public elementary schools， 65 private ones, 420 public junior high schools and 86 private ones within the area. Among them, junior high schools are classified into different levels according to the teacher quality.

Fourth, we reveal educational inequity basing on multi-source data. As a result of the long-term intervention of government policies and financial inputs, schools within this area show differentiated levels of education quality, and differentiate attraction and acceptance of different sources of students and families. Therefore, we take the 439 school districts as the unit to conduct an in-depth investigation. We obtain the price, house type and size of second-hand houses traded of each district from the major real estate trading websites, as well as the population statistics and forecast data in the past years. By constructing a model of house price dynamics and population mobility, we reveal the 439 school districts in central Shanghai that have abnormally high house prices and frequent population mobility.

Finally, we select school districts with housing prices and population mobility to conduct further qualitative research. By combining the quantitative analysis results with the qualitative findings, we verify the correlation between the quality of teaching, promotion rate and tuition fees of schools in 439 school districts, as well as the level of characteristics above, so as to reveal the mechanism of the distribution of basic education facilities and the influence of the school districts on the residential space segregation.

We point out that educational resources quality interact with urban social demand, and that abnormal fluctuations in housing prices and population mobility combine to drive resources to continuous spatial polarization, thus exacerbating the spatial segregation. The trend of low birth rates bring new impacts on the spatial allocation of basic education resources. When implementing urban regeneration, it is an challenging issue for Chinese urban planning to maximize basic education resources for the most needy ones through spatial planning. This study not only has the theoretical value of revealing the socio-spatial structure of high-density urban areas, but also has the practical value of providing a reference for the planning of educational facilities.

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Keywords: Educational Equity, Chinese School Districts, Basic Educational Facilities, Spatial Segregation Phenomenon, Shanghai Metropolis

STRATEGIES FOR UNIVERSITY-BASED CIVIC ENGAGEMENT: A CASE STUDY ANALYSIS

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Individual Paper Presentation

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Town-gown partnerships, also called university-community engagement and service learning, are not new. The topics have been explored since the Middle Ages, but substantial scholarship relevant to the modern university has been a serious subject for over a century (Marshall 1957; Perry 2005). Since the emergence of this scholarship, there has been criticism over how the relationship between universities and communities can quickly become extractive, prescriptive, and not focused on the community's needs (Martin et al. 2005). However, if structured correctly, this type of partnership has the power to become symbiotic: residents can lead, enhancing the neighborhoods they live in; agencies and municipalities can work with residents; and universities can facilitate and provide expert knowledge – all while valuing experiential learning and community-engaged research (Perry 2005). Despite the long history of university-community engagement dynamics, the specific processes and institutional structure of the relationships are understudied and undertheorized.

While there is scholarly work that explores town-gown relationships from a range of disciplines, including but not limited to public administration (Bruning et al. 2006; Emerson et al. 2012), social work (Gerstenblaatt et al. 2014; Wertheimer 2013 et al.) economic development (Massey et al. 2014), and service-learning/education (Buys et al. 2007; Eyler et al. 2001; Saltmarsh 2011), there is still a need for more scholarship that explores how partnerships situate expert knowledge in particular place, time, and social circumstances. The challenges faced by partners require careful planning, communication, and stakeholder commitment. Our research analyzes the various forms university-community partnerships take in award-winning project case studies from the Rudy Bruner Award for Urban Excellence (RBA) collection.

For this research, we conducted a comparative study across 88 award-winning RBA projects between 1987 and 2019, employing a case study methodology outlined by (Yin 2009). The collection, comprised of over 1,000 applications from 956 unique places geographically spread throughout the United States, is a unique award for

several reasons. The first is that no pre-determined criteria limited what project could apply, except it had to be a built project in an urban area. No typology, scale, or cost-constrained selection; large projects competed against small projects because excellence is possible in various place types, scales, and budgets. Another distinctive aspect is that detailed self-report application forms were consistently administered over 34 years and required perspective sheets, including, but not limited to, community members, not-for-profit community-based organizations, public agencies, developers, architects or designers, professional consultants, and municipalities.

We then compared this to the work of the University at Buffalo's Citizen Planning School (CPS) program. Compared to the RBA cases previously explored, the CPS case provides a different kind of university-community partnership. This type of partnership has garnered more attention recently due to the American Planning Association (APA) publication about community planning academies (Carner 2023). Rather than the university coming in with a commission for a specific project, CPS worked to equip community residents with the tools and knowledge needed to take on a project that they deemed most critical within their neighborhoods, ultimately increasing the self-sufficiency of those within the community.

The assessment and comparison across the RBA cases and CPS program revealed a range of approaches taken by universities that are all viable in the pursuit of best practices in urban place-making. After our analysis, four types of university-community partnerships emerged: the university as consultant, the university as investor, the university as scholarly advocate, and the community as driver. Within each typology we noted different levels of design, municipality support, community engagement, politics, vision, university engagement, and investment. Each project and partnership offers different levels of emphasis on expert-based collaborative practices, supporting citizen champions for change, and the nexus of leadership on projects.

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Keywords: university-based engagement, community engagement, placemaking, urban excellence, urban development

SUPPORTING PLACE- AND COMMUNITY-MINDED SMALL BUSINESSES THROUGH CRISIS

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Individual Paper Presentation

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Migrant entrepreneurs play an outsize role in “Main Street” businesses like restaurants, laundry, and salons but few studies have examined the impacts of such businesses (Kallick, 2015). These kinds of businesses not only support local economic development but they also shape a neighborhood’s character and residents’ connection to place (DeFilippis and Saegert, 2012). The traditional literature on migrant entrepreneurship primarily characterizes business owners as atomistic individuals seeking economic and social mobility. Conversely, recent scholars of migrant entrepreneurship have used an intersectional lens to identify more-than-economic motivations, illustrating how motivations are gendered, raced, and classed (Valdez, 2011). In this paper, I employ an intersectional approach to identify a particular subset of migrant entrepreneurs that are ‘place- and community-minded’. The tendency of scholars to only examine businesses through an economic lens obscures the communal contributions of these spaces. In contrast, this study highlights the community-centered practices that live underneath existing accounts of entrepreneurship. This study draws on two years of ethnographic fieldwork with the Brazilian community in Somerville. Starting in September of 2021, I not only regularly dined in these restaurants and interviewed owners, staff, and customers, but I also served as a Portuguese-language interpreter, technical assistance provider, and liaison between restaurants and local community development organizations.

Through the case of Brazilian restaurants in Somerville, Massachusetts, I argue that place- and community-minded small business owners cultivate networks of community care through their business spaces. This is a gendered process, with mostly women taking on the role of community caretakers. Furthermore, even when faced with an unprecedented economic crisis due to the Covid-19 pandemic, these place- and community-minded restaurants took on substantial debt and continued to nourish their networks of community care–countering economistic utility maximizing perspectives that would assume these restaurants would close their doors. Finally I argue that street-level bureaucrats are key to supporting these restaurants during crisis. Street-level bureaucrats will continue to play an important role for these spaces as they face ongoing challenges related to gentrification since the Covid-19 pandemic made even clearer the precarity marginalized communities face (Harper-Anderson et al., 2023).

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Keywords: Community Care, Intersectional Entrepreneurship, Latinx Placemaking, Covid-19, Street-Level Bureaucrats

THE FAILURE OF URBAN TRIAGE IN THE SHRINKING CITY OF YOUNGSTOWN, OHIO

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Individual Paper Presentation

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Planning for shrinking cities invariably involves grappling with resource constraints. Planners operating within these contexts must adeptly navigate through scarce resources that are in high demand. Among the plethora of challenges faced by planners in shrinking cities, urban vacancy stands out as particularly vexing. This issue is exacerbated by its sheer abundance, tangled legal ownership, public safety hazards, neighborhood decay, and economic downturns (Mallach, 2006). In many American shrinking cities, code enforcement and tax foreclosure represent two primary methods by which public sectors attempt to combat urban vacancy (Accordino & Johnson, 2000; Dewar et al., 2015). However, both approaches require substantial public funding, limiting the capacity of most Rustbelt municipal governments to address vacancies comprehensively due to their deteriorating fiscal circumstances. This brings about a question for municipalities, how to prioritize some urban vacancies for public intervention.

Urban triage offers a potential solution to complex urban resource allocation challenges. Essentially, it involves the prioritization and distribution of resources within urban environments, especially during emergencies or crises when resources are scarce and demand is high. While the concept of urban triage has faced criticism in planning literature (Kirkpatrick, 2015), it remains a central principle guiding planners, particularly in addressing spatial priorities in shrinking cities. Moreover, significant federal funding initiatives such as the Neighborhood Stabilization Program and the Hardest Hit Fund also adopt the principles of urban triage in their resource allocation strategies.

This study examines the implementation of the urban triage concept in the shrinking city of Youngstown, Ohio. From 2014 to 2015, collaborated with Youngstown Neighborhood Development Corporation, Youngstown City Government selected 13 out of its 34 neighborhoods, to have Neighborhood Action Plans (NAPs). We hypothesize that NAP neighborhoods were tipping points in Youngstown, which means that their conditions were in the middle among all the neighborhoods. We also hypothesize that, when compared with non-NAP neighborhoods, NAP neighborhoods would have a treatment effect after NAPs' implementation.

In order to testify these hypotheses, we analyzed longitudinal data from local property survey, county land bank and city government's demolition, American Community Survey (ACS) through difference-in-difference analysis. We have two major quantitative research findings: 1) among NAP neighborhoods, only a few qualified the tipping point criteria, some NAP neighborhoods are much better off than most other neighborhoods in Youngstown; 2) there is no significant treatment effects on NAP neighborhoods, when comparing with non-NAP neighborhoods.

We conducted interviews with informants in Youngstown to inquire their views on the quantitative research findings. We summarized four major explanations for our quantitative findings: 1) the selection of neighborhoods for NAPs was driven by political egalitarianism, aiming to appease constituents from various city wards, which resulted in a dispersed spatial distribution across the city; 2) the presence of a functional neighborhood association emerged as a crucial factor influencing the decision-making process regarding NAP allocation; 3) non-NAP neighborhoods developed alternative strategies to secure public resources to address urban vacancies,

demonstrating self-sufficiency in resource mobilization; 4) policymakers exhibit distinct priorities in addressing urban vacancies, which may not necessarily align with the focus on NAP neighborhoods.

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Keywords: Neighborhood planning, Urban triage, Urban vacancy, Shrinking cities, Demolition

THE IMPACT OF CLIMATE CHANGE ON RESIDENTIAL MOBILITY DECISIONS

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Individual Paper Presentation

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In recent decades, climate change has led to increasingly unpredictable and extreme weather patterns, stronger El Niño and La Niña phenomena, and a rise in the frequency and severity of natural disasters (Stott, 2016). The impacts of these events on housing and households have resulted in rising utility costs in certain regions, additional investments in disaster preparedness and retrofitting, higher premiums for homeowners' insurance, and increased home repair and maintenance costs (Martin, 2022; Perera et al., 2020). Increased financial burdens may negatively impact residents' physical and mental health, and/or motivate households to move to more affordable places regarding utility, maintenance, and insurance costs.

Research in displacement due to natural disasters is abundant, as is research related to adaptation and mitigation strategies responding to climate change. However, little is known of the impact of disasters and disaster perceptions, and rising financial costs on residential preferences in choosing a place to live, and whether extreme events play a role in influencing households' intent to move. To contribute to the literature on how climate change affects residential mobility decisions, the study starts with exploring the American Housing Survey (AHS) data between 2011 and 2021. Using the AHS, changes in electric utility expenses and homeowners' insurance cost shares among representative income brackets between 2011 and 2021 are calculated for the housing units occupied consistently by the same households. The 2021 AHS data for these households are then merged with the American Community Survey (ACS) 2018-2022 five-year estimate to take into consideration neighborhood characteristics. The temperature anomaly data at the county level since 1905 is then merged with the AHS and the ACS data. Correlation analysis between changes in utility and insurance costs and temperature anomaly is

conducted to account for the impact of climate change on these costs. Housing attribute variables, household demographic variables, neighborhood characteristics, utility costs and change in utility costs, insurance costs and their changes (if homeowners), and temperature anomaly are used in a series of logistic regression models to measure how utility and insurance costs relate to the mobility decisions of households by tenure status.

Preliminary results indicate that insurance and utility costs strongly correlate with county-level temperature anomaly. The results also indicated that there was a statistically significant association between insurance costs and homeowners' intent to move at the 0.10 significance level, while the effect of utility costs was not found to be statistically significant.

This study is a comprehensive review of how climate patterns relate to the mobility decisions of households. The study fills a gap in the existing literature on residential mobility, where the climate factor is not traditionally considered (Li, 2012). Residential mobility influences urban planning decisions and community stability, and identifying the climate change factors will help planners and politicians better prepare for population change in local communities.

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Keywords: Climate Change, Residential Mobility, Temperature Anomaly, Utility Costs, Insurance premium

UNEVEN URBAN PROCESSES & PLACEKEEPING IN MINNEAPOLIS

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Individual Paper Presentation

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Placemaking reflects a planning approach which often centers planners and developers as the stewards of urban space. Placemaking advocates may engage with community members and try to address their interests. But top-down revitalization plans can lead to an "unmaking" of places, which recreates racialized and socioeconomic inequality (Moran & Berbary, 2021). By contrast, placekeeping, a concept drawn from Indigenous planning and urban ecology, offers an alternative approach to redevelopment (Marceau et al. 2023; Tuck & McKenzie, 2015). I draw from scholarship that demonstrates how communities maintain deep connections to the places they come to

know (Jojola & Shirley, 2020) and how they work to prevent displacement from speculative reinvestment and rising property values (Davison, 2013). A placekeeping approach looks at how shared ownership, collective governance, and an equitable distribution of the benefits of redevelopment can be realized.

I look to the East Phillips neighborhood of Minneapolis as a case study to understand how community organizations use the logics of placekeeping to rectify past and ongoing environmental injustices. In East Phillips, a site called the "arsenic triangle" due to high levels of contamination and industrial polluters have subjected the primarily Latine, Black, and Indigenous communities to disproportionate environmental hazards and unequal health outcomes. East Phillips-based organizations are engaged in efforts to protect the communities against polluters and repurpose the contaminated site to become a community hub and urban farm. As communities struggle with ongoing redevelopment, East Phillips provides insight into how communities might restore past losses, protect against present threats, and build towards more just futures. Specifically I ask:

How have past planning decisions and development processes shaped the landscape of East Phillips?

How do East Phillips-based organizations and activists use the logics of placekeeping to navigate contemporary redevelopment efforts?

I use document analysis, interviews, and participant observation, as complementary methods to examine these questions. I first evaluate planning reports, maps, news articles, meeting transcripts, and website content to help trace past planning decisions and development processes in neighborhoods to the contemporary conditions of community redevelopment. I then draw on interviews and participant observation to explore how community-based organization staff and neighborhood activists understand placekeeping and use associated strategies and tactics to advance their redevelopment plans.

This research first draws a structural link between past uneven urban development and present conditions in racialized communities. I suggest that industrial siting decisions and racialized urban development processes created the environmentally hazardous landscape that makes up the East Phillips neighborhood. Secondly, I demonstrate how communities resist and disrupt planning processes to assert their own visions for their neighborhoods. I find that the East Phillips Neighborhood Institute (EPNI) serves as a place-based organizing hub for multiple movements in the neighborhood. By occupying, litigating, and eventually purchasing the contaminated site from the city, EPNI has inspired other placekeeping initiatives across the neighborhood. East Phillips organizations are now engaged in ongoing processes to structure their redevelopment in a way that shares ownership with community members and minimizes displacement. Thus, placekeeping serves as an alternative way that communities may maintain their connections to place and defend against further environmental injustices.

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Keywords: Placemaking, Placekeeping

URBAN REGENERATION AND GENTRIFICATION OF THE CREATIVE COMMUNITY

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Individual Paper Presentation

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Urban regeneration, a major task in China's current stage of urban development, will inevitably lead to gentrification with the enhancement of the living environment, spatial quality, and urban culture. It has been a vital challenge for authorities and developers how to achieve social equity, safeguard the interests of aboriginal people, and realize win-win benefits for stakeholders in urban regeneration. Towards this issue, previous studies focus on the causal inference of gentrification in urban regeneration programs in terms of political and economic laws. Still, there are research gaps in theory-practice transformation driven by the dynamics of communities for coping with gentrification. This study takes as a sample case the Ceramic Art Avenue Taoxichuan in Jingdezhen, a revitalized compound in the downtown area of a Chinese city that once flourished for the collective ceramic industry before the 1990s. With analyses of its industrial heritage transformation, this research aims to explore the implantation of cultural and creative industries with comprehensive consideration of the public service for the surrounding community, especially for young creators' entrepreneurship and accommodation, to protect the interests of most stakeholders, and to propose relevant regeneration strategies dealing with the negative impacts of gentrification from planning to design.

This study adopts a combination of qualitative and quantitative research methods. On the one hand, semi-structured interviews and field surveys are used to obtain the demands of multiple stakeholders in the creative community and to analyze the social network. On the other hand, pre- and post-urban renewal data from existing policies, social media reports, and other research are quantitatively analyzed to form a cognition of the political, economic, and spatial conditions at different stages of gentrification. By logical reasoning in multidisciplinary fields, this research explores the phenomenon of gentrification in the creative community to support the foundation of a replicable coping method for urban regeneration.

There are findings through this research. The creative class represented by Jingdezhen drifters promotes the transformation of Jingdezhen's ceramic industrial structure, which reveals the unitized production mode matches cultural and creative industries. However, through gentrification in Jingdezhen's urban regeneration process, some unexpected upscale development leads to the marginalization of the ceramic creative class. Accordingly, community vitality is affected by the transformation of the social production network structure, dominance of the commercial industry, and implantation of middle-class culture. Based on these laws of spontaneous operation of the creative community in Jingdezhen, it is effective to cope gentrification tendency with a "market-assisted state-led mode" by methods from planning to design: small-scale capital participation in the frame of the state-led economy to avoid homogeneity; enhancement of local culture in the process of spatial quality improvement to restrict the development of luxury; promotion of the industrial chain of the production-oriented community, highlighting the creative class as the "direct producers" in industrial and social manipulation. These strategies effectively intervene in the process of gentrification, improving the economic efficiency of the industry while optimizing cultural identity, spatial quality, and social engagement from the perspective of most stakeholders.

This research provides a theory-practice transformation on responses to the development tendency of the creative community in urban regeneration. It establishes a new systematic design method for coping with the negative

influence of gentrification in developing countries. At the same time, from a perspective of social equity, it further discusses the phenomenon and mechanism of gentrification in communities verified by solid foundations from investigation into urban regeneration programs, which supplements the theoretical system of gentrification in a broader sense.

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Keywords: Gentrification, Urban regeneration, Creative community, Jingdezhen, China

WHAT CAN RURAL PLANNING LEARN FROM COMMUNITY DEVELOPMENT?

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Individual Paper Presentation

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"In their Introduction to the Routledge Companion to Rural Planning, Scott, Gallent, and Gkartzios (2019, 1) point to "an urgent need to reinvent rural planning for the 21st century," yet the challenges facing rural areas have not been much reflected in planning scholarship, practice, or institutions (Hibbard and Frank 2021). As one aspect of that reinvention we have called for the field of planning to pay greater attention to rural communities and to "take a more broad-based view of development, to include not only economic growth but also social, cultural, environmental, and political equity and well-being" (Hibbard and Frank forthcoming).

Planning widely understands itself to be a derivative field that borrows and synthesizes from other fields. As a result, these fields have been rich sources for assessment, innovation, and expansion. Here we examine lessons and opportunities that can be drawn from one such cognate field that has particular relevance for rural planning: community development.

According to Rios et al. (2021), the planning field's connection to community development has primarily been for urban equity concerns. However, they noted that the other significant branch of community development is rural community development, which "grew out of self-help activities of late-nineteenth-century rural life…[with] ties to the U.S. Department of Agriculture, land-grant institutions, and educational associations" (2). This branch is still going strong within the nation's Cooperative Extension System, among others. Similarly, we have found through explorations of planning history that creating and strengthening rural communities, with associated rural cultures and ways of life, was a prominent focus of American planning in the early 1900s, but largely disappeared from the field by the latter half of the century (Hibbard and Frank 2021). In this paper we thus search further, surveying the field of community development and its cognates for possible sources to strengthen today's rural planning and reunite the fields.

Our paper begins with a background discussion of the definition of planning and its possible openness to lessons from the field of community development. We also present a conceptual framework for analysis. Planning theorists have noted key dimensions of the field, such as Hightower's (1969) classic dichotomy of planning entailing substantive and procedural aspects. Expanding on this and others, we explore the planning and community development fields through a framework of three recursively linked elements: disciplines, professions, and institutions.

We then apply this framework to assess the current state of rural community development in the fields of community development, planning, and cognate fields. We ask: What is the current state of the community development field with respect to rural communities, particularly its knowledge, practices, and institutions? How does the field of rural planning connect with rural community development? What other cognate fields connect with rural communities and community development, and how do they conduct rural community development? To answer these questions, we conducted literature reviews and thematic analyses of web-based information about rural community development, rural planning, and cognate fields.

Next we examine a set of US-based case studies to understand the rural planning/community development nexus. The range of cases emphasize each field acting separately and together, drawing on concrete instances to illustrate and clarify the substantive knowledge, practices, and institutions involved, and their recursive relationships.

Finally, we offer to rural planning the lessons and opportunities from community development, to leverage and connect each field's strengths in terms of disciplines, professions, and institutions. To further facilitate self-reflection within the planning field, we compare and contrast paradigms drawn from theories of planning and community development."

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Keywords: rural planning, community development

WHAT GOOD IS A GOOD? HOW THE CAPABILITIES APPROACH INFORMS EQUITY PLANNING

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Individual Paper Presentation

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For the last several decades, planning theory's focus has begun to shift away from neutrality and efficiency and toward value-based approaches that prioritize just and equitable outcomes. In this vein, one major equity-oriented framework relating to distributional justice is the Capabilities Approach (CA) developed by Amartya Sen. The CA can be used as a measurement tool that looks beyond a traditional ends-evaluation process of cataloging and measuring resources (what Rawls calls "primary goods"). Instead, it seeks to identify the real freedoms and capabilities people have to convert their resources in pursuit of a life of human dignity and flourishing, in this way sharing a common goal with equity planning.

By design, the CA is a non-prescriptive framework meant to involve a community of stakeholders in deliberative processes to help decide which capabilities should be prioritized and measured. Therefore, application of the theory requires a translative process of operationalization. In a planning context, it has been deployed in divergent ways that are often fragmented and inconsistent with the spirit of the CA, often neglecting key aspects required to maintain a priority focus on measuring (and increasing) capabilities. In this context, this paper will consider the following question: how can the CA be operationalized in a way that both honors the intent of Sen's focus on increasing well-being through a capability lens and allows room for researchers and communities to have context-specific flexibility in their application of the approach?

To help answer this question, a comparative case study analysis of three research projects will serve to illustrate distinct applications of the CA. In the first project , Biagi, et al.'s 2018 study in the city of Alghero, Italy combined mainstream Qualify of Life empirical modeling with the CA in order to investigate residents' perceptions of well-being. In the next project, Speak (2012) examined the Bhalaswa relocation colony in Delhi by applying a "real life" methodology based on a feminist approach that privileges the voices of marginalized groups and local knowledge. Finally, Cooke, et al (2022) set out to make transportation-policy recommendations for planners in three African cities, but they ended up shifting their focus because of the unexpected complexity of the results of their interviews which were conducted using a CA-based methodology.

The case study analysis identifies both possible pitfalls to be avoided and exemplars to be expanded upon and further investigated in the operationalization of the CA. The elements of these studies which most closely follow the CA employ data collection methods that seek to understand the authentic, lived experiences of their research participants, focusing on substantive freedoms available and motivations behind actions taken in order to identify the factors involved in converting primary goods and available resources into a form of well-being. This sort of CA-based methodology serves to complement and extend the use of aggregated indices and other similar approaches often used to measure quality of life and happiness. Sen and others have pointed out that while these methods produce readily actionable data points, they can also obscure crucial information relating to motivations, to the presence or absence of genuine choices, and to often detrimental opportunity costs.

A key implication of adopting a CA-based methodology for which this paper argues is the potential to provide more relevant information and clearer understanding to planners and policy makers so that they can direct resources to further equity. Additionally, data from this methodology may lead to an expanded scope of the planner's role as they recognize that their work will not "end with the provision and maintenance of [a] good" but instead could extend to increasing capabilities (Basta 2016, p. 204).

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Keywords: Capabilities Approach, Equity Planning, Qualitative methodology

YOUTH KNOW THEIR PLACE: LESSONS FROM WALK MY BRICKS PROJECT

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Individual Paper Presentation

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Youths are a powerful but rather untapped resource regarding community change and in co-producing knowledge of inclusive spaces in communities. Youth-centered participatory action research provides more than just where they go to play or socialize, but further challenges the production of knowledge involved in producing visualizations and delineating socio-spatial assemblages (Baker et.al., 2019). Youth engagement may uncover how our historical past is intertwined with decisions of the present and future investments and what constitutes a just future (Swords et al., 2019). In doing so, youth participants can take an active role in utilizing storytelling as a critical approach to reimagining alternative visions of the future of the community (Ortiz, 2022). The article seeks to answer the following questions: 1) How might we engage youth in a storytelling approach to making sense of their environment? 2) To what extent can storytelling through a youth-centered participatory approach uncover alternative knowledge of communities? and 3) In what ways can a youth-centered storytelling approach contribute to planning and designing intergenerational public spaces?

We draw from the experience of co-developing a youth-led community walk and tour program in Oakridge Neighborhood in Des Moines, Iowa. This includes working with undergraduate students in a Sustainable

Transportation class to conduct neighborhood walking assessments with youths in the community, subsequent participatory mapping and storytelling workshops, and interviews with program coordinators spanning two years. Youth leading the tour participate in a collective healing potential by telling their stories (Ortiz, 2022). In response to a tragic loss in the community, youth share how they make stronger connections to memories through caring for their treasured spaces within the neighborhoods–potentially furthering a call for 'therapeutic planning' practices (Sandercock, 2023). Further understanding of youth-centered spaces also contributes to producing intergenerational spaces (Nelisher and Sideris, 2023) as an outcome of planning and designing inclusive public spaces.

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Keywords: participatory action research, youth, community development, coproduction

Track 2 Research in Motion (RiM)

CHILDREN'S FOUND PLAYSPACES IN VARIOUS HIGH-RISE GATED COMMUNITIES IN CHINA

Abstract ID: 1110.0.0.817.2024
Research-in-Motion (RiM)

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Rapid urbanization in China has resulted in an increase in high-rise buildings as a response to rural-urban migration. High-rise residential communities are the most common form of urban development in most first-tier and second-tier Chinese cities (Karsten, 2015). As of the end of 2019, there were over 260,000 high-rise residential buildings in China, making high-rise living typical for families. The transition from traditional low-rise to high-rise communities has resulted in changes to the private spaces and lifestyles of Chinese families, particularly children (Ekblad, 1990). Housing areas are among the most accessible spaces for children's play, and as they tend to spend most of their time in their communities, their outdoor play environments and experiences have also been affected.

Children's play in gated communities usually takes place in constructed or found play spaces. The constructed play spaces are designed specifically for children and often consist of a kit, a fence, and a carpet: a kit of fixed play equipment; a fence ostensibly to keep children within the space; and a carpet of rubber surfacing (Woolley, 2008). However, these sorts of play spaces experience limited use and are often occupied only at peak times. There is evidence that children do not only play in constructed spaces; they also play in found spaces, which might reflect that children will play anywhere and that children's preferred spaces go beyond these constructed ones (Whitzman & Mizrachi, 2012). In past traditional neighborhood communities, identified found play spaces include roads, pavements, car parks, paved areas, public grass, gardens, wild areas, planted areas, access areas as well as walls, fences, and the flat roofs of garages (Hole, 1966). This raises the question: Within high-rise gated communities, where do children play beyond constructed play spaces?

This research critically examines the intersection between children's needs and the urban planning practices that shape their play environments in high-, medium-, and low-income high-rise gated communities in Nanjing, China. Informed by 368 interviews with adults and children from various families, as well as informal observations, the findings reveal that over 50% of children engage with found play spaces—areas often overlooked in the urban context. The study investigates how children discover and interact with found spaces, and how their selves, and familial attitudes influence their use of found play space. Additionally, the research develops an assessment tool designed to identify and categorize the typologies of found spaces, evaluating their play value from a designer's perspective.

This research critically examines the intersection between children's needs and the urban planning practices that shape their play environments in high-, medium-, and low-income high-rise gated communities in Nanjing, China. The findings, informed by 368 interviews with family adults and children and informal observation, reveal over 50% children have their found play spaces but which are often overlooked areas within the urban context where children play. The study investigates how children discover and interact with found spaces, and how their selves, and familial attitudes influence their use of found play space. Furthermore, the research creates an assessment tool to identify typologies of found spaces and evaluate their play value from a designer's perspective.

Both qualitative and quantitative findings suggest that these intentionally designed spaces may not sufficiently cater to the spontaneous play behaviors and preferences of children. The interviews indicate that children rely heavily on found spaces, highlighting a discrepancy between the constructed play environments and the actual needs of children. This challenges the common belief that constructed playgrounds should be the only or primary venues for children's play.

To develop communities in a more child-friendly manner, this research encourages urban planners and designers to broaden their perspectives beyond merely constructed play areas. It advocates the consideration and integration of found play spaces into urban planning strategies. This shift aims to acknowledge and value children's needs and voices within urban planning. Adopting this approach not only enhances the quality of life for young residents but also fosters a more inclusive and engaging community for all. This research seeks to influence the guidelines of the Standard for Urban Residential Community Planning and Design in China, steering them towards a more child-friendly direction.

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Key Words: Children's outdoor play, Children's play spaces, Child-friendly Design, Outdoor play, High-rise Gated Communities

COMMUNITY-DRIVEN RESILIENCE HUB PLANNING: A MULTI-CRITERIA APPROACH

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Research-in-Motion (RiM)

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Amidst the escalating threats of natural disasters and extreme weather events, community resilience hubs have emerged as pivotal in enhancing localized resilience efforts (Shea, 2018). The significance is pronounced in geographically isolated regions, such as the Pacific Islands, where the logistics of emergency aid delivery are notably challenged by distance and accessibility, underlining the criticality of localized resilience efforts. Leveraging community assets (George et al., 2022), resilience hubs serve dual roles: as community resource centers during normal times and as emergency aid nodes during disasters (Roode & Martinac, 2020). Despite the acknowledged importance of community engagement in the development and operational phases of these hubs, research predominantly focuses on physical components such as the infrastructure and utility of these hubs, overlooking the social dynamics and community perspectives (USDN, 2019). This study addresses this gap by exploring community perceptions and preferences on the functionality and siting of resilience hubs on O'ahu, Hawai'i, using a GIS-based multi-criteria framework that integrates Multi-Criteria Decision Making (MCDM) with insights from a survey of 416 residents and 129 identified potential hub sites. The framework, enhanced by expert opinions and community workshop findings, evaluates factors such as community support, hazard vulnerability, and accessibility to prioritize sites for resilience hub development.

Findings suggest a heightened reliance on resilience hubs during emergencies, with a marked preference for their development among rural communities as opposed to their urban and suburban counterparts. The support level and preference factors also differ by location. The distinctive preference of rural communities for the development of resilience hubs underscores the necessity of tailoring hub functionalities and services to accommodate the unique needs and challenges of different community settings. This differentiation highlights the importance of

inclusive planning processes that engage a broad spectrum of community stakeholders, ensuring that resilience hubs are both accessible and responsive to the diverse needs of urban, suburban, and rural residents alike. These insights carry profound implications for the design and operational strategies of resilience hubs, shaping their infrastructure, functions, and offerings to better meet community needs.

By presenting a systematic framework for evaluating potential resilience hub sites, this research offers valuable insights and tools for policymakers, urban planners, and community organizations, aiding in informed decision-making to enhance community resilience. Given the increasing threat of natural disasters, the framework and findings from this study provide a scalable model for resilience hub development that could be adapted by other regions aiming to strengthen their disaster preparedness and response strategies.

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Key Words: Community Resilience, Resilience Hubs, Multi-Criteria Decision Making, Community Perspectives

EXPLORING THE ROLE OF SOCIAL INFRASTRUCTURE IN FOSTERING ECONOMIC TIES

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Research-in-Motion (RiM)

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Income inequality and social polarization hinder economic mobility. Research shows that differential opportunities in residents' neighborhoods impact upward income mobility (Chetty et al., 2014; Chetty & Hendren, 2018). There is a growing recognition of the role that social infrastructure in the built environment can play in addressing such disparities (Florida, 2017; Latham & Layton, 2019; 2022; Nelson et al., 2022). In this context, public land grant universities in the US are uniquely positioned with a pivotal mission: to ameliorate social inequalities and foster economic mobility, especially among individuals from lower-income strata. One of the strategies to achieve this mission is to invoke the role of the local state through the deliberate creation of infrastructural opportunities that catalyze connections between individuals across income levels, thus facilitating the dissemination of information via social capital channels (Warner, 1999; 2001). Despite the importance of this goal, more research is needed on how public land-grant universities can create an environment that promotes diverse interactions and learning experiences. It is still being determined whether campus design can be used to enhance connectedness in these

institutional-built settings. Therefore, there is a strong need for further investigation into the specific elements of the built environment that either hinder or facilitate interaction opportunities (Chetty et al., 2022a; b).

To address the literature gap, this study is a qualitative research inquiry complemented by the method of data triangulation, which centers on the hypothesis that strategic campus planning plays an instrumental role in promoting interconnectedness among campus users. I use five public land grant universities as the case studies. Social capital measures used in the study are drawn from the Social Capital Atlas, an open-ended data source. I begin with the institutional master plans as artifacts for inductive reasoning strategy to answer the first research question: 1) How are public universities using campus design to enhance user connectedness? Next, with an online questionnaire survey and semi-structured interviews with administrators, university architects, and planners, I focus on the second research question: 2) What difficulties do administrators and planners encounter in their campus planning endeavors to encourage user connectedness? Considering the value proposition of the concept of 'third spaces' in campus planning endeavors (Butler & Diaz, 2017; Kane & McDuffie, 2018), with the third research question I explore 3) How are 'third spaces' incorporated into campus design and what role do they play in enhancing connectedness?

Through a rigorous qualitative comparative analysis, the research findings are anticipated to yield actionable insights, informing strategic campus planning initiatives that bolster social equity and educational efficacy within the context of public land-grant universities. The study endeavors to arm campus planners and capital improvement project managers with empirical evidence to guide investments in creating inclusive campuses that transcend social class divides. Further, it delineates the decision-making processes that underlie strategic planning; the study seeks to reconcile institutional ambitions with public expectations, aligning infrastructural development with the overarching goal of social integration. Thus, the implications of this research are manifold, extending beyond the academic discourse within the planning practice. Lastly, the insights gleaned from this study are anticipated to enrich our comprehension of how planning initiatives can be effectively harnessed to enhance social inclusivity and diversity, thereby contributing to the broader discourse on educational equity and community engagement within higher education settings.

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Key Words: Social Infrastructure, Bridging Social Capital, Campus Planning, Economic Connectedness, Public land grant universities

GRASSROOTS VERSUS INCLUSIVE INNOVATION: LESSONS FROM NEW YORK CITY, USA

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Research-in-Motion (RiM)

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Refashioning city centers and commercial districts into innovation-igniting urban developments (Zandiatashbar and Kayanan, 2020) such as creative clusters, technology zones, clusters of innovation, and innovation districts for boosting economic competitiveness and growth in the knowledge-based economy is a widely adopted urban development practice. Innovation districts (Katz and Wagner, 2014) that host clusters of knowledge-based organizations (firms, universities, research institutes, etc.) in mixed-use, amenity-rich, and transit-served settings for facilitating encounters and interactions across diverse knowledge workers and networks and boosting innovation have emerged as a popular 'traveling planning concept' (TPC). In addition to attracting external economic investment and high-skilled technology workers, innovation districts are also considered desirable from a sustainable mixed-use urban development perspective.

However, studies of Silicon Valley and other cities such as Boston, MA, St. Louis, MO, and Buffalo, NY (Zandiatashbar and Kayanan, 2020) have demonstrated that innovation-fostering mixed-use and amenity-rich clusters erode affordability and displace and exclude underserved people and communities in their vicinity. Gómez and Oinas (2022) suggest that 'landing processes'—the interventions through which a TPC is adjusted to suit local conditions and developmental objectives—are key for ensuring local innovators, small businesses, and underserved communities and residents are included in innovation-oriented economic development initiatives typically designed for embedding external investors and high-skilled workers into the local economy.

In this research, I employ mixed methods (observation, semi-structured interviews, and secondary data analysis) to document place-based and grassroots innovation initiatives in New York City, such as collectives and cooperatives that connect and support local innovators and businesses and facilitate innovation-in-place. I compare and contrast the grassroots innovation processes of worker cooperatives affiliated with the New York City Network of Worker Cooperatives (NYC NOWC) with the innovation district "landing processes" commonly used to mitigate adverse effects such as vulnerable community displacement and economic exclusion. Examples of commonly used landing processes include school-to-work programs, resident upskilling to unlock access to low-to-medium skilled job opportunities within innovation districts, and allocating affordable workplaces for local businesses and start-ups within innovation districts.

Since over ninety percent of NYC NOWC's 70 members are women-, immigrants-, and people of color-owned worker cooperatives, NYC NOWC is a robust site for collectively examining NYC-based grassroots innovation-in-place practices. NYC NOWC members' grassroots innovation practices include leveraging community assets such as social capital and place identity of underserved communities and locations, expanding business-grade broadband infrastructure, micro-financing, and incubating home-based businesses in marginalized locations to facilitate innovation-in-place, among others. I conclude by discussing intersections between grassroots innovation initiatives and asset-based community development initiatives (Gomez, 2021; Kretzmann and McKnight, 1993), and the need to foster both grassroots innovations and inclusive landing processes that facilitate access to jobs and economic opportunities in innovation districts.

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Key Words: Grassroots Innovation, Asset Based Community Development, Innovation-in-Place, Worker Cooperatives

RACIAL DISPARITY IN NEIGHBORHOOD ASSOCIATIONS: ASIAN PORTLANERS PERSPECTIVE

Abstract ID: 1110.0.0.665.2024
Research-in-Motion (RiM)

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As the United States becomes more culturally diverse due to globalization and an increase in immigration, the strategies of community engagement based on deliberation face the challenges to inclusion for people with diverse cultural backgrounds (Bernstein and Norwood 2008; Melendez and Martinez-Cosio 2019). Therefore, many scholars and practitioners have made an effort to mitigate exclusion by including people with marginalized identities in decision-making. For example, Community Connect (2008) suggested “an increase in the number and diversity of people involved in their communities” as the first goal of a “comprehensive road map for strengthening Portland’s civic life”. Then, the Office of Community & Civic Life in the City of Portland, practically, has contributed to organizing and capacity building of historically under-engaged groups, and training for the staff and leaders who are working with people of color, immigrants, and refugees (De Morris and Leistner 2009).

Despite these efforts, community engagement in the United States is still dominated by white middle-class males (Melendez and Hoff 2022). This is because people focus more on quantifying how many under-engaged groups participate in community engagement, but do not pay attention to giving them substantial power (Goetz et al. 2020). Indeed, Meléndez and Martinez-Cosio (2019) observed a participatory budgeting process, which mainly used English, and claimed that the role of a translator is not enough to give Spanish-speaking Latino immigrants power in decision-making. Since translation takes time, Spanish-speaking participants should speak shorter than English-language participants, and the flow of communication puts them be a position that respond to Ensligh-speaking participants rather than lead the conversation (Meléndez and Martinez-Cosio 2019).

East Asians in the United States, especially, could encounter barriers to community engagement due to the stereotypes against them, their cultural characteristics, and their identity as a marginalized group. In terms of

stereotypes against Asian Americans, for example, the perpetual foreigner stereotype can make Asian Americans appear ineligible to participate in the "American" decision-making process (Lee et al. 2009; Lee et al. 2021). In addition, the model minority stereotype can lead Asian Americans to be excluded from discussions about the inclusiveness of community engagement by presupposing that they are already well engaged (LAAUC 2021; Lee et al. 2009). Furthermore, since the deliberative democracy discipline is Western-centric (Dissanayake 2003), the studies on community engagement tend to lack consideration of the cultural characteristics of non-Western countries.

In this regard, this study aims to explore the racial disparity of community engagement from the perspective of East Asians. This study especially focuses on neighborhood associations and East Asians who live or work in Portland, Oregon to answer two research questions: (1) How many East Asian Portlanders are actively involved in neighborhood associations? (2) What factors influence their participation or non-participation? Using the mixed method approach, this study found that East Asian Portlanders are underrepresented in neighborhood associations. A significant barrier to initial participation was the mismatch between the characteristics of neighborhood associations and those of Asian Portlanders, such as language, culture, socioeconomic factors, and values. The initial exclusion from neighborhood associations not only precludes individuals from achieving the positive benefits, such as self-efficacy and social bonds that can be derived from community engagement, but it also fortifies neighborhood associations to be more favor to the interests and needs of the current participants, thereby perpetuating the exclusion of Asian Portlanders.

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Key Words: community engagement, neighborhood association, East Asian, Portland

THE IMPACT OF CULTURAL REGENERATION ON PLACE IMAGE AND REVISIT INTENTION

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Research-in-Motion (RiM)

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In 2023, South Korea's total fertility rate is 0.72, the lowest among the 38-member countries of the OECD. In response to the population decline crisis, the Korean government enacted a special law in 2023 and designated 89 local governments as depopulation areas, providing administrative and financial supports. The declining local cities are investing in culture and tourism, and are making various efforts to improve living conditions and revitalize their cities through diverse regeneration projects.

The Ministry of Culture, Sports and Tourism is promoting the Cultural City Project to create a city brand by utilizing the unique cultural assets of the region. Cultural and artistic assets are important to revitalize local areas and improve their competitiveness in conjunction with local tourism projects. However, cultural tourism development projects that are proposed without comprehensive understanding of places are producing negative results such as budget waste and abandoned place.

Yeongwol Y Park, located in Yeongwol-gun, Gangwon-do in South Korea, is a complex cultural space that recreated an unused space that had been neglected due to the failure of a public tourism project into a space that utilizes local cultural assets. This study intends to examine the impacts of cultural regeneration factors using an unused space on visitors' place image and revisit intention with a case of Yeongwol Y Park, and to suggest implications for cultural regeneration projects.

This study has reviewed previous studies to organize the constructs and indicators of cultural regeneration, place image, and revisit intention. Cultural regeneration factors include the factors of cultural facilities, cultural events, and local cultural industries. Place image consists of the factors of attractiveness, friendliness, and interest in the place. Revisit intention encompasses personal revisit, family and coworker revisit, and intention to prioritize the place over other places.

The sample of visitors who visited Yeongwol Y Park more than once is stratified to consider the proportion of visitors by gender and age. The proportion of the population by gender and age is calculated utilizing the big data provided by Korea Tourism Data Lab of the Korea Tourism Organization. As a result of the survey, the number of respondents consists of 316 men and 234 women, totaling 550 respondents. A structural equation modeling is employed to investigate the direct and indirect relationships between cultural regeneration factors, place image, and revisit intention.

Among the cultural regeneration factors, the factor of cultural facilities shows a significant positive effect on three factors of place image and revisit intention. The factor of cultural events is expected to have a significant effect on place image and a marginal effect on revisit intention. The factor of local cultural industries is expected to have a positive impact on place image, but no direct impact on revisit intention. Cultural facilities factor shows the highest impact on revisit intention among three cultural regeneration factors, while other factors have marginal impact on revisit intention.

It is evident that cultural facilities that are culturally recreated utilizing neglected places are perceived as friendly, interesting and attractive places, which creates a new image of the places and increases the intention to revisit. Both the factors of cultural events and local cultural industries, however, have a positive effect on place image, but it does not seem to have significant impact on revisit intention mainly due to the limitation of a local small city and the lack of tourism infrastructure.

Citations:

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Key Words: unused space, cultural regeneration, place image, revisit intent, structural equation modeling, Yeongwol Y Park

Track 3 – Economic Development

Track 3 Pre-Organized Session Summaries and Abstracts for the Sessions

NEW INDUSTRIAL PATHWAYS, PARTNERSHIPS, PROCESSES, AND PLANNING CHALLENGES
Abstract ID: 1112.0.0.166.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.317.2024, 1108.0.0.296.2024, 1108.0.0.176.2024, 1108.0.0.417.2024

Carl Grodach [Monash University] carl.grodach@monash.edu, organizer

This pre-organized paper session brings together scholars from the US, Canada, Germany, and Australia to explore the pathways and challenges to low-carbon and socially inclusive industrial policy. There is an urgent need to identify routes toward more inclusive and climate-resilient industries and industrial spaces. How can planning forge new pathways, partnerships, and processes for low-carbon and socially inclusive industrial development? Existing industrial policy agendas lean toward technological innovation and high skilled jobs. Simultaneously, competing priorities particularly around housing provision put pressure on retaining and growing key industrial lands, functions and workforces (Aderneck 2023). These conditions neglect important segments of industrial activity and threaten sustainable industrial transitions.

Emerging adaptations to industrial lands and core industrial activities in cities, and particularly those along coastlines or in low-lying coastal zones (Witte et al. 2020), intersect with mounting social, ecological and economic imperatives and their industrial legacies. Planning, management, and governance policies for contemporary industry require better understanding of the diverse activities, workforces, and paths toward more climate adaptive infrastructure (Chang and Förster 2023). At the same time, decarbonizing industrial sectors must confront the realities of planning and development politics and planning regulations, which are often out of step with new equitable industrial futures (Dierwechter and Pendras 2023; Grodach and Martin 2021).

This session will examine the planning and policy challenges toward socially just, decarbonized industry development alongside the emerging partnerships, processes, and solutions from an international comparative perspective. The papers presented in this session draw on a range of methods including qualitative case-based approaches, mixed-methods research, and policy analysis.

Learning Objective(s):

- Identify planning challenges toward more equitable and sustainable industrial policy.
- Identify potential planning strategies for more equitable and sustainable industrial policy.

VIABILITY OF MISSION-BASED MODELS FOR INDUSTRIAL LANDS IN VANCOUVER (CA)

Abstract ID: 1108.0.0.317.2024
Pre-Organized Paper Presentation

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This contribution discusses the challenges faced by tenants of the productive processes following mission-based models of land use management and economic development for industrial functions in the context of the Canadian city Vancouver. The city of Vancouver confronts challenges like many other urban centres and grapples with forces that gentrify or displace industrial uses (Sprague & Rantisi, 2019). Despite attempts to address these concerns through spatial measures such as updated planning processes and zoning plans at municipal and regional levels (MVRD, 2020), local businesses are still under pressure.

To help illustrate experiences of local industrial business operations enabled through the portfolio-oriented efforts of the non-profit called Community Impact Real Estate Society (CIRES), this presentation builds on a pilot project exploring sustainable adaptation of urban and industrial lands (Chang & Foerster, 2023) and draws on content analyses from interviews, policy, and report documents from 2022 and 2024 to provide examples and deeper insights. The aim of this work is to discuss opportunities and challenges resulting from approaches aiming to balance the integrity of industrial functions and local demands for housing. Not only does this approach nod towards an emerging and social type of mixed-use approach to developing industrial lands, but it also shines a spotlight on the question: Which alternative and productive processes are possible to balance the economic and social sustainability of industrial lands? What differences or similarities are reflected in the perspectives of tenants that benefits from socially impactful or mission driven local economic development processes or programs? What spatial or planning policy considerations arise from these alternative and productive processes?

Beyond sharing ongoing experiences in Vancouver, this contribution aims to engage in ongoing debates on how communities might could “make green-city strategies bluer” (Dierwechter & Pendras, 2023, p. 163). The combination of practical and policy insights will interrogate and invite other scholars to consider what their public administrations are already doing or could also do to enhance the benefits of portfolio-oriented but spatially sensitive approaches in their communities. By doing so, we contribute to building awareness for means towards lowering thresholds for local industrial business and initiatives wishing to anchor social value through productive functions on industrial lands.

Citations:

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Keywords: industrial land, social inclusion, urban planning, urban management

PLANNER PERCEPTIONS AND IMAGINARIES OF INDUSTRIAL LAND USES IN AUSTRALIA

Abstract ID: 1108.0.0.296.2024
Pre-Organized Paper Presentation

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In this research we interrogate the changing nature of urban industrial activity and the role of urban planning in shaping new industrial futures. Urban planning policy is a critical and yet often neglected factor in the landscape of urban industrial activity. Historically, policy aimed to protect and facilitate industrial activity largely to minimize conflict with other land uses and maintain viable spaces for industrial activity (Hurley et al 2023). However, the nature of industrial activity and work are changing, with new modes of production, hybridized business models, and increasing competition for land that have implications for urban sustainability more broadly (Grodach et al 2023). In this context, we focus on the ways in which planning professionals conceptualize, grapple with, and manage changing industry, investigating how they imagine the needs of current and future urban industrial land. Planning imaginaries are normative concepts of the way things are and should be. They are constantly negotiated and reconstructed within and between communities and are often tacit and taken-for-granted, at times escaping critical reflection (Davoudi et al. 2018). Interrogating planning imaginaries provides insight into how planning professionals and urban elites conceive of desired futures and how they may wield the power of planning in achieving this (Jensen et al 2013).

We examine the dominant narratives, tensions, and conflicts behind planning imaginaries through the lens of contemporary industrial activity and planning in Brisbane, Sydney, and Melbourne, the three largest cities in Australia. Through 32 semi-structured interviews with planning professionals, we aim to explore the professional understanding of industrial activity and its dynamics, and imaginaries of the particular role of industrial land planning and management. Thematic analysis is deployed to identify latent themes invoked by interviewees when discussing planning for industrial land uses, specifically focusing on instances where planning imaginaries were expressed (Xu and Zammit 2020; Davoudi et al. 2018).

Professionals characterize the landscape of industrial planning in varied ways including a traditional focus on protecting and containing industry; revitalisation and diversification of industrial landscapes; embracing the future of new industry; and looking at industrial land as obsolete. There is also considerable conflict and competition between narratives in practice. The combination of imaginaries directly impinges on how different cities pursue industrial land use policy with varying implications for moving toward low-carbon and socially inclusive urban industry. The research reveals the particularly unsettled nature of industrial land imaginaries in planning. It highlights the risks of applying uncritical norms and the need for more committed engagement with the role of urban policy in supporting industrial activity in the context of change, aspirations of sustainability and economic competitiveness, and competition for land.

Citations:

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Keywords: Industrial land use, land use planning, planning imaginaries, Australia

CONCRETE: MAPPING THE PATH TO DECARBONIZATION

Abstract ID: 1108.0.0.176.2024
Pre-Organized Paper Presentation

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Concrete—a dense, rough building material made from a mix of cement, broken stone or gravel, sand and water—is everywhere. This human-made substance is second only to water as the most widely used resource on the planet. But in its current form, concrete is also one of the most environmentally destructive. The production of cement, which is the binding factor in concrete, is the source of nearly ten percent of the world's carbon dioxide emissions, releasing more carbon annually than any single country save China and the United States.

There are no workable substitutes for concrete. Globally, the use of cement has been increasing by 3 percent a year, and global reliance on cement and finished concrete is only projected to increase in coming decades. According to the climate advocacy group Architecture 2030, the global building footprint is set to double by 2060, adding floor area equivalent to present-day New York City each month for the next 40 years. On top of that, the expansive need for climate adaptive infrastructure—everything from sea walls and raised foundations to wind turbines and networked clean energy transmission towers—will further increase global concrete demand. Alternatives like mass timber and steel have been proposed for some structures, but neither can match concrete's functionality for load-bearing structural elements, its malleability for building features, its resilience to environmental pressures, and its cost. The path to decarbonization must include further development of low-carbon concrete alternatives and with it, the need to also identify and resolve existing barriers that prevent rapid and widespread use.

This paper illuminates a potential pathway for concrete decarbonization through an in-depth study of two urban areas that have positioned themselves as national low carbon concrete leaders. One case involves the San Francisco Bay Area, home to several pioneering ready-mix and aggregate suppliers that have gained a national following as material innovators. Using a highly collaborative model of business engagement, in addition to well-resourced R&D operations, these firms work closely with structural engineers, commercial builders, construction and labor contractors and various public agencies to develop and supply low-carbon concrete mixes in support of

multiple “net zero” or “low carbon” construction projects, including at showcase Silicon Valley ‘tech’ headquarters. Additionally, these material suppliers have worked with local planners and environmental advocacy groups in Marin County to develop the nation’s first low-carbon concrete building code, inspiring larger California jurisdictions, including Los Angeles, to follow their lead.
The second case involves a long-standing public research facility in the Minneapolis-St. Paul metro region which conducts in-situ concrete tests in order to improve the durability of highways, roads, sidewalks and other large-scale transportation infrastructure. Research scientists and engineers, along with regional industry partners and trade associations, have leveraged the facility’s national reputation and robust Federal-funding source to build cross-sectoral support for enabling legislation. The result was the inclusion of low carbon concrete provisions within Minnesota’s historic 2023 Buy Clean procurement law, rather than industry lobbying for concrete’s exemption as happened in other states like California.
Combined, these cases illustrate the need for bottom-up industrial policy that can strengthen Federal leadership by mobilizing local support for material deployment through situated and collaborative engagement. But equally, these cases illuminate deep tensions and frictions that stem from entrenched power imbalances and poorly connected industry practices that forcefully push against material innovation and adoption. In this regard, these cases reveal the generative tools that industry actors within the US construction industry use to engage and rework long-established industrial and institutional practices that hinder the adoption of low-carbon alternatives, in turn providing other jurisdictions with an adaptive roadmap for advancing material transition through institutional redesign.

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Keywords: construction, industrial decarbonization, material innovation, urban infrastructure, industrial policy

BLUING THE GREEN: MANUFACTURING SUPPORT AS GREEN CITY STRATEGY

Abstract ID: 1108.0.0.417.2024
Pre-Organized Paper Presentation

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Under conditions of global climate change and impending environmental challenges, green city policies and other expressions of urban sustainability have assumed a central place in urban planning practice. While welcome and necessary, such policies typically situate urban manufacturing as a problem to be solved and as antagonistic to desirable green urban futures. The result is mounting pressures on an already beleaguered sector of the urban

economy, threatening the survival of manufacturing firms and introducing a political wedge that both reinforces perceptions of elitism in the environmental movement and generates resistance to urban sustainability. The purpose of this research is to approach urban industrial planning from a different perspective, asking not how urban manufacturing can become 'greener' (reducing carbon output, managing emissions, shifting product outputs), but rather how green urbanism can become 'bluer' by recognizing, incorporating, and nurturing blue collar lives and livelihoods. Central to this perspective are an understanding of underappreciated contributions that manufacturing already makes to green urbanism and an interest in expanding those contributions. Drawing on an extended case study of the Puget Sound industrial region, centered on the widely recognized 'emerald city' of Seattle, this paper explores existing and potential strategies for creatively weaving manufacturing into more dominant urban sustainability initiatives, especially in the land-use planning, transport,

and economic development arenas. Analyses of existing regional manufacturing landscapes and industrial planning and policy documents, and interviews with key participants in the manufacturing ecosystem, reveal common barriers to progress in this area even as openings for progress are also emerging. The goal of this work is therefore to identify and suggest new approaches to planning practice that can maintain and potentially expand the role of blue collars in green cities.

Citations:

- Dierwechter, Yonn; Pendras, Mark (2023): Planning, Manufacturing, and Sustainability: Three Research Themes. In Urban Planning 8 (4), pp. 162–165. DOI: 10.17645/up.v8i4.7627.
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Keywords: Industrial planning, Sustainability, Green cities, Regional planning, Urban development

RECONSIDERING THE FISCAL IMPERATIVE FOR ECONOMIC DEVELOPMENT

Abstract ID: 1112.0.0.160.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.164.2024, 1108.0.0.990.2024, 1108.0.0.265.2024, 1108.0.0.183.2024, 1108.0.0.1010.2024

Joshua Drucker [University of Illinois Chicago] jdruck@uic.edu, organizer

After the Great Recession and COVID-19 pandemic, municipalities began reevaluating their traditional sources of revenue as well as how to spend those revenues to achieve their goals. This panel explores ways in which new

development patterns and local government priorities have been shifting the dynamics of the public finance-economic development relationship in the U.S.

Learning Objective(s):

- Learn about the relationship between local economic development and public finance in the U.S.
- Learn about shifts in municipal revenue strategies and implications.
- Learn about changes and experiments in local economic development strategies and their implications.

PUSH-&-PULL OF PROPERTY TAX RELIEF: WHO PAYS FOR EXEMPTIONS AND INCENTIVES?

Abstract ID: 1108.0.0.164.2024
Pre-Organized Paper Presentation

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Champions of the property tax endorse its reliability in funding local governments, its effectiveness for redistribution, and its capacity to balance the adverse aspects of other taxes (e.g., Youngman 2016). Local governments attempt to govern and achieve a diverse range of public goals through the property tax system. The many advantages of the tax aside, no one likes paying their property tax bill; its visibility and volatility make the property tax among the most unpopular taxes. Therefore, local governments adopt measures to relieve some property owners of part or all of the burden of paying their property tax.

Municipalities regularly offer exemptions to homeowners, often targeted to those for whom the tax is especially onerous or who they believe deserve special treatment (e.g., seniors, homeowners with disabilities, veterans) (Ihlanfeldt and Rodgers 2022). Homestead exemptions reduce the assessed value of property by a fixed amount, percent, or amount of growth above a set base. Municipalities also commonly provide property tax relief to owners of commercial and industrial properties to attract or retain their ventures or to support the redevelopment of distressed areas. Such economic development incentives reduce the assessment ratio or tax rate, or return some property tax revenues to select taxpayers in the form of development assistance (as with Tax Increment Financing). Despite the potential to accomplish public objectives, providing property tax relief to certain property owners incurs opportunity costs for local governments, and may increase the tax burdens on taxpayers, both those who do and do not receive tax relief. Moreover, exemptions and incentives can reallocate the property tax burden among different land uses, with homestead exemptions pushing the tax burden onto business property owners and economic development incentives shoving that burden back onto homeowners. This raises practical questions about how different property tax relief efforts interact and the best ways for local governments to structure tax relief to achieve particular goals.

We examine the incidence and consequences of homestead exemptions and incentives, the two primary forms of property relief offered by municipalities in Cook County, Illinois. Using information obtained from the county assessor's office, we measure the extent and spatial distribution of property tax relief. We construct simulation models that permit us to compare various empirical and hypothetical scenarios, including the current situation and a baseline scenario that eliminates both types of property tax relief. Applying these data and models, we assess the interactions between exemptions and incentives within jurisdictions, with a special focus on distinguishing their separate and combined (net) effects on property tax burdens. We draw implications regarding the effective distribution of the property tax and the implications for achieving property tax relief and other municipal financial goals.

Our research derives from a project assessing the system of property taxation in Cook County, Illinois (e.g., Drucker et al. 2023). The key purpose is to investigate how the system components interact to complicate the tax burdens and outcomes for taxpayers and local governments. Cook County is a fitting location for studying property tax issues: the second most populous U.S. county includes the City of Chicago and more than 130 smaller municipalities with a diverse mix of property tax and land use profiles. We extend the literature in public administration and economic development investigating the strategic use and implications of property taxation, including recent studies of Cook County (Drucker et al. 2020; Funderburg et al. 2021).

Citations:

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Keywords: property tax, economic development, incentive, exemption, tax burden

MUNICIPAL ORIENTATIONS TOWARD WAREHOUSE DEVELOPMENT AND SUBSIDIES

Abstract ID: 1108.0.0.990.2024
Pre-Organized Paper Presentation

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This paper examines municipal orientations toward large-scale warehousing and distribution facilities and the use of economic development subsidies for their construction. The past decade has been marked by a boom in large-scale warehousing and distribution facility construction, driven by growth in e-commerce, changing technology, and logistics consolidation (Giuliano et al. 2013), accelerated by the COVID-19 pandemic. Much of the existing research on the warehousing boom has focused on the negative environmental impacts and infrastructure challenges these facilities present. Accordingly, many municipalities have sought to limit construction of these facilities within their bounds, going so far as to institute construction moratoriums. Paradoxically, other municipalities in the same regions have used tax abatements and other economic development programs to attract these facilities (Lippert & Moore 2020). This paper dissects this paradox to ask: what factors drive divergent municipal responses to warehouse development?

Evidence of spatial clustering of tax abatements suggests local governments use such incentives strategically, warranting further investigation to discern possible motivations and intentionality (Funderburg, et al. 2021). This paper examines these motivations in the industrial warehousing context, drawing from interviews of municipal actors, triangulated with longitudinal data on warehousing square footage growth and other sources for the Chicago region. Findings suggest that historic patterns of disinvestment, political pressure to demonstrate job creation, and municipal fiscal stress in light of a taxation structure heavily reliant on property tax revenue drives appetites for warehouse subsidies. Indeed, since the start of the COVID-19 pandemic, municipalities with high effective tax rates added three times the amount of warehousing square footage per square mile on average than their lower rate counterparts. Consistent with previous research (Weber & O'Neill-Kohl 2013), municipal orientation toward incentives is mediated by consultants and other outside actors, particularly in cases of small municipalities with limited planning capacity.

This work furthers our understanding of the changing geography of goods movement and how local governments are approaching economic development subsidies in the post-pandemic era. Yet, it also prompts equity concerns. Warehousing and the "diesel death zones" that result from concentrating freight activity disproportionately impact low-income and minoritized communities (Yuan, 2021), raising important questions about who benefits, who bears the costs, and who gets to make these planning decisions.

Citations:

- Funderburg, R., Drucker, J., Merriman, D., & Weber, R. (2021). Is Tax Competition Strategic? Spatial Distributions of Business Property Tax Abatements in the Chicago Suburbs. Economic Development Quarterly, 35(1), 66–83. https://doi.org/10.1177/0891242420977694
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Keywords: warehouses, economic development, subsidies

FISCAL POLITICS IN CALIFORNIA: CITY COMPETITION FOR SALES TAX REVENUE

Abstract ID: 1108.0.0.265.2024

Pre-Organized Paper Presentation

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The rise of e-commerce has not only shifted where consumers buy goods, but it has also reshaped the competition for sales tax revenue in California. Following the introduction of Proposition 13 in California in 1978, which capped property tax rates, sales tax became an important discretionary source of local revenue for cities, facilitating the "fiscalization of land use" (Misczynski, 1986; Wassmer, 2002). The fiscalization of land use occurred as part of a broader shift in local government away from urban managerialism and towards urban entrepreneurialism (Harvey, 1989), promoting city competition for jobs and investment. In California, a 1% local sales tax is allocated to the local jurisdiction in which the sale occurs and has provided incentives for cities to zone land for retail uses. For online sales, the point-of-sale location has become a site of political contestation. In 2019, new regulations were introduced in California requiring out-of-state online retailers, such as Amazon, to pay sales tax to a local jurisdiction based on the location of the fulfillment center. Sales tax income for cities with a concentration of e-commerce distribution warehouses has increased substantially since these changes were implemented. For example, sales tax revenue per capita in the City of San Bernardino has doubled from $211 per capita in 2020, to $485 per capita in 2022. However, retail companies have the discretion to designate where the order was fulfilled. As a result, some cities have also been utilizing sales tax abatements agreements to provide incentives to attract distribution warehouses to their city or retain companies that threaten to leave, promoting a race to the bottom (LeRoy, 2005; Schragger, 2016).

In this paper, I explore how e-commerce has created a new fiscal-jurisdictional politics in California. Competition for sales tax revenue is no longer confined to local retail catchments and is now occurring on a regional scale. There is an emerging tension between cities that benefit from these new sales tax regulations and those that feel disadvantaged by it, raising important questions around inter- and intra-regional inequality. These tensions have been exacerbated by the impact of the COVID-19 pandemic on bricks-and-mortar retail expenditure in urban downtowns. Politicians representing large metropolitan cities such as San Francisco and Los Angeles are pushing for new sales tax regulations (SB 1494) which would prohibit sales tax abatement agreements, while others, such as Ontario and Fresno, see it as vital to their economy.

Through analysis of city revenue data, I compare trends in sales and property tax revenue between 2003 and 2022. I find that the "redistribution" of sales tax revenue associated with e-commerce has had a significant positive impact on the fiscal position of e-commerce cities. For the urban cities (such as San Francisco and Los Angeles), property tax is the primary source of tax revenue and thus shifts in sales tax revenue have had a negligible impact on their tax revenues, despite the vocal nature of these cities in policy arenas. Through a review of media articles and policy documents, and semi-structured interviews, I identify the narratives which are utilized to support the policy positions of cities and politicians advocating for and against sales tax abatements, and the potential policy implications for local economic development. This study makes a valuable contribution to broader debates regarding which cities have the economic and political power to influence state policy, particularly in the face of fiscal austerity.

Citations:

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Keywords: economic development, municipal finance, sales tax, city competition, warehouses

EXTENDING ARPA: POLICY FEEDBACK IN BASIC INCOME TRIALS

Abstract ID: 1108.0.0.183.2024
Pre-Organized Paper Presentation

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The American Rescue Plan Act provided U.S. localities with more than $300 billion in unrestricted aid and instructions to experiment with novel policies and programs (Rocco and Kass 2022; U.S. Senate Democrats 2021). With reporting requirements that ran to just a few sentences, cities and counties obliged by undertaking experimental programs that ran from buying out residents' medical debt to, most prominently, financing dozens of basic income trials (Doussard 2023). ARPA-funded trials of regular, no-strings-attached cash payments to citizens join hundreds of equivalent trials worldwide, all of which face the same question: How can short-term experiments be converted into standing policy change (Kelly and Rocco 2019)?

This paper examines the potential for basic income trials to yield permanent policy change through the process of policy feedback. Typically applied to questions of national policy change, policy feedback frameworks reverse the common supposition that politics yields policies, asking instead how policies change politics (Mettler and SoRelle 2018; Moynihan and Soss 2014; Pierson 1993). Drawing on more than 100 completed and coded interviews with the basic income program administrators, elected officials, policy entrepreneurs and participating not-for-profit organizations, I identify four key policy feedback mechanisms that convert basic income trials into political change. First, bureaucratic policy entrepreneurs respond to basic income trials by adding cash stipends to other programs. Second, basic income trials create professional communities of interest, including think tanks, evaluation teams, vendors supplying cash-transfer infrastructure and a rapidly growing ecology of basic income advocacy organizations. Third, the high visibility of basic income trials in local media, where they stand out vis a vis other initiatives, creates openings to renew, revise and expand the policy. Fourth, receiving no-strings-attached cash payments enhances low-income citizens' capacity to participate in the political process.

These findings reveal distinctive features of both basic income programs, and the mechanics of experimental urban policy. Where the nascent and limited literature on experimental policies focuses on large-scale federal programs, these results reveal distinctive mechanisms of and stimuli to policy development and extension when cities undertake experiments. This in turn suggests that ARPA's influence on the policies, people and issues involved in urban politics will outlast the policy's pending expiration date.

Citations:

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Keywords: Cash Transfers, Urban Politics, Guaranteed Income, Policy Experiments, Equity Planning

"HOUSING IS WHERE JOBS SLEEP": HOUSING AS AN ECONOMIC DEVELOPMENT TOOL

Abstract ID: 1108.0.0.1010.2024
Pre-Organized Paper Presentation

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Recent debates that focus on both housing and economic development have typically explored how land-use policies (i.e., zoning) may facilitate or detract from a city’s ability to grow its housing stock, its labor force, and its economy. For instance, some suggest that large cities should continue to relax land-use regulations to boost housing production which would, in turn, facilitate the in-migration of workers (Hsieh and Moretti 2019). Further, once such barriers are mitigated, innovators could, in theory, move to cities with bigger high-tech clusters which are associated with more robust agglomeration economies to become more productive, contributing to aggregate economic growth in the US (Moretti 2021). However, the story may not be so simple. Stacy et al. (2023) find that loosening land-use restrictions increases the supply of rental housing in many US cities but does not necessarily help to lower rents to address the housing needs of lower-income individuals and families. Ultimately, Rodríguez-Pose and Storper (2020) suggest that such blunt, one-sized-fits-all approaches to improving the housing stock in many cities may exacerbate inequalities, running counter to many economic developers’ goals. But there is little in the academic literature that demonstrates what other alternatives exist. This presentation helps to fill this gap.

I present findings, primarily from two small and midsized cities (i.e., populations less than 500,000), demonstrating how economic development professionals try to navigate these concerns as they use housing as a means to achieve their city’s economic development goals. These findings are a part of a larger qualitative study featuring over 50 semi-structured interviews with economic development professionals representing over 20 small and midsized cities in the US.

I offer three preliminary findings: First, economic development professionals in these cities sought to increase housing production in tandem with redeveloping their downtowns to create “live-work-play” environments that would attract college-educated workers with “creative class” preferences. At the same time, interviewees tried to balance these goals by emphasizing the need to preserve and produce more affordable housing. However, much of

their focus was on the development of “workforce” housing (e.g., 60% to 120% AMI) instead of more deeply subsidized units (e.g., 30% AMI). Economic developers’ preference for workforce housing stemmed from their desire to fill labor needs in specific industries (e.g., health care), aspirations for their cities (and especially their downtowns) to be economically and socially diverse, and hopes to be more competitive with other locales by boosting the city’s inventory of “starter homes.” Finally, practitioners expressed varying levels of concern about the residential displacement of lower-income residents and displayed varying levels of commitment to its prevention despite significant infrastructure investments which may facilitate gentrification and residential displacement.

Ultimately, these findings provide more nuanced understandings of how economic development professionals in some small and midsized cities are treating housing as a tool to achieve fiscal health and broader economic development goals. Further, this study points to how the preferences of economic development professionals are shaping the development and availability (or lack thereof) of certain opportunity structures in communities, cities, and regions.

Citations:

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Keywords: Economic Development, Housing

Track 3 Roundtables

ECONOMIC DEVELOPMENT 30 YEARS AFTER REGIONAL ADVANTAGE

Abstract ID: 1109.0.0.30.2024

Roundtable Submission

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Yas Motoyama [motoyama.1@osu.edu] Ohio State University

It has been 30 years since the publication of AnnaLee Saxenian's seminal work, Regional Advantage (1994), which documented Silicon Valley's model of continuous innovation and contrasted it with the corporate sclerosis of Boston's Route 128. How has the field of economic development evolved since then? Which questions have we answered, which remain unanswered? Some larger debates in the past include, though not exclusive, clusters and industrial studies, regional innovation (including innovation districts), entrepreneurship ecosystems (including maker space), and the creative class, as well as the importance of certain forms of global connection (Bathelt, Malmberg & Maskell, 2004). While the economic development field has always been interdisciplinary, the last 30 years opened up larger frontiers with disciplines including geography, economics, business, political science, and sociology.

Silicon Valley itself, the icon of an economically successful region, has transformed in the past three decades as well. While it was the epicenter of many successful startup and scaleup companies in collaboration with existing industrial players, the Valley may increasingly be crowded out by monoliths exerting market dominance. Antitrust cases are emerging and concluding (Berk and Saxenian 2023), while unicorns are chased. Despite many national and regional governments attempt to emulate the Silicon Valley model, arguably none have succeeded (Storper, 1997). Then, what is the implication of the field if our extracted theories have no place to be implemented? Is it the policy implementation problem, the weakness of our theories, or the limits of intentional action?

In our roundtable, we try to focus on the 'big' debates and directions of the field. We strategically recruit panelists who are insiders yet semi-outsiders of the economic development field: AnnaLee Saxenian became the dean of School of Information. Matt Zook and Peter V. Hall are geographers. Iris Quan is at a business school. The session will be facilitated by Yas Motoyama who has gone to the non-academic sector, but returned as a planning professor.

Panelists:

AnnaLee Saxenian:	Professor. School of Information. University of California, Berkeley.
Peter Hall:	Professor and Vice-Provost. Simon Fraser University.
Xiaohong (Iris) Quan :	Professor. School of Business. San Jose State University.
Matt Zook:	Professor. Geography. University of Kentucky.
Yas Motoyama:	Associate Professor. City and Regional Planning. Ohio State University.

Citations:

- Saxenian, AnnaLee. 1994. Regional Advantage: Culture and Competition in Silicon Valley and Route 128.
- Bathelt, H., Malmberg, A., & Maskell, P. 2004. "Clusters and knowledge: local buzz, global pipelines and the process of knowledge creation". Progress in Human Geography, 28(1), 31-56.
- Berk, Gerald, and AnnaLee Saxenian. 2023. "Rethinking Antitrust for the Cloud Era." Politics and Society 51 (3): 409–35.
- Storper, Michael. 1997. The regional world: territorial development in a global economy. Guilford press.

Key Words: Economic development, Economic geography, Silicon Valley

POLITICS OF ECONOMIC DEVELOPMENT: GOALS, GOVERNMENT, GOVERNANCE, GRIEVANCES

Abstract ID: 1109.0.0.360.2024

Roundtable Submission

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Economic development planning scholarship has typically focused on the importance of equity, reflected in the rise of "inclusive" economic development. Economic development planning is inextricably tied to politics, and achieving these equity goals thus requires an engagement with the politics of economic development. We propose a framework for unpacking the political economy of economic development: goals, government, governance and grievance politics. Acknowledging that economic development goals carry embedded values and political preferences, draws attention to the likelihood of economic development programs being captured by interest groups. The category of government includes the actual and imagined motivations of political actors and how they shape the behavior of participants. Additionally, governance covers the capacity of institutions and power dynamics. Existing research highlights that metropolitan institutions lack the capacity or authority to develop and implement policies which address equity (Lester & Reckhow, 2013), and large firms have more power and resources to influence decisions, particularly compared to small firms (Christopherson & Clark, 2007). Finally, grievance politics encapsulates the role of economic development as a political platform (for example, the revenge of the places that do not matter – see Rodríguez-Pose, 2018). This topical discussion panel brings together planning scholars who study the political economy of economic development to highlight the importance of unpacking these dimensions of politics.

Building from their own fieldwork, each panelist will address the following questions:

- What are the core goals of economic development in the regions/ places you have studied?
- What were the actual and imagined motivations of key political actors?
- Who has the capacity and power to shape economic development decisions?
- How did working in networks aid or impede the attainment of economic development goals?
- Whose voices were excluded from economic development?
- How have economic development issues been mobilized as political platforms?

Each panelist will briefly address these questions, based on their current research. The moderator will then incorporate audience members into the discussion by asking them to share experience from their own research or practice and provide examples of the role of politics in economic development.

Citations:

- Christopherson, S., & Clark, J. (2007). Power in Firm Networks: What it Means for Regional Innovation Systems. Regional Studies, 41(9), 1223–1236. https://doi.org/10.1080/00343400701543330
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Key Words: economic development, political economy, governance, political actors

PRACTICE AND RESEARCH TO EMPOWER COMMUNITIES FOR EQUITABLE ECONOMIC GROWTH

Abstract ID: 1109.0.0.681.2024
Roundtable Submission

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The proposed panel discussion seeks to explore the intersection of entrepreneurship-led economic development and equitable community wealth creation in marginalized and underserved communities. Drawing on the expertise of practitioners from multiple economic development centers and researchers in the field, this panel aims to uncover innovative practices, research findings, and policy implications that contribute to inclusive community wealth creation through entrepreneurship. By examining various models and approaches that support entrepreneurship-led economic development in communities often overlooked by traditional economic development strategies, the discussion will highlight successful frameworks and identify key challenges and opportunities for fostering an economy that provides opportunities for all to prosper. Attendees will gain a comprehensive understanding of the synergies between academic research and practical initiatives, and how these collaborations can drive significant contributions towards equitable and sustainable economic growth in different types of urban settings.

Questions for Discussion
1.Highlight their roles and/or research areas related to economic development in marginalized or underserved communities (self-presentation)
2.Reflecting on the experiences and research shared by the panelists, what are the most significant barriers to equitable economic growth and inclusive community wealth creation that still need to be addressed?
3.Considering the varied approaches to entrepreneurship and economic development in marginalized communities, what are the key factors in ensuring these initiatives not only start but thrive over the long term? How do factors like local policies, community engagement, and access to resources play into the sustainability of these ventures?
4.How can partnerships between universities, private sectors, and communities work together to overcome these challenges?

Citations:

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- Wang, Q., & Richardson, L. (2021). Fostering art and cultural entrepreneurship in underserved communities: A case of Newark, NJ. Journal of Planning Education and Research, 0739456X211035836.

- Cowell, M., Haskins, C., & Sayed, S. (2023). Understanding Economic Development Organization Efforts to Advance Inclusive Economic Recovery in Virginia. Economic Development Quarterly, 37(2), 154-169.

Key Words: Equitable Economic Growth, Inclusive Entrepreneurship Ecosystem, Community Wealth Creation, Marginalized Communities, Economic Development Strategies

Track 3 Individual Paper Presentations

BARRIERS TO COLLABORATIVE ROBOT ADOPTION AMONG SMMS IN THE U.S.

Abstract ID: 1108.0.0.773.2024
Individual Paper Presentation

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In the rapidly evolving domain of robotics, collaborative robots—popularly known as 'cobots'—emerge as a revolutionary breakthrough. Tailored to work alongside humans within shared workspaces, cobots offer considerable promise for adoption across a broad spectrum of industries that could increase firms' success and competitiveness. In particular, Small and Medium-sized Manufacturers (SMMs), given their focus on small-batch and short-term production, stand poised to benefit from cobot deployment. Despite existing research corroborating the advantages of cobots in enhancing productivity, augmenting quality control, and improving workplace conditions, their uptake in the United States has been slow to reach its full potential. In this study the authors identify eleven primary barriers to cobot adoption within SMMs and then elucidate the complex interplay among these barriers.

The eleven barrier categories are categorized into six groups: technology, knowledge, skilled workforce, perception, cost and profitability, and external relationships. A panel of experts were recruited to explore these barriers through a three-round Delphi survey. The panel included executive or senior representatives from 25 SMMs located in Georgia, North Carolina, and Washington State. The authors also employed Interpretive Structural Modeling (ISM) and Matrice d'Impacts Croisés Multiplication Appliquée à un Classement (MICMAC) analytical techniques to explore the interdependencies among these barriers.

This study provides important implications for a regional robotics and economic development policy approach. In particular, a comprehensive strategy is vital for fostering a conducive environment for successful cobot integration. The strategy should extend beyond intra-firm dynamics to encompass the cultivation of a robust regional robotics

ecosystem. Key to such an approach would be promoting robust public-private partnerships like those exemplified by the Manufacturing Extension Partnership (MEP), which plays an essential role in bridging the gap between technology providers and SMMs.

Citations:

- Acemoglu, D., et al. (2022). Automation and the workforce: A firm-level view from the 2019 Annual Business Survey, National Bureau of Economic Research.
- Gertler, M. S. (1995). "“Being there”: proximity, organization, and culture in the development and adoption of advanced manufacturing technologies." Economic geography 71(1): 1-26.
- Hall, B. H. and B. Khan (2003). Adoption of new technology, National bureau of economic research Cambridge, Mass., USA.
- Kildal, J., et al. (2018). "Potential users' key concerns and expectations for the adoption of cobots." Procedia CIRP 72: 21-26.
- Leigh, N. G. and B. R. Kraft (2018). "Emerging robotic regions in the United States: insights for regional economic evolution." Regional Studies 52(6): 804-815.

Keywords: Technology Diffusion, Collaborative Robot, Delphi survey, Regional Economic Development

BEYOND CHARITY: FOUNDATION GRANTMAKING FOR URBAN ECONOMIC DEVELOPMENT

Abstract ID: 1108.0.0.691.2024
Individual Paper Presentation

Jeeson Oh [University of Louisville] jeeson.oh@louisville.edu, presenter
Thomson, D. E. 2019. “Donor-driven democracy? Governance implications of foundation-dependent revitalization.” Journal of Urban Affairs Journal of Urban Affairs, 41(4), 551–569. [Yujin Park] Mallach, A., & Brachman, L. 2013. Regenerating America’s legacy cities. Lincoln institute of land policy.
Chung-Ang University []

This research longitudinally investigates large foundations’ grantmaking for Urban Economic Development (UEcD) in the United States. It aims to uncover the types of development funded by prominent U.S. foundations and identify factors that affect foundation decision-making with regard to UEcD grantmaking. A number of high-profile foundations in the United States have long provided financial and technical assistance to various community institutions and intermediaries focused on neighborhood-level development. Over the past two decades, however, a growing body of major foundations have shifted away from merely providing resources toward more directly addressing city- or regional-scale economic challenges (Giloth 2018; Thomson 2019). These foundations have redirected their grants and investments away from charitable giving to support and even create new and different strategies for UEcD.

Planning scholars have noted this shift and suggested the emerging role of foundations in UEcD, particularly as economic development assets (Mallach and Brachman 2013). While these studies draw scholarly attention to foundations and their operations in American cities, they lack a systematic analysis of foundation grantmaking from the perspective of foundations as organizations driven by organizational interests and constrained by institutional structures (Graddy & Morgan, 2006). As a result, planning scholars’ understanding of the specific development

initiatives funded by leading foundations, the changes in their grantmaking for UEcD over the years, and the factors driving these changes is still limited.

In this paper, I seek to address this gap in planning scholarship by conducting an in-depth analysis of foundation grantmaking for UEcD. Integrating trend and time series analyses of grants data, document analysis, and semi-structured interviews, this research answers the following questions: (1) What types of development have large foundations focused their grant and investment dollars on? (2) What factors influence foundation grantmaking in the context of Urban Economic Development (UEcD)? I focus on the top 100 foundations ranked by grant and investment amount allocated for UEcD as of 2020. For the purpose of this paper, UEcD grantmaking encompasses grants and investments in five key development areas—economic (business recruitment, retention, expansion, and entrepreneurship), workforce, community, housing, and real estate developments (Hill 2023). I analyze individual UEcD grants and investments awarded by these foundations in 2005, 2010, 2015, and 2020, paying particular attention to the direction and extent of grantmaking shifts for these five key development activities over the study period. The subsequent time series analysis uncovers factors associated with a specific type of development. Documents and interview analysis sheds further light on the findings from the grants data analysis, enabling a more nuanced understanding of foundation grantmaking for UEcD.

Longitudinal analysis of grants data shows a decline in grantmaking for housing development across the 100 foundations between 2005 and 2020. Conversely, grant and investment allocation toward more comprehensive community development, encompassing (creative) placemaking, community organizing, youth development, and advocacy has been on a steady rise. Only a handful of foundations, most of which have assets exceeding $1 billion, allocated their grant and investment funds toward workforce and economic development. Foundations with missions closely tied to specific geographic areas are more likely to fund real estate development compared to those operating nationally and internationally. Furthermore, the expertise and interests of foundation CEOs play an important role in determining grantmaking priorities among different areas of development. This research contributes to planning scholarship and practice by enabling theoretically informed and contextualized understanding of foundation interests and constraints in grantmaking for Urban Economic Development.

Citations:

- Giloth, R. 2019. “Philanthropy and Economic Development: New Roles and Strategies.” Economic Development Quarterly. Vol. 33(3), 159–169.
- "Graddy, E. A., & Morgan, D. L. 2006. “Community foundations
- Hill, E. 2023. “What Is Economic Development? And What Is the Job of an Economic Development Professional?” Economic Development Quarterly, 37(1) 34–48.
- The paper facilitates urban and planning scholars in developing a nuanced and theoretically informed understanding of foundations’ interests, priorities, and constraints with regard to grantmaking for Urban Economic Development (UEcD) by conceptualizing them and their grantmaking from an organizational perspective. It also makes a methodological contribution by creating a comprehensive dataset on UEcD grantmaking from 100 large U.S. foundations and longitudinally analyzing their grants and investments for UEcD.
- and public policy.” Nonprofit and Voluntary Sector Quarterly, 35(4), 605-630."

Keywords: philanthropy, foundations, economic development, community development, urban development

BUILDING BRIDGES BETWEEN BLACK BUSINESSES AND ANCHOR INSTITUTIONS

Abstract ID: 1108.0.0.589.2024
Individual Paper Presentation

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Sigmund Shipp [Hunter College, City University of New York] sship@hunter.cuny.edu

Anchor institutions, including hospitals and healthcare centers, have the potential to promote economic development in their host communities through diversifying their supply chains to include local, often smaller, minority-owned businesses. Yet, this potential to promote economic development is beset by a number of practical challenges that can hinder efforts to increase local purchasing. Among these challenges, local businesses are often unaware of contracting opportunities with healthcare institutions, healthcare procurement officers have a hard time finding qualified local vendors, and healthcare procurement processes are often complex and difficult to navigate for businesses. Thus, successful efforts to promote economic development through anchor institution procurement must address these fundamental challenges. In this paper, we explore one effort to promote local supplier diversity in Brooklyn, New York: Brooklyn Communities Collaborative's (BCC) Health Enterprise Local MWBE Accelerator Program which aims to demystify the procurement process for local businesses, provide business development support, and foster relationships between local businesses and healthcare procurement officers. The Accelerator Program is the third phase of a three-year Participatory Action Research (PAR) project undertaken by researchers at Hunter College, City University of New York and BCC. The program is informed by our earlier research with Black entrepreneurs and the subsequent formation of the Brooklyn Health Enterprise Advisory Council, composed of business development intermediaries serving businesses in East and Central Brooklyn.

This paper assesses the design and implementation of the Accelerator Program in order to identify areas of success and those in need of improvement for future iterations of the Program, and to assess its viability as a strategy to foster minority procurement with healthcare anchors. As a collaborative, action-oriented research project, the authors have been involved in the development of the Accelerator. As such, we will draw on participant observation along with interviewing and short periodic surveys of program participants to determine the degree to which the business owners feel the Accelerator is preparing them to contract with healthcare anchor institutions in Brooklyn. In addition, we will engage with anchor institution staff to understand the degree to which the Accelerator Program has prepared businesses to work with them.

We expect that the Accelerator will be an effective strategy for building relationships between businesses and anchor institutions and will provide businesses with the support necessary to navigate healthcare procurement. The lessons learned from this research will be of use to economic development planners and others working to build bridges between anchor institutions and local, minority-owned businesses by offering an inside look into program design and implementation — areas of critical importance to the development of successful supplier diversity programs.

Citations:

- Bates, T., Farhat, J., & Casey, C. (2022). The Economic Development Potential of Minority-Owned Businesses. Economic Development Quarterly, 36(1), 43–56. https://doi.org/10.1177/08912424211032273
- Dubb, S., & Howard, T. (2012). Leveraging Anchor Institutions for Local Job Creation and Wealth Building. Institute for Research on Labor and Employment at the University of California, Berkeley.
- Ehlenz, M. M. (2018). Defining University Anchor Institution Strategies: Comparing Theory to Practice. Planning Theory & Practice, 19(1), 74–92. https://doi.org/10.1080/14649357.2017.1406980
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- Sordi, A., Tate, W. L., & Huang, F. (2022). Going beyond supplier diversity to economic Inclusion:Where are we now and where do we go from here? Journal of Purchasing and Supply Management, 28(2), 100751. https://doi.org/10.1016/j.pursup.2022.100751

Keywords: anchor institutions, Black entrepreneurship, healthcare, economic development planning, supplier diversity

CAN INDUSTRIAL REDEVELOPMENT BENEFIT DISTRESSED CENTRAL-CITY NEIGHBORHOODS?

Abstract ID: 1108.0.0.1072.2024
Individual Paper Presentation

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Under what conditions can urban planning and economic development policies and planning mitigate the social and economic impacts of deindustrialization on working-class communities? Since the 1970s, industrial communities across North American have suffered the impacts of industrialization (Bluestone and Harrison 1982). In subsequent decades, research has turned from documenting processes of urban restructuring to assessing its relationship with broader metropolitan social and demographic trends, including shrinkage, as well as the ways that local and regional economies have adapted to restructuring (Wolman et al 2013, Audirac 2018, Ganning and Tighe 2021).

In this paper, we join the discussion about how places can mitigate and adapt to the pressures of deindustrialization. Through a comparative study of Detroit, Michigan and Windsor, we argue that national, regional, and local action can mitigate or exacerbate deindustrialization and its negative effects on the social and built environments. Detroit-Windsor is a transnational metropolitan area situated along the north and south banks of the Detroit River. It is a region whose economic development has been dependent upon the automotive industry for more than a century; both core cities are recognized as the “birthplace of the auto industry” in their respective countries. Since the 1950s, the threat and reality of deindustrialization, in terms of both a relative and absolute decline in manufacturing employment, has devastated metropolitan communities on both sides of the international border. Yet Detroit’s actual experience of deindustrialization has been both longer in duration and more severe. Detroit’s manufacturing employment has declined by 92% since the city reached its peak manufacturing employment in the late 1940s. In Windsor, meanwhile, manufacturing employment peaked in 2000 and has since declined by 25%. Whereas neighborhoods in Detroit that surround current and former automotive

facilities exhibit extreme population loss, in Windsor such places remain in-tact. What explains these differences? How have urban planning and economic development policies and practices mediated community responses to deindustrialization in different ways?

This paper explains these divergences in local performance and draws lessons about public responses to deindustrialization in North American communities at both the regional and the neighborhood scales. It utilizes a nested, comparative case study of automotive manufacturing districts in Detroit and Windsor, drawing on news archives, interviews, gray literature, academic reports, and public databases. We examine performance at the regional and local (municipal) levels as well as at the level of specific industrial districts. At the district-level, we focus on the Conner Corridor on Detroit's east side, which has retained a Chrysler/Stellantis assembly context yet exhibits extreme housing loss, and Ford City in Windsor, which has retained a Ford engine manufacturing complex and continues to support an in-tact, though high-poverty, neighborhood, the Douillard Road community. Our case narrative emphasizes economic and community development initiatives since the 1990s, placing these within longer-term legacies of industrial and urban restructuring.

We find that industrial retention efforts, when pursued, effectively retained investments in each geography. Yet the impacts on adjacent residential communities is starkly different, and these were mediated by different approaches to managing community benefits arrangement (Wolf-Powers 2010). In Detroit, planning efforts have exacerbated housing loss through aggressive land assembly actions and environmental regulatory failures. In Windsor, economic retention policies have emphasized cash transfers rather than complex "deals," and a combination of community organizing and planning programs have mediated the impacts of reinvestment. We further argue that racial stigma, which existed on both sides of the border but was more relevant in Detroit, contributes to divergences in both interventions and outcomes.

Citations:

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Keywords: deindustrialization, industrial retention, economic development, community benefits agreements, Rust Belt

CASE STUDIES OF REMOTE WORKER ATTRACTION PROGRAMS IN THE UNITED STATES

Abstract ID: 1108.0.0.1092.2024

Individual Paper Presentation

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Since the first program was announced in 2018, over 70 towns, cities, regions, and even states have implemented their own remote worker attraction (RWA) programs offering relocation incentives to workers with full time remote jobs. Though the incentives vary from welcome baskets of local goods to $10,000 cash, the common goal shared across RWA programs is to attract new residents by leveraging monetary incentives, place marketing, and the increased mobility that comes with jobs detached from a firm's physical location. These programs, however, are increasingly used as a solution to a wide range of migration-related issues from brain drain in small towns to labor shortages in major metropolitan areas. Without empirical testing, it is still unclear whether these programs work and where they may be most effective. Regardless, they are most commonly used to combat the negative effects of regional economic divergence in low-growth regions.

In this paper I explore RWA programs as an emerging economic development policy phenomenon, asking the question: how and to what extent do RWA program administrators individualize their policies to maximize their effectiveness in different types of places? I answer this question through case study research I conducted in the state of Indiana, whose economic development corporation has provided matching funds to any municipality or economic development corporation seeking to develop their own RWA program since 2022. I use content analysis of public documents, such as meeting minutes and budget proposals, alongside key informant interviews with program administrators and others involved in the development of these programs. Because of the state-level matching, Indiana vastly outpaces any other state in raw number of programs, with 27 programs active at some point between 2018 - 2024. The programs vary from small, relatively inexpensive programs to large regional efforts and include both active and inactive programs. This variation allows me to explore a wider variety of programs while maintaining a cohesive geography and policy climate to allow for comparability.

This research demonstrates how both effective and ineffective RWA programs are developed. I found that common reasons for discontinuation often stem from unintended challenges and consequences, such as disagreements over funding continuation across multiple stakeholders to new or worsening housing shortages. I also found that the administrators reporting success based on their own internal metrics are more likely to have integrated the RWA program with other concurrent economic development strategies. This paper does not determine the impact or effectiveness of RWA policies, but instead examines RWA programs as a policy phenomenon in economic development. There is little research published on them as of yet, and through this paper I seek to further the conversation on an interesting emerging topic.

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Keywords: labor attraction, remote work, migration, incentive program

CITY OR REGIONAL PROBLEM? SHIFTING SCALE IN INDUSTRIAL LAND PRESERVATION

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Individual Paper Presentation

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In recent decades, as housing prices in global cities have rapidly increased, residential developers have begun competing for the last sites left in the urban core – industrial land. Developers consider urban industrial sites "low-hanging fruit" because of the low value of their built improvements and dearth of neighborhood resistance to residential conversion. Given low industrial rent revenues, many industrial landowners are eager to sell at a premium.

Yet, this industrial land plays a vital role in local and regional economies by providing middle-wage jobs, accommodating back-office activities and city services, and supporting startups with low-cost space, among other functions (Chapple, 2014; Howland, 2010). Low vacancy rates and steady employment levels attest to the continued viability of these sites. Although cities have generally been slow to understand the importance of industrial land (Leigh & Hoelzel, 2012), some have used economic development policies, zoning, and even narratives to protect and promote industrial land (Davis & Renski, 2020; Grodach, 2022).

In this paper, we argue that industrial land preservation is overdue for a regional turn. Using the case of three global city-regions – the San Francisco Bay Area, Greater Sydney, and the Greater Toronto-Hamilton Area – we show how preservation debates are shifting to the regional scale, with mixed results depending on the institutional context. Based on economic and cell phone data, we document the regional importance of production, distribution, and repair industries. Fifteen key informant interviews across the three regions shed light on the development of regional policies in each case: Priority Production Areas in the Bay Area, the Greater Sydney Region Plan's "Retain and Manage" policy framework for industrial lands, and Ontario's A Place to Grow policies for employment lands. Regression results from the Bay Area case suggest that industrial preservation zone designation is associated with employment and firm growth.

Our preliminary results suggest that designing and implementing industrial land preservation policies at the regional scale can succeed with the right mix of carrots and sticks. Most importantly, the regional shift helps circumvent local political pressure to convert industrial land to residential use, in part by demonstrating the value of local industrial land to regional competitiveness, but also by helping municipalities access infrastructure funding and other economic development resources.

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Keywords: industrial land, industrial preservation, regional planning

COMMERCIAL GENTRIFICATION-LED COMMUNITY DISPARITIES: IN THE CASE OF YEONNAM

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Individual Paper Presentation

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Despite the recent surge in research on commercial gentrification, its impact on local residents has been largely overlooked by scholars and policymakers. Most studies tend to focus on the drivers, processes, and economic outcomes of commercial gentrification.

A few studies exploring the effects of commercial gentrification on local residents present divergent findings. One study, centered on a low-income neighborhood, suggests that the transformation of the commercial landscape brings much-needed retail diversity, including drug stores and supermarkets, and is generally welcomed by local residents as long as displacement is mitigated (Freeman, 2006). Conversely, a case study conducted in a high-income neighborhood reveals that the process often diminishes overall quality of life for local residents due to increased noise, air pollution, and traffic congestion (Forouhar et al., 2022). While these insights are valuable, they predominantly focus on long-time residents, neglecting the experiences of newcomers and how the rapidly evolving commercial environment impacts them.

To address this gap, this study undertakes a comprehensive analysis of the multifaceted changes associated with commercial gentrification, including shifts in land use, alterations in business composition, changes in employment opportunities, and demographic transformations. This approach enables us to untangle the intricate and dynamic effects brought about by commercial gentrification. This investigation is situated in Yeonnam-dong, Seoul, South Korea, a small residential neighborhood characterized by compact parcels and narrow alleyways. Until 2010, Yeonnam-dong remained relatively underdeveloped due to its isolation by railways and major roads. The retail landscape primarily catered to essential local services such as laundromats, barbershops, and traditional Korean eateries. Compared to the Seoul average, Yeonnam-dong exhibited a higher proportion of vulnerable groups, including foreigners, individuals in their twenties, and single-person households.

In the absence of significant development momentum, efforts to revitalize the area were initiated through targeted public investments, such as the establishment of a transit station in 2011 and the creation of a park in 2015,

undertaken in collaboration with higher-level institutions. These investments enhanced accessibility to and amenities of he area, and spurred a rapid conversion of residential spaces into commercial establishments, particularly evident since 2015. The share of commercial usage surged from 20% to 50% between 2011 and 2018, with a predominant focus on food and beverage businesses, leading to the displacement of essential retail services for local residents, including laundromats and drug stores.

Commercial gentrification also precipitated a notable population decline of 2.5% between 2011 and 2022, exceeding the decrease observed in adjacent neighborhoods, which stood at 1.5%. Of particular concern is the threefold acceleration in the increase of economically challenged individuals in their twenties compared to neighboring areas between 2022 and 2024. This trend suggests that the proliferation of low-end service jobs in food and beverage establishments may have attracted young job seekers to the area.

These findings indicate that while business owners and visitors benefit from enhanced transportation and amenities, local residents often experience diminished job prospects and deteriorating living conditions. Furthermore, the adverse effects of commercial gentrification extend beyond mere displacement or environmental degradation, potentially exacerbating inequality within the neighborhood. Despite the superficial appearance of prosperity with the emergence of new businesses and an influx of affluent visitors, the underlying socioeconomic disparities persist, unnoticed to many.

These findings underscore the need for more systematic investigations into the impact of commercial gentrification on local residents to gain a comprehensive understanding of its consequences. Policymakers should pay more attention to changes occurring from the ground to enhance neighborhood sustainability and foster inclusive growth to address the complex challenges posed by commercial gentrification effectively.

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Keywords: commercial gentrification-led community disparities, vulnerable population, sustainable neighborhood development

DEMOGRAPHICS & DONUTS: PARSING TELEWORK'S INFLUENCE ON URBAN OUTMIGRATION

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Individual Paper Presentation

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"The digitalization of work has been a relevant planning topic for decades, producing tantalizing visions of a commuter-less future, enhanced worker autonomy, and the 'electronic cottage'. This utopian ideal never materialized, however, as remote work remained a marginal practice until Covid-19. The pandemic permanently dislodged the workplace and CBD as fixed points of orientation in daily life for millions of workers worldwide. Numerous scholars have noted a locational shift for workers and firms away from the densest urban neighborhoods and towards peripheral areas and smaller cities; most notably, Ramani and Bloom (2021) termed this pattern "the donut effect

Citations:

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Keywords: Remote work, Donut effect, Demographics, Age cohort effects, Urban economic development

DIVERSITY PERSPECTIVE ON THE HISTORY OF REMOTE WORK: A MIXED METHODS STUDY

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Individual Paper Presentation

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The COVID-19 pandemic became an unexpected catalyst for the adoption of remote work and caused an explosion of interest in the rapidly changing nature of the workplace. Technological advances have enabled work and home locations to be geographically decoupled en masse for the first time in modern history and scholars note that the effect could be as big as the "next Industrial Revolution".

This study traces this revolution among different metropolitan areas from a diversity perspective. Although there is much ongoing research on the educational and racial disparities in the opportunities to remote-work, little research exists on the different experiences and preferences among remote workers. Generational framework, feminist planning theory, and reports of pandemic experiences suggest that an individual's identity profoundly impacts their remote work experience. Understanding these differences is increasingly important for advancing workplace equity, as well as understanding diverse workers' residential choices which affect the urban landscape (Delventhal, Kwon, and Parkhomenko 2020; Stiles 2019; Krasilnikova and Levin-Keitel 2022).

I focus on how workers' age, gender, and race impact their choice to work from home (WFH). The age and life stage of the worker affect whether they prioritize in-person networking with colleagues or the flexibility that telework gives them to devote more time to family (Twenge 2023; Kahn 2022). Feminist planning theorists argue that because cities have been designed by men, as well as gender norms and fear of sexual assault, women's freedom

and sense of safety when commuting tend to be more limited (Day 2011; Markovich and Hendler 2006; Parker 2016). This, in addition to the conventionally heavier childcare burden, may mean that women are more likely to choose WFH than men. Lastly, during COVID-19, racial minorities reported feeling relieved by the ability to work at home because they had more control in dealing with microaggressions (Robinson 2022; Onwuamaegbu 2021). Are older workers, women, and minorities more likely to choose WFH than younger workers, men, and whites? Do these choices shift as the option to WFH increases and the composition of WFH jobs shifts from agriculture and shops to knowledge work? I answer this using the U.S. census, ACS, and qualitative narratives.

In order to chronicle the evolution of who worked from home, I first use the decennial census data from 1960 to 2020 to examine the history of working from home in the U.S. and map how the demographics of WFH workers changed since the mid-20th century when current remote work technology had not yet been available. I supplement these findings with a narrative of the lives of WFH workers in the mid-20th century.

Then I show the shift in demographic characteristics and residential locations of WFH workers as technological advances introduce a new form of WFH and COVID-19 accelerates its adoption. Using ACS 1-year Public Use Microdata Sample from 2018 to 2022, I analyze the effect of COVID-19 on WFH takeup by diverse workers and supplement these with documented experiences from remote workers today.

Preliminary results show that controlling for education, women, minorities, and older workers are more likely to work from home, and that the uptake of remote work due to COVID-19 was concentrated on larger metropolitan areas. Further analysis and archival records will shed light on the reasons behind these patterns.

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Keywords: remote work, COVID-19, diversity, feminist planning, work from home

DO CO-PATENTING NETWORK STRUCTURES AFFECT REGIONAL ECONOMIC RESILIENCE?

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Individual Paper Presentation

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In an age when knowledge is highly specialized, innovations are more likely to occur in collaboration across geographical boundaries (Breschi & Malerba, 1997). Inventors collaborate and exchange resources across regions, strengthening the regional adaptive capability to combat external disturbance (Bristow & Healy, 2014). Different structures of collaborating networks indicate different resilient capabilities. For example, a region collaborating with various regions receives more diverse external information and resources than regions only frequently collaborating with a single hub region. In contrast, strong connections facilitate frequent interactions and rich information flows, thus speeding up information exchange (Aral & Van Alstyne, 2011). However, whether structural characteristics of inter-regional collaboration networks affect regional economic resilience is understudied. We take on the task and aim to answer the following research questions:1) Do regions maintaining sparse connections with various regions have a better ability to develop new growth paths? 2) Do regions owning strong connections with hub regions have a better ability to recover in the pre-shock growth path?

The paper contributes to economic resilience literature from network theory's perspectives. A tension exists between recovering the old path (i.e., adaptation) and developing a new path (i.e., adaptability) (Boschma, 2015). Existing quantitative empirical studies examining the relationship between economic network structure and economic resilience don't consider the trade-off relationship between adaptation and adaptability (Kurth et al., 2020). Our paper fills the gap by examining the trade-off dimensions of economic resilience simultaneously, using the inter-CBSAs innovation-collaboration network as a contextual example.

Our data come from three main resources. We use patent inventor data from the U.S. Patent and Trademark Office to construct inter-CBSAs' co-patenting networks. Meanwhile, employment data from the U.S. Bureau of Labor Statistics are collected to calculate the measurement for regional economic resilience. Regarding external disturbance, we collect natural hazards from the Spatial Hazard Events and Losses Database for the U.S. The study time period is from 1990 to 2012.

We adopt social network analysis to create each CBSA's inter-CBSA collaborating ego network. The ego network maps all the connections associated with a single agent. Our study treats each CBSA as the "ego" to create a network. Nodes are CBSAs with inventors participating in co-patenting activities with the "ego" CBSA, and ties reflect the frequency of co-patenting that inventors from one CBSA collaborate with inventors from the "ego" CBSA. Degree centrality and density of each CBSA's ego network are calculated and used in the seemingly uncorrelated regression to examine the influence of network structure on adaptation and adaptability.

We have cleaned all the co-patenting networks, natural hazards, and employment data and calculated the network structure indicators. Next, we will use regression to quantify the influence of network structure. Results will verify whether regions with higher degree centrality are more capable of developing a new growth path, whereas regions with higher ego network density are more capable of recovering in a pre-shock growth path.

Practically, this study will guide policymakers to strategically cultivate inter-regional innovation-collaboration networks and improve regional economic resilience. For example, policymakers could establish online forums, utilize social media to share information, and reduce long-distance collaboration costs. Also, providing financial support for innovators and entrepreneurs from different regions to have face-to-face networking helps to create new collaborations.

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Keywords: Innovation, Regional Economic Resilience, Network Structure

EVALUATION INDICATORS FOR SUSTAINABLE PUBLIC-PRIVATE SMART CITY PARTNERSHIP

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Individual Paper Presentation

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This research examines the success and failure of public-private partnerships (PPPs) for smart city projects, such as the Sidewalk Toronto project in Canada and the Sejong 5-1 Living Area project in South Korea. The case study explores the multifaceted dynamics of PPPs in implementating smart city initiatives. Through comprehensive stakeholder interviews and an extensive literature review, this study aims to uncover both the tangible and intangible elements that have affected the sustainability of these partnerships.

The methodology adopted for this research is twofold. First, a detailed literature review provides a foundational understanding of the business models, organizational structures, strategic objectives, and regulatory frameworks underlying the PPPs in the cases. This literature review spans both domestic and international sources, including the MIDP report for Sidewalk Toronto and public data sets from South Korea.

Second, the study employs in-depth interviews with stakeholders such as urban planners and public officials involved in the Sidewalk Toronto and Sejong 5-1 Living Area projects. These interviews are aimed at extracting insights into the complexities of project implementation, the challenges encountered in partnership dynamics, and the strategies devised to overcome such challenges. The objective is to derive a set of qualitative indicators that could guide the assessment of PPPs in the future smart city projects, focusing on sustainability, efficiency, and mutual benefit.

The findings from the Sidewalk Toronto project highlight the innovative approach of involving private partners from the project's inception, emphasizing the critical role of trust, communication, and mutual respect on contractual obligations. This early and planning-stage involvement, however, showcased a lack of clarity in pre-agreements on

roles and responsibilities, leading to potential conflicts and confusion. The research underscores the importance of regulatory frameworks and compliance mechanisms to mitigate these challenges, ensuring that decision-making processes are streamlined and transparent.

In contrast, the Sejong 5-1 Living Area project underscores the necessity of a sophisticated, integrated system for managing the complexities of smart city operations. Furthermore, the study emphasizes the importance of establishing a solid legislative foundation for data sharing and authority in smart city projects, suggesting the innovative PPP models.

Conclusively, the research proposes a comprehensive framework for the sustainable development of smart cities through PPPs. It advocates for clear and detailed contracts that outline the responsibilities and roles of all parties involved, the importance of discussing authority in technology-driven projects, and the need for stringent government oversight. Additionally, it highlights the significance of securing public consensus on privacy and operational aspects, ensuring that smart city developments are inclusive, transparent, and aligned with broader societal expectations.

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Keywords: Smart City, Urban Planning, Sustainability, Public-Private Partnerships, Stakeholder Engagement

FISCAL FEDERALISM, ARPA AND THE POLITICS OF REPAIR

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Individual Paper Presentation

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The American Rescue Plan (ARPA) represents a shift in federal politics toward local government since the COVID-19 pandemic (Rocco and Kass, 2022). The unprecedented size, scope and timeliness of ARPA enables local governments to address the structural inequities laid bare by the pandemic. US Federalism was broken before the pandemic (Xu and Warner, 2022), with states exerting a triangle of pressures that created a tightening vice on local government through revenue restrictions, downloading expenditure responsibilities and restricting local policy authority. In contrast to theories of austerity urbanism, we point to the potential of ARPA to ease the pressure on

cities and create a moment for more progressive action.

We analyze US local government expenditure and revenue trends from 2002-2022 to show how this tightening vice has eased under ARPA. Doussard and Schrock (2022) have used Kingdon's (1984) policy streams framework to explore how windows open for policy change. We use this framework to show how ARPA represents a politics of repair that may lead to a more cooperative federalism. ARPA is larger, longer and more expansive than the American Rescue and Recovery Act (ARRA) after the Great Recession. This enables the potential for progressive local action that can spur creative democracy (Lake 2017) at the local scale. Even if it does not last, it represents a layer in the palimpsest of federalist policy toward more cooperative federal-local relations, and the potential for a broader "politics of repair" called for by planners (Williams 2024).

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Keywords: Local Government, Finance, Federal Policy, ARPA/COVID, Federalism

GENDER DYNAMICS OF ENTRY INTO SELF-EMPLOYMENT DURING PANDEMIC

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Individual Paper Presentation

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As self-employed individuals faced economic challenges and some were compelled to close their businesses during the pandemic, much of the research on self-employment has leaned towards investigating changes in the wages of the self-employed and their exit behaviors. There has been relatively less research on how the pandemic influenced people's decisions to enter self-employment. Using statistical methods and Current Population Survey data from 2018 to 2023, I examine the entry behaviors of various demographic groups and by their geographical locations. Here, entry into self-employment is classified into two types: transitioning from paid work to self-employment and transitioning from unemployment to self-employment.
Interestingly, I find that married women entered self-employment more frequently after the COVID-19 pandemic. Furthermore, they displayed a greater likelihood than their male counterparts to transition from paid employment to self-employment during this period. In the early stages of the COVID-19 pandemic, childcare facilities and schools closed down, which inevitably exaberated working parents' challenges. My results suggest that married

women with children tend to choose self-employment as a way to manage the dual roles of paid labor and childcare.

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Keywords: self-employment, gender difference, COVID

GLOBAL EVIDENCE ON IMPACTS OF URBAN RESTRICTION UNDER PANDEMIC ON RECOVERY

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Individual Paper Presentation

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Introduction

The COVID-19 pandemic has globally caused serious health risks since 2019. In response to the risks, heterogenous actions were made by governments. Some governments introduced social distancing and requested people stay home to reduce the spread of infections while other governments applied no/weak restrictions on daily activities even during the pandemic (Hale et al., 2021). Some governments with restriction policy may have successfully reduced infection risks but suffered from plummet in urban socio-economy due to poor business/commercial activities (Naseer et al., 2023); and their economic performance has still stayed at a substandard level. Meanwhile, other governments without restriction policy may have experienced many cases/deaths caused by the pandemic; however, some of them smoothly recovered their economic performance after the pandemic (Wu et al., 2024). However, no evidence is available regarding the association of government's pandemic policy with post-pandemic economies. To what extent did the government's restriction policy affect the level of post-pandemic economic activities? To answer this question, this study shows global evidence by empirically analyzing the impacts of movement-restriction policies on post-pandemic urban-activity levels in major cities. This study establishes a hypothesis that cities with office-disclosure policy have lower urban-activity levels than those without policy. This is verified with empirical data covering the period from 2016 to 2022.

Data and Method

Three kinds of data are used: (1) socio-economic, demographic, and geographical data of urban centers, collected from Global Human Settlement Layer of European Commission, Urban Research Centre; (2) Nighttime light (NTL) data (15 arc-seconds, approximately 500 m grid cell size), produced using monthly cloud-free radiance averages obtained from low-light imaging day/night band data collected by the National Aeronautics and Space Administration/National Oceanic and Atmospheric Administration Visible Infrared Imaging Radiometer Suite (Elvidge et al., 2021); and (3) government's responses to the pandemic, collected from the Oxford Covid-19

Government Response Tracker. Using the above data, a global dataset was developed where representative data of central business districts (CBD) are summarized for 304 cities with 1.5 million or more population. The CBD is defined as an area with top 10% of NTLs in 25km-radius circle in each city.
Then, a difference-in-differences (DID) model is employed where the urban-activity level is a dependent variable, which is represented by NTL. It is formulated as:
〖lnY〗_ct= β_0+ β_1 〖treat〗_ct+ u_c+ λ_t+ ε_ct
where Y_ct: average NTL in CBD in city c at year t; 〖treat〗_ct: dummy that equals 1 if the office-closure policy is introduced in city c at or before year t and 0 otherwise; u_c and λ_t: city- and year-specific fixed effects, respectively; and ε_ct: error term. Our main concern is β_1; if it is significantly negative, the office-closure policy reduced the urban activities.

Results
The model was successfully estimated with adjusted R-squared of 0.983. The estimation results show that the office-closure policy reduced urban activities by 5.89%; however, its statistical significance is weak (p=0.052). The robustness tests are also performed including a parallel trend assumption test and a placebo test, suggesting our results are quite robust.

Conclusion
This study revealed that the office-closure policy reduced the urban economic-activity level after the pandemic although its statistical significance was weak. This suggests that policy makers should carefully examine a trade-off between reducing cases/deaths caused by infections during the pandemic period versus economic recovery in the post-pandemic period when they would face the pandemic in the future.

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Keywords: Pandemic, Office-closure policy, Post-pandemic period, Urban-activity level, Nighttime light data

INNOVATION ON STREETS: STREET VIEW AND SPATIAL DISTRIBUTION OF INNOVATION
Abstract ID: 1108.0.0.422.2024
Individual Paper Presentation

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Innovation occurs within cities and clustered on the streets, where a favorable street view quality fosters a positive atmosphere for enterprise innovation. As Shanghai strives to become an excellent global city, both its street view quality and enterprise innovation capabilities serve as exemplary representations. Against this backdrop, this paper employs machine learning algorithms based on object detection and semantic segmentation, using the big data from Baidu Street View of Shanghai, to analyze the spatial distribution characteristics of street view indexes around enterprises and empirically examine the impact of diverse street view characteristics on the spatial distribution and concentration of enterprise innovation. The study reveals significant disparities in the spatial distribution characteristics of diverse street view indexes within a 1 km radius around enterprises in Shanghai. Moreover, different street view indexes have varying effects on enterprise innovation. Positive and significant influences are found from indexes such as the presence of cars, bicycles, green view rate, sky view rate, sidewalk rate, and street view diversity index. However, the presence of pedestrians and the building rate have a significant negative impact on enterprise innovation. Furthermore, we find the spatial heterogeneity in the results. Enterprises located in the core areas and Open Economic Zones of Shanghai are more affected by street view indexes. This paper emphasizes the important impact of enhancing urban spatial quality, represented by street view quality, on fostering the agglomeration of enterprise innovation. In urban planning, efforts should be actively directed towards transforming streets into attractive spaces with an innovative atmosphere.

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Keywords: Street View images, Enterprise innovation, Machine Learning, Object detection, Semantic segmentation

PARALLEL NARRATIVES OF LAND ACQUISITION IN THE NATIONAL CAPITAL REGION

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Individual Paper Presentation

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The unsurmountable pressure of urban growth in the National Capital Region (NCR) of Delhi, India has consumed over three thousand villages in just the last two decades. Urban agglomeration is infringing upon inhabited villages in peri-urban areas covering over 21,270 sq. miles area (NCR 2018). Cities grow expand and invest in major land-intensive economic infrastructure projects such as metro rail, airports, Ports, and industrial areas including servicing land for housing and supporting other urban development activities. Indian public agencies have employed various land appropriation mechanisms to assemble large swaths of land.

This paper will focus on the NCR area and compare two land assembling models used there – a participatory land pooling model and a coercive land acquisition-based assemblage. The land pooling in the NCR is used by the Delhi Development Authority (DDA), a public land development agency focusing on housing in the Delhi region to increase the supply of affordable housing, while another model is used in assembling land for the Noida International Airport (NIA) in GB Nagar district of Uttar Pradesh within NCR. This research will present the two models as used in the NCR area and will showcase how the assemblage was conducted, the role that the public agencies (DDA and NIA) and the private land owners played while focusing on two villages – the Narela village in the DDA's land pooling area and the Rohi village in NIA area. It provides insights into the advantages and shortfalls of the two land assemblage models and proposes policy recommendations for future assemblage that recognize impacted families as partners in the development and are cognizant of their needs.

Appropriating land from the villagers in the presence of democratic media requires justification, which is built differently in two distinctly different approaches adopted by the administration at DDA through its DDA Land Pooling Policy and the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement Act, 2013. Exploration of two strategies adopted within the NCR by the administration in two locations separated by less than a hundred kilometers can explain the struggles toward a common future while bringing the discussion on the people's agenda to the center. Using plans, policies, and other related documents procured from the NIA, DDA, and other public agencies involved in the NCR, we conducted a semi-structured questionnaire survey of the impacted families and also mapped the physical, social and economic features as provided in the new homes and areas developed during the R&R areas in the two villages.

There was a change in the acquisition strategy by the Delhi Development Authority, through the Land Pooling Act in notified areas of Narela. The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement Act, 2013, nearly 3,300 Acres of land was acquired in phase 1 of the NIA in 2020. There are 8,000+ affected families of which 3,074 were displaced (R&R reports). Of the five displaced and relocated for the first phase of NIA, Rohi is studied in detail. This R&R is backed by a Social Impact Assessment and Environmental clearances from the Ministry of Environment Forest and Climate Change. The Delhi Development Authority's Land Pooling policy to lower the cost of acquisition, by entering into a 60:40 partnership with the farmers who own the land. Acquisition under the land pooling policy under the Delhi Development Act is remarkably different and brings new transformation challenges that could include economic isolation of areas and the accumulation of land into bigger parcels that bring different forces into play. This research is dialectic. It argues that the use of two land acquisition strategies requires improvisation.

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Keywords: RFCTLAR&RAct,2013, DDA Land pooling, Transformation, Land Acquisition, New Urban Agenda

RACIAL INEQUALITY IN THE BENEFITS OF BUILDING A CAREER IN A BIG CITY

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Individual Paper Presentation

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Big cities offer many benefits including, on average, higher wages for the workers who live in them. One reason for this “urban wage premium” is that bigger cities provide greater opportunities for workers to accumulate skills and experience that are valuable in the labor market (De la Roca & Puga, 2017). At the same time, racial wage inequality is also higher in bigger cities (Ananat el al., 2018; Buchholz, 2023). In this paper, we examine whether part of this greater inequality in bigger cities is due to racially uneven returns to building a career in a big city. We use restricted-access data from the National Longitudinal Survey of Youth 1979 cohort, which allows us to follow workers over their entire careers and match their work experience to big and small cities. Our main finding is that big city work experience is worth about one quarter to half as much for Black and Latinx workers as it is for White workers. We consider to what extent these disparities might be due to racialized occupational differences, as high-skill occupations in particular have a large urban wage premium. Our main results are very stable even after accounting for racialized disparities in occupational sorting (i.e. are Black and Latinx workers less likely to work in certain high-wage occupations), and racially disparate remuneration in certain occupations (i.e. does the pay within certain occupations depend on a worker’s race). However, we do find that a significant portion of the disparity in the benefits of big city work experience can be explained by racial disparities in the benefits of high-skill work experience, which are significantly lower for Black and Latinx workers. Finally, we provide some suggestive evidence that high cost-of-living in big cities may underlie these inequalities (Bunten et al., 2023). Overall, this research identifies a heretofore unknown source of inequality that is distinctly urban in nature.

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Keywords: Inequality, urbanization, wages, cost-of-living

REAL-ESTATE SPECULATION AND THE OBAMA PRESIDENTIAL CENTER IN CHICAGO

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Individual Paper Presentation

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Establishing anchor institutions in low-income communities as a spatially targeted economic revitalization strategy is a common practice in US cities. These anchors seek to bring social and economic stability to neighborhoods through job creation, making sustained community investment, creating sites of community organizational collaboration and governance, and often contain education and workforce development capacities to upskill a local workforce. These anchors differ from smaller-scale satellite offices of universities and health care institutions in that their scale reflects an effort to be more transformative for communities. Established anchors can also exert new influence on adjacent communities through new involvement in urban development initiatives.

The role of anchor institutions as developers and collaborators in processes of shaping neighborhood development trajectories poses specific accountability challenges for communities. While anchor institutions may have broad social missions, they now constitute an outsized source of development for neighborhood revitalization as they garner support from city governments to advance their own institutional interests without needing to adhere to formal accountability measures such as transparency and clearly defined community benefits (Fennelly 2023; Rich and Tsitsos 2018). City governments support these 'third-sector' actors in what has been coined the 'third wave' of gentrification, marked by heightened government support and entrepreneurialism in enabling larger-scale investments for urban revitalization that gentrifies neighborhoods (Hackworth and Smith 2001).

On May 12th, 2015, the Barack Obama Foundation announced that the future Barack Obama Presidential Center (OPC) would be located on Chicago's South Side in either Washington Park or Jackson Park. In a recorded video announcing the Presidential Center's future South Side home, President Obama discussed the project's ability to change the South Side in stating, "[w]ith a library and a foundation on the South Side of Chicago, not only will we be able to encourage and affect change locally, but what we can also do is to attract the world to Chicago" (Obama Foundation 2015). And there is no question the greater South Side's residents can benefit from new jobs and economic activity, education and workforce development opportunities, youth programming, and world-class community spaces. However, tension exists within the duel aims of creating world-class physical structures and amenities in a place, and the ability to localize impacts when local residents are subjected to land and property markets that will reflect the speculation of an actual increased desirability of spaces that increases rent prices and property values.

Measures to ensure incumbent populations benefit from new developments can take many forms, such as local hiring guarantees with living wages, creating and preserving affordable housing, small business supports, and dedicated access to new facilities for community members and organizations, and are often included in a formal CBA. With the wide variety of aims, and associated benefits and burdens that different anchors can bring to a community, each project should be judged differently by its community impacts and ability to deliver on its goals

which can be codified into formal agreements or left to less- or un-structured commitments with no enforcement mechanisms.

This paper will focus on the OPC as an anchor currently under construction within Jackson Park on Chicago's South Side through an examination of the announcement effects of the Center on property sale and rent values in the surrounding communities using a regression discontinuity in time research design. Through the case of the OPC, we will compare housing market impacts to community organizing efforts, paying specific attention to their sequencing, to illustrate the comparative swiftness in which the market responds to a perceived increased desirability of an area in relation to housing affordability preservation efforts.

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Keywords: Real-estate, Gentrification, Community Benefits Agreement, Anchor Institutions

REGIONAL HIGH TECH INNOVATION GROWTH AND TRADITIONAL KNOWLEDGE STRUCTURE

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Individual Paper Presentation

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Despite aspirations for sustained economic competitiveness, regions rarely experience perpetual growth. A primary factor contributing to a region's economic downturn is its specialization in specific industries that subsequently decline, as evidenced in the Rust Belt regions of the United States (Glaeser, 2005; Martinez-Fernandez et al., 2012). In response to industry-driven decline, regions adopt various economic revitalization strategies to reinvent their export base, enhance innovation, and restore competitiveness. A prevalent approach involves cultivating specializations in emerging, high-tech industries such as computer technology, pharmaceuticals, and biotechnology, which diverge from the regions' traditional industrial specializations.

Significant progress in agglomeration research has shown that the industrial or knowledge structure of a region's economy drives innovation growth (Feldman & Audretsch, 1999; Glaeser et al., 1992). Relevant theories include the theory of Marshall-Arrow-Romer externalities, Jacobian externalities, and related and unrelated variety (Frenken et al., 2007). However, prior studies have predominantly examined the impact of a region's overall or

sector-specific industrial structure on either aggregate or sector-specific innovation growth. The link between preexisting industrial structure and the emergence of new industrial strengths, critical for regions seeking to reinvent their export base, has received less attention. This essay shifts the focus towards the processes of economic restructuring, investigating whether a region's innovation growth in high-tech industries correlates with the knowledge structure of its traditional industries.

This study employs the US Patent and Trademark Office (USPTO) technological classification and patent data to define high-tech and traditional technological fields. Through regression analyses, the paper tests whether a more specialized or diversified knowledge structure of traditional technological fields better encourages high-tech innovation growth from 1986 to 2014. The findings indicate that regions with greater diversity across both related and unrelated traditional technological sub-categories demonstrated higher levels of innovation in high-tech fields, thus exhibiting a stronger capacity to restructure their knowledge base. In contrast, a high degree of specialization in specific traditional technological sub-categories negatively impacts a region's ability to undergo restructuring. The trend remains consistent across multiple time periods from 1986 to 2014.

This study further elucidates how knowledge diversity can lead to innovation within technological fields that significantly diverge from a region's historical specialization. It suggests, first, that regions with a broad array of traditional technologies provide a fertile ground for high-tech companies to identify new market needs and integrate emerging industry knowledge. Second, such diversity, often seen in larger economies, facilitates the support of high-tech start-ups, including those that deviate from their initial technological specializations. Third, while scholars may argue that regions historically focused on specific traditional technological fields have successfully integrated high-tech expertise, this study challenges this view, positing that most of these regions actually exhibit a high degree of related variety rather than a high degree of specialization.

For policymakers, the findings advocate for a diversified industrial strategy, especially emphasizing broader sectors that encompass a variety of related sub-industries to enhance economic resilience and facilitate the adoption of new technologies and emerging opportunities. Policy measures could include creating incentives for adopting and developing technologies adjacent to but outside the traditional economic stronghold of the region, and investment in education and training programs that equip the workforce with versatile skills applicable across various sectors.

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Keywords: High-tech Innovation, Knowledge Structure, Economic Restructuring, Industrial Diversification, Industrial Specialization

REIMAGINE THE INFORMAL ECONOMY THROUGH OUTDOOR MARKETS USING BIG DATA

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Individual Paper Presentation

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The urban informal economy has been extensively conceptualized as encompassing activities that lack official recognition or regulation, and it has been linked to issues of income inequality and job insecurity (Castells & Portes, 1989; Chen & Carré, 2020). Nevertheless, there is an increasingly acknowledged perspective that the informal sector can also encompass dynamic and entrepreneurial endeavors, particularly in creative industries and knowledge-based economies (Sassen, 2006; Webb et al., 2009). Moreover, the trend towards formalization of the informal economy further fosters integration between the informal and formal economic sectors (Dell'Anno, 2022). While the outdoor markets in China can be situated within the purview of the informal economy due to their higher adaptability for the market, lower cost for entry, and deficiencies in protecting consumer rights, they have received much more regulation by the government.

Viewing the outdoor markets as signifiers of the urban informal economy under this new paradigm, this research aims to address three questions: (1) how the visibility, convenience, and attractiveness of outdoor markets are revealed through the combination of multi-source data, (2) what the spatial-temporal patterns of social media exposure for the outdoor markets are in the past five years, and (3) what the relationship between the digital presence of outdoor markets and the spatial attributes of its surrounding environment is.

Prior scholarly literature examining the informal economy and its relationship with the environment has predominantly focused on empirical analyses involving street vendors (Igudia, 2020), underground economic activities (Kristianto et al., 2021), and informal employment (Webb et al., 2020). However, limited attention has been given to exploring the interconnections between outdoor markets and the physical environment. By leveraging multi-source data, this study addresses these research gaps and hypothesizes that (1) the social media exposure of outdoor markets varies across cities and over time, (2) the attributes captured by street views exhibit variations across cities and over time, and (3) the social media exposure of outdoor markets is influenced by the presence of nearby points of interest (POIs) and distinctive street views of the surrounding environment.

This study capitalizes on the inherent tendency of outdoor markets to stimulate social media sharing by leveraging Weibo, a prominent digital platform that combines social networking and microblogging functionalities in China. Drawing upon Weibo posts pertaining to outdoor markets from 2019 to 2023, a total of 18,320 geographical coordinates corresponding to these markets were identified from 76,335 geotagged posts. To enhance the analytical framework, this study integrates point of interest (POI) data and employs the K-Means method to identify outdoor markets with four geographical tags: "shopping malls nearby," "main streets nearby," "tourist attractions nearby," and "parks nearby." Additionally, the Random Forests method is utilized to classify outdoor markets into three thematic categories: handicrafts, food, and lifestyle. Leveraging the street view images sourced from Baidu Map, this study assesses various aspects of the surrounding environment of outdoor markets, including greenery, openness to the sky, building height, and traffic infrastructure. These assessments are conducted using a semantic segmentation model and a transfer learning approach.

This study makes noteworthy theoretical contributions by shedding light on the intricate dynamics between the

physical environment and the emerging paradigm of urban informality. Theoretical frameworks employed encompass the theory of the production of space (Lefebvre & Nicholson-Smith, 2009) and state entrepreneurialism (Liu & Yau, 2020). Moreover, the study introduces a novel approach to capture the interplay between the urban informal economy and spatial considerations, utilizing a cutting-edge amalgamation of social media posts, POI data, and street view data. This innovative approach holds significant potential in informing decision-making pertaining to the location choices of outdoor markets and facilitating government support.

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Keywords: Informal Economy, Outdoor Markets, Open-Source Big Data, Street View, Social Media

THE COASTAL FRINGE TRAP IN CATCHMENT VULNERABILITY OF SMALL BUSINESSES

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Individual Paper Presentation

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Anticipated climate change poses a significant threat to coastal communities in the United States, exacerbating environmental shocks and highlighting their vulnerability to storm- and hurricane-induced hazards. Recent events, such as the heavy precipitation and flooding in Southern California, underscore the urgent need to address these growing threats. These threats can disrupt human activities and impede the overall well-being of coastal communities. Despite their importance as social infrastructure and pivotal entities of the local economy, CSBs are under-affected. Community-based Small Businesses (CSBs) are particularly vulnerable to coastal hazards due to a combination of internal characteristics and the sensitivity of customer demand to disturbances. To improve their resilience, it is necessary to develop strategies that take into account their unique vulnerabilities. Due to the fact that CSBs rely on customer visitation to ensure their economic and social roles within the community, the vulnerability of the customer catchment area and the CSBs are two sides of the same coin.

Studies in the field of small business vulnerability have deeply engaged business owners and have focused on business-centered attributes while lacking a thorough mapping of demand-side vulnerability. Additionally, the variability in vulnerability among different sectors and sizes of businesses, as well as among different coastal

regions, remains underexplored. Without a holistic understanding of how environmental disturbances, such as floods and extreme winds, impact customer visitation and business continuity, local and regional planners lack essential information for equitable planning that facilitates CSB vulnerability. Leveraging large-scale customer visitation and mobility data is a promising approach that expands the opportunity to account for interdependence between CSBs and catchments. This research aims to bridge these gaps by quantifying the demand-side vulnerability of CSBs through a comprehensive assessment of visitation-based catchment areas. Specifically, it seeks to understand how the vulnerability of CSB catchments varies, highlighting disparities across spatial areas and industrial sectors among coastal communities, thereby contributing to a more nuanced understanding of CSB vulnerability in the face of climatic hazards.

We introduce the CSB-Catchment Vulnerability Index (CCVI), a novel approach that aggregates the vulnerability of catchment areas to CSBs based on visitation data. This index combines the Social Vulnerability Index (SVI), assessing the socio-economic vulnerability of customers, with the Hazard Vulnerability Index (HVI), evaluating exposure to hazards within catchment areas. By applying the CCVI across 17 coastal metropolitan areas in Florida, USA, this research maps demand-side vulnerability and identifies spatial, community, and sectoral disparities in CSB catchment vulnerabilities. The findings highlight a spatial inequity effect, termed the “Coastal Fringe Trap,” indicating that CSBs on the fringe of coastal areas are generally more vulnerable but receive less attention in hazard-related planning. The finding contributes to the intersection of spatial planning and economic development that balance economic benefits and vulnerability concerns. A comparable analysis of CCVI across communities and sectors reveals the major metrics that contribute to place-based distinction, while also identifying three types of demand-side vulnerability among CSBs in different sectors. The CCVI informs local and regional planners with generalizable and comparable metrics, identifying vulnerable spatial areas, key local industrial sectors, and specific root causes. Recognizing the dual role of CSBs as both social infrastructure for communities and economic entities, we intend to suggest planning strategies that not only address customer vulnerability for CSBs but also facilitate resilient CSB service to vulnerable neighborhoods.

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Keywords: Small Businesses, Climate Adaptation, Vulnerability, Disparity, Spatial Planning

THE EFFECT OF ROBOT ADOPTION ON FEMALE EMPLOYMENT

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Individual Paper Presentation

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Amidst a technological renaissance characterized by significant productivity gains and cost efficiencies through advanced technologies like robotics, the narrative of technological displacement has raised alarms, especially regarding its demographic-specific impacts on employment. Women, often marginalized in the traditionally male-dominated manufacturing sector, emerge as a particularly vulnerable group in this technological transition. This study aims to rigorously examine how the integration of robotics influences female employment trends in manufacturing firms across South Korea.

The foundational theory of "Creative Destruction," as proposed by Schumpeter, underpins the study's theoretical framework, juxtaposing the economic vitality of innovation against its potentially disruptive consequences on labor markets. The literature review scrutinizes the dichotomy within scholarly debates surrounding technology innovation—where product innovation spurs labor demand by expanding markets, while process innovation, including robotics, might reduce labor demand, particularly impacting low-skilled jobs. Recent scholarship, however, presents a contrasting view, suggesting that technological advancements, while displacing some jobs, also create new employment opportunities through mechanisms like the price compensation effect, which lowers production costs and stimulates demand for skilled labor.

Employing a robust methodological framework, the study leverages data from the Survey of Business Activity of Korea, focusing on a sample of manufacturing firms from 2017 to 2021. It combines Ordinary Least Squares (OLS), Fixed Effects (FE), Propensity Score Matching (PSM), and Difference-In-Difference (DID) estimations to dissect the causal relationship between robotics adoption and female employment. This multifaceted analysis allows for a comprehensive exploration of the issue, mitigating potential biases and confounding variables to ensure the reliability of findings.

The empirical findings reveal a complex picture. Initial analyses suggest a general increase in employment following robotics adoption. However, deeper investigations using FE and PSM methodologies uncover a more troubling trend—a significant reduction in female employment in firms that have embraced robotics, compared to those that have not. This gender-disparate impact is further corroborated through DID estimations, which illustrate a marked decrease in female employment in robotics-adopting firms over the study period.

In conclusion, the advent of robotics in the manufacturing sector, while heralding efficiency gains and technological progress, poses significant risks of exacerbating gender disparities in employment. The study calls for proactive policy measures to address and mitigate these disparities, advocating for an inclusive technological advancement strategy that safeguards against the marginalization of female workers. The research underscores the imperative for regional and industrial policies that promote gender equity in the workforce, including educational and vocational training programs tailored to equipping women with the skills necessary to thrive in an increasingly automated industry.

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Keywords: Robotics, Innovation, Regional Economic Development, Propensity Score Matching

The Impact of Industrial Variety on Social Spatial Segregation

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Individual Paper Presentation

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Alleviating social spatial segregation is essential for promoting inclusive urban development. While extensive research has concentrated on the spatial segregation of residents with varying socio-economic characteristics, only a few studies have examined the formation processes and underlying mechanisms behind social spatial segregation. In the context of economic globalization and technological innovation, urban and regional economic structures have experienced significant transitions, thereby reshaping industrial compositions and concurrently affecting the labor markets. This study aims to explore the impact of industrial variety on the social spatial segregation of workers, thereby addressing the aforementioned gap.

Industrial variety, viewed as a novel dimension for understanding local economic development paths, offers a fresh theoretical perspective for examining workers' social spatial segregation. Related variety is characterized by knowledge spillover and collaborative innovation within industries, which could potentially exacerbate inequalities. In contrast, unrelated variety focuses on enhancing the economy's resilience to external shocks and on the provision of diverse employment opportunities, indicating a potential for inclusive development. Investigating how these two types of industrial variety affect the socio-economic attributes of workers and their residential choices requires systematic examination.

This study seeks to explore the influence of related and unrelated varieties of industrial development on workers' residential spatial distribution, and how this either contributes to or mitigates social spatial segregation. By incorporating industrial variety into the analytical framework, this study is enabled to uncover new trends and mechanisms of social spatial segregation within the context of economic development, thus promoting a vision for a more equitable and sustainable urban spatial development.

The study is centered on Shanghai, China, which plays a pivotal role in the country's efforts towards globalization. Accompanying adjustments in economic structure are social transformations and spatial reconfigurations that occur simultaneously. Utilizing subdistricts as the spatial research units, this study assesses the related and unrelated varieties of newly established enterprises using corporate registration data from 2018 to 2022, and analyzes the residential locations of workers through mobile phone signaling data from 2017 and 2023. The entropy index and the COV (coefficient of variation) of housing prices are employed to uncover the heterogeneity in residential spatial distribution and socio-economic attributes of workers. Subsequently, an OLS regression model has been constructed, using changes in the two heterogeneity indices as dependent variables, and related and unrelated varieties as independent variables, to ascertain the impact of industrial varieties on social spatial

segregation.
This study has found that unrelated variety displays a significant positive correlation with both the entropy index and the COV of housing prices, indicating that an increase in unrelated variety is associated with more diverse residential distribution and a broader spectrum of workers' socio-economic attributes. Conversely, related variety is observed to have a significant negative correlation with both the entropy index and the COV of housing prices, suggesting that an increase in related variety leads to more concentrated residential spatial distribution and a more homogeneous socio-economic attribute profile among workers. In other words, combinative development within industrial sectors poses a risk of exacerbating social spatial segregation, while combinative development across unrelated industrial sectors contributes to alleviating social spatial segregation.
By utilizing multi-source big data, this research has achieved a quantified measurement of workers' social spatial segregation and has revealed the intrinsic link between economic development and social spatial segregation. This study contributes to enhancing the quality of local economic development by integrating a social dimension, striving for a development trajectory that is both sustainable and inclusive.

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Keywords: Social Spatial Segregation, Related Variety, Unrelated Variety, Shanghai

UNRAVELING REGIONAL ECONOMIC RESILIENCE: MEASUREMENT AND DETERMINANTS

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Individual Paper Presentation

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The concept of economic resilience within regions has become increasingly prominent in the discourse of urban planning and regional economic development. This heightened interest is fueled by the challenges posed by economic recessions, the Covid-19 pandemic, and climate change, offering a fresh lens for understanding regional economic dynamics through frameworks such as vulnerability to disruptions and adaptive capacities. Despite the rapid adoption of the resilience framework, criticisms have emerged regarding its conceptual fuzziness and the lack of consensus on metrics and operationalization methods, potentially leading to misguided policy interventions.
To address these concerns, this study employs the minimum business continuity objective framework and the resilience triangle, commonly utilized in scholarly works focusing on an engineering perspective of resilience. Our conceptualization of economic resilience revolves around regional work capacity, highlighting a region's ability to maintain and recover its production capacity and employment base against enduring cyclical economic fluctuations and transient disruption. Applying this approach, we evaluate the economic resilience of 229 administrative units in South Korea, revealing significant variations in their ability to maintain and recover employment levels amidst recessionary shocks.
Furthermore, we conduct a comprehensive exploration of the regional characteristics associated with economic resilience. Initially, we select potential variables from theoretical studies and empirical evidence, followed by the identification of key regional characteristics exhibiting robust correlations with economic resilience through rigorous statistical analysis. These identified characteristics are systematically categorized within the established framework of the "4R's of Resilience" – robustness, redundancy, rapidity, and resourcefulness. Moreover, we extend our analysis to explore how 4R's of resilience interact and influence each other, offering a nuanced understanding of the multifaceted nature of economic resilience within regional contexts.
Our study yields not only to the advancement of widely applicable metrics for evaluating regional economic resilience but also have substantial implications for policy development and regional planning practices. By contextualizing factors linked to regional economic resilience within the popular 4Rs concept, practitioners and decision-makers can readily identify areas for improvement and translate insights into bespoke policy goals and strategies tailored to the unique needs of regions. Furthermore, our study underscores the importance of cohesive policy frameworks aimed at bolstering regional economic resilience, acknowledging the intricate interplay among factors of economic resilience.

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Keywords: Regional Economic Resilience, Work Capacity, Minimum Business Continuity Objective, 4Rs of Resilience

BROWNFIELDS JOB TRAINING: PROBING CHALLENGES FOR WORKFORCE INTERMEDIARIES

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Research-in-Motion (RiM)

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Workforce development is a term used frequently across economic development literature and is emerging as a key component of community economic development programs. Formally, Workforce development programs encompass programs, policies, practices and institutions that help labor market actors create, sustain and retain a skilled workforce (Schrock 2013, Leigh and Blakely 2013). Demographic transitions, globalization and rapid changes in technology have created a changing landscape within which individuals, employers, public-sector and non-profit workforce development agencies operate within. Workforce development programs are often viewed as "people centered" economic development strategies and as a path to more equitable economic development (Tan et al. 2016; Garmise 2006) but reviews of current workforce development programs suggest that mainstream approaches to designing and implementing programs are dated and this may contribute to a "skills gap" between many in the workforce and potential employers (Lowe 2021; Zaber et al. 2019). In addition, questions exist about the effectiveness and efficiency of various workforce development programs (Hollenbeck and Huang 2016; Simons 2013; Eberts, Bartik and Huang 2011).

This Research in Motion paper examines the contextual (local economic and employment trends, changes in program design or size, changes in local policies, etc.) and organizational factors (staff and board capacity, changes in organizational missions, changes in funding organizations and programs, challenges with grant administration and project management, etc.) that affect job training practices and policies for organizations that have been recipients of US EPA sponsored Brownfield Job Training Grants between 2018-2022. 72 different workforce development agencies have been recipients of 80 brownfield job training grants during this time. Through surveys, semi-structured interviews and working with key program informants this paper is aimed at exploring the experiences these organizations, termed "workforce intermediaries" (Lowe 2021) in that they work to directly match employer needs with a trained workforce, have had when implementing job training programs aimed at providing training activities that support assessment, cleanup, and preparation of brownfield sites for reuse.

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Key Words: Brownfields, Workforce Development, Job Training, Green Jobs, Workforce Intermediaries

FOSTERING INCLUSIVE INNOVATION DISTRICTS THROUGH COMMUNITY ENGAGEMENT

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Research-in-Motion (RiM)

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Over the past two decades, the concept of “Innovation Districts (IDs)” has emerged as a pivotal urban economic development model aimed at fostering innovation and creativity within urban areas while enhancing cities' economic competitiveness. IDs have gained popularity among urban and economic scholars, policymakers, and urban planners. While they hold promise for delivering economic, physical, and social benefits, there are indications of potential negative impacts associated with their implementation. Zandiatashbar & Kayanan (2020), in their examination of innovation-igniting urban developments, identify significant adverse effects such as polarized labor division, housing unaffordability, unequal access to opportunities, and socio-spatial polarization. Similarly, Morisson & Bevilacqua (2019) highlight that IDs may exacerbate economic, social, and racial polarization within urban areas. Additionally, Griffith (2015) discusses the displacement of existing residents and the deepening of socioeconomic divides as other negative consequences of IDs, particularly affecting low-income and minority communities, leading to spatial segregation. Furthermore, Kayanan (2022) argues that while IDs initially attract entrepreneurs with smaller space needs, driving development where larger corporations are not investing, a shift occurs once the economy improves, focusing on securing higher rents, which can result in the displacement of smaller entrepreneurs.

While there is a consensus among experts that innovation districts should prioritize inclusivity and accessibility for all urban residents, particularly those with lower incomes, there are apprehensions regarding whether these districts genuinely lead to inclusive development (Kayanan, 2022). There is a risk that if real estate development interests take precedence, affordable housing for lower-income workers and essential public services might become secondary concerns, or worse, be entirely overlooked. Esmaeilpoorarabi et al. (2020) conducted a study on public interaction with IDs in Sydney, Melbourne, and Brisbane, revealing that although these districts are acknowledged, actual public engagement remains limited, mainly involving younger, educated individuals. Despite aspirations to promote inclusive urban development, these districts struggle to attract diverse public involvement, prompting concerns about their impact on social and economic inequality. While there is evident interest from local communities, suggesting potential for neighborhood revitalization and resource sharing, underscoring the necessity to engage local communities in IDs, the evaluation of community engagement and inclusivity within IDs has been lacking both in practice and scholarly research.

Although numerous studies have explored the adoption of innovation districts as drivers of economic growth, their current impact on local communities remains poorly understood. There is a notable lack of research on how these districts benefit local communities and the level of public engagement within them. This study seeks to address two primary questions: 1) How are communities engaged throughout the various phases of IDs development and operation? 2) How do policymakers respond to the negative social consequences of innovation districts on local communities? Employing qualitative methods, including content analysis, community surveys, and focus group interviews (triangulation), this study focuses on the Oklahoma City Innovation District (OKC-ID) to investigate these questions. Additionally, socio-spatial analysis is conducted to assess the impact of OKC-ID on marginalized communities within the district boundaries.

This study offers planners and policymakers invaluable insights into the development of effective strategies aimed

at mitigating negative consequences within IDs development. By delving into the analysis presented herein, planners and policymakers can gain a deeper understanding of the specific needs essential to engaging all community members within IDs. This heightened awareness will facilitate the formulation of more robust policies geared toward fostering social inclusion within these districts. Moreover, by identifying the factors that contribute to community engagement and inclusivity, policymakers can tailor interventions to address the unique challenges and opportunities presented by IDs, thereby enhancing their overall effectiveness and impact on local communities.

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Key Words: Innovation Districts, Economic Develoment, Community Engagement, Inclusive Development, Socio-spatial Analysis

RECOVERY FOR ALL? WORK, GENDER, MOBILITY AND POST-COVID ECONOMIES OF CARE

Abstract ID: 1108.0.0.1255.2024
Research-in-Motion (RiM)

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As cities and economies around the world re-opened after the COVID-19 pandemic, economies, forms of mobility and work changed, perhaps permanently. Work-from-home rates rose, and transit ridership fell, as new constellations of economic activity emerge. However, these changes were neither consistently beneficial nor evenly

distributed. Many cities have undergone economic transformation, with particularly acute impacts on the employment and health of women and youth. COVID-19 mitigation has had disproportionate impacts on women and youth employment in specific economic sectors, and these groups have also been at high risk of adverse mental health outcomes given disruption of family supports, and school closure. Even as overall employment recovers, many women and youth struggle with the ongoing effects of these disruptions that create barriers to pre-pandemic levels of labour force participation.

This mixed-methods analysis of post-pandemic recovery in Toronto is focused on women and youth's employment, access to services, and labor participation and quality of work. We particularly focus on the notion of the "economy of care", considering access and engagement with household, social and community needs for women and those entering the workforce for the first time during and immediately post-covid.We rely on novel access to primary health care data held by public healthcare systems in the three cities of the study to track the recovery of basic, local health care services; interviews with staff at local clinics; fine-grained cell-phone mobility data; neighbourhood-level analysis of the built environment; and gendered changes in employment through and after covid to develop a model for changes in labor-force participation across urban geographies post-covid. We will examine the long-term recovery patterns in the three global cities to understand why some cities and neighbourhoods have better supported a resilient recovery – bounce back or adaptation leading to positive and equitable health and employment outcomes.

We identify interventions to reduce negative impacts of large-scale shocks and global events, based on innovative temporal and spatial data, mediated through individual, family and community factors. We generate evidence to inform policies for resilient urban recovery from the COVID-19 pandemic and protect vulnerable urban populations in future pandemics.

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Key Words: labor, gender, health, economy-of-care, urban morphology

REMANUFACTURING THE BROWNFIELDS CHALLENGE

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Research-in-Motion (RiM)

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Brownfields are a spatial consequence of both environmental hazards associated with industrial development and an outcome of deindustrialization. Historically, we considered these as separate policy challenges. In the 1990s, researchers identified land contamination left behind by heavy industry as a primary driver for vacancy and blight in urban core neighborhoods. Early work by Coffin and Shephard (1998) identified four key barriers to the redevelopment of brownfield properties; fear of liability associated with laws governing brownfield cleanup, lack of funding for brownfield identification and cleanup, lack of brownfield information, and lack of demand for brownfield properties.

Meanwhile, during the same era, deindustrialization was (and in many ways still is) studied as an economic outcome of changing technology and shifting location patterns in manufacturing. In Bluestone and Harrison's 1982 study of US deindustrialization, they point to the loss of over 30 million jobs in the 1970s as a direct result of plant closings, restructuring, or relocations.
What came to be known as the Rustbelt in the US signified disinvestment on a large scale, topping off the white flight and suburbanization of the 1950s and 60s. Urban core areas in what were once powerful manufacturing regions in and around the central Midwest, Great Lakes, and Northeast had become relics of an industrial past that few wanted to resurrect (Leigh and Coffin 2000). Many of these regions continued to see growth in the outlying areas, only to be plagued by the hollowed-out centers of their primary cities. St. Louis, Cleveland, Detroit, and Buffalo all stand as reminders of our industrial heritage but also classic examples of the brownfield challenges facing legacy manufacturing cities.

Cities have historically responded to brownfield challenges by focusing on removing redevelopment barriers. As a result, new land uses often diverge considerably from past land using activity in these locations. The rustbelt chic becomes an aesthetic that developers market to gentrifying urbanists as former manufacturing buildings become fashionable condos or food halls. Little attention is paid to what was lost; the jobs and tax revenue once generated by an active industrial sector.

This paper examines impacts of past brownfield redevelopment activity on industrial land in urban core areas by examining brownfield redevelopment practices in the city of St Louis. In particular, the research explores how brownfields serve as drivers of land use change, focusing on former and current industrial uses, and what impacts those changes are having on the economic and fiscal health of the city. Drawing on findings from other industrial land use studies like Grodach's work (2022) in San Fransisco and the Lester et. al. (2013) study in Chicago, IL and Charlotte, NC, this paper will explore whether brownfield redevelopment strategies still yield a more resilient and sustainable future for core urban areas? Specifically, how do the drivers of industrial land use change intersect with brownfield redevelopment activities in the urban core?

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Key Words: Brownfields, Industrial development, Land use conversion, economic development

RESHAPING THE FIELD: WOMEN/NON-MEN/WOMXN IN ECONOMIC DEVELOPMENT

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Research-in-Motion (RiM)

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A growing literature documents the importance of gender in the physical design of spaces (Navarette-Hernandez et al., 2021) and urbanism in general (de Duren et al., 2020). Gender mainstreaming scholarship has shed light on the many ways in which gender relates to both how public spaces are designed and how they are experienced by users (Ryan, 2019). While the planning field continues to prioritize the creation of just, equitable, diverse, and inclusive cities, the field of economic development has been slower to focus its efforts on inclusivity, especially from an intersectional and gendered perspective. To do just that, this research explores the history of women/non-men/womxn in the field of economic development and the myriad ways in which they have shaped and are reshaping the field. The research asks how the field has changed in recent decades and how gender shapes the work that economic developers do. It also documents the practical experiences of womxn working in the field today.

In 2001, Andre and Wesinger found that women's representation in economic development organizations (EDOs) at the state level increased by 56.6% during the 1990s (p. 71). However, that same study also found that the number of women in EDOs was still small (11.9% of all memberships) and concluded that "future research should focus on the extent to which women's agendas for economic development differ and whether women's influence is sufficient to advance an agenda" (ibid). As poignant as these findings are, that call was not heeded and there remains very little scholarship that addresses the influence of womxn in the economic development field. This research seeks to reinvigorate that conversation by analyzing current data from national organizations and stakeholder interviews. Demographic data on practicing economic development practitioners come from the International Economic Development Council, the Economic Development Division of the American Planning Association, and the Economic Development Track of the Association of Collegiate Schools of Planning. Qualitative data come from stakeholder interviews with practitioners and academics working in the economic development field, as well as sentiments conveyed in conversations with academics who participated in a roundtable on the topic at the ACSP Conference in 2021.

The research starts from the premise that, since its inception, the field of economic development has traditionally reproduced existing power dynamics. As the world changes and the field of economic development becomes increasingly diverse, it is important to understand intersections of identities and the potential for such identities to shift the practice of economic development. The research thus focuses on the ways in which an increasingly diverse economic development field may afford the opportunity to better identify and rectify historical injustices and discriminatory practices that have shaped our communities. More specifically, it considers the impact that

economic development decisions made by a more representative field of economic developers may have on different communities, especially womxn and others who have historically been marginalized within the development process. Preliminary findings suggest that the number of womxn practicing and teaching in the field of economic development continues to grow. However, the findings also show that the pace with which womxn's participation has grown differs substantially by race and ethnicity. Stakeholder interviews further suggest that womxn practicing and teaching in the field possess multiple identities that shape their experiences within the field, the ways in which they approach their work, and how they envision the future of the economic development field as the demographics of the field continue to change.

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Key Words: gender, representation, economic development

THE EFFECT OF JOB PROSPECTS AND CAREER MOBILITY CHOICES IN KOREA

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Research-in-Motion (RiM)

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Recent studies conducted in South Korea have shown that employment opportunities and job growth are predominantly concentrated in the metropolitan areas of the capital region. This phenomenon has led to significant disparities in employment rates and job sizes across regions. Despite the high cost of living and housing in the capital region, this study empirically analyzes the extent to which job prospects influence individuals' decisions to change jobs within the Korean capital region. Previous research suggests that factors such as young people's work values, job satisfaction, job prospects, and working conditions significantly impact job mobility decisions in the capital region.

The present study examines the impact of job prospects on voluntary job relocation decisions to metropolitan areas in Korea by addressing the following two research questions: (1) Is there a noticeable shift toward occupations with high job prospects? (2) Is there a significant turnover trend for the Korean capital region? The study used data from Korea's Graduate Occupational Mobility Survey and the Youth Panel. Furthermore, the study

used regression analysis and multilevel modeling to draw causal inferences.

Research trends suggest that job prospects influence labor market supply and demand, leading to regional imbalances. In addition, industries or occupations experiencing growth see high labor demand, often leading to population movements. For example, the tech industry's rise has increased the demand for jobs like programmers and data analysts, especially in the Pan-gyo area of the capital region, known for its concentration of IT companies. Recent literature extensively explores the implications of automation on the labor market, with studies confirming declining employment rates in manufacturing jobs due to automation, causing a structural shift toward service industries, which are less vulnerable to automation.

From a methodological standpoint, the present study's theoretical model draws upon prior research on turnover models, adapted to fit the Korean context. Regression analysis results indicate that age and job prospects positively influence the decision to change jobs, with the younger population exhibiting a greater tendency to relocate to the capital region, preferring jobs with better prospects. Furthermore, lower job satisfaction and higher wages were found to encourage migration to the capital region. Although the regression analysis verified causal relationships between key variables, multilevel modeling was employed to address inconsistencies in the unit of analysis. Multilevel model results confirmed that individual turnover decisions are positively influenced by job prospects.

In conclusion, the study finds a high turnover rate toward the capital region in Korea, necessitating a detailed examination of the underlying causes of this migration for urban planning strategies that encourage population inflow into experiencing outflow. The high rate of voluntary job-hopping among young individual suggests a pressing need for both companies and the government to enhance job opportunities and working conditions. This should include offering flexible work arrangements, career development and education opportunities, and making workspaces safer to support the growing trend of individual-driven job-hopping.

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Key Words: Job Prospects, Career Mobility, Multilevel model, South Korea

THE IMPACT OF OUTDOOR SEATING ON COFFEE SHOP VISIT VOLUME

Abstract ID: 1110.0.0.955.2024

Research-in-Motion (RiM)

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Urban third place refer to social surroundings separate from the two usual social environments of home and the workplace. (Oldenburg & Brissett, 1982) These spaces play a crucial role in urban living by providing settings for community engagement, relaxation, and social networking outside the structures of home and work. (Jacobs, 1992) Given the importance of urban third place, planners have responsibility to create policies to facilitate desired characteristic of it. Previous studies have identified outdoor seating as a specific characteristic for street setting to increased pedestrian traffic volumes and vibrant city environment. (Mehta & Bosson, 2021, Ringsberg et al., 2023) Another study found a positive relationship between retail sales and pedestrian infrastructure improvement such as outdoor seating. (Volker & Handy, 2021) However, the potential of outdoor seating to contribute to the visit volume of urban third place is understudied. This paper studies the following research questions: (1) does outdoor seating increase visit volume of urban third place? (2) if so, what characteristics of outdoor seating, such as quantity, density, material, and shape, lead to a greater increase?

This study uses coffee shops, as an example of urban third place, in New York City to examine the impact of outdoor seating on urban third place visit volume. Known as a bustling metropolis, New York City boasts a vibrant sidewalk cafe culture, which make New York City a particularly good testing ground to examine the impact of outdoor seating on third places.

I employ five sets of data from 2022 to 2023: location, rating, and characteristics of coffee shops, characteristics of coffee shop outdoor seating, visit volume of coffee shop, surrounding land use pattern, and surrounding demographic characteristics. The sample space, businesses that labeled as “coffee shop”, are located through the Google Maps’ Points of Interest (POI). The data for dependent variable, weekly visit volume of coffee shops, will be collected from Advan, a data provider. The data for independent variables, which include the number of outdoor seating provided, the seat density of outdoor seating area, and whether shade is provided, will be captured by image recognition process from google satellite map and google street view. Control variables capture (1) rating and interior design characteristics of coffee shops from google review, and (2) development and demographic characteristics of immediately adjacent blocks, which can be collected from New York City Automated City Register Information System (ACRIS) and Census Bureau respectively. Next step I will use regression to examine the impact of outdoor seating on the visit volume of urban third places.

After regression analysis, I expect to see (1) outdoor seating has a positive impact on visit volume of coffee shops (2) the impact of each characteristic of outdoor seating on visit volume of coffee shops.

This study contributes to urban third place literature by demonstrating the feasibility of utilizing outdoor seating to empower urban third place. Practically, this study can guide planners to encourage more outdoor seating, and suggest specific characteristic such as quantity, density, material, and shape of outdoor seating, to enhance social activities in urban third places for a better urban life.

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Key Words: Outdoor seating, Coffee shops, Networking Space, Social Capital, Urban Third Place

Track 4 – Environmental Planning & Resource Development

Track 4 Pre-Organized Session Summaries and Abstracts for the Sessions

IMPROVING CLIMATE ADAPTATION THROUGH INFORMED ENVIRONMENTAL PLANNING
Abstract ID: 1112.0.0.262.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.281.2024, 1108.0.0.286.2024, 1108.0.0.592.2024

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Urban green spaces are increasingly considered essential attributes for improving both public health and wellbeing, while also playing a key role in mitigating climate change impacts. Advocates for green space planning seek to improve access to urban natural areas among historical disadvantaged communities to address longstanding environmental injustices and spatial segregation. Yet, planning of green spaces within cities often face undervaluation and controversy. Different perspectives among city planners, urban designers, policymakers, and community leaders further complicate these efforts. In this session, we will present a range of case studies showing the complex dynamics surrounding green space planning. We will delve into cross-disciplinary insights and pioneering approaches. We will explore the benefits of planning green spaces for people, while also addressing the inherent challenges of environmental planning across diverse contexts. The session will highlight policy implications for sustainable urban development by examining the nuanced relationship between environmental justice, climate change, and green space development.

Learning Objective(s):

- We aim to foster a deeper understanding of how to navigate the complexities surrounding green space planning for more inclusive and sustainable urban futures.
- Session participants will learn about qualitative and quantitative methods used in studying human dimensions of green space planning.

LINKING ENVIRONMENTAL JUSTICE AND GOVERNANCE IN UGS EQUITY RESEARCH
Abstract ID: 1108.0.0.281.2024
Pre-Organized Paper Presentation

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Environmental Justice (EJ) is a framework that has been employed to examine various kinds of inequitable issues related to the "environment". It is argued that the "environment" should not only be conceived as the wilderness or the "big outside", but rather the environmental conditions in which people interact. This indicates the pluralistic interpretations of EJ are necessary and the environment we interact with daily is not deterministic as it encompasses more than just the physical and tangible environmental characteristics, but the socially constructed ones as well. In addition, EJ itself has gone through significant expansion in its research scopes with progress in normative justice theory and its engagement with other frameworks, including 1) moving beyond distributive patterns to include deeper institutional and structural conditions of recognitional and procedural justice. 2) carrying identity beyond political and cultural boundaries and expanding across spatial scales.
Characterized by the different stakeholders' notions of Justice in a specific context, the effectiveness of EJ policies varies. The relationships between government agencies, civil society, and nature are greatly reconstructed across geographical scales under neoliberal capitalism, thus, indicating the deliveries of EJ policies are affected by the governance structures and decision-making mechanisms greatly. Environmental Governance (EG) is about both the social organization of decision-making regarding the environment, as well as the production of social order via the administration of nature, individually and collectively. It is also concerned dearly about justice as it has always had moral implications from distribution, participation, and recognition.
To this day, limited empirical evidence is present that assesses the mechanisms that lead to the current UGS distribution over time regarding UGS governance. Therefore, we ask what the role of civic participation is in promoting Environmental Justice. To answer this question, the case study investigates the governance structure and institutions of UGS in Austin, TX, and utilizes identified conditions of interest, including proximity to the nearest UGS, per capita size of green space, and the civic participation values, to test census block-group-level UGS equity using Crisp Set Qualitative Comparative Analysis. The anticipated result will produce a truth table for each decade showing configurations comprised of different conditions of interest. The parameter of fit of consistency shows whether there exists empirical set relations of being necessary or sufficient. The findings will shed light on expanding the pluralistic understandings of EJ, the messy issues concerning governance practices beyond neighborhood scale, and the opportunity of EJ as a framework to integrate and frame new challenges and methodologies by engaging both spatial and temporal scales.

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Keywords: Environmental Justice, Environmental Governance, Urban Green Space

EVALUATING THE INTEGRATION OF NATURE-BASED SOLUTIONS IN LOUISIANA PARISHES

Abstract ID: 1108.0.0.286.2024
Pre-Organized Paper Presentation

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Climate change presents critical and immediate challenges, as highlighted in this investigation, both globally and in specific regions such as Louisiana, United States. Louisiana is particularly at risk from the consequences of climate change, including rising sea levels, extreme weather occurrences (such as hurricanes, floods, and heatwaves), and shifts in energy consumption and water supply. For example, in the forthcoming decades, Louisiana is projected to undergo increased temperatures, thereby escalating the risk of intense floods and droughts. In excess of 107,201 properties in New Orleans are at a high risk of flooding, with a probability surpassing 26% over the next 30 years, which constitutes 99% of all properties in the city. Addressing the diverse needs and challenges encountered by various societal actors impacted by climate change is the immediate responsibility of governments.

The objective of this study is to assess the integration of nature-based solutions (NBS) policies and actions at the local level in Louisiana, with an emphasis on their potential to strengthen climate resilience. NBS can provide multifaceted benefits, encompassing environmental, social, and economic dimensions, while proficiently addressing and adapting to the localized impacts of climate change, thus enhancing local resilience. However, the degree to which parishes in Louisiana incorporate NBS policies and actions to mitigate climate change is not yet understood. Due to the intricate nature of planning decisions, this research scrutinizes the current nature-based initiatives at the parish level in Louisiana. The specific aims are: (1) Identify the presence of NBS policies and actions incorporated into parish plans. (2) Investigate differences in the prioritization of NBS policies and actions across parishes. (3) Assess the degree to which NBS policies and actions tackle issues of systemic racism and inequality.

This study utilizes content analysis to scrutinize the plans of 64 parishes in Louisiana, exploring the conceptualization and execution of NBS policies within established parish-led planning initiatives. The process of identifying plans that address NBS involves the systematic gathering of formal plans/policies associated with official parish budgets, excluding those without endorsement from parish governments. These encompass topics such as nature-based solutions, green infrastructure, sustainability, climate resilience, hazard mitigation, all within comprehensive plans and other relevant planning documents at the parish level. We employ thematic and open coding techniques via Atlas.TI to systematically classify NBS. The classification framework encompasses the typology, functionalities, and advantages of NBS.

The expected results of this study can provide a comprehensive understanding of the integration and effectiveness of NBS in mitigating the impacts of climate change at the local level in Louisiana. Additionally, the investigation into how NBS policies address systemic racism and inequality could shed light on the social equity dimensions of climate adaptation efforts. The impact of these findings could be significant for policymakers, planners, and community stakeholders. By highlighting best practices and gaps in the implementation of NBS, the study could inform the development of more effective and equitable climate resilience strategies. Moreover, the insights gained could contribute to the broader discourse on sustainable urban planning and the role of nature-based approaches in addressing climate change. Ultimately, the results could pave the way for more resilient and inclusive communities in Louisiana and beyond.

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Keywords: Nature-based solutions, Climate resilience, Louisiana parishes, Content analysis

CLIMATE CHANGE ADAPTATION STRATEGIES FOR ACTIVE TRANSPORTATION IN US CITIES

Abstract ID: 1108.0.0.592.2024
Pre-Organized Paper Presentation

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Introduction. Climate change-induced hazards such as extreme heat, floods, and wildfires are affecting transportation in US cities. Cyclists and pedestrians are more exposed to these extreme weather events. For example, people might avoid biking, and pedestrians might choose longer but shaded routes during hot days. US cities are promoting active transportation as a mitigation measure for climate change. Therefore, it is necessary to explore the efforts taken by US cities to provide comfortable walking and biking facilities, considering extreme climate events.
Research goal. We examine how US cities include climate change adaptation strategies for pedestrians and bicyclists in their climate action plans, active transportation plans, bike plans, pedestrian plans, and urban forestry plans. This is the first national-level study to examine climate adaptation for active transportation.
Methods. We focused on the 100 largest US cities based on population in 2022. Understanding that climate adaptation for active transportation includes efforts by several planning sectors, we collected a variety of different plans for those cities. In total, we identified 75 climate action plans, 69 urban forest management plans, 32 active transport plans, and 88 bike and pedestrian plans. We then used combinations of keywords (e.g., adaptation, heat, cycling) to identify relevant paragraphs about climate adaptation for active transportation within those plans. Subsequently, we conducted content analysis for such relevant paragraphs, seeking to identify various types of adaptation strategies.
Results. The content analysis of the collected plans shows that most US cities have recently started including climate adaptation for active transportation issues. The plans noted the major climate change-induced hazards affecting active transportation, such as heat events, sea level rise, flooding, wildfires, cold weather, and others. Overall, more content in plans focused on climate mitigation strategies that aim to reduce motor vehicle miles

traveled by promoting active travel than on climate adaptation for active transportation.
Among the content focusing on adaptation, most strategies focus on addressing extreme heat threats and flood risk. Specifically, almost all cities are working to create more green infrastructure to reduce the heat island effect, such as increasing tree canopy and creating cool corridors. Many of these initiatives, such as San Diego's Green Street project, include green infrastructure strategies to reduce urban heat and flood risk, and thus, green infrastructure can address multiple adaptation issues. However, some cities face challenges in planting and managing street trees as trees cause conflict with utility lines and can damage sidewalks. Thus, plans report that planting street trees requires coordination among property owners, non-profit organizations, and city departments. Flooding is another threat that climate adaptation strategies are addressing. Some cities suggest interventions to reduce stormwater runoff, such as using permeable paving, improved drainage systems, de-paving parking lots, and modifying minimum parking requirements. For example, Tucson's Green Stormwater Infrastructure Program can potentially reduce the flooding impacts on neighborhood streets and provide shaded bikeways and walkways. Many cities often include equity considerations (e.g., the needs of low-income people, people with disabilities, and people of color) in these planning documents. Specifically, plans mention community input in expanding the active transportation network, prioritizing investments in majority-minority neighborhoods and low-income areas, Americans with Disabilities Act (ADA) compliant designs, and equitable access to transport facilities.
Implications. This research can help policymakers and planners understand the major climate change-induced hazards US cities face and their associated impacts on the active transportation sector. Our findings provide an overview of the climate change adaptation strategies for comfortable active transportation in cities around the US, and how these vary in different US regions. Planners can learn about funding opportunities and barriers to implementing climate adaptation for active transportation.

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Keywords: Active transportation, climate change, climate adaptation, green infrastructure

PREPARING A PLANNING WORKFORCE FOR THE ENERGY TRANSITION

Abstract ID: 1109.0.0.714.2024
Roundtable Submission

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An energy transition is underway. Technological advancements and reductions in costs for renewable energy, as well as huge federal tax incentives and billions in funding for infrastructure deployment, mean that is it is no longer "demand" for the technology that is the limitation; instead, the key hindrance is the ability to deploy (i.e., "supply") it fast enough.

While some of this infrastructure will certainly go into urban environments, most will be located in rural areas which have plenty of open space, low property costs, and low tax rates to host wind and solar farms. [For scale, most wind farms stretch over 25,000+ acres; the average size of a solar farm proposed in the Midwest is 1,600+ acres.] Indeed, more than 95% of the existing wind energy projects in the country and over 70% of the solar energy projects are in rural areas. That presents both a real economic opportunity to these communities but also challenges when not all members of a community are supportive of this change to their landscape, or when it is incompatible with other land use goals.

The need for planners to help communities—and private renewable energy developers—navigate this change has never been more urgent.

In this Roundtable we'll have a topical discussion with planning faculty engaged in teaching either energy planning or rural planning courses—or faculty who are interested in joining this small-but-growing crew—to discuss opportunities and challenges to preparing more students to be effective in the space. We'll start with pre-seeded questions including how to prepare "urban planning" students to be effective in the rural space, how to provide appropriate technical content without getting bogged down in the details, and discuss how to navigate the conversations which can be highly polarized. But the conversation will draw heavily upon the questions of roundtable attendees.

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Key Words: renewable energy, rural planning, energy transition

THE EVOLUTION OF ECOLOGICAL THOUGHT IN PLANNING

Abstract ID: 1109.0.0.25.2024

Roundtable Submission

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The interplay between environmental planning and ecology has been complex and, at times, inconsistently integrated. Historically, planning has predominantly focused on human ecosystems, often overshadowing the broader ecological context, despite environmental legislation and the undeniable ecological dimensions of contemporary environmental challenges such as climate change, disaster resilience, environmental justice and human health. This discrepancy highlights a gap between the theoretical underpinnings of planning as an applied form of human ecology (Steiner, Young, and Zube 1988) and the broader, often non-human (or more-than-human), ecological considerations.

Despite the ecological essence of many planning issues, the incorporation of ecological principles into planning has been relatively limited. Since 2002, each ACSP conference has featured at least one paper with "ecology" in its title, averaging around 4.5 per conference. However, the interpretation of "ecology" varies significantly, extending into interdisciplinary realms like "political ecology" and "social-ecology," with varying degrees of depth in engagement. Moreover, ecological concepts, such as the Tragedy of the Commons, permeate planning education and research (Brinkley, 2022), though Elinor Ostrom's Nobel prize winning work on collective resource management presents a critical evolution of this concept, emphasizing the potential for sustainable and equitable commons governance.

This roundtable aims to critically examine how ecological concepts and tools have been utilized and evolved within planning. The discussion will trace back to the integration of human ecology, as seen in Zipf's (1950) systems theory, and the influence of landscape architecture, notably through McHarg's (1971) regional analysis. The emergence of urban ecology (Alberti 2008) and the focus on urban resilience further exemplify the shifting dynamics between planning and ecology, emphasizing the integration of human, ecological, and technical dimensions. Yet, the field of planning, even within the environmental specialty, often lacks rigorous ecological training, hindering effective interdisciplinary collaboration and potentially leading to conflicting approaches in crucial research areas.

By reflecting on historical perspectives and exploring the potential for a more integrated future, this roundtable seeks to address past shortcomings and envision a path towards a more cohesive interdisciplinary approach. The discussion will explore opportunities for meaningful engagement between planning and ecology, aiming to enhance the resilience and sustainability of human settlements through informed and integrated planning practices.

Citations:

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Key Words: Environmental Planning, Ecology, Landscape, Interdisciplinary

Track 4 Individual Paper Presentations

A META-ANALYSIS OF GREENSPACE AND MENTAL HEALTH AFTER COVID-19

Abstract ID: 1108.0.0.1216.2024
Individual Paper Presentation

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The COVID-19 pandemic emphasized the benefits of natural greenspace on mental health in pandemic situations. The effects of greenspace on reducing mental health disorder is detected, but limitations impede highlighting the overall effectiveness of greenspace on mental health to be valid and significant. Therefore, this study aims to comprehensively and quantitatively analyze the effaectiveness and significance of greeenspace on reducing mental disorders after COVID-19 outbreak.

This study adopted systematic review to select adequate, necessary studies with significant association between greenspace and mental health after COVID-19. Meta-analysis is performed using the selected studies for calculating and analyzing the combined effect size of greenspace on reducing mental disorder, difference of effect size in various factors of greenspace or mental health, and variables' effects on greenspace or mental health. Also, correlation test using MQRS and effect size is performed to determine significant correlations of factors in greenspace and mental health.

The analysis confirmed the combined effect size of association between greenspace and mental health to be interpreted as large enough(medium effect size, 0.565). Various factors consisting greenspace or mental health had considerable effect sizes, with heterogeneity exists between studies of different greenspace and mental health aspects(subgroups). Significant correlation of factors in greenspace and mental health was identified, with correlations satisfying both reliability and effectiveness are used for suggesting necessary greenspace policies with mental health benefits during pandemic situation.

Different variables of study period, female proportion, and mean age significantly affected certain factors of greenspace or mental health, while the increase in effects of greenspace on mental health was detected as the COVID-19 period prolongs. Also, the regional heterogeneity of effects on association between greenspace and mental health is recognized in all factors consisting greenspace and mental health except for visitation of greenspace.

In conclusion, valid and significant effects were detected in various associations between greenspace and mental health. Based on the results of this study, conducting elaborated research and establishing adequate and necessary greenspace policies and strategies are recommended to effectively benefit mental health of citizens in future pandemic situations.

Citations:

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Keywords: Greenspace, Natural Environment, Mental Health, Mental Disorder, COVID-19

A MULTI-FACETED ANALYSIS OF CLUSTERING PATTERNS OF RENEWABLE ENERGY FARMS

Abstract ID: 1108.0.0.1013.2024
Individual Paper Presentation

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The transition toward renewable energy sources is critical in addressing global climate change and ensuring sustainable energy security both at the local and regional levels. By understanding the relations between physical characteristics, policy frameworks, and regional dynamics, planners can incorporate these findings into policy formulation and facilitate the implementation of targeted incentives and regulations to incentivize renewable energy adoption and foster more sustainable urban landscapes (Stokes and Warshaw 2017).

This research uncovers the clustering patterns of renewable energy farms (wind and solar photovoltaic) across the United States, encompassing both individual land-based and offshore wind turbines and large-scale ground-mounted solar photovoltaic (PV) installations with a capacity of 1 megawatt or more. By examining these patterns through multifaceted lenses, including physical/environmental characteristics and policy perspectives, this study explores the complex interrelationships of factors influencing the spatial distribution of renewable energy infrastructure.

Through the geospatial analysis performed with methods including spatial autocorrelation, spatial regression, and hotspot analysis (Rauner et al. 2016; Tercan et al. 2021), at the core of this investigation lies the examination of physical and environmental attributes such as solar radiation intensity and wind speed at different heights, which significantly impact the viability and efficiency of renewable energy installations. However, in addition to physical factors that are easy to explain and predict (Ko 2013), this study transcends the realms of environmental analysis to encompass policy perspectives, recognizing the central role of governmental regulations and incentives in driving the adoption and deployment of renewable energy technologies (Rozhkov 2023). By inspecting state-level policies and incentives, we attempt to define how different regions and individual states promote and support renewable energy development and how it is correlated with the clustering we identify. Through comparative analysis, we aim to uncover differences in policy frameworks and their implications on the spatial distribution and clustering patterns of renewable energy infrastructure, thereby providing insights into the effectiveness of policy interventions in fostering renewable energy adoption at the regional level.

Furthermore, this research explores the synergistic effects of physical/environmental characteristics and policy frameworks on the clustering patterns of renewable energy farms. By employing a comprehensive analytical framework that integrates both environmental and policy dimensions, we seek to unravel the complex interdependencies and feedback loops between these factors, shedding light on the drivers and barriers influencing the spatial distribution of renewable energy infrastructure in the United States.

In summary, this research offers a holistic understanding of the clustering patterns of renewable energy farms in the United States, encompassing both physical/environmental characteristics and environmental policy perspectives. By unraveling the multifaceted dynamics shaping the spatial distribution of renewable energy infrastructure, this study seeks to inform policymakers, stakeholders, and researchers alike, facilitating evidence-based decision-making and fostering the transition toward a more resilient energy future.

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Keywords: Energy Policy, Renewable Energy, Geospatial Analysis, Spatial Clustering, Sustainable Infrastructure

ACCEPTABILITY OF URBAN PLANNING ELEMENTS FOR CARBON REDUCTION

Abstract ID: 1108.0.0.307.2024
Individual Paper Presentation

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This research aims to contribute to the establishment of carbon-neutral policies in response to the global decarbonization transition by comparing the public acceptance of urban planning elements and policies aimed at reducing carbon footprints in South Korea and Germany. The study encompasses a comprehensive review of carbon footprint (CF) reduction research and policies within both nations, emphasizing sector-specific planning elements for food, housing, transportation, waste, and water consumption. Through the analysis of public acceptance and perception types towards these CF reduction planning elements and policies, the study aims to uncover actionable policy utilization methods. The research methodology involves an initial investigation of policy issues and research trends, followed by the delineation of the research scope and direction with expert consultations. Subsequent steps include the examination of CF reduction planning elements and policy initiatives, the derivation of sector-specific CF reduction elements using LangChain technology, and the validation of CF reduction plan elements and policy acceptance assessment items through expert consultations. The study further conducts an analysis of resident acceptance and perception types regarding sector-specific CF reduction planning elements and policies through online surveys targeting 500 individuals in South Korea and Germany, complemented by Q-methodology for perception type investigation and analysis. The comparative analysis of the survey results aims to identify the differences in determinants of acceptance based on perception types, leveraging descriptive statistical analysis and structural equation modeling. The ultimate goal is to propose policy utilization strategies informed by the comparative analysis of acceptance and perception type survey outcomes.

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Keywords: Carbon Footprint, Urban Planning, Public Acceptance, South Korea, Germany

ADAPTING IN PLACE:THEORIZING THE GROWTH OF SMALL TOWNS UNDER CLIMATE CHANGE

Abstract ID: 1108.0.0.1223.2024
Individual Paper Presentation

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This paper studies the role of community-based climate adaptation in contributing to the emerging pattern of in-place growth of small towns in India. Combining a multi-sited qualitative case study with a representative survey, the paper examines the institutional conditions under which adapting to decarbonization through ground water management results in successful local adaptation, and an increase in the rate of urbanization in the adjacent small towns. Centered around the long-standing theory based on the urban-rural dichotomy, the paper proposes an alternative theorization of a growth continuum between and around smaller urban centers. The paper asks: how does locally based climate adaptation planning influence regional growth pattern? Further, the paper inquires how local market economies determine the outcome of adaptation planning.

The paper uses empirical evidence from a community-based adaptation program in West Bengal state in India, implemented by the West Bengal Accelerated Development of Minor Irrigation (WBADMI) project. The WBADMI project implements community-based groundwater management schemes by creating project location specific community-based organizations called Water User Associations (WUA). Currently, 2695 WUAs manage ground water use by small-time farmer communities across the state. The World Bank funded project is in its second phase starting 2024, with a plan to expand its WUA formation scheme. This paper uses evidence based on strategic comparative case studies of two such WUAs located in the peripheries of the nearest urban centers. Demographically similar in nature, the two WUAs vary in their proximity to metropolitan regions, thus varying in having access to large market infrastructure to sustain the benefits generated by the WBADMI adaptation scheme.

The paper hypothesizes that access and proximity to urban centers determine the success and long-term sustainability of the adaptation schemes, primarily due to the role of spatial access in sustaining the change these interventions are able to bring to the environmental and economic ecosystem of the project locations. Based on preliminary findings, the study claims that the benefits of adaptation projects located within the urban-rural continuum, and closer to urban centers exceed that of projects located away from urban centers. The former location of localized adaptation then leads to the process of urbanizing in-place much faster than the latter. This urbanization process is marked by a shift in the existing agrarian economy, household prosperity measures and intrahousehold investment decisions. Data is collected through qualitative case study comprising of focus group discussion, stakeholder interviews and shadowing community leaders, and through a representative sample survey.

The study poses that adaptation projects located in the peri-urban interiors of metropolitan regions growing under the conditions of neoliberal environmental governance demonstrate a peculiar form of growth, wherein these smaller, semi-rural towns grow in-place, showcasing the characteristics of urbanization through new economic activities stemming from planned adaptation, while retaining their inherent unurbanized, visibly rural characteristics. This seemingly ‘unurban’ appearing development brings into a place the other characteristics of urbanization, such as an increase in population density, influx of floating population of informal sector workers, increased land prices, shrinking of cultivable land, and a marked decrease in agricultural activities.

The paper contributes to existing theories on climate adaptation, community-based organizations, peri-urban development, and place-based climate justice. From a planning implementation perspective, the findings directly inform the policies looking to find long term strategic planning solutions for sustaining state-interventions in assisted climate change adaptation.

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Keywords: Adaptation, Equity, Urbanization, Water User Association, Climate Justice

AN ANALYSIS OF LAND USE AND LAND COVER NEAR HIGHWAY PROJECTS IN CALIFORNIA

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Individual Paper Presentation

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Highway capacity expansion has wide impacts on land use and land cover (LULC). Cost-benefit analyses and environmental review processes for roadway capacity expansion and maintenance decisions do not comprehensively consider the LULC impacts. This study examined land cover changes directly associated with highway expansion in California, and the relationship between land use and the vegetation impacts of highway projects using satellite remote sensing data. The methodology involves a geospatial analysis of Normalized Difference Vegetation Index (NDVI) data in 18 sites across California before and after highway expansion project completion. We accounted for seasonality and included a set of control sites. Findings indicate that the impacts of highway expansion on changes in NDVI are diverse, stressing the importance of the environmental context around each individual project site. Sites that are located near less-developed areas with more extensive natural vegetation (e.g. sprawled areas or exurbs), show a significant decline in NDVI values. Virtually all sites with insignificant changes in NDVI after highway expansion are located in areas that already exhibit heavy urban development (e.g.,

Los Angeles, San José) or are otherwise located near large expanses of bare, non-vegetated earth. Also, project sites that experienced multiple types of construction (i.e., adding more lanes, widening sections, bridge renovation, etc.) were more likely to exhibit decreasing NDVI values compared to project sites that only experienced one type of construction. Decisions about highway construction and capacity expansion should consider the context and the full environmental impacts, including land use and land cover changes over time.

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Keywords: Environmental impacts of transportation, Highway capacity expansion, Remote sensing, Environmental quality review, Transportation infrastructure

AN EVALUATION OF QUEENSLAND LOCAL COASTAL HAZARD ADAPTATION STRATEGIES

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Individual Paper Presentation

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Approximately 85 percent of Australians live in the coastal region. Coupled with rapid population growth and increasing development pressure, climate change impacts such as rising sea levels and the increasing intensity of storms and cyclones pose growing risks to Australia's lifestyle, environment, and economy. Prior research provided a comparative analysis of adaptation to sea-level rise and coastal flooding in all Australian states and territories (Dedekorkut-Howes et al. 2021); however, no such assessment at the local level exists.

Queensland is one of the most vulnerable states to the coastal climate change impacts in Australia with the highest number of residential and light industrial buildings and the greatest value of existing road infrastructure at risk from a sea level rise (DCCEE 2011). More than 80 percent of Queenslanders live on the coast. The level of vulnerability and risk is well-known; however, action to date has been limited by all levels of government (Howes and Dedekorkut-Howes 2016). In 2016 Queensland state government launched the QCoast2100 program which funds Queensland coastal local governments to prepare Coastal Hazard Adaptation Strategies (CHAS) (Torabi et al.

2022). Of the 31 coastal local governments participating in the first phase of the program 26 of them released a draft or final strategy to date and the remainder are in the final stages of the process.

This project aims to examine local level coastal climate adaptation through the example of Queensland's QCoast2100 program. The research focuses on strategies for managing the consequences of sea-level rise in Australian coastal settlements and aims to answer the following questions: "What are local governments in Queensland doing to adapt to coastal flooding and sea-level rise? Are current initiatives sufficient to manage the risks? How can they be improved?" These questions are answered through an evaluation of the CHAS documents completed to date in terms of their comprehensiveness, implementability, transparency, stakeholder engagement, and inclusion of best practice coastal adaptation strategies and practices. This is supported by 47 semi-structured interviews with key stakeholders involved in strategy preparation and implementation. The interviews collected data on how sufficient these strategies are for adapting coastal hazards, barriers to preparing and implementing adaptation plans and what can be done to overcome them.

Findings indicate that the program was invaluable in putting coastal hazards on the agenda of local governments. The documents produced are viewed as a starting point and provide an understanding of the coastal risks and timelines. In most cases, they are used as basis for funding applications for implementation of the adaptation actions identified. Without this additional funding most local governments do not have the necessary resources to implement the strategies. Majority of the councils do not have dedicated staff for this program and lack of capacity and expertise are also hampering the implementation.

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Keywords: Coastal adaptation, Sea level rise, Managed retreat, Local adaptation, resilience

ANALYZING INTRA-URBAN SPATIOTEMPORAL CO2 PATTERNS USING MULTISOURCE DATA

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Individual Paper Presentation

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The pressing challenge of global warming highlights the need for monitoring carbon emissions. Urban planning can play a critical role in reducing carbon emissions at the intra-urban level. However, current carbon-related urban planning lacks empirical data to support it due to the lack of valid high-precision monitored data. This study aims to examine the spatiotemporal distribution of carbon concentrations in Shanghai, a megacity, by utilizing a multi-source monitoring data approach. The study uses six monitoring station data and satellite inversion data from Shanghai to analyze the spatial distribution of carbon concentrations. The time-series analysis from central urban and background monitoring sites is used to analyze the temporal distribution. The research employs Geometry Weighted Random Forest Classification (GWRFC) to perform spatially correlated analysis concerning built environment and social activity in grids. The study identifies preliminary factors, including industrial heat sources, population, and land use. This approach can provide empirical data to support carbon-related urban planning, which can help in reducing carbon emissions in Shanghai.

Background: Understanding the total and distributed characteristics of carbon emissions is crucial, especially within urban areas where traditional carbon monitoring methods may not accurately reflect internal temporal and spatial distributions. While the IPCC's top-down method offers a framework for estimating greenhouse gas emissions, it falls short in accounting for hidden emissions from consumption processes. Therefore, real-world monitoring can provide more accurate results and refine estimates. In 2022, Shanghai let out 131m tons of carbon dioxide, omitting 10.9% of carbon dioxide with only 2% land in the Yangtze River Delta agglomeration. In this circumstance, understanding how factors affect carbon concentration may help cities, especially megacities, reduce their carbon emission through an overall planning perspective.

Methods: High-precision carbon concentration data are from real-time monitoring at 6 ground stations including the central station (Jing’an), the background station (Chongming), and four other stations located in Shanghai Center, Jiading, Qingpu, and Fengxian (separated over Shanghai) continuously for a year in 2023. The monitoring stations also capture wind speed, direction, temperature, and humidity data. Spatially satellite inversion results from 2023 are corrected using ground-monitored data and inverted 3km×3km resolution carbon column concentration grid data in Shanghai. The study also analyzed full-year temporal sequences from Jing'an and Chongming sites and monthly averages at various altitudes from a central Shanghai site for vertical comparison. Machine learning techniques, GWRFC for example, were applied to attribute spatial variations gridded correlation with carbon concentrations to specific influencing factors.

Results: Spatially, the study identified distinct distribution characteristics, with the highest carbon dioxide levels in Jing'an (downtown) and the lowest in Chongming (suburban seashore and background station). Temporally, the comparison of background sites with urban sites reflected human activity changes, with significant diurnal variability observed in the urban environment during summer and early autumn. At altitudes between 225-335m, average monthly carbon concentrations were some 470ppm, significantly higher than the surface and upper atmosphere levels of approximately 430ppm. Machine learning analysis of spatial grids, incorporating industrial heat source data, population data, and land use types, explored preliminary influencing factors to figure out the contribution of built environment and socio-economic factors in Shanghai, from which the pattern would be introduced to other cities.

Conclusion: This research offers a cutting-edge analysis of carbon concentration patterns within Shanghai's urban landuse, leveraging a combination of monitoring datasets, high-resolution satellite inversion column data, and urban built environment factors. It reveals the potential of urban planning to mitigate emissions through spatial

optimization. Identifying high-emission zones and their drivers—such as industrial operations and population density—enables targeted planning interventions. Prioritizing mixed-use development and expanding green spaces not only reduces commuting-related emissions but also leverages the carbon sequestration benefits of urban greenery. These findings advocate for a strategic integration of technology, policy, and sustainable development to significantly decrease CO2 levels in metropolitan regions.

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Keywords: Carbon Concentration, Spatiotemporal Analysis, Carbon Neutral Planning, Random Forest, Environmental Planning

ANALYZING PARTICIPATORY PLANNING MEETINGS USING LARGE LANGUAGE MODELS

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Individual Paper Presentation

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How can generative artificial intelligence be used to improve public input on planning outcomes? Recent research has demonstrated the potential for Large Language Models (LLMs), like ChatGPT, for improving how planners review and synthesize public input data. However, written testimony submitted through online portals and/or social media are one small component of how the public engages in plan-making. A large portion of public participation actually occurs in face-to-face and virtual public meetings. There are an array of challenges faced by trying to analyze user-submitted, textual feedback, including contextual knowledge, local vernacular, emotional content, and sarcasm, using LLMs. These and other challenges are amplified during interactive public meetings and hearings. Moreover, multi-party dialogue is much more difficult to parse, as well, and the volume of text-based transcripts that could be produced from a single planning process might dwarf user-submitted, textual feedback. Nevertheless, the potential for using LLMs to analyze public meetings should not be understated.

Because public meetings represent one of the most crucial elements of participatory planning process, accurately capturing and synthesizing what is said, by whom, and to what effect is critical. Most participatory planning process rely on informal, handwritten notes, or formally adopted meeting minutes to capture a record of what occurred during public meetings. These reflections can introduce distortions into the record that may influence how plans are composed or what policies are considered. To counteract these distortions, we have pioneered a method for analyzing participatory planning meetings using audio/video recordings. These methods have provided unique insights into how participants in planning meetings reason about complexity and space and scale, for instance, and also how facilitators and planning technology influences stakeholder judgment.

In this paper, we draw the trend of using LLMs for planing purposes into our ongoing research using audio/video recordings to analyze public meetings. The purpose of this paper is to demonstrate how LLMs and other natural language processing tools might be used to analyze public meetings. For this paper, we focus our analysis on how public input impacted water policy in Maui County, Hawaii leading up to and following the disastrous wildfires which occurred in August 2023. We accessed publicly available meeting recordings, transcribed them, and analyzed the transcripts using several commercially available LLMs. We focus our analysis on identifying shifts in topics discussed and the sentiment of the discussion. Our preliminary findings suggest that, prior to the August 2024 wildfires, the public had little to no influence on the water resources policy in Maui. However, the public response to the wildfire triggered a temporary and observable shift in water policy, in terms of the topics considered and the decisions made by public officials. We discuss the value of using this analytical approach and outline its potential impact on planning practice and research.

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Keywords: Participatory Planning, Generative Artificial Intelligence, Large Language Models, Water Resources Policy & Planning, Environmental Planning Processes

ASSESSING EXPOSURE TO URBAN HEAT THROUGH HOUSING AND THE BUILT ENVIRONMENT

Abstract ID: 1108.0.0.1104.2024
Individual Paper Presentation

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Extreme summer temperatures have negative environmental, social, and health impacts (Cianconi et al., 2020; Kalisa et al., 2018). Previous studies found that extreme heat is associated with neighborhood characteristics. Housing characteristics, spatial composition of land cover and land use, building form and street network affect the temperature of the surrounding environment (Hart & Sailor, 2009; Zheng et al., 2019). Also, in the United States cities, changes in housing characteristics and land cover are associated with neighborhood income level and demographic characteristics (Mitchell and Chakraborty, 2015).

In this paper, we examine the relationship between urban housing types and neighborhood land surface temperature (LST). Using Washington D.C. as a heuristic, we measure the variation of summer LST among different housing types, identify the prevalence of heat exposure disparities for different socioeconomic groups, and discuss strategies for policy makers regarding the use of housing policy to address disparities in heat exposure. We answer two questions: First, how does summer warmth as measured by land surface temperature (LST) vary across housing types and socioeconomic groups? Second, what are the effects of the spatial structure of housing types in relation to the intense summer heat? Our findings reveal that detached single-family housing experiences the lowest heat exposure while large multifamily developments experience the highest heat exposure. These disparities overlap with neighborhood sociodemographic characteristics, with low-income households and people of color being more likely to live in neighborhoods that experience higher temperatures on average during the summer.

Findings from our study point to the potential for inclusionary housing policies and zoning reforms to be incorporated in heat mitigation strategies in residential settings and contribute to improving health equity and the mitigation of adverse health outcomes associated with urban heat exposure.

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Keywords: Urban Heat Island, Housing Type, Landscape Pattern, Heat Exposure, Washington D.C.

ASSESSING THE ECONOMIC VALUE OF URBAN PARKS WITH MOBILITY DATA IN AUSTIN,TX

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Individual Paper Presentation

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Background and Research Question:

Urban parks are crucial for community and environmental well-being, offering significant ecological, social, and health benefits. To effectively prioritize funding for reconstruction and maintenance, the Parks and Recreation Department needs to quantify the benefits of urban parks. This quantification is vital for justifying investments and funding, shaping policy and planning, and directing maintenance and enhancement efforts (Harnik, 2009), which can lead to significant improvements in social equity and quality of life. However, traditional methods of measuring park benefits present several challenges. 1. Quantifying the non-economic values of parks is challenging. 2. The data used often suffers from low reliability and small sample sizes. 3. These methods struggle to accurately capture the complex dynamics of tourist behavior.

Utilizing a case study, this project will explore the long-term economic benefit of urban parks in Austin, TX, quantified through public welfare using the Travel Cost Method (TCM). It will also examine how the economic benefits of two urban parks, identical in size and year of construction, differ when analyzed longitudinally over time (annually, monthly, and weekly).

Methodology and Findings:

This research is driven by human-based data, it utilizes mobility data from SafeGraph and Advan, which is valued for its precision and the timely updating of various ground truth datasets, enhancing data reliability. Ethical concerns were mitigated through privacy measures like the Laplacian noise algorithm. (SafeGraph： Places Accuracy, 2023). This dataset encompasses Garrison District Park and Gaines Creek Neighborhood Park, two parks in Austin, Texas, that share similar characteristics—both span approximately 39.5 acres and were constructed in the mid-to-late 20th century. It includes detailed information on roughly 1.8 million Points of Interest (POIs).

This study quantifies the economic benefits of urban parks using the TCM. It provides objective insights into travel behavior and associated costs and enhances the accuracy of economic valuations for park-related activities. The application of TCM in assessing park economic value is particularly beneficial as it: TCM provides empirical data on park valuation from a user perspective (Iamtrakul et al., 2005). Also quantifying the economic value of parks through visitor travel costs can aid in justifying park budget allocations and balancing public spending, ultimately contributing to public welfare by ensuring that investments in green spaces reflect community values and needs.

Utilizing data on time spent in the park, visitation rates, and travel distances, the study applies TCM to calculate the Consumer Surplus of parks, with a focus on comparing Garrison District Park and Gaines Creek Neighborhood Park in Austin. The preliminary analysis suggests that significant differences in economic benefits between parks are observed when accounting for control variables such as park size and construction time. The total estimated economic benefits from recreational uses of Garrison District Park amount to $2662,360, while for Gaines Creek

Neighborhood Park, the figure is $728,480. The next phase of the research will concentrate on investigating how park facilities and the surrounding urban environment influence these economic benefits.

Relevance and Implications:

By enhancing the accuracy and efficiency of public welfare valuations(Jaung & Carrasco, 2020), this study equips Austin's park management with valuable tools for aligning park maintenance and recreational use with conservation goals. The findings advocate for a data-driven approach to resource allocation for urban green spaces(Engin et al., 2020), providing policymakers with a robust justification for investing in park development and maintenance. It also can be a useful method to assist local government in planning multiple uses of public lands and prioritizing the budget based on benefit value to support public welfare.

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Keywords: Big Data, Economic Value, Public Welfare, Consumer Surplus, Urban Parks

ASSESSING THE U.S. 50 STATE-LEVEL WETLAND CONSERVATION PROGRAM PLANS

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Individual Paper Presentation

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Wetlands, renowned as vital ecological hubs, serve as essential "biological supermarkets," sustaining diverse wildlife through abundant food resources. In the United States, federal laws and regulations provide a robust framework for wetland protection. However, the extent to which state-level planning efforts align with national missions, particularly regarding the imperative of "no-net-loss" of wetlands, warrants examination. This study evaluates the status of state-level wetland program plans across all 50 states from 2015 to 2023. Through a comprehensive analysis of the current available EPA-approved plans, employing a framework of 30 indicators spanning five categories, this research scrutinizes the strengths and weaknesses in state-level wetland conservation

management and planning. Our findings reveal promising trends: while state plans demonstrate varying degrees of focus on wetland conservation, integration with broader environmental protection efforts is notable. However, the crucial national goal of "no-net-loss" of wetlands is inconsistently reflected in state plans, signaling a clear gap between overarching mandates and on-the-ground realities. Particularly concerning is the limited attention paid to addressing wetland degradation, indicating a pressing need for more targeted and proactive conservation strategies at the state level. This study underscores the importance of states adopting explicit and concerted approaches to wetland conservation, emphasizing the integration of environmental considerations across governmental agencies. Ultimately, it provides valuable insights and a practical roadmap for enhancing wetland conservation within state and local planning frameworks.

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Keywords: Wetlands Conservation, Plan Integration, Wetland Program Plans, No-Net-Loss of Wetlands

ASSOCIATION OF REDLINING AND SOCIAL VULNERABILITY WITH HOSPITAL UTILIZATION

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Individual Paper Presentation

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Background and Research Question:

Cancer has long been recognized as a cause of death in the US (Siegel et al., 2022). Social vulnerability Index (SVI), which consists of non-medical factors such as socioeconomic status (SES), race, and ethnicity that influence health outcomes, are known to contribute to disparities in cancer incidence and mortality. In various societal domains, one of its key drivers to persist structural racism is racialized residential segregation (Moazzam et al., 2023). Notably, the Home Owner's Loan Corporation (HOLC) was a government-sponsored body created as part of the

1930s New Deal era that refinanced home mortgages and graded neighborhoods based on mortgage security risk. These maps encouraged mortgage lending in predominantly White and affluent neighborhoods (A, B) and discouraging investment in neighborhoods whose residents were disproportionately low income, foreign born, or people of color (C, D) (Wright et al., 2022).This discriminatory practice leaded to reduced access to education, employment, income mobility, healthcare, and ultimately contributing to increased present-day social vulnerability. In essence, discriminatory policies such as redlining can continue to have a severe impact on healthcare even decades after having been discontinued (Moazzam et al., 2023).

While the previous studies have analyzed only a specific kind of disease site in isolated geographic regions, limited studies have investigated the comprehensive association between historical redlining and cancer-related hospital utilization. Research question of this study is belowed: to explore the complex relationship between environmental risk, cancer-related hospital utilization, Social Vulnerability Index (SVI), and historical redlining using Structural Equation Modeling (SEM).

Methodology and Findings:

This study conducted three path models to confirm relationships between variables with ZCTA level in Texas State: (1) Path model 1 – Environmental risk, cancer-related hospital utilization and Social Vulnerability Index (SVI) (n=1,935); (2) Path model 2 – Including Redlining for Model 2 (n=1,935); (3) Path model 3 – Only for county having a Redlining (n=608). Then, we analyzed spatial association to compensate for spatial autocorrelation, utilizing spatial statistical models (SEM and SLM) and ordinary least squares.

The results revealed that there are significant relationship between Environmental risk, SVI, cancer-related hospital utilization, also the relation of each variable with redlining. When redlining is included in the model 2, the association of hospital utilization, environmental risk is getting weeker than model 1. However, focusing on the area that had a redlining, the association of (1) environmental risk with SVI; (2) SVI with redlining became stronger. This means that redlining affects the local SVI, which affects the local environmental risk. As a result, the environmental risk where redlining existed in the past tends to be large, which also affects cancer incidence and contributes to the US health quality.. The results suggest that cancer-related hospital utilization is affected not only by the individual's socio-economic status but also by the residential segmentation due to structural discrimination.

Relevance and Implications:

Recognizing and comprehending health disparities among cancer patients can guide efforts aimed at reducing excessive cancer incidence and mortality, lowering economic burdens on society, and advancing health equity. Our research findings bolster the need for further investigation into the enduring health consequences of past redlining practices, as well as other historical injustices, both individually and in conjunction with contemporary legacies of these policies. Such insights also hold significance for informing policy decisions and healthcare strategies at both local and state levels.

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Keywords: Social Vulnerability Index, Cancer-Related Hospital utilization, Historical Redlining

AUSTRALIAN URBAN PLANNERS' PREPAREDNESS TO ACT ON CLIMATE CHANGE

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Individual Paper Presentation

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In an increasingly urbanised world, which is facing significant climate change impacts in the coming decades (Intergovernmental Panel on Climate Change, 2023), the capacity of urban planners to address climate change will be critical. Rapid decarbonisation of cities is required (Hsu et al., 2022), as is new ways of planning to avoid hazards that climate change is presenting (Meerow & Ladd, 2022). Yet research indicates that even when climate change is indicated as a priority in planning documents, and the need for a paradigm shift is acknowledged, in practice climate change is subordinate to other priorities such as economic growth (Hrelja et al., 2015). Thus, ensuring urban planners have the awareness of climate change and it's impacts; the analytical capacity to apply this to their decision making in practice; and the ability to enable actions to address climate change – will be critical to minimise loss and damage associated with climate change. Yet, there has been limited research conducted to understand how prepared urban planners are to address climate change. This work builds on previous research, by exploring the preparedness of urban planners to act on climate change using Moser and Luers (2008) climate change preparedness framework which comprises: awareness, analytical capacity, actions (AAA). The aim of this paper is to explore how prepared Australian urban planners are to act on climate change. It explores this through the following research questions: Are Australian urban planners aware of climate change risks? Do they have the analytical capacity to understand climate change and translate that into their practice? What actions are they taking to address climate change? To answer these questions, in depth interviews were undertaken with 21 Australian urban planners in a diverse range of public and private sector roles across the country.

The research found that most respondents were able to identify key climate change risks for urban planning (awareness), including flooding; heat; sea level rise and coastal erosion. However, fewer were able to identify skills they personally had to assist with climate change risk (analytical capacity). Many in large organisation relied on other colleagues or departments to provide such skills and capacity. The main ways in which risks were cited as being assessed were through planning tools such as 'overlays' informed by flood modelling and other risk assessments, and ESD and water sensitive urban design controls. The most frequently stated action taken by respondents to address climate change was the development of policies and strategies within their own organisation – ranging from development of climate adaptation plans for those working in government, to organisational sustainability plans for those in the private sector. Another key action was lobbying or advocating for

change. The results from each of the AAA components will be brought together to present a framework of climate change 'frontrunners'. The details of the framework can inform the development of more advantageous urban planning practice for climate change action.

The full paper will present a review literature on the climate change preparedness of urban planning professionals, before providing context to urban planning in Australia. Details of the research method will be provided before results are presented and discussed, including implications for theory and practice.

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Keywords: urban planning, climate change, awareness, capacity, action

BARRIERS IN INTEGRATING ECOSYSTEM SERVICES INTO THAI ENVIRONMENTAL POLICIES

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Individual Paper Presentation

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Concerns regarding climate change and biodiversity loss have elevated discussions around integrating ecosystem services (ES) or ecosystem-based solutions into environmental planning (IPBES, 2019). Simultaneously, climate impacts have spurred the development of large-scale grey infrastructures such as dams, dikes, and diversions as responses to climate uncertainty. While these infrastructures offer promising technological solutions, various studies have highlighted their potential for irreversible environmental degradation and adverse effects on communities with lower socio-economic status (IPBES, 2019; Shi et al., 2021).

In Thailand, situated in the monsoon belt like many other Asian countries, addressing climate impacts and incorporating ecosystem-based solutions into environmental planning presents significant challenges. Thailand was among the first Southeast Asian countries to receive substantial financial and technical support from multilateral organizations such as UNDP and GIZ to explore and incorporate ecosystem services into environmental planning and natural resource management sectors like the Royal Irrigation Department, Royal Forest Department, and Department of National Parks, Wildlife, and Plant Conservation. Yet, the Thai government often defaults to familiar technological solutions, favoring grey infrastructure like floodwalls and manmade canals to mitigate floods and

droughts, even though the repeated implementation of this strategy has proven ineffective in safeguarding many Thai cities (Marks & Elinof, 2020). Despite international facilitation targeting several Thai agencies, a global focus on adopting ecosystem services concepts, and the growing scholarly literature supporting this concept, over the past decade, Thailand has struggled to fully integrate these approaches into comprehensive policy frameworks (Huu Loc et al., 2020). The implementation of ecosystem services remains largely confined to pilot projects, failing to achieve broader adoption.

This study aims to investigate the reasons behind the apparent disconnect between international support for ecosystem services and their recognition in Thai governmental policies. By examining both perspectives of ecosystem services and policymakers, the research seeks to uncover practical implications and on-the-ground impacts. Employing a multi-method approach including ethnographic observations, case studies, 30 in-depth stakeholder interviews (both on-site and online), and an extensive review of governmental documents and literature, the research sheds light on institutional and governance barriers hindering the mainstreaming of ecosystem services into policy frameworks and on-the-ground implementation. This research methodology enables a better understanding of the impacts of climate change policy and socio-environmental interactions. It provides holistic views and broader insights into policy and its implementation within communities (Barnes et al., 2013).

Findings reveal how rigid institutional structures have evolved into bureaucratic and political boundaries, fragmenting responsibilities and hindering cross-sectoral coordination necessary for mainstreaming ecosystem services. Other key obstacles include policymakers' unfamiliarity with ecosystem services, challenges in quantifying ecosystem service values compared to traditional cost-benefit analyses, discontinuity of external ecosystem services support across siloed agencies, and misalignment between ecosystem services principles and specific departmental mandates. Moreover, the prevalence of grey infrastructure has entrenched path dependence in infrastructure development, reinforcing institutional inertia that prioritizes economic growth over environmental sustainability. By focusing on the context of the global South, rather than challenging the ecosystem services literature, this study contributes to the limited body of literature on integrating ecosystem services into environmental policies and implementation. By examining place-based practices in Thailand, the research offers insights into the institutional factors and policy disconnects that have hindered the mainstreaming of ecosystem services, which are relevant not only for Thailand but also for other nations seeking to adopt ecosystem services for sustainable climate adaptation pathways.

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Keywords: Ecosystem services, environmental policy, infrastructure, climate adaptation, institutional barriers

CAUSAL PATHWAYS TO JUST OUTCOMES IN URBAN NATURE-BASED SOLUTIONS

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Individual Paper Presentation

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Recent interest in nature-based solutions (NbS) has catalyzed significant momentum toward a new paradigm of urban climate action centered around emulating nature and amplifying nature's capability to address sustainability crises. Proponents of NbS highlight their dual potential to address environmental challenges and enhance human wellbeing. However, there is a risk that NbS could be used to perpetuate new forms of displacement, marginalization, and other environmental injustices in urban settings. Despite these well-documented concerns, strategies for planning and implementing NbS in a socially just manner are still not fully developed, particularly within urban contexts. This article aims to bridge this gap. Employing the Fuzzy Set Qualitative Comparative Analysis (fsQCA) method, we pinpoint the causal conditions contributing to social justice outcomes in 14 global NbS case studies, thereby answering the critical question: What combinations of planning and governance factors contribute to social justice outcomes in the implementation of NbS? Drawing on Fainstein's framework of justice as equity, democracy, and diversity, three causal conditions are hypothesized to influence justice outcomes: the level of participation, the inclusion of justice considerations in project design, and the degree of public/community control. Cases were calibrated for condition and outcome membership via qualitative comparative methods, and truth table analysis was performed using fsQCA 3.0 software. Tests of necessity find no single condition is fully required on its own to produce just results. However, fsQCA solutions point to purposefully designing NbS to promote justice as the most important core pathway, featuring in the complex and intermediate solutions for all four outcome variables: distribution, process, recognition, and overall justice outcomes. Additional peripheral pathways emerge depending on the specific justice dimension. For distributive, recognition-based, and overall justice outcomes, a lack of public control combined with deeper community engagement fostered more equitable outcomes. This suggests that where public control of NbS projects is absent, deeper levels of community engagement are required to foster justice outcomes. This fsQCA advances theoretical and applied understandings of enabling just outcomes in NbS. Key findings suggest planners and practitioners should prioritize inclusive decision-making processes that embed disadvantaged communities, coupled with an intentional focus on justice issues from project inception. While no single approach guarantees justice, these multi-causal pathways offer transferable policy insights supportive of a just cities agenda centered around sustainability, equity, and community wellbeing.

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Keywords: Nature-based solutions, Social justice, Fuzzy-set qualitative comparative analysis (fsQCA), Participation, Equity

CHARACTERIZING NIGHTTIME URBAN HEAT DYNAMICS: A STUDY OF PORTLAND METRO, OR

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Individual Paper Presentation

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Urban Heat is an ongoing and growing climate-related concern that significantly impacts human health. As heat is not static and varies over the day – by time and space -- evaluating how its distribution is mediated by built environment factors is important. Of particular interest for cities with materials that retain and radiate heat, temperatures at night have been a prominent factor in safeguarding communities. Nighttime heat is projected to become greater, and it would have a significant health impact on both heat-related death and well-being. Perhaps because of limited access to multiple time periods of high-resolution temperatures, fewer studies currently examine the relationship between the built environment and nighttime heat or the temporal cooling occurring at night.

The study draws on a novel high-resolution dataset of urban heat collected over three periods of the day – morning (6-7am), afternoon (3-4pm), and evening (7-8pm) – in the Portland metropolitan region during 2023. We use the multi-temporal dataset to understand nighttime temperature dynamics: afternoon to evening cooling and evening to morning cooling, both of which correspond to the gaining of heat and the overnight cooling. We refer to both of these phases as (1) the resistance phase (afternoon to evening) and (2) the recovery phase (evening to morning). The resistance phase is the period that resists heat absorption by urban structures, and the recovery phase is when the heat is released from the urban texture, and overnight cooling occurs.

The use of the resilience framework allows us to understand how heat changes through an urban region using established concepts such as resistance and recovery. Of particular interest is aligning the resilience framework with characteristics of the built environment and sociodemographics. Specifically, we ask: (1) Do urban neighborhoods with different urban characteristics have different diurnal and nocturnal UHI? (2) Does the nighttime heat resistance and recovery differ among those neighborhoods, and (3) To what extent is nighttime heat release associated with socioeconomic conditions? We anticipate that addressing these questions will support theoretical, methodological, and practical developments in the field of climate adaptation.

We develop a set of neighborhood-scale built environment indicators and classify neighborhoods by them. The classified neighborhoods are used to identify differences in nighttime heat dynamics using statistical ANOVA and

post-hoc tests. The results identify the difference in nighttime heat resistance and recovery measures by classified neighborhoods. Lastly, regression analysis with socioeconomic variables identified the association with these resilience measures.

The result of the study reveals that urban heat varies significantly by neighborhood during the day, though go further to highlight the implications of built environmental characteristics on nighttime resistance and recovery. By establishing a link between nighttime heat dynamics and urban characteristics, the research illuminates how different areas within Portland Metro, OR, respond to heat throughout the day, especially at night, and identifies factors contributing to effectively releasing heat. The study also identified the association between nighttime heat resilience and socioeconomic conditions, which help to inform outreach efforts for those specifically exposed to extreme temperatures. Given that socially marginalized populations face greater exposure to urban heat, developing planning strategies aimed at lowering nighttime temperatures could lead to improved public health outcomes.

Though no direct measures of public health, the findings highlight the critical importance of designing urban environments that are responsive to heat, especially at night, when temperatures are known to have a significant impact on human health. The investigation into nighttime heat resilience is also particularly timely, given the increasing frequency and intensity of heat waves. Based on the findings we offer examples of targeted interventions in urban designs and green infrastructure strategies that prioritize thermal comfort and health.

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Keywords: Nighttime Heat, Heat Resilience, Air Temperature, Urban Heat Island, Climate Adaptation

CITY RESILIENCE TO CLIMATE CHANGE: AN EVALUATION OF CLIMATE ACTION PLANS

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Individual Paper Presentation

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As the impacts of accelerating climate change become increasingly tangible, numerous countries and cities worldwide are establishing climate change action plans (CCAPs) to address climate risks. Alongside goals for carbon neutrality and efforts to mitigate climate change, these plans aim to enhance adaptation to climate change risks. The goal of CCAP is to make cities safer from the risks posed by climate risks and to reduce damage from climate change, thereby constructing a more resilient city. This is akin to the idea of resilience, where cities withstand, adapt to, and even improve upon their pre-existing conditions in the face of external disturbances. In other words, efforts to adapt to climate change ultimately contribute to enhancing a city's resilience to climate change, assuming climate change as an external disturbance. Indeed, it is essential to question whether current CCAPs reflect the characteristics of urban resilience and whether they are suitable for enhancing both climate change adaptation capacity and resilience simultaneously. Therefore, interpreting and evaluating CCAPs from the perspective of resilience is crucial. Existing studies evaluating CCAPs traditionally categorize plans based on fact base, goals, policies, and implementation. Additionally, depending on the climate risk sectors, mitigation, and adaptation measures, previous studies assess which risk categories have been addressed, who the implementing agents are, and what the effects are. However, these evaluations typically do not interpret action plans or assess their essence from a resilience perspective. Thus, this study aims to develop evaluation indicators based on the transformative approach to resilience characteristics and to evaluate the local climate action plans from the perspective of city resilience.

This study evaluated climate action plans from the viewpoint of nine city resilience attributes, focusing on 30 cities that are members of the C40 network both with CCAP written in English and with over 3 million people. The main city resilience attributes were drawn from existing studies that crucially address the attributes of urban resilience: Flexibility, Inclusiveness, Integration, Redundancy, Resourcefulness, Robustness, Reflection, Diversity, and Transparency. To assess whether CCAPs reflect each city resilience, we developed several indicators from nine attributes such as 'Sufficient affordable food supply' and 'Effective emergency response services' from Flexibility. The evaluation was conducted in two main ways. Firstly, the evaluation was based on the alignment between the vision, goals, and sector-specific strategies of the plan and the indicators for each resilience attribute they aim to address. For instance, if adaptation policies aimed at providing climate change-related education to various groups such as gender, race/ethnicity, or targeted support policies for vulnerable groups, the plan was evaluated as having high inclusiveness and integration. Secondly, the evaluation was based on the formal structure of the plan, such as the number and diversity of plan strategies. In evaluating the plans based on these criteria, qualitative content assessment was performed using multiple coders, along with the utilization of text mining techniques.

The analysis revealed that the nature of goals and strategies considered important in CCAPs varies depending on the country, and the attributes of resilience pursued also differ. While most cities effectively address redundancy, robustness, and resourcefulness, differences were observed among cities regarding inclusiveness, flexibility, and integration. Moreover, policies aimed at reducing damage from climate risks, such as physical-related policies or retrofitting infrastructure, are mostly associated with robustness. On the other hand, climate action strategies related to enhancing accessibility to infrastructure, empowering vulnerable groups, or education are more closely linked with inclusiveness. This study contributes to providing policy implications for building more resilient cities in the face of climate change risks.

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Keywords: Climate change, Climate change action plan, Resilience, Plan evaluation

CLIMATE ACTION PLANNING IN AN OIL TOWN; THE LONG BEACH CASE STUDY

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Individual Paper Presentation

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In the past 15 years, Long Beach, CA has become known for implementing progressive policies ahead of other cities, including raising the minimum wage, introducing hero's pay, and banning polystyrene. However, significant climate policies have faced more significant challenges.

In 2019, the city's mayor embraced the governor's call for bold climate policies to achieve carbon neutrality by mid-century. Elected officials directed staff to design a sweeping Climate Action Plan for carbon neutrality by 2045. A network of environmental organizations mounted a support campaign. Despite optimal political conditions, the final plan approved by the city council removed the core carbon-reducing instruments (i.e., Community Choice Aggregation, phase out of oil operations). Experts, including select city staff, believe that the plan will not achieve the 2045 emission goal.

Given vocal support from elected officials, a robust campaign to hold these officials accountable, and the policy's popularity among key constituents, the robust policy should have passed easily (Amenta, 2022). Its failure to do so presents the central puzzle of the paper. What other factor not addressed in the literature is responsible for this disappointing outcome?

Drawing on urban regime theory, social movement literature, and political mediation theory this paper suggests that Long Beach reflects a city divided between an older, yet embattled oil and business regime, on the one hand, and a nascent yet still amorphous regime powered by progressive organizations, unions, and foundations. The still-emerging progressive regime commands overwhelming approval from the electorate, but the growth regime maintains ultimate power, with financial resources to lobby elected officials. Municipal bureaucrats rely on the growth coalition for expertise (Stone, 1989). Consequently, progressive officials were pitted between the battling regimes. Wishing not to alienate voters or the money and bureaucratic pull of the other, their only viable option was a Climate Plan free of the tools needed to achieve its primary goal.

The paper contributes to regime theory by suggesting that this is a case of "interregnum" governance: the old regime is dying, however, its ongoing control over resources and its strategic alliances within the bureaucracy block a new regime from fully being born. Progressive elected officials find themselves limited to implementing aspects of progressive policies that do not risk alienating this fading but still powerful block of stakeholders. Lastly, we suggest that “interregnum governance” is not unique. It characterizes many progressive cities as unable to pass policies necessary to address the climate crisis effectively.

This interregnum governance is one explanation not yet addressed in climate policy literature, where a growing body of research found many urban climate plans were not comprehensive, excluded stakeholders, and lacked integration with other plans. (Aboagye & Sharifi, 2023). Municipalities are where the rubber meets the road, their land use and regulatory powers over environmental policy are required to stop or reduce the effects of climate change (Logan and Molotch, 1987).

By employing these theoretical frameworks, this paper provides a viewpoint not discussed in traditional climate policy research and provides a comprehensive analysis of the challenges and complexities involved in governing for climate change, where the stakes are higher, but the cost to play remains the same.

Qualitative and Quantitative methods include; content analysis of climate action plans, sustainability meetings, council meetings, letters of support and opposition, city budgets, voter records, and political contributions. The paper includes a power analysis map.

Positionality statement: I had the pleasure of serving as the second district city council member (2016-2020), and authored the Community Choice Aggregation Agenda item, I worked closely with all stakeholders. I work closely with advisors and mentors to ensure I consider all data points and theories in this work.

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Keywords: Urban, Movements, Governance, Climate, Planning

CLIMATE ANXIETY AMONG STUDENTS: IMPLICATIONS FOR URBAN PLANNING EDUCATION

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Individual Paper Presentation

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In recent years, the pervasive threat of climate change has precipitated a growing phenomenon known as ecological grief. Ecological grief can manifest in a range of negative emotions, e.g., sadness, anxiety, and hopelessness (Cunsolo & Ellis, 2018). 'Climate grief' or 'climate anxiety' is a specific form of ecological grief often seen in young adults engaged in climate change education. A recent study of climate anxiety found that eight out of ten young adults understand climate change as an existential threat (Hickman et al., 2021). Recognizing that students experience anxiety that can impair academic performance and emotional well-being or motivate action and engagement, educators must find the pedagogical sweet spot that enables a practical and motivating anxiety (Cachelin & Nicolosi, 2022; Consulo et al., 2018; Ojala et al., 2021). Given recent calls for climate change education to be more integrated into planning programs, research in this area is crucial (Infield et al., 2023).

The purpose of this study is to examine effective pedagogies that foster healthy responses to complex psychological phenomena and elicit strategies for urban planning educators. Delving into key climate anxiety drivers (sources of climate news, political ideology, demographics, etc.), examining potential disparities in anxiety levels across academic disciplines, and evaluating student suggestions for climate change pedagogy offer valuable insights for educators aiming to enhance climate literacy.

Our research questions include: a) What are the primary determinants of climate anxiety among students within higher education settings? b) Does the prevalence of climate anxiety differ significantly among students pursuing majors centered on climate change compared to those in other disciplines? c) What insights do students offer for optimal climate change pedagogy?

Our study uses a mixed-method design with a combination of open-ended and Likert scale questions aimed at gauging students' sentiments regarding climate change and the impact of various pedagogies. Participants included 700 undergraduate students, most of whom were environmental studies (ENVST) majors. We created two latent constructs, viz. Climate Anxiety Index (CAI) and Generalized Anxiety Disorder (GAD-7) from the survey responses. A standardized major axis regression demonstrated that even with a baseline level of GAD-7, the predicted levels of CAI are relatively high. A multi-variate regression further demonstrated that CAI is higher among 'liberal' students with ENVST majors who 'more than frequently' (5-point Likert scale) obtain climate change news from various sources like classrooms, print, or online media. Further, a qualitative data analysis revealed that many students feel an overwhelming sense of powerlessness and are very concerned about the future. Many students are frustrated with political inaction, and several emphasize the need for more solution/action-oriented lessons as well as co-curricular campus support groups.

Drawing parallels between the impacts of climate change education for ENVST students, who arguably have the most comprehensive and long-term exposure to this topic, and curricular challenges faced by planning educators, this study can provide valuable insights. Research-informed climate change content and pedagogy integrated into urban planning curricula can equip future planners with both the motivation and tools to address complex

environmental challenges. Specifically, results suggest an integrative approach to climate education that attends to the practical and pedagogical skills needed by both urban planners and planning educators.

This study's main contribution is to share the prevalence and complexity of responses to climate change education as well as pedagogical techniques that can foster practical, motivational anxiety. As an applied and solution-oriented field, planning educators are well positioned to lead the charge in effective and motivating climate change education.

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Keywords: climate anxiety, climate pedagogy, planning education, mental health

Climate Infrastructure Inequality and Housing Market Dynamics

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Individual Paper Presentation

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Decisions and financing of climate resilience infrastructures heavily depend on local property value, leading to income inequality in the quality of climate infrastructure. There is limited quantitative evidence on the distribution of climate infrastructure quality and its long-term economic consequences. This study combines inspection records from National Levee Database (NLD) with daily satellite imageries at 250-meter resolution to examine the residual risk behind US flood protection levees. I find that lower income communities disproportionately reside behind levees with low protection level and poor maintenance quality, particularly when municipal governments serve as local sponsors. Consequently, these communities are more likely to have experienced levee failures in the last two decades as revealed by satellite imagery. This infrastructure inequality creates diverging housing price trajectories as the residual risk has become increasingly realized over the past two decades. Using event study approach based on recent econometric literature, I find housing prices drop by 5-10% (from any flooding to large flooding events)

when levee-protected communities being flooded, with no evidence of recovery within ten years post-disaster. This is in contrast with the modest and temporary impacts of flooding on housing prices for communities without levees. The negative shocks to housing market have important local public finance implications. Using data from Census of Government, I find that levee failures lead to a 5.6% decrease in total revenue of municipal governments, even after factoring in increased revenue from intergovernmental transfers. This is primarily owing to a significant 23.2% reduction in property tax revenue. The resultant decline in total revenue causes a decrease in total expenditure and constrains a municipalities' capacity to increase capital outlay after a disaster. The profound financial consequences of levee failures on municipal finance can risk perpetuating infrastructure inequality, rendering cities with low-quality infrastructure to be even more susceptible to residual flood risk. These results highlight the need to consider the feedback relationship between municipal finance and climate justice through the channel of infrastructure investment.

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Keywords: Climate Change, Infrastructure, Housing Market, Local Public Finance

CODEVELOPMENT OF AN ENVIRONMENTAL DATA PLATFORM TO SUPPORT COMMUNITY ACTION

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Individual Paper Presentation

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Public data infrastructure, such as the EPA Environmental Justice Screening and Mapping Tool, is valuable for communities seeking to identify environmental justice (EJ) concerns and redress environmental harms. Yet, for many communities, the existing tools neither address community-specific concerns, nor do they have the block-by-block spatial scale of the environmental hazards that impact their lives. Co-created environmental data platforms

have the potential to support EJ communities in connecting scientific and lived expertise to address the socio-environmental complexity that creates and exacerbates the injustices. Given the historical and contemporary inequalities, building data platforms with EJ communities needs to incorporate procedural and epistemic justice concerns. To that end, this paper seeks to answer the following two questions. 1) How have researchers considered procedural and epistemic justice in the development of public data platforms? 2) How can EJ communities and researchers co-develop an environmental monitoring system that is informed by residents understanding of environmental challenges in their community, supports relevant and usable tools and knowledge at various stages of the process, and generates valid scientific and experiential data to guide action?

To examine the state of the practice, we review the literature concerning procedural and epistemic justice in data development for decision-making, with a specific focus on data platforms that are co-developed with EJ communities. Since written articles often miss key details in complex projects, we perform semi-structured interviews with a dozen prominent EJ researchers selected for their participation in the 2015 Environmental Justice Analysis workshop series and as emerged in the literature review. We ask each interviewee to select a project that they consider particularly successful. The questions then focus on how stakeholders were selected, the role of stakeholders in defining data collection, and how the researchers considered the different socio-economic positions of participants in the early phases of their project. We analyze interview responses to identify prominent practices for procedural and epistemic justice as well as potential new practices.

The strengths and gaps identified in current EJ data platforms inform our approach to answering question two. We present self-reflection on the initial phases of the Common SENSES project, a collaboration between environmental justice communities, government agencies, and academic researchers to address micro-spatial inequities relative to climate hazards. In initial co-design conversations, community and academic partners identified data needs that were specific to the community organizing and advocacy needs. This phase included community members identifying the environmental hazards impacting their lives, researchers repackaging publicly available data for easier resident interpretation, and collective identification of sensor locations through a process in which residents identify areas of concern, scientists recommend sensor locations, residents provide feedback, and all partners iterate to the final placement. These data sources were all developed in a series of environmental hazards mapping workshops, a data portal training, and discussions with community partners. Geospatial and quantitative resources were matched with resident stories to provide compelling tools for demanding a healthier environment. All this data comes together in a community-accessible environmental data platform. We conclude by comparing the data platform development process and results in the Common SENSES project to the practices observed in the literature and interviews.

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Keywords: environmental justice, data platforms, co-creation, procedural justice, epistemic justice

COMMUNITY ENGAGEMENT FOR AN URBAN HEAT ADVOCACY TOOL IN NEW YORK CITY

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Individual Paper Presentation

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In the face of escalating urban heat events, exacerbated by climate change and urban infrastructural configurations, New York City (NYC) has been at the forefront of initiating and implementing heat mitigation strategies. These initiatives are vital in addressing the disproportionate impact of heat on vulnerable populations, intensified by historical injustices such as redlining. This study aims to delve into the dynamics of advocacy and policy-making in urban heat management within NYC, emphasizing the pivotal role of advocacy groups and the utilization of the Advocacy Coalition Framework (ACF) to understand coalition behaviors and policy development.

NYC's approach to combating urban heat includes a suite of mitigation strategies like the establishment of tree planting programs and cool roofs. Legislation has further reinforced these efforts by mandating sustainable roofing practices that incorporate cool roofs, green roofs, and photovoltaic panels. Despite these progressive measures, the transition from policy formulation to implementation has encountered significant barriers, underscoring a gap in empirical research focused on the execution phase of urban heat policies. Advocacy groups have been instrumental in pushing for more robust legislation and its enforcement, highlighting the necessity of advocacy alongside legislative action in addressing urban heat.

The study utilizes the ACF to explore how advocacy coalitions within the extreme heat policy subsystem in NYC navigate the policymaking process. The non-adversarial nature of coalitions, led by Environmental Justice Alliance (EJA) and WeACT, presents a unique case for investigation under the ACF, which traditionally explores adversarial settings. This research seeks to broaden the application of ACF by examining collaborative and non-adversarial coalition dynamics in urban heat management, offering insights into the roles and interplays of various actors within the policy subsystem, including advocacy groups, community-based organizations, and expert contributors.

Central to the discussion is the role of expert-based information and how it facilitates policy learning and the development of interventions. The establishment of a data portal by the City University of New York (CUNY) exemplifies the critical role of expert and technical knowledge in supporting advocacy efforts. This initiative aligns with one of the ACF's hypotheses concerning the significance of expert-based information in fostering policy learning, emphasizing the necessity for accessible, evidence-based data in crafting effective urban heat mitigation strategies.

This research underscores the complex interplay of historical legacies, policy, and informational barriers that challenge effective climate adaptation and urban heat planning. The fragmentation across governance structures

and the lack of comprehensive, multidisciplinary data have been significant hurdles, limiting cross-governmental and interdisciplinary collaboration essential for contextual heat resilience strategies.

In conclusion, the study highlights the indispensable contributions of advocacy groups to the legislative and enforcement processes regarding urban heat mitigation. It reveals the limitations of applying ACF in its traditional form to the nuanced context of NYC's urban heat policy subsystem, advocating for a refined framework that acknowledges the role of government agencies as coalition members. By examining the collaborative efforts of advocacy groups, community-based organizations, and expert contributions, this study provides a nuanced understanding of the policy-making landscape for urban heat management in NYC, pointing toward a more integrated and evidence-driven approach to addressing one of the most pressing climate challenges of our time.

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Keywords: Urban Heat, Climate Justice, Advocacy Coalition Framework

COMMUNITY LISTENING FOR JUST URBAN TRANSITIONS: AN EXPERIENCE IN TORONTO

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Individual Paper Presentation

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The challenge of rapidly accelerating low-carbon transitions in cities and preventing this widespread transformation from exacerbating urban inequalities is the core of the urban just transitions debate both in academia and the political realm (see the discussion around Green New Deal in the US and Europe). Albeit techno-driven solutions for transition have been widely explored, the democratic dynamics underpinning them are less scrutinized. According to Hughes and Hoffmann (2019: 7-8), the co-production of knowledge with urban communities and networks within a community-based research framework can play a significant role in developing more concrete indicators and strategies for pursuing, recognizing, and measuring just urban transitions.

The Listening Project (LP), carried out by the Urban Just Transitions cluster at the University of Toronto Scarborough in collaboration with a steering committee of local groups, represents an emblematic experimentation in this

direction. Inspired by a participatory action research approach (see Cornish et al., 2023), the LP aims to understand how climate actions towards "net-zero" futures intersect with people's everyday concerns and hopes in Scarborough. Situated in the Eastern outskirts of the Great Toronto Area, Scarborough is a popular destination for newcomers. It is one of the most diverse and multicultural areas in Toronto, but it is also one of the neighborhoods with the highest levels of poverty and food insecurity. Several organizations are active and advocate for improving the life quality and social services for the residents. In partnership with some of them, the LP supports a series of listening activities, including neighborhood walks, art workshops, and community mapping. The conversations in each listening session intend to build a deeper understanding of participants' visions of just transition while strengthening communities' capacity for collective action.

This presentation focuses on the first reflections from the listening session carried out in partnership with the Malvern Family Resource Centre (MFRC), a multiservice agency providing a variety of multicultural and multigenerational programs and services, with a focus on food justice. One of its pilot projects to reduce food insecurity is an urban farm where 16 resident families access and cultivate fresh and culturally appropriate foods. The surplus of vegetable production creates opportunities to generate supplemental income and has stimulated the organization of a summer Km Zero farmers' market. The listening sessions have conceived the market as a meeting and aggregation space for residents, wherein creating convivial conversations around the intersections between climate change and daily life. From June to October 2023, a group of researchers together with the MFRC has organized several initiatives including passing-by interactive activities (e.g. post-it, two itinerant-raffle-based conversations, art-based moments, posters), 2 workshops, and a final event. The entire process has emphasized participants' feedback through a circular and community-based peer review process on the produced knowledge. The two workshops are an example of this process. The first has been a community mapping workshop (Saija & Pappalardo, 2022) which involved residents in identifying on map strengths, issues, what people used to like but is not there anymore, and how these identified places are interconnected with climate change/impacts. The second was a Future Scenario workshop (see Robinson's works) titled "Scarborough 2043" and meant to connect the strengths, priorities, and climate change problems identified during the previous community mapping workshop with the capability to envision and multiply the possible desirable futures and organize to attain them.

In light of this collaborative research experience, the presentation offers both a theoretical and empirical contribution to the potential and limitation of community listening-based research to co-produce knowledge and formulate policy indications from the bottom aimed at facilitating inclusive and just transitions to low-carbon cities.

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Keywords: just urban transitions, community listening-based research, climate change, co-production of knowledge, Toronto

COMMUNITY PERCEPTIONS ON ECOSYSTEM SERVICES VALUE FOR WETLAND CONSERVATION

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Individual Paper Presentation

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This study investigates community perceptions regarding the valuation of wetland ecosystem services for land use planning in the Las Piñas - Parañaque Wetland Park (LPPWP), situated along the coasts facing Manila Bay, Philippines. Rapid urbanization, threats of reclamation for development, pollution, and shifting community attitudes towards the environment have transformed the land use of this coastal region, underscoring LPPWP's status as the last coastal frontier of southern Manila Bay. The LPPWP and similar protected areas situated in built environments are not alone in facing these uncertainties that affect how nature contributes to people's wellbeing and consequently influences how community's assign value to the environment (Scholte, et al. 2016, Pascual, et al. 2017). Many coastal cities across the world are experiencing these very same challenges. Wetlands, in particular, are important ecosystems that provide a long list of provisioning, regulatory, cultural and supporting services to human populations and are, in many cases, difficult to value and are sometimes unknown to the communities they serve (Chan, et al. 2016). Encompassing mangroves, salt flats, lagoons, and ponds, and hosting over 80 bird species, the LPPWP's roughly 182 hectares highlight the urgent need to align land use planning with community values to preserve the area's critical ecosystem services (Scholte, et al. 2016). The primary questions this study addresses are: (1) How does the community perceive and value the wetland ecosystem services provided by the LPPWP, and (2) how can these perceptions inform and improve land use planning approaches within the area?

Employing both quantitative and qualitative data collection and analysis methods – including household surveys, key informant interviews, direct valuation, and narrative analysis – the study reveals a strong community preference for provisioning and cultural ecosystem services. Furthermore, it finds that the community is willing to support these services financially, through mechanisms such as an annual barangay tax (PHP 492), a per-use fee (PHP 130), or an annual entry fee into the park (over PHP 1,000). The study also finds that members of the community with more knowledge about wetlands were also those who could more readily identify and assign value to wetland ecosystems services. To ensure the conservation of the LPPWP's wetlands, the study recommends strategies aimed at enhancing community engagement in the land use planning process, prioritizing the cultural and provisioning ecosystem services valued by the community, making access more democratic for marginalized community members, and integrating the protected area's management plans with ongoing master planning efforts in Manila Bay.

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Keywords: wetland conservation, ecosystem services, community perception, land use, protected areas

COMPARATIVE ANALYSIS OF THE USE OF LOCAL KNOWLEDGE IN CLIMATE ACTION PLANS

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Individual Paper Presentation

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The increasing attention to climate change has prompted many U.S. cities to proactively develop their climate action plans to adapt to or mitigate its potential impacts. At the core of these efforts is the integration of local knowledge with formal expertise, the latter often based on model-based predictions of climate change impacts. This integration is crucial for ensuring these plans engage the actual needs and concerns of the communities they serve while reflecting the best available understanding of climate change-related risks. This process frequently emphasizes community engagement, ranging from traditional face-to-face interactions to online platforms. Given that local knowledge can often be unstructured, decentralized, and dynamic, planners are frequently tasked with collecting diverse community insights and combinging those into coherent sources of information that inform and decisions. Therefore, understanding how to effectively gather and interpret community input is crucial for empowering communities and facilitating the co-production of climate action plans.

This study aims to analyze the various tools and techniques planners employ to gather and analyze community input for climate adaptation plans and how these efforts inform the final plan. Literature in both academia and practice has outlined different methods for collecting local knowledge through various sources, from using sticky dots to identify “hot spots” at a community meeting to more formally analyzing video recordings of public meeting, semi-structured interviews with key stakeholders to mass surveys which allow for statistical tools to be used in analyzing community sentiment(s). However, despite the extensive literature on methods for gathering community input, there has been limited attention paid to the effective analysis of the information gather through these tools, particularly in the context of climate action plans. Planners, through their education, are often equipped with a range of analytical tools and techniques that encompass both qualitative and quantitative approaches. These methods enable the organization of feedback into thematic categories that reflect the communities’ concerns and priorities. Considering there is no single method for effectively examining these aspects, further study is required to understand how planners in different cities strive to gain a deeper insight into local knowledge within the unique contexts they face.

To answer these questions, we analyze the specific community engagement strategies employed in the creation of Climate Action Plans in 14 U.S. cities. These cities were selected because they are part of the C40 Cities Climate Leadership Group, a global network of local leaders who have long been concerned about climate change. We collect the most recent climate action plans completed by these cities and identified relevant actors who managed the community engagement processes in those plans. First, we analyze plan documents to highlight the various communication, participation and inclusion methods utilized by planners and the specific types of local knowledge each plan emphasizes. Following this, we conduct semi-structured interviews with specific actors who were responsible for coordinating community engagement to delve more deeply into how they collect local knowledge, summarize the collected inputs, and the techniques and tools they use to analyze them.

Our findings reveal a range of analytical tools and techniques that facilitate the effective collection and analysis of public input. By detailing the specific practices utilized by planners, this research provides valuable insights into the current landscape of urban climate planning and its use of local knowledge. It highlights the importance of a systematic and thoughtful approach to public engagement and data analysis, demonstrating that community voices are not just heard but are instrumental in shaping urban climate resilience. Building on these key findings, we also explore educational implications for planning curricula focused on public participation and qualitative data analysis in planning practice.

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Keywords: Climate change, Community engagement, Local knowledge, Planning process, Planning practice

DECIPHERING MUMBAI'S STRESSED MITHI RIVER: SPATIAL AND SENSORY INSIGHTS

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Individual Paper Presentation

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This paper investigates the complexities of Mumbai's Mithi River, an urban waterbody battling pollution, developmental pressures, and urban flooding. It examines the river's environmental history and current challenges through spatial and sensory analyses against the backdrop of climate change, with Mumbai facing rising sea levels and increased extreme rainfall events. Anthropogenic factors, such as pollution and inadequate infrastructure, have significantly compromised the natural and functional integrity of the seasonal Mithi River and its floodplain. This study aims to provide a holistic understanding of the Mithi River's urban water management challenges by integrating archival research, mapping analysis, field observations, and the lived experiences and memories of the community, which are integral to the river's ecosystem.

Key data for this study include geospatial and historical maps, photo documentation, and insights from seven months of fieldwork in 2022, alongside semi-structured interviews with 30 participants. These resources, combined with mapping analysis of developmental history, land use, and governance and complemented by on-the-ground

experiences, offer a comprehensive view of the Mithi River's role within Mumbai's urban ecosystem, which consists of biophysical, built, and social systems (Nagendra & Ostrom, 2014; Pickett et al., 1997).

Significant land reclamation over the past 150 years has transformed the Mithi River watershed into Mumbai's most dynamic inland landscape. The findings illuminate the river's crucial role within the urban ecosystem and its future under climate change, while also highlighting the community's perceptions and experiences. The findings also underscore why governing this seemingly manageable 17.84-kilometer (11-mile) stretch has evolved into a remarkably complex and unsustainable endeavor (Ghosh et al., 2020; Kamath & Tiwari, 2022). Insights from oral histories and participant observations reveal a multifaceted narrative of land transformation, the impact of global city ambitions, and the community's diminishing value due to flooding and constrained real estate redevelopment opportunities.

Notably, participants' reflections on crossing the river without recognizing the true nature of this resource underscore a prevalent perception of the Mithi as a neglected and polluted waterbody, often referred to as a nullah or a drain. This perception highlights the urgent need for efforts to not just restore this urban river but also redefine its status as a vital natural resource in the city, not just providing critical ecosystem services and maintaining ecological habitat but also creating opportunities for "positive feedback" for urban revitalization and fostering community cohesion (Groffman et al., 2003)

A key insight from this study is the Mithi River's embodiment of the tensions between natural conditions, development pressures, and institutional demands within Mumbai. By providing a nuanced understanding of urban water management issues, this research reflects broader concerns applicable to cities in the Global South. It explores the community's vision for the river's future and the potential for integrating nature-based solutions and decentralized systems and engages with secondary discussions from planning, landscape, and urban design perspectives (Dunlop et al., 2023; Manzo & Perkins, 2006). This paper seeks to contribute to the discourse on sustainable urban water management by combining spatial insights with the sensory and social dimensions of human-environment interactions, aiming to influence both current and future restoration efforts for this essential urban ecosystem.

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Keywords: Mumbai Mithi River, sustainable urban water management, spatial, perceptions, climate change

DETERMINING ENTRY POINTS FOR COMMUNITY & RESIDENTIAL SOLAR WITH NLP

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Individual Paper Presentation

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As a distributed energy resource, solar photovoltaic (PV) energy reduces reliance on fossil fuels for residential energy consumption, especially in places with an abundance of sunshine. While rooftop solar PV has grown more popular among single-family homes, household uptake and installation of residential solar panels is limited by upfront costs as well as barriers for renters and multi-unit residential spaces. Community solar energy (CSE) projects overcome these barriers by sharing the costs and logistics of solar generation within a neighborhood. While the motivators for participation in CSE are well studied, less is known about the most effective timing for engaging participation. Work in behavioral science points to moments of change, such as moving home, to be effective intervention points in encouraging switches to sustainable behaviors, but the uptake of rooftop PV and CSE appears to happen primarily after residence is established. Online media sources have the potential to capture moments of readiness by both expanding the population coverage and providing freeform text for qualitative analysis of resident feelings towards their own residential energy provision. Paired with emerging machine learning techniques, such as natural language processing (NLP), semantic analysis of the content of large corpora of online posts can identify ideal moments for planners to engage communities in making the switch to solar energy.

This paper leverages a large collection of online complaints against electric utility companies to ask: When and why might residents be ready to install rooftop PV or participate in CSE? We aim to identify ideal moments for interventions with customer segments based on discontent with current systems. We operationalize this approach through a case study in Los Angeles County, a place with high annual solar radiation ideal for solar energy. Drawing on a variety of sources including 20 years of complaints from Consumer Affairs for local large-scale utility providers, historical data on blackout events and utility service costs, as well as locations of existing and potential community solar projects, we test and validate a framework for continuously identifying customer segments primed for solar adoption.

Through the application of state of the art NLP techniques, we identify the main topics in the complaints to be unexpectedly high bills, lack of clarity around charges, and power outages. 7% of the complaints mention switching to rooftop solar due to high costs. Paired with service disruption and changes in retail prices of energy, we determine customers are most primed immediately following a service disruption lasting longer than a day, at the beginning of the year, or after a 3-6 month lag from a price increase, likely due to billing cycles.

This paper offers three primary contributions to urban planning research and practice. First, it furthers methodological advancements on the use of user-generated online content for a deeper understanding of sentiments and pain points for change. These reviews offer qualitative experiences collected at scale and over long time periods, providing an extension to small-n qualitative methods. Conceptually, it deepens our understanding of the most prolific pain points in traditional energy distribution as energy infrastructure and policy grow to be increasingly critical areas of practice for planners. Finally, this paper provides a framework for continuously

monitoring and acting upon ideal location and market share pairs for rooftop PV and CSE projects. The use of near real-time responses to utility issues provides planners with a tool to capitalize on moments of readiness while furthering equitable access to energy. As we look to transition to renewable energy for our electricity production at scale, leveraging qualitative experiences alongside quantitative markers offers an efficient and effective path forward to shifting the market share of residential energy consumption.

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Keywords: urban informatics, natural language procesing, renewable energy, community solar projects

DISASTER DEBRIS MANAGEMENT AND THE MAINE FLOODS OF 2023

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Individual Paper Presentation

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Disaster debris is commonly generated from large-scale disaster events, and frequently hampers the efficiency of the response and recovery phases (Brown et al., 2010). Moreover, the complexity of the debris management process often requires the involvement of several different agencies and levels of government (Luther, 2017). Past research has highlighted the importance of pre-disaster debris management planning as an effective tool for promoting an overall more efficient post-disaster process (Crowley, 2017; Trivedi et al., 2015). While there is a body of literature that looks at the impacts of disaster debris on response and recovery as well as the effectiveness of pre-disaster debris management planning, most of this research focuses on geographic locations that have long histories of past large-scale disaster events. There is a gap in the literature pertaining to the debris management of areas that do not have a long history of debris-generating events. Understanding the debris management needs of these locations is crucial given that climate change-induced disasters have brought more intense events to areas, some of which have not had frequent experiences with responding to and recovering from such events (Cappelli et al., 2021). The Maine floods of December 2023 provide an example of such an area. The floods reached historic levels and generated substantial quantities of debris across several counties.

The purpose of this research is to examine the debris management process and needs in an area that does not have a frequent history of debris-generating events. The following research questions were examined: How does pre-disaster debris management planning impact the response and recovery phases of historic flooding events? What are the most significant debris management challenges in historic flooding events? The research questions were applied to the context of the Maine floods of 2023 due to the small number of debris-generating events throughout the area's history. Interview protocols were designed with questions pertaining to the debris management process in the preparedness, response, and recovery phases. Structured interviews were then conducted with local emergency management personnel and others who took on an active role with the debris management process. Interviews were recorded, transcribed, and coded using initial and focused coding. Results suggest that more preparedness is needed for debris management in the area. Furthermore, the debris management training model that is provided for local governments from the Federal Emergency Management Agency (FEMA) is not sufficient for many of the impacted counties in Maine because it is designed for mostly urban and suburban areas. Maine contains several unorganized territories that do not have local, incorporated municipal governments. Further research and training development are needed to address the debris management needs of these areas.

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Keywords: Debris, Floods, Maine, Trainings

DO GREEN GENTRIFICATION CONCERNS AFFECT MENTAL HEALTH AND WELLBEING?

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Individual Paper Presentation

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Introduction: Urban green space provides important benefits such as microclimate regulation, air quality improvement, and improved human health and wellbeing. Hence, community advocates often call for increased green space provision, especially in areas with limited access. However, the construction of new green spaces in underserved areas might lead to "green gentrification", describing the influx of wealthier new residents to formerly low-income communities of color due in part to new green spaces. Recently, studies have shown that gentrification might also precede greening, in what has been named the "green gentrification cycle".

Several studies have assessed why gentrification might precede and/or follow greening and what measures could be put in place to prevent its negative impacts, such as displacement. However, despite some research about the influence of green gentrification on human health and wellbeing, very little is known about the potential health and wellbeing impacts before green gentrification occurs in already gentrifying neighborhoods. Integrating knowledge and methods from urban planning and public health, we assess how perceptions and concerns about future green gentrification might shape residents' mental health and wellbeing.

Research questions: 1) How do residents in gentrifying neighborhoods describe the potential impacts of future green gentrification on their mental health and wellbeing? 2) How do these perceptions vary between longtime low-income residents and more affluent recent in-movers? and 3) To what extent does knowledge of future green space investment add to the stress that some people might be already experiencing due to ongoing gentrification?

Methods: We focus on Salt Lake City's West Side, an underserved community in the city that is experiencing some gentrification. In the next few years, Salt Lake City will build the Glendale Regional Park (a 30-acre regional park) and revitalize the Jordan River Parkway Trail (part of a 45-mile greenway). We used a mixed-method approach including a survey with residents (200) and in-depth interviews with residents and project stakeholders (20). The survey includes validated scales describing attitudes toward green spaces, neighborhood change perceptions (e.g., neighborhood preservation, development support, social integration), mental health and wellbeing measures, and control variables. For the survey analysis, we use regressions and structural equation models to test associations between the residents' perceptions of the new green space investments, gentrification, and their mental health and wellbeing. We analyze the interview transcripts through content analysis, including deductive coding based on content from the existing literature and inductive coding.

Results: The survey analysis shows a negative significant association between mental health outcomes and development support. On the other hand, there is a positive significant association between wellbeing outcomes and development support. In interaction tests, we found that these results are stronger for more recent in-movers and residents with insecure housing. Moreover, homeowners with high mental health outcomes show positive attitudes toward new green space investments. Residents with insecure housing that are already experiencing stress show a positive association with social integration. Results of the interviews show that most of the residents are in support of the new green space investments, but there are major concerns about potential gentrification, especially from low-income renters. These future greening processes increase the stress they are already experiencing.

Implications: Our results suggest that planners seeking to add new green spaces to underserved areas should consider strategies that will help address any potential gentrification and displacement outcomes. This will help make such investments fulfill their intended purpose to advance environmental justice. Also, because we find differential health impacts between gentrifiers and longtime residents, planners could work with public health professionals to identify groups that might need mental health support during green gentrification processes.

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Keywords: Green gentrification, Urban green spaces, Parks, Environmental justice, Health equity

DOES THE PRESENCE OF OSDS MATTER? EVIDENCE FROM THE HAWAIIAN HOUSING MARKET

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Individual Paper Presentation

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On-site sewage disposal systems (OSDS), such as cesspools and septic tanks, have negative environmental and public health impacts. Although OSDS' have been linked to higher instances of viral and bacterial infections (Fleisher et al., 2010), along with coral reef eutrophication and toxic algal blooms (Nepf et al., 2022), approximately 18% of all households in the United States are served by OSDS (EPA, 2021). This includes areas with high density concentrations of residences along the coast, including Delaware, New York, Florida and Hawai'i.

Rapid development and growth in Hawai'i led to over 100,000 cesspools on five of the Hawaiian Islands (Hawai'i Island, Kaua'i, Maui, Moloka'i and O'ahu) (Whittier & El-Kadi, 2014). To encourage the transition away from cesspools, the Hawai'i State Legislature passed in 2016 a statewide ban on new cesspools by 2050, followed by a law requiring homeowners to convert cesspools to a treated wastewater technology (including septic systems) or attach to existing sewage systems. However, the uptake of conversion has been low, likely due to financial barriers and access to site appropriate technologies. To date there has been little research on the financial implications of cesspools (and other OSDS) further the purpose of informing policies that might better prompt conversion. This study examines the impact of cesspools and other OSDS on the value of housing, to understand whether and the extent to which OSDS are being capitalized into housing decisions. Following Tarui et al. (2023), whose study found that coastal properties exposed to future sea level rise up to 1 meter were transacted at a lower value if on OSDS than sewered, this study expands on their findings to assess OSDS across the entire archipelago. Using a hedonic model, we determine whether the presence of OSDS impacts property values across O'ahu, Hawai'i Island, Kaua'i, and Maui. We utilize housing transaction data, FEMA flood zone data, OSDS inventory and parcel attributes. Preliminary findings show that residential home values decline by 17% due to the presence of OSDS, particularly cesspools, relative to similar properties but on the sewer. Another interesting finding is that housing located in FEMA flood zones also decreases property values by 15%, demonstrating the potential compound nature of physical risk that becomes financial risk.

The implications of these findings are particularly relevant to inform policy and planning relating to wastewater system upgrades, in Hawai'i and beyond. Our findings suggest that home sellers and buyers are indeed aware of negative impacts (value) of OSDS, and that homeowners with OSDS are effectively compensated for this negative attribute upon sale. As such, mandating conversion upon sale is likely both an effective and fair means to moving toward the State's 2050 goal. Homeowners who convert their cesspools prior to sale will increase their home's value significantly.

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Keywords: waste management, housing market, hedonic model

Drinking water system consolidation potential, governance and equity

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Individual Paper Presentation

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Drinking water is one of our two most fundamental human needs. Unlike the need for clean air, however, drinking water consumption requires the physical planning of service to communities via infrastructure networks. Yet across the United States, poorly-performing, often very small drinking water systems operate poorly under nominal public oversight in spatial patterns that neither cohere well with utility or city planning geographies nor follow a logic which yields positive environmental, efficiency, or equity outcomes. This is due both to patterns of overt environmental racism, administrative oversight as well as proactive planning support for sprawl.

My previous work has thus laid out the case for planning intervention to address the over-dispersion of drinking water systems, or water system sprawl. In parallel, consolidation of the nation's ~ 50,000 community water systems is a policy that has grown in favor in recent years a means to enhance water equity in the United States. Yet empirical support for most, but not all common, theoretical claims about water system consolidation in the literature is scant, especially regarding governance, as well as equity and inclusion with respect to both procedural and distributive outcomes. In my proposed presentation, I focus on my collaborative, recently published research which explores answers to several pressing, related questions regarding drinking water system consolidation.

Namely:

- What are the common local governance planning pathways for water system consolidation?
- Does consolidation advance procedural inclusion & equity at the system scale?
- Does consolidation improve distributive (Human Right to Water) outcomes for customers?

I answer these questions using results of a comprehensive analysis of the prevalence and governance pathways of drinking water system consolidations in California over the period 2015-2021, as well as a pre-post household survey and water quality sampling effort in the context of water system consolidation in New York (2015-2022), along with insights from several ongoing projects.

I find empirical support for certain, but not all common, theoretical claims about consolidation in the literature. Generally, I find enormous diversity in local governance planning pathways (over 30 different transition types across 200 cases, with the most growth in special district representation). I also find that residents served by consolidating and receiving systems tend to be similar, but among consolidated systems, low-resource communities are underrepresented. Finally, using the New York case, I found positive changes in customer level quality and accessibility, but variance in perceived versus realized affordability impacts. I close by outlining implications for future research, policy and advocacy on drinking water system consolidation.

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Keywords: water, consolidation, equity, infrastructure

Dynamic Visual Assessment of Urban Streetscapes: Hengshan Street

Abstract ID: 1108.0.0.315.2024
Individual Paper Presentation

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Objectives: By investigating the relationship between the urban street environment and human perception under "dynamic" walking situations, this study seeks to improve the urban street landscape and maximize the walking experience for the public. Using a combination of qualitative and quantitative research methods, a dynamic visual assessment system with subjective, objective, and interactive components is created. In order to examine the dynamic visual perception mechanism, system is quantified by using scientific and professional techniques.

Methods: Based on previous research on the subjective and objective evaluation of urban streets, a dynamic landscape visual objective evaluation system is chosen and built, including spatial elements (sky view factor, architectural visual proportion, green view index), spatial configuration (mean horizontal visual depth), and spatial vision (color richness). The following are the definitions of subjective indicators: clarity (vague-clear), transparency (enclosed-open), richness (monotonous-rich), and relaxation (suppressed-relaxed). Based on the subject-object interaction principle, dynamic visual subjective and objective evaluation indicatorshave been developed, including dynamic viewing frequency, landscape preference offset degree, and spatial vitality index.

Results: Data on surface elevation, building elevation, and road elevation are gathered from open-source platform OpenStreetMap and the geographic spatial data cloud, with an emphasis on Shanghai's Hengshan Road. In addition, 80 example photos are taken using fixed-point photography on the spot. The green view index, building area percentage, and sky area proportion of the sample sites are computed using image semantic segmentation algorithms. The mean horizontal visual depth is calculated using GIS spatial analysis. Color richness is calculated by analyzing the RGB values of the image colors using Colorimpact software. Subjective assessment indicators of the sample points are computed on the basis of these results and the subject-object linear regression equations that are currently available. In order to ascertain dynamic viewing frequency based on 40 sets of two-step path trajectory data, landscape preference offset degree based on 21 two-step path positioning photographs, and spatial vitality index based on 26 Baidu heatmap data, the study also employs GIS overlay analysis and inductive statistics methods.

Conclusion: The study examines correlation between the dynamic visual perception mechanism and visual assessment system using the Partial Least Squares Regression in SPSS. Moreover, a scatter plot in three dimensions is created. According to the study, "dynamic viewing" behavior influences how people perceive their surroundings while they are in cities significantly. Reduced desire for space and pedestrian flow are caused by a decrease in dynamic viewing frequency. The public's impression of street space is enhanced in terms of clarity, transparency, ease of use, and richness when there is a greater range of spatial hues within the field of view, a smaller building area, and more translucent and clear spaces. These results emphasize the significance of subject-object interaction, or "dynamic viewing" behavior indicators, in enhancing street scene perception and visual quality. Planning and designing urban streetscapes should focus on elements including viewing frequency, viewing preferences, and spatial vitality in dynamic visual environments.

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Keywords: dynamic viewing, visual assessment of landscapes, interaction between subjects and objects, urban streetscape

ENHANCING URBAN BIRD HABITAT FRAGMENTATION: INSIGHTS FROM SHANGHAI, CHINA

Abstract ID: 1108.0.0.1115.2024
Individual Paper Presentation

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Shanghai, as China's premier international economic and financial hub, faces significant challenges in balancing economic growth with environmental conservation. The rapid pace of development has led to habitat fragmentation, particularly impacting urban bird species. Moreover, the existing land communal system undermines effective ecological conservation efforts by depriving policymakers of clear land conservation values, thereby prioritizing economic interests over environmental concerns. Numerous studies, including the SLOSS Debate, demonstrate that small patch assemblages may harbor more species than individual large patches of similar size. Building on this understanding, this study explores the possibility of optimizing the conservation potential of highly fragmented, hot spot-distributed bird habitats in cities at a landscape scale. It aims to delineate metrics for reconciling economic development and ecological conservation with minimal cost and maximum efficiency. This paper focuses on Shanghai as the study area, employing Fragstats software to categorize landscape elements (Metrics) and utilizing the dual modeling research method (MaxEnt+Marxan) within the Systematic Conservation Planning (SCP) approach to quantify bird distribution and habitats. The main objectives are as follows: 1. Evaluation and planning of hot spot distribution areas for 527 species of wild birds in Shanghai, spanning 22 orders, 82 families, and 255 genera. Subsequently, hotspots for bird distribution are assessed and mapped. 2. Targeting 108 areas in Shanghai, including urban parks, school greenspaces, and villages, identified for their conservation benefits using official E-Bird data. Research results are categorized into two main types: Single Large/Several Small, and the SLOSS biodiversity conservation framework is applied to study species conservation patterns. Our hypotheses are as follows: (i) Within the same area, 'Several Small' and 'Single Large' habitat types exhibit comparable average conservation benefits for bird diversity, yet they differ in preferences for birds of various residency types. Moreover, positive effects on bird survival exist within certain thresholds of human activities in both habitat types, influenced by distinct human use preferences and behaviors. (ii) There is no absolute disparity in conservation benefits between the two habitat types ("Single Large" and "Several Small") for

bird diversity. Urban bird conservation potential is heightened under a certain level of fragmentation and landscape connectivity, extending conservation benefits to neighboring areas. The study aims to investigate bird conservation strategies amidst rapid urbanization and unclear management of land commons. It seeks to conduct foundational research to understand how fragmented small patches of habitat at the urban scale can be optimized to maximize biodiversity conservation benefits.

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Keywords: Landscape metrics, habitat fragmentation, land communal ownership, System conservation planning, Urban bird diversity

EQUITABLE MANAGEMENT OF THERMAL COMFORT IN MULTI-FAMILY BUILDINGS

Abstract ID: 1108.0.0.1093.2024
Individual Paper Presentation

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Indoor thermal comfort serves as a catalyst for health and quality of life. In cities with moderate weather like Los Angeles, indoor thermal comfort can be achieved through architectural design principles such as orientation and ventilation, and minimal intervention of mechanical systems (Chai & Fan, 2022; Taleghani et al., 2013; Omer, 2008). However, like many other urban areas, Los Angeles faces heat risks from a warming environment, aggravated by the urban heat island effect. In recent years, the city has experienced hotter and longer summers, putting the population at risk of health complications which are particularly dangerous to vulnerable populations such as the elderly, children, and those with pre-existing health conditions. City governments and civil organizations explore efficient ways to mitigate these risks with cooling centers, tree-planting initiatives, and heat emergency plans to protect public health during periods of extreme heat. However, these may not be accessible to everyone who needs them, and a better approach would be to improve thermal comfort in existing residential buildings. To achieve this, the county's Department of Public Health recommended the amendment of the Los Angeles building code to require indoor temperatures of less than 82 degrees Fahrenheit in housing outfitted with air conditioning (County of LA Public Health, 2023). This mandate is comparable to existing regulation that requires landlords to provide renters with adequate heat. Following this recommendation, the LA County Board of Supervisors passed a motion to require cooling measures in rental housing. A subsequent proposal by the LA County Department of Public Health seeks to enforce the installation of A/C units in multi-family housing units to ensure on-site thermal

comfort, without any mention of the necessary insulation retrofits in these buildings. Extensive research unequivocally underscores the necessity of installing insulation in buildings to attain optimal thermal comfort efficiently. Without the proper insulation, operating an A/C unit is cost-inefficient at achieving indoor thermal comfort, and due to increasing electricity consumption would impose an additional cost burden to many families in Los Angeles. Additionally, greenhouse gas emissions could increase due to an increment in electricity demand to power these A/C units. If California aspires to reduce its GHG emissions by 40% before 2030 and achieve further climate goals, the state must focus its efforts on reducing emissions created by millions of housing and commercial buildings.

This study aims to assess the cost-effectiveness of providing A/C units to occupants of multi-family housing for achieving thermal comfort, compared against the expenses associated with retrofitting their dwellings with the necessary insulation. Using a GIS (geographical information systems) model, I will map multi-family buildings in the City of Los Angeles and organize them by year of construction to estimate the number of units that lack insulation. Los Angeles is characterized by multifamily buildings (about 56% of the housing stock); and the majority of those were built before 1975, the year that insulation requirements were included in the building code. Using the city's records, I will generate a ratio of units that have not been upgraded since the regulation passed. Using the same model, I analyze the required capacity (number and capacity of A/C units) to compare against the estimated insulation required to retrofit these units. Later, I analyze the costs associated with the provision of the A/C units, costs associated with the usage of these units and how these costs may contribute to the energy burden on users, and the consequences of these additional costs on thermal comfort and equity. The analysis concludes with an evaluation of the potential effects in relation to the concept of energy justice as defined by Sovacool & Dworkin (2015).

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Keywords: Thermal comfort, Sustainability, Energy, Insulation, Equity

ESTIMATING WATER CONSUMPTION UNDER DIFFERENT DEVELOPMENT SCENARIOS

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Individual Paper Presentation

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It is important for planners to ensure that future urban growth can be supported by clean and reliable water supplies. Understanding how new development will impact water supplies in the future can support scenario planning efforts by municipalities and regional organizations. There are a wide range of methodological approaches to estimate future water consumption at a variety of scales (House-Peters 2011). The modeling approaches vary but the applicability of all of them all comes down to data availability. Sometimes the necessary data does not exist. For example, we know that individual attitudes and preferences influence water consumption but in the absence of widespread surveys that variable cannot be used to calculate future estimates (Randolph and Troy 2008). In other instances, data required to estimate water consumption is not shared outside of a single agency. Public utility records that contain property location and type are some of the most useful data to link urban development and built environmental characteristics to water consumption, but the data are often not made available by the public utilities (Ruddell 2018). There is a need for either more data sharing or a simplified approach to estimate how urban development affects water consumption. This study represents the latter approach and develops a simple but accurate method for estimating water consumption in a large metropolitan area.

The Phoenix Metropolitan Area (PMA) is one of the fastest-growing urbanized areas in the U.S. as well as one of the hottest. Regional water providers responsible for managing the water supply want to better understand how urban development will impact water consumption in the region. The problem is they don't have the data they need. There is no single regional or state agency responsible for understanding how both water is consumed and how land is developed. Instead, land use and water resource management is fragmented between multiple jurisdictions. The PMA contains over ten municipal governments that provide water to their residents as well as plan and permit urban development. The customer data is not shared between the organizations, nor is it made publicly available to researchers or planning agencies.

This study presents an approach to accurately estimate water consumption using only data that is publicly available. Land use data was collected from the Maricopa Association of Governments and the Maricopa County Tax Assessor. Using GIS, the total acreage of each land use, i.e. single family, multifamily, agriculture, industry was calculated. Water consumption data was obtained from state mandated annual reports as well as published water resource management plans. Combining the land and water data allows calculation of average water consumption per acre by land use. For example, a single-family residential property in Phoenix uses on average 1.2 acre feet per acre each year. This measure is called a "water duty" and when the water duties were applied to current land use in the region the estimate was only 0.004% different than the five-year average of actual water consumption. The estimate was almost exactly what is consumed in the region. The water duties were then applied to a future development scenario where all vacant land was developed in the PMA and agricultural lands were converted to residential. Interestingly, the conversion from agriculture to residential reduces water consumption and overall water consumption would only increase slightly despite a much larger population in the region. These formulas and water consumption rates were implemented in an Excel based scenario planning tool that is now being used by a regional water provider to estimate water consumption under different scenarios of urban development.

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Keywords: Water, land use, scenario planning

EVALUATION OF URBAN STREET TREES FOR A MORE RESILIENT CITY

Abstract ID: 1108.0.0.1139.2024
Individual Paper Presentation

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Urban greenspace is part of the important component to support a healthy and sustainable urban environment. During the past decades, there has been a growing body of literature explored the quantity, quality, benefits, and costs associated with urban greenspace and street trees, and broader impact toward environmental justice and urban socioeconomic disparities.

In this talk, we systematically evaluate the quantity and quality of 196825 urban street trees in District of Columbia, using street view images, remote sensing and GIS datasets. To begin with, we used remote sensing images to map the tree species and tree health using machine learning algorithms. We found that high-resolution and multi temporal remote sensing images have the potential to distinguish both tree species and tree health status at individual tree level. At the same time, we explored influences from various aspects such as socioeconomic, environmental and landscape structures toward the health status of street trees at census tract level. We further identified the association and causality for street trees under poor health conditions due to several socioeconomic and environmental factors. We found that the health status of the street trees is directly impacted by environmental and landscape pattern factors. There is also an indirect impact from socioeconomic factor toward quality of street trees. We also used street view images to identify the streetscape patterns and further provide strategies and insights for urban street tree management for cities to not only address environmental inequity for climate adaptation plans, but also promote a more resilient urban greenery system.

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Keywords: Urban forestry, Greenspace, Street trees, Environmental Justice

EXAMINATION OF FACTORS THAT AFFECT LOCAL CLIMATE ACTION PLANNING IN JAPAN

Abstract ID: 1108.0.0.1050.2024
Individual Paper Presentation

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Global warming and climate change continue to threaten people's lives, communities, and the natural environment around the globe. The Paris Agreement of the United Nations Framework Convention on Climate Change requires industrialized countries to report their annual greenhouse gas (GHG) inventory, which covers emissions and reduction of direct GHGs. The Government of Japan has set an interim goal to reduce its CO2 emissions by 46 percent by 2030, compared to the 2013 levels, on the way to eventually meeting the goal of net zero by 2050. In 2019, the CO2 emissions from the transportation category accounted for 199 million t-CO2 or 16.4% of the total GHG emissions in Japan; road transportation accounted for 89.2%.

Local governments possess critical roles in identifying the need for adaptation and mitigation and developing measures that can be effectively implemented in the areas, including land use, transportation, and infrastructure (Amundsen et al., 2018). However, the literature on transportation-related climate action plans in the US indicates the lack of rigor in developing climate action plans, the problem with silos among the relevant planning areas, and the resulting lack of effectiveness in achieving the stated goals of GHG emissions reduction, including the case with SB375 in California (Deakin, 2019b; Sciara, 2020). As the Government of Japan delegated, in the Global Warming Law (GWL), its authority to implement relevant laws to prefecture governors and city/town/village mayors, local governments are responsible for developing, implementing, and monitoring their climate action plans. While the local action plan only for government-related activities ("administrative business" version) has been mandatory for all local governments since 2008, the one for non-government-related activities ("area measures" version) is required only for the governments of prefectures, "designated cities," and "medium-size cities" with the population of 200,000 or more. At the same time, there has been an increasing number of local governments of all sizes declaring net-zero CO2 emissions by 2050.

This study follows the previous study that examined the effectiveness and challenges in implementing climate change policy in local climate action planning and implementation in Japan, focusing on the transportation and land use planning fields (Iseki, 2024). It addresses questions, including (1) what factors are related to the earlier production of climate action plans by local governments, (2) what factors influence the GHG emissions reduction goals and the set years of achieving the goals, and (3) what factors are related to the relative importance of alternative fuel vehicles in the climate action plan.

The study analyzes the database built based on three primary datasets. The first dataset contains the data from "the survey on the implementation status of the law concerning the promotion of global warming countermeasures at the local governments in 2021" published by the Ministry of Environment. The second dataset contains information on the local governments that have declared net zero carbon dioxide emissions by 2050, published by the Ministry of Environment between 2019 and 2024. The last dataset contains the responses of the two original surveys collected from a total of 116 local governments during the seven months of 2021. The first survey was sent to and responded by the planners of a unit that prepares local climate action plans, while the

second survey was sent to and responded by the planners of one of the transportation-related units, which is considered most relevant to climate action planning by each local government.

This study contributes to the literature on climate action planning, with a focus on its connection with the transportation sector and the critical roles of local governments. It seeks to increase the understanding of factors that lead to successful climate action planning.

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Keywords: global warming and climate change, climate action plans, transportation sector, local governments, policy implementation

EXAMINING THE ROLE OF COMMUNITY STAKEHOLDERS IN CLIMATE PLANNING

Abstract ID: 1108.0.0.693.2024
Individual Paper Presentation

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Climate change represents a wicked problem facing the world. Due to their proximity to climate impacts and understanding of context-specific vulnerabilities, local governments are increasingly viewed as critical change agents in addressing both the impacts and the causes of climate change. Global injustices related to climate risk and responsibility are mirrored at the local level, where marginalized urban residents that have contributed least to the problem are most at risk from its consequences. As awareness of the complexities of climate change and the potential for responses to have unintended negative consequences has grown, local governments are experimenting with participatory and collaborative approaches to climate governance.

Community-led climate planning and policy making approaches are promoted as a way of addressing persistent injustices in local climate governance processes and outcomes by shifting both resources and decision-making power to those most impacted by climate change.

In theory, these efforts align with mainstream participatory planning practices, as well as the demands of environmental and climate justice advocates who call for more meaningful engagement with frontline communities. However, given the plethora of research highlighting the gap between participatory ideals and practice, this recent rise in state-sponsored, community-led climate planning raises questions about the potential for these efforts to reproduce, rather than challenge, unjust processes and outcomes.

Building on theories of participatory planning and environmental and climate justice, this study investigates an ongoing experiment in state-funded, neighborhood-scale, community-led climate planning in California. I ask: How are impacted community stakeholders involved in and influencing local climate planning processes and likely outcomes in historically marginalized communities? This question is addressed through a two-part analysis of the TCC Program, a prominent government-funded, neighborhood-scale climate planning program in California. Launched in 2016 by the State Legislature, TCC funds the design and implementation of climate mitigation and adaptation projects among the State's priority populations, communities characterized by their disproportionate environmental and economic marginalization. Using qualitative document analysis and critical discourse analysis, I analyze the relationship between divergent understandings of community, strategies of involvement, and planning decisions through a critical environmental justice (EJ) lens.

I find that community based organizations representing some of the state's priority populations played a key role in imagining and realizing the TCC program. At the same time, however, the scale and scope of the projects being funded make it difficult for historically marginalized communities to lead in their design and implementation on the ground. The comprehensive nature of the projects being funded, which is considered essential by environmental and climate justice advocates, makes community control more challenging, if not inaccessible, ultimately curtailing the visions of climate justice being put forward by frontline communities.

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Keywords: community-led planning], climate change planning, environmental justice, climate justice, frontline communities

EXPLORING ENVIRONMENTAL AND SOCIAL EQUITY IN PERI-URBAN PARKS

Abstract ID: 1108.0.0.14.2024
Individual Paper Presentation

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Peri-urban parks play a crucial role in enhancing urban living conditions and promoting contact with nature. However, assessing peri-urban park environmental and social equity requires understanding actual park user activities, which has been lacking in previous research. To bridge the gap, this study utilizes mobile phone big data from over 40,000 visitors to peri-urban parks in Tokyo. We applied Local Moran's I, Lorenz Curve, Gini coefficient, and K-means clustering methods to scrutinize accessibility and social inequities among residents of Tokyo's 23 special wards and within distinct visitor groups. The findings reveal significant insights: Firstly, mobile-based indicators expose disparities, underscoring the relevance of human activities in assessing peri-urban park accessibility, variations in these indicators highlight the need for a multi-dimensional approach. Secondly, Gini coefficient analysis of mobile-based and two-step floating catchment area indicators suggest that extending the service radius beyond 10km enhances accessibility equity. Furthermore, social inequities are more distinctly illustrated through mobile-derived visitor groups compared to age-demographic groups. These findings offer valuable insights for decision-makers in park planning policy, enabling the development of strategies that address accessibility and social inequalities while establishing effective classifications for peri-urban park visitor groups.

Citations:

- Urban greenness mixed land-use and life satisfaction: Evidence from residential locations and workplace settings in Beijing
- Inequities in the quality of urban park systems: An environmental justice investigation of cities in the United States.
- Accessibility to urban parks for elderly residents: Perspectives from mobile phone data

Keywords: Peri-urban parks, environment and social equity, mobile phone data, visitor group clustering, Tokyo

EXPLORING LIVELIHOOD IMPACTS OF SETTLEMENT RELOCATION: A CASE OF XICHUAN

Abstract ID: 1108.0.0.476.2024
Individual Paper Presentation

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The formulation and implementation of policies to harmonize resource use and human development has become a major task globally, especially in ecologically-dependent areas where productive human life is overly constrained by natural resources. Household livelihoods (HL) provide a well-established framework for the analysis of policy effectiveness, defining the activities, assets, and access that determine an individual's or household's livelihood (Ellis, F, 1998). In China, Poverty Alleviation Relocation (PAR) is a policy tool for resolving localized human-land conflicts through the means of rural settlement relocation, and is particularly relevant for poor people living in areas where resources cannot support sustainable livelihoods. However, no clear conclusions have been drawn about the sustainability of people's livelihoods after settlement relocation (Zhou et al., 2018), especially in

ecologically-dependent rural areas that lack diversified livelihoods (Liao and Brown, 2018). This study aims to empirically answer the following questions: how do shifts in the spatial environment in which households are located affect their livelihood structures under conditions of homogenous production? What specific role do spatial relevance elements play in the influence process?

This study focuses on six mountainous villages in Xichuan Township, China and their households that have completed relocation under the PAR policy. The main methods of data collection are the use of participatory tools and techniques, household surveys, supplemented by GIS analysis. The relocation network was constructed by integrating information on the attribute changes of geo-referenced and spatially related elements before and after relocation. For the 56 household samples, livelihood capital was selected as a measurement indicator, and a five-dimensional indicator system describing changes in livelihood structure was constructed for human capital, natural capital, social capital, financial capital, and physical capital. In terms of spatial correlation element improvement of relocation network, transportation, infrastructure, and agricultural production improvement can be achieved through relocation and support livelihood optimization (Liu et al., 2020; Perz et al., 2012). This study quantifies this in a GIS system. Finally, panel data were used to test the correlation between changes in livelihood capital and spatial correlation elements in relocation networks.

The results show that PAR has differential effects on the five types of livelihood capital. For household financial capital and physical capital, the improvement is more obvious, and the average optimization index reaches 0.73 and 0.68, respectively. while natural capital and social capital are not effectively optimized with the change of the living environment, which shows the negative impact of PAR on the accessibility of natural resources and the social network in rural areas. The results of regression analysis showed that the improvement of public service accessibility and the shortening of the radius of non-farm employment had a positive effect on the improvement of household human livelihood capital. However, the improvement of the surrounding agricultural production environment does not enhance households' natural livelihood capital. Meanwhile, households that relocate to live in more populated areas do not effectively acquire more social capital. This paper concludes that for rural livelihoods to remain sustainable and balanced in the process of policy implementation, the organization of relocation networks must be properly selected and optimally laid out in combination with specific spatially linked elements.

These empirical results depict the impacts of spatial adjustment and resource management policies on specific households in the implementation process, which can provide a basis for the practice of PAR in special areas. At the same time, the experiences and shortcomings can provide lessons for other countries around the globe in addressing the challenges of harmonizing resource use and human development.

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Keywords: Household Livelihood, Poverty Alleviation Relocation, Relocation Networks, Ecologically-dependent Areas

EXPLORING THE ROLE OF NATURE-BASED SOLUTIONS IN URBAN RESILIENCE

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Individual Paper Presentation

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Climate change presents significant challenges to urban areas, including rising temperatures, extreme weather events, and urban heat islands. Addressing these challenges requires the development of effective strategies to enhance urban resilience, mitigate the impacts of climate change, and adapt to evolving conditions. In this context, Nature-Based Solutions (NBS) have gained recognition as a promising approach to tackle the complex climate-related issues facing urban landscapes. However, there is a lack of comprehensive understanding of how NBS are being implemented in cities and their potential to enhance resilience and address climate change.

Nature-based solutions (NBS) are centered on protecting, sustainable management, and restoring both natural and modified ecosystems, aiming to benefit biodiversity and human well-being. They are designed to promote healthy ecosystems and support adaptation to climate change, reduce the risk of natural disasters, enhance food and water security, mitigate biodiversity loss, and protect human health. Despite the growing interest in NBS, their application in urban settings to address climate change and bolster resilience remains ambiguous. Existing literature primarily focuses on actions in natural areas on the outskirts of cities, which have been altered by human activities, with the assumption that interventions in these areas will positively impact urban environments. However, this assumption necessitates further research to fully comprehend the potential, limitations, and implementation of NBS within urban contexts.

This research aims to investigate the role of NBS in urban landscapes as a means of simultaneously addressing the challenges of climate change, with a specific focus on resilience, climate mitigation, and climate adaptation. Employing a mixed-methods approach, the study integrates quantitative data analysis, qualitative interviews, content analysis of plans, and spatial analysis of plan policies. The policy analysis phase involves creating a comprehensive list of policies categorized as Nature-Based Solutions and conducting an in-depth analysis to understand their specific characteristics and potential impacts.

Preliminary results from an initial sample of 230 cities recognized for their leadership in sustainable development indicate that investments in adapting cities to climate change often favor traditional gray infrastructure over NBS. This preference is possibly due to the well-established science of conventional city-building, with clear investment

costs and improvement indicators. However, there is a need for a comprehensive assessment of how cities incorporate NBS into their climate adaptation and mitigation strategies.

This study provides valuable insights for urban planners, policymakers, and researchers in the field of sustainable development and climate resilience. By evaluating the implementation status of NBS policies in selected cities and examining their experiences, successes, failures, challenges, and lessons learned, the research aims to contribute to a better understanding of the potential and limitations of NBS in enhancing urban resilience and addressing climate change.

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Keywords: Nature-Based Solutions, Urban Resilience, Climate Adaptation, Climate Mitigation, Policy Analysis

EXTREME WEATHER, CHARGING RATE AND MODERATING EFFECT OF STATION SHELTERS

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Individual Paper Presentation

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As green and efficient means of transportation, new-energy vehicles are increasingly favored. The rapid growth of these vehicles requires greater attention to the construction and operation of charging infrastructure. However, the development of charging infrastructure faces multiple challenges. There is a mismatch between high-cost construction, low utilization, expanding market size, and increasing charging demand. Therefore, it is significant to understand the factors influencing the utilization of public charging stations. Furthermore, recent record-breaking heatwaves and extreme precipitation in many cities have strained water and power supplies, impacted food security, livelihoods, travel behavior, and public health. These extreme weather events also pose challenges for urban infrastructure operation. However, existing charging station studies and planning seldom consider this aspect. Thus, there is an urgent need to consider the impact of extreme weather and adopt moderating strategies when promoting the construction and management of public charging stations.

This study evaluates the utilization of public charging stations under extreme weather conditions using weather data and charging record big data, focusing on Shenzhen, a pioneering city in promoting vehicle electrification and renowned for its high density of public charging stations. Extreme precipitation has a more significant negative impact on fast charging station utilization. Additionally, we explore the moderating effect of station design, with a particular emphasis on the role of shelter. We find a correlation between parking cost, built environment, socio-economic context, and the installation of station shelters. The moderating effect of shelters is found to be more significant for fast charging stations, and the impact differs between weekdays and weekends. Our research provides a systematic and empirical exploration from a station perspective, offering evidence for the planning, operation, and management of charging infrastructure in the context of climate change. It further promotes the development of the new-energy market.

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Keywords: public charging infrastructure, extreme weather, moderating effect, built environment

FACTORS IN THE ADOPTION OF LARGE SCALE SOLAR PROJECTS IN THE UNITED STATES

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Individual Paper Presentation

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Over the past decade, thousands of megawatts of capacity have been added to the grid, through utility-scale solar projects. Yet the best estimates suggest a 4-6 year time horizon for planning and permitting these Large-Scale Solar (LSS) projects, with significant delays in the permitting and lengthy interconnection queues. While there has been a significant interest in identifying the patterns and causes of rooftop solar adoption by households (Graziano and Gillingham 2015; Wolske, Gillingham, and Schultz 2020), there has been not much work done in identifying the correlates of successful utility scale solar adoption in different areas. Even though utility scale solar is spatially clustered much of the work has been concentrated on identifying barriers and delays in specific projects(Susskind

et al. 2022). The one national study we can find (Ding et al. 2023) uses cross-sectional data and suffers from category errors in their policy level variables.

In this study, we present the results form longitudinal analysis of large scale solar projects. We use the data from Energy Information Administration's form EIA-860 to locate generator level information of existing and planned generators with 1 MW or greater nameplate capacity. We take advantage of the recent efforts by Lawrence Berkeley National Laboratory and United States Geological Survey which validated the locations and extents of the generators (Fujita et al. 2023). Using this primary dataset, we explore the following questions. We will explore the following questions by constructing appropriate statistical models: (1) What are the spatial and temporal patterns of adoption (clustering, dispersion etc.) in the Southeast? Does the metropolitan context matter? (2) What trends in demographic and economic characteristics of a jurisdiction are important to explain the adoption over time? What are the differences between communities that are currently designated as Justice40 and those that are not? (3) What are the impacts of trends in agricultural practises and outcomes (loss of farmland, productivity), changes in forest land uses and urban development pressures on adoption? (4) How do regional and infrastructural features, such as proximity to existing urban centres and transmission infrastructure impact the adoption? (5) Does jurisdictional and ownership fragmentation/consolidation affect the adoption rates? (6) Exploring spatial and temporal autocorrelation. Does prior experience with LSS, increase or decrease the likelihood of adoption of new LSS? Does the presence of LSS in neighbouring jurisdictions increase or decrease the likelihood of adoption?

To answer these questions, we assemble data from large number of sources including UGSG landcover, American Community Survey, County Business Patterns, USDA's National Agricultural Statistics. By analysing spatial and temporal trends, we aim to explore potential causal links between the rise of photovoltaic infrastructure and changes in land use. We use a generalised spatial dynamic panel data (GSDPD) to estimate the effects of various correlates on LSS (Jin et al. 2020). While we don't aim to present a causal model, this is paper sets the stage for a more in depth qualitative exploration of jurisdictional practises that help or hinder the energy transition.

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Keywords: Large scale solar projects, energy planning

FLOOD VULNERABILITY ANALYSIS OF INDIVIDUAL SEMI-BASEMENT HOMES IN SEOUL

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Individual Paper Presentation

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The increasing intensity of rainfall due to global warming is increasing the vulnerability of people living in semi-basement houses to urban flooding. To address this issue, The Seoul Metropolitan Government has announced a policy to assist in relocating underground residents to the ground floor. However, to effectively mitigate the flood risk of semi-basement houses and facilitate the relocation process, adopting a proactive approach that reflects various urban spatial factors is important. Therefore, this study aims to evaluate the flood risk of individual semi-basement houses in Seoul by analyzing the physical environment, population, and socio-economic factors. This study will also suggest flood risk mitigation measures based on a detailed index analysis. The analysis of the Flood Vulnerability Index (FVI) of all semi-basement houses in Seoul shows that the flood-vulnerable semi-basement houses are significantly concentrated in Dobong-gu and Eunpyeong-gu. Moreover, the analysis of the flood-prone areas in Dobong-gu and Eunpyeong-gu using the detailed indicators shows that Dobong-gu has a relatively high Exposure Index (EI) and Physical Vulnerability Index (PVI) value. In contrast, Eunpyeong-gu has a relatively low Social Resilience Index (SRI). Therefore, Dobong-gu should prioritize reducing physical vulnerability and flooding exposure, while Eunpyeong-gu should focus on improving social resilience. This study contributes by analyzing flood vulnerability at the level of individual semi-basement houses, reflecting their urban spatial characteristics. Furthermore, this study provides basic data that can help local governments develop flood risk reduction policies based on the evaluation characteristics of semi-basement housing.

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Keywords: Flood Vulnerability, Semi-Basement Home, Urban Flooding, Flood Risk Mitigation

FORMING RISKS OR RESILIENCE: RECOVERY PLANNING IN BHIMESWOR CITY IN NEPAL

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Individual Paper Presentation

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Human vulnerabilities to disasters are formed over time by geographic, social, economic, and policy changes and disparities (Cutter et al., 2003; Wisner et al., 2004). Disaster recovery offers opportunities to overcome these vulnerabilities and build resilient communities. However, communities rarely plan for recovery (Hokanson & Schwab, 2014), even though recovery is a locally driven process (Johnson & Hayashi, 2012). A 7.8 magnitude earthquake shook more than 15 densely populated districts of Nepal on April 25, 2015, followed by a major aftershock of 7.3 magnitude with its epicenter in Dolakha District. More than 9,000 people were killed, and over seven billion USD worth of property and infrastructure damage occurred (Yamada et al., 2016). Bhimeswor Municipality, the largest city of Dolakha District, faced extensive damage to residential buildings, official facilities, and road networks due to its proximity to the earthquake epicenters. After nine years of the event, the municipality recovered, but many questions on vulnerability and resilience remained unanswered. This study strives to untangle the landscapes of disaster recovery efforts and changing faces of social and economic vulnerabilities in the aftermath of the 2015 Nepal Earthquake with the case study of Bhimeswor Municipality of Dolakha district.

Most earthquake-damaged private houses, government buildings, community facilities, and infrastructures were restored by 2023. Volunteerism, social capital, and informality played significant roles in the tangent of formal institutions. But earthquake recovery was not the same for all. Some communities achieved higher resilience, and others became more vulnerable. To understand multiple fronts of resilience and vulnerabilities in disaster recovery planning, this study uses 400 household surveys among earthquake-affected families, 13 in-depth interviews with community leaders and recovery planners, and a desk review of publications from national and international sources. Using binary logistic regression models on survey data, coding of interview transcripts, and triangulation of survey and interview findings with desk review results, this study concludes that social capital and informality played crucial roles in the earthquake response. However, when the recovery started, bonding relationships functioned well among poor ethnic minorities compared to economically well-off classes. The insufficiency of funds and incompatible building designs with livelihoods were significant challenges, resulting in displacements, migrations, and economic vulnerabilities among minorities. The study recommends empowering local government and informal institutions in communities as the best planning strategy to build resilience against future geologic and climatic disasters in Nepal and beyond.

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Keywords: Disaster Recovery, Nepal Earthquake 2015, Vulnerability, Community Resilience

GARDENING IN THE MACHINE: ECOLOGICAL PRAXES FOR RESHAPING NEIGHBORHOODS

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Individual Paper Presentation

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Crises of the Anthropocene place exponential demand on cities. In planning, we speak of improving sustainability, resilience, and adaptation with increasingly integrated and interdisciplinary strategies. More commonly, this discourse emphasizes material-technological solutions, but seldom acknowledges the role of transforming culture, practice, and other intangibles such as emotional connections to nature (Kahn and Hasbach 2012). Echoing early bioregional planners, this research focuses on integrating and building a socioecological ethos through praxes at the grassroot level to transform neighborhoods and improve cities socially and ecologically (Thackara 2019). Neighborhood praxes provide long-term, hands-on engagement that reshape norms, behaviors, routines, and practices and, from a systems lens, can be greater than the sum of their parts (Kennedy 2011).

Through this presentation, I explore the Urban Ecology Center's (UEC) use of applied, community-based ecological praxes to catalyze individual and neighborhood changes. For the last 30 years, the UEC in Milwaukee, WI has been organizing a range of environmental programs and activities from land stewardship and community science to outdoor recreation, workshops, nature-based public events, and more – all oriented around community building and connection. This pragmatic work also generates real-world outcomes such as restored greenspaces. While creating local networks and stewarding resources, such praxes promote a common identity that integrates social and ecological awareness and action. Thus, I answer, 'How and to what extent does the UEC's praxes inspire a socioecological ethos in residents and communities? And to what extent do these praxes influence local cultures and conventions towards greater sustainability and resilience?

To study this phenomenon, I spent 5 months conducting participatory research at the UEC, attending weekly programs and events, observing, listening, and conversing with practitioners and volunteers. By living and working in proximity to the UEC's locations, I became part of several intersecting communities and gathered critical insights about the individual and neighborhood impacts of this work. To document my data, I took rigorous fieldnotes, conducted 36 semi-structured interviews, photo-documented events, and analyzed physical and digital content.

The results of this research suggest that, in some ways, these praxes do drive individuals and communities towards more synthesized social and ecological sensibilities and practices. Beyond tangible outcomes, many practitioners adopt and spread sustainable, resilient, and adaptive ways of thinking about and existing in urban spaces, some of which challenge and defy traditional urban norms and conventions. Additionally, in viewing urban neighborhoods as part of the broader environment, this work can improve practitioners' sense of socioecological justice and equity. I make the case that such praxes, as a form of grassroot planning, can transform urban neighborhoods in a

meaningful and empowering way by developing new imaginaries, practices, and cultures based on an infused social and ecological paradigm.

In terms of planning scholarship and practice, this research highlights the effective role of using community-based ecological praxes to transform cities alongside other strategies. My work supports similar findings which demonstrate how local environmental work dramatically alters participants' environmental awareness, knowledge, and actions (Krasny and Tidball 2012). By conducting this work right within neighborhoods and focusing on community, the UEC builds intimate relationships between people and places, so they envision their own lives and communities as interdependent parts of a socioecological system. Furthermore, this research supports the need for more practical, project-based education - across different disciplines and institutions - with real-world outcomes that engage with local environments and neighborhoods using a socioecological perspective (Madiraju and Brown 2014). Although limited in scope, such efforts provide a pathway to reimagine and reshape neighborhood cultures and foster new ways to inhabit cities with greater social and ecological awareness and intention.

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Keywords: Civic ecology, Neighborhood planning, Socioecological urbanism, Transformative learning, Anthropocene

GREENING THE GAP: EXAMINING URBAN GREENERY EQUITY IN SHRINKING CITIES

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Individual Paper Presentation

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Urban green spaces (UGS) play an essential role in improving residents' health and achieving equitable urban development, particularly in cities experiencing shrinkage (Nesbitt et al., 2019). Currently, numerous cities worldwide are experiencing urban shrinkage, characterized by depopulation and economic decline (Martinez-Fernandez et al., 2016). This trend often results in the unequal distribution of UGS, leading to challenges in Urban Green Equity (UGE) (Hoffimann et al., 2017). However, many studies rely on cross-sectional data and overlook the insights gained from longitudinal data in tracking temporal changes (J. Chen et al., 2023). Furthermore, UGE quantification typically focuses on the quantity rather than the quality of UGSs, like whether the park is easily accessible and whether the green space is adequately visited (S. Chen et al., 2020). Addressing these gaps, this study selected 10 cities from each of four countries (Japan, China, the United States, and Australia), all experiencing varying degrees of urban shrinkage. These countries cover the developing and developed world, and what these

cities have in common is that they have gone through a process of urbanization and contraction as the city's mainstay industry declines. The research begins in the American city of Pittsburgh. We employed machine learning methods to analyze a decade's satellite imagery, assessing changes in UGS's type, area, and morphology in these shrinking cities. In addition, we use census block fine-grained access data to observe whether green spaces in the city are visited, which is used to assess the quality of green spaces. Our approach redefines the UGE index, incorporating the Gini coefficient weighted by proximity to residential areas. Moreover, we developed a random forest model to evaluate the significance of different quality aspects of UGS in shrinking urban environments. This model utilizes satellite imagery to predict UGE outcomes in these cities. This study offers a novel perspective and tool for enhancing UGE in cities undergoing shrinkage by extending beyond the conventional focus on UGS quantity and integrating quality factors. Our findings underscore the importance of considering both the quality and quantity of UGS in urban planning, particularly in the context of urban shrinkage.

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Keywords: Greenery quality, Machine learning, Satellite imagery, Environmental justice, Urban shrinkage

GREENNESS PROTECTS FEMALES MORE AGAINST LUNG CANCER WITH PARTICULATE MATTER

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Individual Paper Presentation

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New cases of lung cancer occurred globally rank first among all caner type, and east Asia was reported a highest risk of lung cancer mortality. Lung cancer is more prevalent in male, but the incidence gap between female and male has narrowed since 2000. The lung cancer may overtake breast cancer as the leading cause of cancer death in female. Degradation of air quality has been confirmed to have severe side effects on human health. More research is needed on the environment-health nexus.

With lung cancer incidence as health outcomes, we hypothesis that particulate matters (PM1, PM2.5 and PM10) have a negative impact on the lung health in the context of Chinese cities, but this impact is moderated by greenness and the protective effect are stronger on female than on male. In this large longitudinal county-level study, we verified our hypothesis I and II by multiple linear models and generalized linear regression with relative risk (RR), and examined the hypothesis III with addictive interaction. The particulate matters with a aerodynamic diameters ≤ 1, 2.5 and 10 μm (PM1, PM2.5, and PM10) and vegetation index (NDVI) are set as proxies for independent and moderating variable respectively. This large-scale longitudinal study, which sampled from 344 Chinese county-level cities, investigated the associations between air pollutants and lung cancer incidence, as well as the modifying effect of greenness on those associations.

The study included environmental and socioeconomic variables in the models and confirmed the first hypothesis that PM1, PM2.5 and PM10 were associated with elevated lung cancer incidence. Similar results were reported in our generalized model, finding elevated relative risks of lung cancer with each IQR increment in particulate matter. The detrimental association between particulate matter and lung cancer incidence remained robust in region-adjusted models. Re-running analyses with an alternative index of lung cancer mortality rate as a proxy for health response yielded consistent results.

The present study examined the moderating effect of greenness on the association between particulate matter and lung cancer at a county level. We found protective independent associations of greenness proxies, including NDVI, enhanced vegetation index (EVI) and green area ratio (GAR), with lung cancer incidence. Our study observed that counties with a higher presence of greenery exhibited a decrease in both lung cancer morbidity and mortality rates among males and females, in comparison to counties with lower greenery levels, indicating a potential protective effect of greenery against the adverse impacts of particulate matter on lung cancer.

The joint associational analysis of exposure to air pollutants and NDVI greenness showed elevated RRs of lung cancer incidence (male: 33% for PM1, 40% for PM2.5, 30% for PM10; female: 43% for PM1, 51% for PM2.5, 42% for PM10) in high air pollution and low NDVI greenness (double-impacted group) relative to those exposed to low air pollution and high greenness (confirming the second hypothesis). Synergistic effects of particulate matter and greenness were evident for PM1, PM2.5, and PM10. By identifying a stronger interaction between greenness and air pollution in female lung cancer, the study emphasized the potential protective role of greenness in mitigating the larger side impact of particulate matter on females compared to males (confirming the third hypothesis). Similar dose–response associations between particulate matter and EVI and GAR on lung cancer incidence were also observed. These moderation effects remain consistent across different division methods, greenery proxies, region, and smoking rate.

This study implys the importance of ecological planning and urban greenery in the development of female health cities. The incorporation of green spaces and vegetation in urban environments can promote better respiratory health for female residents.

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Keywords: Protective role of greenness, Lung cancer incidence, Particular matter, moderating effect

GREENNESS, LOCATION, AND MENTAL HEALTH DISPARITY IN SHANGHAI

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Individual Paper Presentation

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One in eight people suffers from mental disorder problems worldwide, and such a percentage may be higher in low-middle-income countries. A large body of research, though focusing on various mental health symptoms and in different social contexts, indicates that residential greenness, such as trees, forests, and grassland, is closely associated with people's mental health. However, some mixed and even reversal conclusions are provided referring to the greenness-mental health relationship and a growing number of research puts effort into the heterogeneous effect of greenness on human beings. This study investigates such a heterogeneous effect by proposing that people may be influenced more by greenness where the green space is insufficient than where green resources are sufficient. In our research, we believe urban and suburban areas in the city can be good settings to assess such heterogeneous influence of greenness.

7690 individuals from 4712 families from the Shanghai Urban Neighborhood Survey are included in our analysis. The greenness is measured using the Normalized Difference Vegetation Index (NDVI) from the satellite image of the European Space Agency based on 250,500, 750, and 1000 buffers of the location where people live. The Multiple regression models are adopted to analyze the association between greenness and individuals' mental health.

Our research finds that residential greenness is negatively associated with people's mental health with a statistic significance. However, people who live in urban areas significantly benefit from the surrounding greens, and their depression is curbed by the increase in surrounding greenness. People who live in suburban areas still face more mental problems when the surrounding greenness increases. This study further explores the mechanism and finds that people living in the urban area are more willing to use community facilities as the residential greenness increases, while those facilities in the suburban area are both not enough and less frequented. In addition, people in the urban area are more satisfied with their neighborhoods and households as the greenness grows. For those in the suburban area, more greenness around their households means they live farther from the urban center and earn less, which may negatively influence on their mental health. Our findings provide policy implications for urban planners that green space plays different roles in the urban and suburban context in terms of mental health treatment.

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Keywords: Residential greenness, mental health, heterogeneity

HERE, THERE & EVERYWHERE: RESIDENTIAL MOVEMENT FOLLOWING A NATURAL DISASTER

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Individual Paper Presentation

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Recent reviews on the social dynamics of climate change emphasize the need for spatially and temporally granular data on environmental hazards, residential mobility (i.e., moving from one home to another), and their connection to place-based inequalities (Klinenberg et al., 2020). These studies highlight the importance of such data in understanding how racial residential segregation shapes communities' experiences of environmental hazards and subsequent residential mobility (Arcaya et al., 2020). Building on this need, this study utilizes micro-level, longitudinal data to examine community-level residential displacement following Hurricane Harvey's impact on Harris County, Texas – the core county of the Houston metropolitan area – in 2017. Specifically, it investigates (1) whether the extent of flood impact experienced led to different patterns of residential displacement within block groups, and (2) whether these patterns are influenced by racial place-based inequalities.

To answer these questions, this study employs consumer reference data (Steward 2021) from Data Axle to analyze the annually recorded, address-level residential movements of 832,212 Harris County residents, aggregated to the block-group level (N=2,143) between 2014 and 2019. By aggregating address-level data, this study builds on prior research by accounting for residential mobility, whether down the street or across the county, that may be lost when using larger spatial measures (Logan et a., 2016). Additionally, by using annually recorded data, this study accounts for households' residential histories and the potential for the effects of the storm to be sustained across time. To gauge the impact of Hurricane Harvey, this study utilizes 3x3 meter resolution, modeled flooding data from the Federal Emergency Management Agency (FEMA) to assess both the average depth and area of flooding at the block-group level. High-resolution data provides a clear picture of where and to what extent flooding occurred. In addition to demographic data from the 5-year, 2016 American Community Survey, by leveraging these technological and methodological advances in residential mobility and flooding data, this study helps to develop a deeper understanding of the social impacts of flooding unavailable with more commonly used approaches (Hoffmann et al., 2021).

By employing Coarsened Exact Matching and fixed-effects regressions, the study identifies heightened rates of residential movement following Hurricane Harvey. However, these results are strongly influenced by racial-ethnic inequalities and the combined effects of average flood depth and area. Only majority non-White block-groups experiencing extreme flood impact exhibited increased residential mobility. Notably, these effects persist for up to three years after the storm – emphasizing the longevity of natural disasters' impacts. These findings demonstrate the value of spatially and temporally granular data in understanding the impact of environmental hazards and the longevity of those impacts on residential displacement, particularly when considering the mediating role of both environmental impact and racial place-based inequalities. As such, this study carries three important implications for disaster managers and urban planners seeking to promote environmental justice in the wake of major, natural disasters. First, future research should avoid race-blind analyses to prevent erroneous conclusions about the influence of natural disasters on residential movement. Second, these findings point to the existence of a threshold beyond which households can no longer maintain their current residential location. Finally, focusing solely on the initial push of Hurricane Harvey would provide an incomplete picture. Therefore, disaster managers and urban planners must recognize how residential displacement accumulates within communities following a disaster. By engaging with these three insights, disaster managers and urban planners will be more equipped to promote environmental and urban equality in the face of an increasingly uncertain global climate.

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Keywords: Natural Disasters, Residential mobility, Environmental Justice, Big Data, Climate Change

HOUSEHOLD CARBON FOOTPRINT IN HIGH-LATITUDE CITIES: A CASE OF EDMONTON

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Individual Paper Presentation

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Cities are one of the leading sources of greenhouse gas (GHG) emissions since 50 - 60 % of global GHG emissions originate from cities linked to energy use (UN-Habitat, 2023). Urban household energy consumption has a significant impact on city-level emissions (Long et al., 2021). Therefore, it is essential to take necessary actions to reduce GHG emissions from household energy consumption to reduce cities’ carbon footprint. This is particularly

important in high-latitude cities, where per capita energy use is higher compared to mid and low-latitude cities. High-latitude cities face extreme weather conditions requiring heating in winter and cooling in summer and largely rely on fossil fuel-based electricity generation (Fercovic & Gulati, 2016; Welegedara et al., 2021).

In our study, we explored household energy-related GHG (HEGHG) emissions across the neighbourhoods in a high-latitude city. We sought to answer three major questions: 1) What is the primary source of HEGHG emissions in a high-latitude city such as Edmonton, Canada, and does this source hold across all the residential neighbourhoods? (2) How do different socio-economic characteristics affect HEGHG emissions in these cities? and 3) What are the possible ways to reduce HEGHG emissions in high-latitude cities? We analyzed data from 265 residential neighbourhoods in the city of Edmonton, which sits at the 53rd parallel, by categorizing them as mature and newly developed based on their age. Mature neighbourhoods (n = 196) were developed prior to 2000 and located around the city's core. On the other hand, newly developed neighbourhoods (n = 69) have been developed in the last two decades and are located at the city's fringe. We used dwelling energy consumption data (n=17, 400) and dwelling area data (n = 334,379) provided by the Natural Resource Canada, a federal agency and the city of Edmonton to calculate GHG emissions from dwellings. This data was complemented by vehicle kilometre travelled data aggregated at the neighbourhood level collected by the city of Edmonton.

We found significant variations in HEGHG emissions across neighbourhoods in the city, particularly within mature neighbourhoods. The average annual per capita GHG emissions from dwellings were 45 % higher than those from personal transportation in the neighbourhoods we studied. This highlights the need for greater emphasis on reducing GHG emissions from dwellings in high-latitude cities. Interestingly, our analysis showed that even though new building standards and techniques have reduced energy use intensities in newly built houses in new neighbourhoods, the increased size of these dwelling units has not resulted in the corresponding reduction in per capita emissions.

Our results also indicate that per capita GHG emissions are highly correlated with neighbourhood median income level, percentage of renters, and residents' affordability. Direct per capita emissions from dwellings and personal transportation increase with increasing neighbourhood income levels in both the mature (r = 0.8) and newly developed neighbourhoods (r = 0.4). This is mainly linked to the residents in affluent neighbourhoods having larger houses and using more personal vehicles for transportation. Per capita GHG emissions decrease with an increased percentage of renters in the neighbourhood, particularly in the mature neighbourhoods (r = -0.5), potentially due to renters' proximity to workplaces and public transportation and their tendency to live in small dwellings to reduce expenses. A significant negative relationship (r = -0.3) showed between the percentage of households spending 30% or more of their income on housing, i.e. those for whom housing is becoming unaffordable and HEGHG emissions. These findings can facilitate the implementation of mitigation measures and appropriate policy development focused on areas where they will have the most impact in reducing carbon footprint.

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Keywords: Energy-related greenhouse gas emissions, Neighborhoods, Edmonton, Canada, High-latitude cities, Socioeconomic characters

HOW DO 'HOT WEATHER' AFFECT THE PERCEPTION OF URBAN DWELLERS?

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Individual Paper Presentation

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Understanding how climate change might affect people's perceptions and prompt action to mitigate its threats and promote resilience is crucial. While past research has utilized social media tweets to establish the relationship between resident perceptions and temperature, there are four limitations: the lack of direct technical support for capturing residents' heat perception, oversimplification of emotional states, regional research restrictions and lack of comparison, and a scarcity of exploration into temperature adaptability. To address these limitations, this study trained a model called hot weather-Bidirectional Encoder Representations from Transformers (BERT) based on 300 million English-language tweets, covering 240 regions in 40 countries worldwide. The model captures the linguistic diversity of residents discussing hot weather on social media, solving the technical problem of establishing residents' heat perception on a large scale. By integrating various NLP emotion models, our study innovatively identified seven emotional responses associated with hot weather, including joy, sadness, fear, neutrality, surprise, anger, and disgust.

Subsequently, we compiled temperature data from the past twenty years (including maximum, minimum, and average temperatures) and calculated the 90th, 95th, and 99th percentile thresholds as benchmarks. We compared these data with the corresponding daily temperatures for 2022. Finally, we applied various machine learning techniques to establish the correlation between temperature and emotional responses.

Results show that the assumption in past research that higher temperatures are positively correlated with the frequency of heat tweets is not entirely correct. Firstly, we observed an interesting phenomenon: 32 cities experienced counter-seasonal heat expression, where residents' frequency of heat expression in winter approached or even exceeded that in summer, as seen in Sydney, Australia. Secondly, the assumed seasonally significant variability was more pronounced in Cfb climate types than in Cfa climate types, indicating unusual hot weather suffered by cities like London and Berlin, a weather anomaly worth attention.

Furthermore, using the surprise score to reflect a city's heat preparedness, we found significant differences and heterogeneity in residents' perceptions of historical temperatures and those of the current year. For example, in New York, when the historical maximum temperature's 99th percentile was in the range of 94 to 96 Fahrenheit, the maximum temperature for 2022 was between 82 to 84 Fahrenheit, and the surprise score decreased by 0.25. However, when both were around 92 Fahrenheit, the surprise score increased instead. Sydney appeared relatively tolerant of the highest temperatures in 2022, only expressing surprise when the historical maximum temperature exceeded the current year's by 20 Fahrenheit degrees. London was particularly unique, with a weak dependency

between the two, possibly indicating that past historical thresholds had little impact on the perception brought about by the current year's maximum temperatures. This aligns with the previously mentioned abnormal climate change case in Cfb climate types.

In conclusion, we also confirmed that heat perception could predict climate change in a region to some extent. This study provides significant contributions to understanding residents' heat perception and paves the way for applying these insights to climate adaptability planning.

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Keywords: climate change, human perception, climate adaptation, emotion, natural language processing

HOW DO MULTI-DIMENSIONAL FACTORS OF GREEN ROOFS AFFECT URBAN HEAT ISLAND?

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Individual Paper Presentation

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Rapid urbanization and high-density development have encroached on the natural landscape, exacerbating the urban island heat (UHI) effects – higher temperatures in built areas than in non-urban areas, which can adversely affect the health and comfort of city dwellers and increase energy use and carbon emissions (Dong et al., 2020). Green roofs, which convert concrete rooftops to vegetation-covered roofs, are found to be effective in mitigating UHI effects.

Many existing studies have examined multi-dimensional factors of green roofs (e.g., green roof area and the Normalized Difference Vegetation Index (NDVI) as two-dimensional (2D) factors and building height as a three-dimensional (3D) factor) to better understand their relationship with UHI effects, thus helping to develop appropriate policies related to urban green roofs (Hu et al., 2020). However, few have considered the 3D structure of roof vegetation into 3D factors and examined its effects. In fact, Bai et al. (2019) recently proposed an efficient and scalable method to calculate the 3D green index of green space by retrieving vegetation heights from high-

resolution remote sensing images, providing a realistic representation of the 3D landscape of green space. In this regard, there are new opportunities to investigate how the 3D green volume (3DGV) of green roofs can affect UHI effects. On the other hand, while comprehensive climate models, such as the Weather Research and Forecasting Model, are adopted in prior studies, their complexity and data requirements limit their use by most urban planners. Some researchers also employed linear regression to evaluate the effects of green roofs, but their impacts can vary over their full range and have a threshold (Lin et al., 2021). Moreover, such biases caused by non-linearity can be solved by implementing machine learning (ML) models, such as XGBoost. Yet, such non-linear effects of green roofs using ML methods are relatively under-addressed.

To address these gaps, this study, using the central districts of Shanghai as a case study, aims to assess the multi-dimensional features of green roofs (2D and 3D) and their non-linear relationship with UHI effects, utilizing remote sensing images and ML methods. First, the land surface temperature (LST) for each green roof was extracted from Landsat 8 to represent the urban heat environment. Following the methods from Bai et al. (2019), the 3DGV of each green roof measured from GF-1 images, along with the total area of diverse vegetation types (e.g., lawn and brush and tree) were integrated to reflect 3D vegetation structure. Additionally, the underlying influential spatial factors, such as NDVI, building height, and spatial features of nearby green space, were further controlled and analyzed. Finally, besides OLS model, several non-parametric ML methods (e.g., random forest and XGBoost) were adopted to assess the non-linear effects of green roofs on LST.

The preliminary results indicated that ML models outperform OLS model in explaining the relationship between green roofs and UHI effects, highlighting the necessity of considering the non-linear effects of green roofs. It would enrich and enhance our understanding of the effective range of various factors of green roofs affecting UHI effects. More importantly, we anticipate that this research would provide insights for urban planners and policymakers on how to spatially configure the vegetation structure of green roofs and arrange green roofs to improve the urban thermal environment.

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Keywords: Green roofs, Urban heat island, Non-linear relationship, Machine learning

HOW HOUSING VULNERABILITY SHAPES CLIMATE ACTION IN CITIES

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Individual Paper Presentation

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To what extent does experience with housing vulnerability shape the relationship between peoples' perception of climate risk and their support for climate action in cities? This research question is derived from recent empirical studies suggesting that both climate change and climate interventions may undermine long-term residential security and place-based livelihoods (Keenan et al. 2018, Anguelovski et al. 2019), raising the specter of what Gould and Lewis (2021) describe as a sustainability class emerging as the new urban elites. This argument demonstrates the importance for planners of extending the framework for developing and evaluating urban climate and resilience interventions toward one that fully internalizes housing vulnerability and displacement as a central component. Without such a framework, the politics of implementation are likely to hinder the long-term viability of climate planning strategies (Connolly 2018).

This paper presents results from a two-stage analysis of the relationship between housing precarity, perception of climate risk, and preference for climate action. The first stage of the analysis is built on a systematic review of existing scholarly literature on the link between housing and climate vulnerabilities. Following current PRISMA methodological guidelines, the qualitative systematic review proceeds through identification, screening, and inclusion phases in order to outline current evidence from around the world of how urban residents process climate risks in relation to their degree of housing vulnerability, and how this processing shapes preferences for climate action. The second stage of the analysis presents results from a survey of nearly 1,500 renters in the Vancouver metropolitan area, which has recently been targeted for extensive climate planning interventions. Building from Canadian national studies of climate risk perception, the survey of renters introduces a novel measure of experience with housing precarity as a possible mediating factor that reshapes the expected relationship between knowledge of climate risk and preference for climate action.

The literature review finds that, despite being more acutely aware of and exposed to climate risk, precariously housed individuals prioritize residential stabilization over climate action in order to maintain their connection with place-based livelihoods. The literature also reports on conditions that lead climate planning regimes to overlook this circumstance. The survey data analysis finds that, even though respondents experiencing housing precarity perceive a high likelihood of climate risk and call for climate action (especially urban greening), they prioritize housing precarity over climate. The recommendations for planning implied by these results refine recent work seeking to shape a new mode of practice for climate urbanism (Connolly et al. 2023). This refinement begins from an acknowledgement that interactions within urban riskscapes like those observed here reorder the geography of risk.

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Keywords: Climate Planning, Climate Justice, Gentrification, Housing Precarity, Climate Risk

IDENTIFYING OBSTACLES TO EQUITABLE FLOOD MITIGATION FUNDING

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Individual Paper Presentation

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With climate change increasing the frequency and severity of flooding, there is a growing need for investments in resilience. In the US, FEMA's Hazard Mitigation Assistance (HMA) portfolio is a key source of funding for flood risk mitigation projects such as household elevations, property buyouts, and drainage infrastructure improvements. FEMA's HMA funding has steadily increased in recent years. Past research has documented concerns about the equity of the funding distributed through HMA, finding that urban and wealthier communities are more likely to receive assistance than marginalized communities (Elliott et al., 2020; Mach et al., 2019). However, the underlying reasons for this inequity – and the interventions that can enable more equitable funding allocation – remain unclear.

A primary limitation of past research on this topic is an inability to see into the funding pipeline for the HMA programs. The funding allocation process is complicated: after federal funding is made available through a presidential disaster declaration, local governments and interested residents must work together to assemble documentation, assess eligibility, and compile property-level applications. Local governments submit applications to the state, which passes applications onto FEMA, at which point funding decisions are made, then money is distributed back down to local governments. There are multiple points in the pipeline where inequities can be introduced. For example, it may be that local governments lack the capacity to assemble and submit applications, and marginalized households within those communities are unable to access the funding as a result (Curran-Groome et al., 2022). Alternatively, the cost-benefit analysis may render some properties uncompetitive, perhaps because their property values are lower, making the benefits smaller. Because past work has examined only on where funding has ultimately ended up, it has been impossible to identify where in the pipeline the issues emerge.

Here, we synthesize multiple novel datasets to construct the full mitigation funding pipeline and identify the specific barriers that may prevent marginalized households from accessing federal funds. First, we identify flood-affected parcels using a new database of flood footprints for over 50 past flood events within the state of North

Carolina. These parcels comprise our pool of potential beneficiaries of flood mitigation funds. Second, we compile data on applications for flood mitigation projects that were submitted to the state from local governments. These data were collected and cleaned through a collaboration with the state and enable unique understanding of the funding process. We use the applications to examine which communities have flooded but never applied (potentially due to local capacity constraints). We can also assess which parcels within a community apply – for example, whether it is the neighborhood with high property values that submits applications but not the flood-prone mobile home parks. Third, we examine completed mitigation projects (i.e., applications that were selected for funding and implemented). By comparing those who apply to those who receive funding, we can assess the role of cost-benefit analysis and other state and federal selection criteria in shaping the distribution of funds.

This analysis provides new insight into the processes that shape the distributional equity (or lack thereof) for flood risk mitigation funds in the United States. The results speak to the reforms needed to increase access to federal funding and ensure that resources are being delivered to those who need it most. Given rapidly growing funding dedicated to climate resilience in the US, enabling equitable access to such resources is urgently needed.

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Keywords: flood, hazard mitigation, equity

IMPACTS OF LAND COVER CHANGE ON WILDLIFE CORRIDORS AND PLANNING RESPONSES

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Individual Paper Presentation

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Wildlife habitats have been severely affected by human activities, and more than two-thirds of species are constrained in their movement between habitats by damaged corridors (Daskalova et al., 2020; Wolff et al., 2023). Wild forest musk deer (Moschus berezovskii) has been listed as an endangered animal in China, and their distribution area in Qinling Mountains decreased by nearly 40% due to urbanization in past 50 years(Wu et al., 2022). It is urgent to protect them in advance addressing connectivity between habitats. We propose a scenario-based integrated framework to identify wildlife habitats and corridors combining with a land cover/use change forecasting model. And Baoji Area, Shaanxi, at Northern Piedmont of Qinling Mountains is selected as the study area. Four alternative land cover/use change scenarios were developed to represent future development strategies and policies. The future land cover/use is forecasted by CA-Markov model, and habitat corridors are identified by

Circuit theory. The connectivity and patency indices are applied to assess the quality of habitat corridors. The preliminary results showed the ecological conservation provided sound habitat protection with the lowest fragmentation among scenarios. Whereas the implementation of Territorial Spatial Master Plan (2035) could improve corridors' quality. Farmland reclaim and urban sprawl would intensify the difficulty of migration with existing paths for wild forest musk deer. To maintain pinch points and reduce barriers, we proposed an optimized land cover/use scheme for spatial layouts of core habitats and primary corridors and provided specific suggestions for corridor protection in the future. This study reveals impacts and relations of land cover/use changes related to urban and social development on the core habitats and corridors of wild forest musk deer. It provides a scientific foundation and guidance in delineating "Three Zones for Land Use" in Territorial Spatial Planning for strengthening wildlife habitat connectivity.

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Keywords: land cover change, urban development, scenario planning, wildlife habitat corridors, wild forest musk deer

INTEGRATING STORMWATER MANAGEMENT AND PLACEMAKING STRATEGIES

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Individual Paper Presentation

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Urbanization has detrimental impacts on increased impervious surface along major water bodies which resulted in deteriorated ecosystem services and natural infrastructure. For the last couple of decades, while waterfront post-industrial sites have gained attention for restoring green infrastructure with environmental benefits, urban design researchers acknowledged potential social benefits of waterfront redevelopment for placemaking.

This study aims to explore how water-sensitive urban design (WSUD) strategies can be embraced into placemaking principles to positively impact on storm water mitigation performance at a site scale. WSUD has recently recognized as one of the most cost-effective tools in stormwater management and flood mitigation. While much of the literature has explored the implementation of WSUD strategies to obtain environmental benefits in general,

there is little empirical and illustrative evidence of these benefits in an effort to mitigate stormwater runoff in post-industrial redevelopment at a site scale.

Thus, this project seeks to address this research gap by applying descriptive and urban hydrology modeling analysis using post-industrial areas along the Mystic River in Boston, MA. The Mystic River is located in inner Boston Harbor and has a long history of industrial use. Especially areas near lower waterway have higher percentage of impervious surface which requires greater attention to improving stormwater runoff mitigation.

This project includes two phases with the following two research questions: 1) How might we develop a framework that embraces various dimensions of community planning principles into WSUD strategies for waterfront post-industrial site? For this research question, we review a series of community planning principles that emphasizes mixed-use, compact, and pedestrian-friendly urban design; and imply WSUD stormwater mitigation strategies such as permeable paving, green roof and façade, detention pond, and swales into appropriate placemaking design tactics.

2) How might we assess stormwater management strategies that help understand the potential environmental and social benefits of waterfront post-industrial redevelopment? For this research question, a spatial descriptive analysis is conducted using GIS software to identify suitable study sites with over-scaled impervious surfaces. In addition, a series of hydrology modeling analysis is conducted to estimate annual stormwater retention volumes in order to evaluate the effectiveness of the proposed framework applied into the selected sites along the Mystic River. This phase also focuses on case study review that references social benefits of WSUD when it is implemented with placemaking strategies.

This study expects to reveal the feasibility of WSUD and placemaking strategies in mitigating stormwater runoff at a site scale. In spite of the possible environmental and social benefits of post-industrial redevelopment, it is important to acknowledge that post-industrial areas with high percentage of imperviousness is incumbrance for sustainable development. This project contributes to our understanding on integrating stormwater management and community planning strategies by building a framework for sustainable redevelopment of post-industrial sites. The framework can help apply appropriate community planning strategies for stormwater management and understand how to leverage physical design to improve environmental and social sustainability in post-industrial sites.

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Keywords: Water-Sensitive Urban Design (WSUD), Placemaking, Post-industrial redevelopment, Impervious surfaces, Stormwater management

INTERDEPENDENCIES IN POST-DISASTER BUSINESS RELOCATION IN PUERTO RICO

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Despite the fact that small businesses make up almost 99% of the U.S. economy, little research has been focused on recovery experiences of businesses and the challenges they face. This is problematic for community recovery at large which depends on successful businesses recovery. Relocation, as an aspect of recovery, is particularly understudied which is an important oversight as more and more communities face risk of displacement due to natural hazards.

Numerous internal and external factors influence a business's recovery and relocation decisions after a disaster. While post-disaster business recovery studies have existed since the 1990s, earlier works have tended to frame recovery as a matter of internal capacity affecting their recovery, namely factors such as a business sector, size, financial status, or business owner or manager's entrepreneurial skills. Where external factors were considered, these were conceptualized in economic terms as indirect effects of disruptions in supply, distributions, labor access and consumer demand. However, this purely economic framing of business recovery has come under question recently in view of research that shows that businesses can be social as well as economic actors in the community. Recent studies have examined business recovery as occurring in an ecosystem of actors and events that influence their own decisions—such as governmental actions, nonprofit actions, household recovery and infrastructure restoration. Recent studies have also shown that business recovery shares characteristics with recovery of other "social" actors like households such as, for example, attachment to place and use of social capital. This implies a need for more holistic research on the dynamic interdependencies between business relocation decisions and decisions occurring in other community systems and spaces, including actions of households, other businesses, utilities, governments, and nonprofits.

The study poses one research question: What stakeholder interdependencies exist in the recovery experiences of local businesses affected by disasters? The study was conducted in two communities of Puerto Rico: Comerío and Loíza that were severely impacted in Hurricanes Irma and Maria during 2017. Data collection involved a purposive survey of 150 businesses in both communities conducted in June 2022 by a team of bilingual students from the University of Utah. The survey was conducted in Spanish and the questionnaire covered topics such as the operational status of business, disaster impact, housing status of business owners, relocation/reconstruction or business closure decisions, formal participation in the R3 program, recovery financing, and interaction with peers and other stakeholders. The survey data was translated into English, processed and then analyzed. Survey analysis

involved performing a binary regression analysis to test the relationship between intent to relocate and variables related to business profile, hazard risk perception, damage received, aid assistance from government and nonprofit sources, infrastructure restoration, and relocation actions of residents and other businesses. The study finds that relocation actions of residents and financial ties to place can positively affect decisions to stay in place while loss of utilities, loss of sales and availability of governmental aid can negatively affect these decisions.

The findings of this study highlight the importance of broader community-level events and actions to local business relocation decisions. The study findings also add to emerging literature on the social role of small businesses in community functioning after disasters. Finally, the study contributes to better community recovery policymaking by advocating for improved coordination between economic policies and policies surrounding housing and household recovery.

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Keywords: business, disaster, recovery, relocation, community

INTRODUCING PLANNING-READY AND ADVOCACY-READY DATA URBAN HEAT MITIGATION

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Individual Paper Presentation

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This abstract introduces "planning-ready data" and "advocacy-ready data" as pivotal concepts in climate justice and urban planning, with a focus on urban heat mitigation. These concepts address the critical gap between complex scientific research on urban climate risks (i.e. heat, flooding, and air quality) and their corresponding strategies in urban planning and policy-making (Heris et al., 2019). Due to the sophisticated nature of climate-related risks and inequalities, we need distilled knowledge and guidelines curated for the planning process and regulatory tools (Van Oijstaeijen et al., 2020).

To overcome this challenge, our approach advocates for research tailored to the policy-making process, divided into two streams: planning-ready data for local government planners and advocacy-ready data for coalitions and

advocacy groups. While both concepts may share some knowledge, they are designed to meet distinct needs. Planning-ready data offers tools that can generate knowledge that is compatible with regulatory tools such as zoning, building codes, and design guidelines (Godschalk, 2004). Advocacy-ready data equips advocacy groups with processed, actionable information appropriate to support public campaigns pursuing policy change concerning urban heat mitigation efforts.

Using urban heat as a case study, we developed a data portal that provides planning-ready and advocacy-ready data for New York City. This portal demonstrates how spatially explicit strategies for mitigating urban heat and the underlying science can be distilled into tools that serve both local governments and advocacy groups. Our tools address tree planting, green infrastructure, and cool roof programs. For local governments, this entails actionable scenarios and cost-benefit calculators that inform how changes in zoning, landscaping regulations, and enforcement efforts can improve heat resilience efforts. For advocacy groups, it involves creating compelling storytelling tools that create reports for the urban heat status of neighborhoods.

This dual approach not only makes scientific data accessible and actionable for key stakeholders in urban planning and climate justice but also underscores the necessity of crafting research outputs to align with the operational realities of policymakers and advocates. By providing planning-ready and advocacy-ready data, this project exemplifies how we can translate urban heat mitigation strategies into practical, impactful tools that empower local governments and advocacy groups.

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Keywords: Planning Process, Advocacy Planning, Urban Heat, Cool Roofs and Trees, Data Portals

LAND-USE CONTROL IN COASTAL CITY CAUSE SPRAWL: RISK OF FLOOD OR PROPERTY?

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[Problems]

People have a desires to own coastal landscapes. The purpose of zoning is for land to be used in a way that enables all people to access coastal spaces and be safe from the impacts of climate change. According to prior studies, coasts are structurally vulnerable to flooding, and it is important to secure disaster-preventive area by zoning.

However, in many coastal cities in South Korea, zoning is used to privatize coastal landscapes, and preserve personal property, which puts people at risk. As development progresses, residential buildings aggressively

encroach on the coast. Every year, the government invests considerable amount of money in disaster prevention to protect residents' property. But what if zoning had been carried out correctly from the beginning?

Most previous research has focused on the choices and risk perceptions of people who decided to reside on the coast despite the risks. However, if land-use regulations had not been relaxed, demand would have been controlled. This study focuses on the predevelopment phase, analyzing how zoning has changed and impacted risk exposure in contrast to value of property.

[Research Methodology]

The study area of this paper covers highly developed coastal areas in Busan, South Korea. Busan is the second-largest city in South Korea and the most popular with coastal tourism. Additionally, high-rise building development is actively taking place adjacent to the Busan coast. In this study, we traced the zoning changes along the coast, which has been rapidly developing since the mid-2000s.

We used spatial analysis to compare risk to the population exposed to floods before the relaxation of land use regulation in 1998-2021. In addition, we used DID(Difference in difference) analysis to evaluate the demand for housing in flood-prone areas before and after huge floods to examine whether exposure to flood increases citizens' housing demand.

[Findings]

The analysis revealed that land use regulations on the coast of Busan have been consistently relaxed since 1998. Reclaimed land was designated as commercial zones with the highest density without buffer space, and the residential areas with low density have been relaxed to high density. Development and housing demand have subsequently been concentrated on the coast.

The dramatically increased prices of high-rise buildings have generated profits for property owners and developers. In addition, The population living in flood-prone areas has increased by more than 150% since 1998. The DID analysis revealed that, during Typhoon Chaba(2016), significant damage occurred due to flooding. Residents realized that they were at risk of flood, but there was no change in demand.

[Conclusion and Discussion]

Three implications can be derived from the results of this study. First, people's desire to own coastal landscapes and tourism resources outweighs their perception of risk, leading them to choose to live in flood-prone areas. Second, the relaxation of zoning not only puts many people at risk but also encourages private use of public resources. Third, the coast satisfies both aesthetic preferences and economic interests. It is evident that if land use regulations are relaxed, people's demands will become concentrated at coast. The city government should regulate the choice to live in hazardous areas and the privatization of public resources by zoning.

This study has limitations in that it focuses solely on Busan. The high-rise buildings along Busan's coast have served as inspiration for many other cities, leading to coastal overdevelopment in various urban areas.

Ironically, people tend to criticize the officials rather than the planners. Perhaps this is because zoning has been detrimental to the city over an extended period.

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Keywords: Zoning, Climate change, Flood, Sprawl, Risk perception

LEARNING FROM RURAL COMMUNITIES' COMPREHENSIVE PLANS AFTER THE 2019'S FLOOD

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Individual Paper Presentation

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Local comprehensive plans have emerged as crucial instruments within the United States' policy frameworks for addressing flood hazards and implementing mitigation and adaptation strategies. While previous research has predominantly focused on the effectiveness of these plans in mitigating coastal flood risks, there remains a dearth of studies examining their efficacy in rural contexts. This study aims to bridge this gap by scrutinizing 64 comprehensive plans from communities across Nebraska, assessing their performance in managing floodplains. Specifically, the research investigates the extent to which Nebraska's communities, particularly rural ones, have prepared for flood risk reduction and whether they have taken more proactive measures in the wake of the historic 2019 flood disaster. The evaluation criteria encompass three vital aspects: awareness, goals and objectives, and action. The findings reveal deficiencies across all three categories, with awareness being relatively well-addressed while goals and objectives exhibit the lowest coverage. Although hazard location delineation demonstrates some proficiency, the identification of vulnerable communities remains inadequate. Moreover, the absence of goals aimed at reducing damage to structures within high-risk zones and deficiencies in educational outreach strategies underscore areas for improvement in plan implementation. Following the 2019 floods, rural communities have demonstrated proactive efforts to improve flood plain management and planning; however, they still exhibit significantly less capacity in the regard compared to larger communities, indicating a considerable journey ahead. The study advocates for the integration of critical components of floodplain management into comprehensive plans to enhance awareness and preparedness, thereby bolstering the resilience of Nebraska's rural communities against flood risks. The research findings contribute to resilience planning theories, particularly for resource-limited and disadvantaged rural communities in the United States.

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Keywords: Flood, Local comprehensive plan, Resilience planning, Rural communities, Nebraska

MANDATING WATER QUALITY COMPLIANCE AND PLANNING FOR EQUITY

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Individual Paper Presentation

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Equity is increasingly important as urban greening initiatives gain popularity. Green stormwater infrastructure (GSI) is receiving particularly heightened attention due to federal encouragement and enforcement (Hopkins et al., 2018). Communities are adopting GSI, such as rain gardens and bioswales, to manage stormwater and comply with the Clean Water Act. GSI is attractive because it simultaneously saves costs and provides co-benefits such as air quality improvement, urban heat island alleviation, and neighborhood beautification, largely attributable to the increase of vegetation in urban areas. Both scholars and practitioners argue that GSI can improve the inequitable distribution of urban green amenities and access to decision-making processes by prioritizing investment in historically underserved communities and fostering inclusive planning processes (GILE, 2021; Mandarano & Meenar, 2017). Despite the well-intended efforts, studies have found that such GSI projects contribute to reinforcing inequalities, such as disinvestment in infrastructure or green gentrification (Heck, 2021; Walker, 2021). Do equity considerations in GSI planning facilitate equitable outcomes? This research explores this question through a comparative analysis of three local governments: Cleveland, OH; Philadelphia, PA; and St. Louis, MO. These post-industrial cities have legal obligations to implement GSI and began planning around the early 2010s (2010, 2011, and 2012, respectively), completing a majority of the mandates. This study first investigates what equity elements are incorporated into GSI planning documents (e.g., consent decrees, GSI plans, annual reports) and analyzes their characteristics and implications, building upon the equity literature. To capture nuances not addressed in the documents, this study conducts interviews with actors in the public sector, including regulators

(e.g., federal and state government) and practitioners (e.g., stormwater managers in the local governments and collaborating organizations). Through comparative analysis, this study examines the regulatory frameworks, policy initiatives, and equity approaches in the three cities' mandated GSI projects to identify synergies, best practices, and challenges to implementing water quality and equity goals. Ultimately this research demonstrates the need for cross-collaboration among utilities, city departments, stakeholders and communities to achieve equity and water quality goals.

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Keywords: Equity, Environmental Justice, Green Stormwater Infrastructure, Urban Greening

MAPPING SOCIAL AND NATURAL CAPITAL IN URBAN GREENING FOR RESILIENCE

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Individual Paper Presentation

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BACKGROUND

In Richmond, VA, urban greening (including green infrastructure, GI) is critical to address multiple shocks affecting city resilience: heat stress, flooding, river pollution, food insecurity, etcetera. Urban greening/GIs are multifunctional, offering many ecosystem services: from sub-site plant species or microhabitat considerations to site-scale landscaping, to landscape scale planning to integrate ecological flows. This makes it possible to link a neighbourhood project pursuing food security via community gardens to one building on Richmond's Biophilic Cities promise by enhancing pollinator diversity, or a tree canopy cover project to mitigate UHI to another tackling urban flooding, and so on. However, given the hundreds of stakeholders planning, designing, implementing, and managing urban greening/GIs for targeted uses, projects get siloed. How can we study the relationships between

the many state, civic, and private actors involved in urban greening, to better support integrated urban greening/GI planning in cities?

FRAMEWORKS

Systems research and urban resilience scholarship provides a theoretical framework to integrate the study of urban greening/GIs and their social networks: as natural and social capital crucial to resilience (1,2) and tied together inextricably (3). Given the emphasis on “interactions”, “connections”, or “links” in research operationalizing social and natural capital (4), we map Richmond’s capital as a Network Map. Network Analysis provides a way to integrate natural and social capital in a self-explanatory format (nodes → links → network) that can be empirically analysed (5), making this is our empirical framework, applied once the map is complete. While the network map will integrate three datasets—(i) geospatial network of urban greening/GIs at sub-site, site, and landscape scales, (ii) documented human-environment interactions therein, and (iii) the network of government and civic actors associated with them—the presentation focuses on the (preliminary) social network map generated by the presenting (primary) author.

METHODOLOGY

The research thus far has involved >500 hours of content analysis and >100 hours of network mapping. Starting with an initial list of 50 actors (government, civic, private), we have now identified >500 actors and >900 urban greening/GI projects within Richmond city (system boundary). For each actor, we identified relevant projects, and for each project: (i) the actor’s role(s) therein, (ii) project personnel to interview, (iii) partner organization(s), and to the extent we could ascertain, (iv) the nature of the relationship(s) between them (funding, data sharing, advocacy, etcetera). We developed the code to convert this spreadsheet data into a network map on the website KUMU, an open-access platform that conveys this complex information in a visually engaging and interactive way, allows easy data updates, and has a few built-in SNA metrics.

PRELIMINARY FINDINGS

While we identified >500 actors and >900 projects, we have only mapped 164 actors as of March 2024. We identified the most prolific actors based on number of projects, and (preliminary) network map analysis reveals several of these actors to also have the highest Degree, Closeness, Betweenness, and Eigenvector Centrality, and Reach. We also found several dozen dyadic and triadic relationships in the network, mostly projects by community/ neighborhood groups. Lastly, while content analysis was fruitful in gathering data about actors and their projects, the nature of their interactions with their (often, many!) “partners” is largely vague. To map social capital, we need to interview hundreds of actors, which we will start once we have mapped all actors and ranked them on the basis of their centrality and reach metrics.

SIGNIFICANCE

Planning is a multi-stakeholder effort, and network analysis is a great conceptual and empirical tool to do so. But given the growing importance of making Planning transparent and engaging, we also find the tool we use, KUMU, to be critical for outreach.

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Keywords: Social Capital, Natural Capital, Social Network Analysis (SNA), Urban Resilience, Green Infrastructure

MEASURING THE IMPACT OF THE URBAN MICROCLIMATE ON HOUSING PRICE: AUSTIN, TX

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Individual Paper Presentation

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There is a growing need for research to understand the economic impact of changes in the urban thermal environment, which has deteriorated over time due to climate change. To understand the impact, this study aimed to determine whether it is possible to analyze the effect of residents' outdoor thermal comfort in low-rise residential complexes on housing prices in a region with a hot and humid climate. This study evaluates the effectiveness of using housing prices and a thermal environment evaluation to understand the impact on residential complexes due to changes in the urban thermal environment. The purpose of this study was to examine the role of residential environment factors, including street trees and yard area, in the thermal comfort evaluation process of external residential spaces. In addition, based on the prices in the past 10 years of individual houses in residential complexes in the research target area, this study analyzed the effect of the outdoor thermal comfort level affecting the price difference between houses as the evaluation standard for the residential environment. The study also focused on the importance of the residential thermal environment, the types of important architectural/landscape design factors affecting the thermal comfort of the outdoor residential environment, and the limitations of evaluation methods to estimate the residential thermal environment.

The primary research question set to achieve the goals of this study is: "Is it possible to analyze the effect of thermal comfort on house prices to understand the economic impact of changes in urban thermal environments?" The following three sub-research questions were also explored: 1) How important is the outdoor residential thermal environment on housing prices in low-rise residential neighborhoods in cities? 2) Among the factors that constitute the outdoor living environment, how can researchers confirm that outdoor thermal comfort level influences housing prices? and 3) What analysis method should be used to supplement the spatial autocorrelation

approach in evaluating the relationship between the components of the residential environment and housing market prices?

Using a hedonic pricing model, this study analyzed the effect of structural characteristics, locational characteristics, and environmental characteristics constituting the residential environment on housing prices. A semi-log hedonic pricing model was utilized as a suitable functional form for this study. In addition, to avoid errors caused by spatial autocorrelation, we developed a spatial autoregressive (SAR) model and spatial error model (SEM). The results confirmed that the outdoor thermal comfort level corresponding to environmental characteristics in the classic hedonic pricing model is an essential factor affecting the market price of houses. In addition, three environmental characteristic variables (i.e., tree canopy coverage ratio, outdoor thermal comfort level, aspect ratio) showed high significance in terms of the influence on housing prices. This result explains that the factors including both the structure of the house and the outdoor residential and thermal environment influence housing price formation.

In this study, the post-evaluation model of residential complexes focused on determining housing prices provides an opportunity to suggest a method to better understand the correlation between residential thermal environment analysis and housing market prices. The results can also be used in the final design by considering the influence and distribution of each urban/landscape design element on the outdoor thermal environment in the residential complex development stage.

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Keywords: urban climate change, outdoor thermal comfort, outdoor residential environment, housing price, hedonic pricing model

MITIGATION BEHAVIORS OF HOMEOWNERS & RENTERS IN WILDLAND URBAN INTERFACE

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Individual Paper Presentation

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Residential development within the wildland urban interface (WUI) has greatly expanded in the United States since the 1990's, placing people and structures in greater proximity to flammable vegetation (Carlson et al., 2022). Such land use practices coupled with the increased frequency and intensity of wildfires due to climate change have amplified wildfire hazards within arid and semi-arid regions such as Southern California. However, our understanding of the wildfire mitigation behaviors of residents that mitigate and shape risks within WUI areas remains limited. Emerging research suggests that prior wildfire experience, risk perception, self-efficacy, and place attachment influence homeowner intention to adopt protective measures, but few studies have examined mitigation behavior of renters (Collins, 2008). In addition, existing studies typically do not distinguish between different types of household wildfire mitigation actions, such as purchasing fire insurance, making protective structural changes, maintaining defensible space, and adopting firewise landscaping (Brenkert-Smith et al., 2012; Ghasemi et al., 2020; Schulte & Miller, 2010). Differentiating between these mitigation behaviors is especially important given these actions can differ substantially in terms of the financial cost of implementation, knowledge required for adoption, perceived self-efficacy of residents to adopt them, and the perceived effectiveness of each action in mitigating wildfire impacts, factors that could differ for homeowners and renters. Studies of wildfire mitigation actions are also typically limited to household- and property-level behaviors and do not account for factors associated with taking community-level actions such as organizing with neighbors to create mitigation plans or participating in government emergency meetings or awareness campaigns.

To expand our understanding of these dimensions of household and community wildfire mitigation actions, in 2023 the current study surveyed over 500 residents living in WUI areas within Southern California near recent burn scars in the Santa Ana and San Bernardino Mountain ranges. Drawing on the Protection Motivation Theory (PMT) framework, we construct a conceptual model to evaluate the factors driving the wildfire mitigation behaviors of surveyed households living in WUI areas. In addition, we examine how factors such as place attachment, home ownership, knowledge, skills or assistance, and residential geographical location influence household and community mitigation behavior. Using a structural equation model (SEM), we examine the factors influencing households' adoption or intention to adopt five risk-mitigation actions: fire insurance, major structural changes to the property, minor maintenance of the property, exterior measures, and community actions.

Consistent with previous research, we find that response efficacy (perceived effectiveness of the action) and self-efficacy (perceived ability of the household to undertake the action) have a significant positive impact on the mitigation behavior across all action types. Residents with stronger place attachment were associated with adoption of or intention to adopt household structural and defensible space mitigations or to engage in community-level mitigation activities; households surrounded by more undeveloped land were associated with purchasing or intention to purchase fire insurance. Being a homeowner was also associated with purchasing or intention to purchase fire insurance and to conduct minor structural maintenance or exterior mitigations, perhaps because renters lack the authority or resources to undertake these types of mitigations. Regardless of ownership status, residents who indicated they lacked the required knowledge to implement mitigation actions were associated with lower levels of mitigative behavior. Our findings emphasize the importance of education and outreach programs to address gaps in knowledge, skills, and assistance for WUI households to undertake wildfire mitigation actions. Additionally, our findings underscore that policy initiatives are needed to support renters in effectively implementing wildfire mitigation actions.

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Keywords: Wildfire, Risk Preparedness, Southern California, Mitigation, Community Actions

MOVING OUT OF HARM'S WAY: AN ANALYSIS OF LAND USE IMPACTS OF FLOOD BUYOUTS

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Individual Paper Presentation

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Floods are destructive to human society and have caused harm to communities. Implementing structural mitigation measures involving the construction of physical structures to prevent flooding has been a traditional approach to reducing the risk of flood occurrences and damages. However, the catastrophic damage from the Midwest Floods in 1993 has shifted the federal policy towards more non-structural measures (Godschalk et al., 1999), and flood buyouts, or moving people out of floodplains by voluntarily acquiring properties and making the sites open space, have become a critical flood policy option (Mach et al., 2019). There have been studies on the implications of flood buyouts, including municipal finance (BenDor et al., 2020) and social justice (Siders, 2019). However, tracking floodplain development is challenging (Hino et al., 2024). Thus, the change and impacts in land use at the buyout sites and surrounding areas have been underexplored.

This research examines the land use impacts of flood buyouts in the City and County of St. Louis areas in Missouri by answering the following two research questions: How have land uses changed at flood buyout sites and surrounding areas? How are demographic and socioeconomic factors and the characteristics of buyout sites and surrounding areas associated with the land use outcomes? This research utilizes the geocoded flood buyout database provided by the Missouri State Emergency Management Agency and the study area's census block group level information from 1990 to 2020. There are 903 flood buyout sites in the study area. The land use type information of the buyout sites and surrounding areas is developed using GIS. This study employs a spatial autoregressive logit model to address potential model misspecification. This study will contribute to a better understanding of land use outcomes of flood buyouts and future planning implications of flood buyouts in the era of climate change.

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Keywords: Flood, Buyouts, Climate change, Land use

MUTUAL AID, COMMUNITY CARE, AND PLANNING IN THE CLIMATE CRISIS

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Individual Paper Presentation

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Environmental hazards disproportionately impact racialized, marginalized, and underserved groups, creating feedbacks that reinforce systemic oppression through vulnerability. Dominant modes of aid provisioning (like charity and government aid) following hazards do not typically account for this feedback, providing only enough aid for a community to, at most, return to a pre-hazard status quo. As we face increasingly dire compounding environmental and social crises, more research in community planning can thus ask: how do informal networks of support, like mutual aid, respond in times of crisis, and what roles do they play in planning for socio-ecological systems? Further, what roles could or should they play in uncertain futures? When and how might planners make room for informal, unofficial, radical, or anarchist efforts?

During the COVID-19 pandemic and in response to subsequent extreme weather events throughout the US, communities across the US saw a resurgence of mutual aid networks, informally organized to meet basic needs like healthcare, housing, food, and social support through direct action. In the absence of sufficient public response, existing community organizations, self-help groups and new mutual aid networks responded from “the bottom up” within a fractured social landscape to meet the immediate needs of their communities. Mutual aid networks and other voluntary community organizations not only provide alleviation from the material impacts of crises but may also act in a bridging capacity, creating horizontal linkages among individuals that increase social capital and community solidarity. While scholars have highlighted the importance of social capital and infrastructures to successful local climate adaptation efforts and community resilience, little research in planning has specifically examined the functions of mutual aid and other informal organizing efforts.

To highlight the gaps and opportunities in diverse approaches to providing aid, this paper proposes an ethic-process-outcome framework to characterize modes of aid provisioning following environmental hazards. Through a collaborative case study of the work of Mutual Aid Disaster Relief (MADR), “a grassroots network whose mission is to provide disaster relief based on the principles of solidarity, mutual aid, and autonomous direct action”, this paper explores how mutual aid centers particular ethics, processes, and outcomes that both differentiate it from other types of aid provisioning and prioritizes long term scaffolding for collective action aimed to address compounding socio-economic pressures and vulnerability to environmental hazards. We provide illustrative examples from MADR’s participatory, solidarity-based work in impacted communities of the Gulf Coast, Puerto Rico, Panama City, and beyond to theorize, in MADR’s words, “disaster relief work as justice work”.

We argue that future hazard planning efforts should transparently assess their respective aid provisioning strategies in terms of ethic, process, and outcome to better provide the multi-scalar and material nature of aid required by the diverse communities impacted by environmental hazards of the current era. Further, we raise questions about the coexistence of mutual aid and formal planning efforts, highlighting potential for both tension and conflict and synchronicity and support.

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Keywords: environmental justice, hazard planning, informal planning, climate adaptation

NAVIGATING LOCAL RESISTANCE: PLANNING FOR RENEWABLES IN RURAL MICHIGAN

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Individual Paper Presentation

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With the passage of Public Acts 233 and 234 in November 2023, Michigan joined the growing list of U.S. states streamlining permitting processes for renewable energy projects. This legislation grants the Michigan Public Service Commission authority to restrict local control over renewable energy siting decisions, eliciting outrage across rural Michigan. Local governments and residents are especially vocal about agricultural impacts, as the unshaded, flat,

accessible land characteristic of farmland is particularly suitable for renewables. The Michigan Townships Association, the Michigan Farm Bureau, and other advocacy groups echo these concerns, arguing that inviting in 'Big Wind' and 'Big Solar' threatens livelihoods and alters rural landscapes in ways residents neither recognize nor endorse.

Though some scholars also warn that the global expansion of renewables will necessitate substantial claims on rural land (McCarthy, 2015), scholarship has yet to fully explore how planning for renewables might impact rural livelihoods. Planners wield substantial power over renewables development through land use decisions (Poggi et al., 2018), but planning literature still focuses largely on how the discipline can accelerate renewables development without considering community buy-in. As the National Academies of Science (2023) argues, planning for renewables without local support can significantly slow progress towards reducing emissions, regardless of the reasons and validity behind local pushback. As the capacity to generate renewable electricity rapidly expands, planners must help advance this transition without compromising rural welfare and engendering pushback that ultimately impedes emissions reductions.

Reflecting similar trends nationwide, this study considers Michigan as a case example to investigate how planners can more effectively and equitably support renewables development amid tensions between skeptical local communities and a state government pushing renewables expansion. Through an analysis of local ordinances and zoning codes, media sources, and semi-structured interviews with local government stakeholders, I examine how local governments are responding to pushback and preparing for the November 2024 implementation of these policies. Per this legislation, in communities with Compatible Renewable Energy Ordinances (CREOs, which cannot be more restrictive than the state policy), developers must have projects reviewed locally and be denied before applying to the state regulatory body to override the local decision. I thus focus on three townships with different regulatory approaches to renewables development – one with no CREO, one with a restrictive CREO, and one with a permissive CREO (as determined in relation to the state's policy and corroborated by the University of Michigan-compiled Michigan Zoning Database) – and consider if and how various actors aim to alter local regulations in response to the policies' passage. I also explore specific policies that would increase buy-in from local governments.

Results suggest that local officials acknowledge how renewables can increase tax revenue and create jobs, but most are unwilling to cooperate with efforts to accelerate this development without meaningful representation and control over siting processes. I argue that local siting parameters should not be defined through top-down, singular approaches, but should instead allow planners to delineate locally specific guidance for their townships. During a time when the Michigan Public Service Commission is seeking public comment on the 2023 legislation, this research informs specific and plausible policy paths toward equitable energy transitions, and offers lessons for other states managing local versus state-level renewable energy tensions.

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Keywords: renewable energy, rural planning, land use, participatory planning, equity

OPTIONAL ASSISTANCE PROGRAMS AS A PATHWAY TO CLIMATE PLANNING IN NEW YOR

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Individual Paper Presentation

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What drives communities to address climate change adaptation in local plans? While state mandates have not proven to conclusively result in better planning outcomes, connecting climate related planning to discretionary funding, providing technical assistance, and generally creating a supportive atmosphere for planning has been highlighted as important antecedents of effective climate planning (Shi et al. 2015).

New York State has a long history of planning and plan-making, from 1929's Regional Plan of New York and Its Environs to the State Housing and Regional Planning Commission in the 1920's and the Office for Regional Development (ORD) in the 1960's. More recently, planning has been prioritized at the state level through efforts like the Regional Economic Development Councils, the Cleaner Greener Communities program, and the post-Sandy New York Rising Community Reconstruction Program. But despite a rich history and "culture of planning" (Bolan 1969), New York State lacks a planning mandate for its 1,600 counties, towns, cities, and villages, and local plans vary widely in coverage, scope, and content. As a number of recent events have illustrated, many communities in the state are increasingly vulnerable to natural hazards (e.g. Superstorm Sandy, Hurricanes Lee and Irene, etc.) and plans are a critical tool for addressing challenges of climate change adaptation and community resilience.

In 1982, the state of New York created the Local Waterfront Revitalization Program (LWRP) as the Office of Planning and Development's chief mechanism for assisting coastal, riverine and Great Lake waterfront communities with waterfront-related planning for development and redevelopment. To date 95 LWRP plans have been adopted, unlocking more than $300 million in state Environmental Protection Funding in 95 communities statewide. In addition to encouraging economic development, addressing ecological issues, facilitating better public access to the waterfront, a key goal of the LWRP is to "avoid and reduce the negative impacts of climate change."

This project asks two related questions: 1) What climate change planning strategies are present in LWRPs and how have these strategies evolved over time in more recent LWRPs? And 2) Does the presence of a LWRP relate positively to the presence of climate change adaptation strategies in other local planning documents in the same community?

We first analyze the 95 existing LWRPs, using widely accepted plan evaluation methodology (e.g. Berke and Godschalk 2009, Lyles and Stevens 2014, Woodruff and Stults 2016) to identify adaptation strategies. We then analyze the other existing planning documents (e.g. comprehensive/master plans, adaptation plans, resilience plans) in these 95 communities, cataloging the presence of additional adaptation content. Finally, we analyze

existing planning documents from a random sample of 95 additional waterfront communities using the same methodology. We then compare adaptation planning efforts in LWRP communities to that of non-LWRP communities to assess the degree to which presence of LWRPs facilitates more climate-change focused general planning even absent a mandate to do so. Results provide planners with a snapshot of adaptation efforts being undertaken by a variety of localities in a planning-friendly state and a better understanding of the role of optional antecedent planning efforts in facilitating additional but optional efforts to address climate change challenges.

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Keywords: Adaptation planning, Waterfront planning, Plan evaluation, New York State

PARK FEATURES INFLUENCING VISIT DURATIONS: A LONGITUDINAL SURVEY IN AUSTIN

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Individual Paper Presentation

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Appropriate duration of exposure in parks can bring lots of benefits which encompasses ameliorating the life quality along with the well-being of city dwellers (Kim & Jin, 2018). To encourage people to be involved more in parks, and stimulate their vigor, it is essential to explore and improve the relevant factors that influence both park attractiveness and human behaviors of visiting. However, many previous studies have been conducted to investigate the components affecting park visit flow, which is quite one-sided in representing park visit behavior (Lyu & Zhang, 2019), few of them referred to the visit duration.

In this regard, this study delves into the relationship between various park characteristics and visit duration in different park categories, with a focus on five typical types comprising district parks, neighborhood parks, pocket parks, nature preserves and school parks in Austin, Texas. It is emphasized how to allocate the park features influencing visit duration dominantly in each typology of park.

We apply longitudinal smartphone data, monitoring long-term behaviors in all the parks in this study for a period of four years, which provides abundant information about visitors' behaviors and experiences (Ye & Andris, 2021), so that place perceptions, landscape facility quality and effectiveness within urban parks can be better comprehended (Han et al., 2018). A fixed effects regression model is employed and analyzed respectively according to the park categories. Each model considers park attributes, socioeconomic factors, and time-related variables which aims at reducing unobserved deviation.

Our analysis finally embraced a total number of 119 parks, with 4 district parks, 6 nature preserves, 72 neighborhood parks, 20 pocket parks and 17 school parks as our focus panel dataset for this study. In general, the impact of each characteristic on visit duration varied widely in different types of parks. To be more specific, a feature exerting positive in one type of park may exhibit negative in another. Otherwise, while in some parks, a feature shown to significantly affect the visit duration pattern, it is inconspicuous in others. Among them, an intriguing detection is that when the relationship is statistically significant, the existence of benches and nature including planting beds and high coverage of canopy were always documented a strong positive correlation with park visit duration in most parks, while an inverse trend was observed with the presence of water. Therefore, based on the outcome as evidence, the targeted amenities can be expected to be more rationally equipped in different types of parks.

This can not only contribute to reasonable arrangement of resources but also refine the construction of parks to facilitate people to prolong their stays in parks which is demonstrated to be salubrious for their health consisting of raising a sense of serenity and belonging, as well as relieving stress (Kim & Kaplan, 2004). In brief, this study can provide a reference for urban planners and landscape architects to design parks more considerably to encourage people to extend their stay periods in parks and thus improve public health.

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Keywords: Park visit duration, Park features, Longitudinal smartphone data, Behavior monitoring, Health improvement

PLACE-BASED COMMUNITY ENGAGEMENT TO ADDRESS NEAR-ROADWAY POLLUTION

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Individual Paper Presentation

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Racial and economic disparities in exposure to near-roadway air pollution remain stubbornly persistent due to structural inequalities embedded in the built environment (Antonczak et al., 2023). Such disparities, which are associated with a broad range of negative health effects – including increased mortality, heart disease, asthma, reduced lung function, and adverse birth outcomes – are the result of historically uneven land use development, racial segregation, discriminatory lending and zoning practices, and the exclusion of historically marginalized populations from decision-making (Houston et al., 2004). Federal and state agencies have begun to compile technical guidance on strategies to reduce near-roadway exposures, including changing land use and the built environment, reconfiguring the site design of near-roadway sites, and converting vehicle fleets to cleaner technologies. Unfortunately, we know little about the implementation of these strategies in practice, particularly for historically underserved or "disadvantaged" communities.

Specifically, there is a substantial knowledge gap regarding how state-sanctioned, place-based programs to address environmental impacts can fulfill dimensions of environmental justice such as participation, distributive fairness, and recognition. We address this gap by reviewing how residents and community leaders in California's San Joaquin Valley engaged in the Community Steering Committees (CSCs) of the Community Air Protection Program to develop targeted mitigation strategies in some of the state's most heavily polluted census tracts. This program is administered by the California Air Resources Board (CARB) under California Assembly Bill 617 (AB 617), which directs regional air districts to form and facilitate a CSC that engages local residents and industry representatives to develop enhanced air monitoring capabilities and identify targeted strategies to reduce localized air pollution (London et al., 2022). We focus on four strategies adopted by CSCs for three AB 617 communities to address near-roadway impacts – transforming roadways and land use, re-routing trucks from sensitive receptors, installing protective vegetative barriers, and blocking freeway and warehouse expansion – and utilize a mixed method approach based on a variety of sources. We interviewed over twenty-five resident and industry CSC representatives; analyzed proposed and adopted CSC plans, monthly meeting agendas, agency presentations, strategy updates, and meeting recordings; and reviewed related city land use plans and processes, and infrastructure project environmental review documents, public comments, and interagency communications.

Although we found that the state-led, place-based AB 617 CSCs in three San Joaquin Valley communities were characterized by substantial participation, the impact of resident engagement was often muted due to epistemic injustices embedded in CSC decision-making processes (Ottinger, 2024). AB 617 processes were initially hailed by state and regional agencies as a model for equitable, community-driven planning. Yet CSC members were often relegated to consultative roles in the design and implementation of near-roadway mitigation strategies in ways that limited their ability to contribute judgment or insights into the process, the resources available to empirically express their embodied experiences, and their recognition as knowers within CSCs and broader decision-making processes. Instead, fragments of local knowledge were left ill-defined, deflected, obfuscated, or dismissed within a state-led process which was heavily driven by agency priorities and timelines, and which deployed scientific justifications and interagency policy knowledge to deprioritize or eliminate consideration of community concerns, often in favor of industry priorities and incentives (Harrison and Contreras, 2023). Despite these limitations, our case study details several areas in which resident engagement influenced implementation strategies, secured substantial state pollution mitigation funding, and provided threshold levels of multi-sectoral and multi-

governmental awareness that community groups are now leveraging beyond existing state-sanctioned CSCs to advance a broad-based environmental and health justice agenda within the San Joaquin Valley.

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Keywords: Near-roadway impacts, air pollution, environmental justice, community engagement, transportation equity

PLAN INTEGRATION FOR RESILIENCE SCORECARD™ FOR MULTI-HAZARDS APPROACH

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Individual Paper Presentation

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In many parts of the world, climate change is exacerbating already-worrying trends of many natural hazards, including frequency, magnitude, and, in the case of some hazards, duration. The result is not only increasingly detrimental impacts, but also increasing exposure to more than one type of hazard (Liu et al., 2016). Worse still, these multiple hazards can occur in close proximity—in both spatial and temporal terms. While hazard effects can be independent of each other, in many cases interactions and compounded consequences – potentially even exhibiting a one-plus-one-greater-than-two pattern – can result (Liu et al., 2016). For instance, in the case of Mount Pinatubo, rainfall from a typhoon combined with ash from the volcanic eruption to generate lahars that caused a further flooding disaster and structural failures (Gill & Malamud, 2014). Recognizing such potentialities, scholars and many authorities have been increasingly calling for research that goes beyond single hazard events to take into account multiple relevant hazards.

It has been increasingly recognized among planning and disaster scholars that plan integration – the extent to which the ecosystem of planning documents is consistent for a particular goal (Berke et al., 2019; Yu et al., 2023; Woodruff & Meerow, 2022) – can play a substantial role in strengthening community resilience to natural hazards and its absence can weaken it. Given the severe impacts of multi-hazards and the potential of plan integration to relieve them, it is critical that planners take hazard resilience into account. Yet, despite the growing scholarly attention to multi-hazard approaches and plan integration, no process has emerged regarding how to evaluate plan integration in the context of multiple hazards. This study addressed this gap by extending the Plan Integration for Resilience Scorecard™ method to encompass multi-hazards. We demonstrate the novel PIRS™ for multi-hazards approach in Beaumont, Texas, by simultaneously evaluating the community's network of plans for three hazards: flooding, wildfire, and extreme heat.

Results show that the areas highly exposed to multiple hazards mainly cluster along the Neches River. Encouragingly, the disaster- and infrastructure-oriented plans, such as Beaumont's Emergency Management Plan, are well-integrated for vulnerability reduction in most cases, thus strengthening the community's resilience toward multi-hazards. However, the development-oriented plans, such as Beaumont's Development Strategies Plan, contain a considerable number of policies that exacerbate hazard vulnerability which, taken together, can overwhelm the more limited resilience-boosting policies and weaken the community's multi-hazards resilience.

This research offers a novel PIRS™ for multi-hazards approach, providing planning practitioners with a continuous evaluation tool. It also allows them to track their performance regarding multi-hazards plan integration and identify integration-promoting and vulnerability-increasing policies within their plan networks. These can, in turn, support practitioners in refining their plan networks to more effectively strengthen community multi-hazards resilience.

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Keywords: Multi-hazards, Plan integration for resilience scorecard™, Hazard vulnerability, Community resilience, Climate adaptation

PLAN QUALITY EVALUATION FOR DISASTER'S RESILIENCE OF LOCAL GOVERNMENT

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Individual Paper Presentation

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Climate change is increasing the frequency and intensity of disasters, highlighting the importance of plans as a non-structural measure to increase community resilience to disasters. Plans have the capacity to move the community towards its aspirations based on the local context and determine the capacity of the local government to implement budgets, policies and promote disaster management in accordance with the plan (Berke et al. 2006; Hopkins and Knaap 2018). In the Republic of Korea, wind and water disasters cause fatalities and severe property damage every year. As a planning basis for responding to these disasters, the Republic of Korea requires the preparation of a Safety Management Plan (SMP) and a Comprehensive Natural Disaster Mitigation Plan (CP). In addition, various plans and systems related to rivers and disaster prevention are being enacted and incorporated into urban planning. However, despite these legal and institutional efforts, the vulnerability of cities has not improved and damage caused by wind and water disasters is recurring. The objective of this study is to evaluate the SMPs and CPs of 16 local governments in the Republic of Korea and determine the level of plan implementation based on the allocated budgets. The study first assesses whether each local government has included the necessary components for disaster response in their plans. Then, it compares the evaluation results of SMPs and CPs to explore whether the two plans complement each other to form an integrated planning system. However, plans usually concentrate on the formulation process and components, which restricts the ability to evaluate the plan's implementation, i.e., the plan's ability to move in the intended direction (Brody 2003; Lyles et al. 2023). To analyse the plan's implementation, text mining was conducted on the data related to disaster safety budgets prepared under the SMP and CP to examine the actual use of disaster management budgets by local governments. The analysis revealed that while both the SMP and CP offer detailed disaster preparedness and response manuals, the SMP lacks a thorough analysis of current disaster situations and fails to describe the connections between organizations, plans, and policies for disaster response. This may result in fragmented implementation during a disaster. The CP provides a detailed analysis of the current situation and vulnerability to disasters. It lays the groundwork for implementation by describing the operational framework and funding. The SMP and the CP are complementary and require close coordination. However, the documents do not specifically address this coordination, resulting in a fragmented and uncoordinated planning system. Furthermore, an analysis of the budgets established under the SMP and CP revealed that the actual budgets were used for administrative operations, in contrast to the plans which mainly proposed structural measures. Therefore, there is a need to review the system where plans are implemented through budget execution. The Republic of Korea suffers significant human and material damage from wind and water disasters annually. To respond to these disasters, the country has established several legal and institutional frameworks, including the SMP and CP, which are statutory plans. Additionally, there are various plans to improve urban systems, which are closely related to wind and water disasters. However, having multiple plans is not the only way to achieve disaster preparedness. In fact, an overabundance of plans can create congestion and hinder the actual implementation of plans. Therefore, to ensure resilience in responding to disasters, an integrated and coherent planning system should be aimed for, rather than multiple plans. This system should be actionable and based on it.

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Keywords: Plan Quality Evaluation, Disaster Resilience, Climate change

PLANNING FOR ENERGY TRANSITION IN SOUTH AFRICA

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Individual Paper Presentation

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Planning for Energy Transition in South Africa: Challenges and Policy Implications for Two Coal Mining Communities in Mpumalanga and Limpopo Provinces

To respond to the climate change crisis and to starve off its devastating impact, the Intergovernmental Panel on Climate Change (IPCC) estimates that by 2030 the anthropogenic gas emissions would need to significantly decrease to limit global warming (Bosca and Gillespie, 2018; Cha, 2020). To meet this target, fossil fuel extraction and use must be substantially reduced. On the Paris agreement, for example, in 2015, 184 countries acknowledge the urgency of shifting towards a low-carbon economy and committed to keeping the global temperature rise well below 2 degrees Celsius and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius (UNFCCC, 2019). This process, of course requires commitment towards specific actions and intervention in the field of politics and legislation, environment, economy, and society at large. The Paris Agreement, however, acknowledges that dealing with climate change will require an understanding that there are local and regional dimension of communities that are built upon the extraction and use of fossil fuel resources and that these should be taken into consideration (Mey, Briggs, Dominish, Rutovitz, Nagrath and Setton, 2019). In other words, the Paris accord recognizes that whilst energy transitioning is positive in many respects, it calls into question the degree to which a rapid low-carbon transition may adversely affect certain economic sectors, communities, and regions (Mey et al., 2019; Blazquez, Fuentes and Manzano, 2020; Cha, 2020). This research adopts a qualitative approach to gather data in Middelburg and Lephalale Mining communities in South Africa. The research used focus group discussions and interviews to collect data from community members and key informant from the mines and municipalities. The results indicates that communities are not consulted on issue relating to energy transition, thus they do not comprehend the inevitable transition the country is anticipating. There was a feel from the community members that the transition will impact not only on their job security but will disrupt their entire livelihood network in the community as most of their livelihood activities are aligned to the operation of the mines. The paper concludes by recommending concrete measures that will not only allow for community participation in energy transition, but which can also transform the entire socio-economic environment of these mining communities.

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Keywords: Energy transition, Planning, Coal Mining Communities, South Africa

PLANNING FOR MULTI-BENEFIT INFRASTRUCTURE & EQUITABLE COMMUNITY ENGAGEMENT

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Individual Paper Presentation

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A growing body of scholarship has identified the importance of addressing co-benefits across planning spaces. Specifically, co-benefits are frequently presented as providing "a win-win strategy to address two or more goals within a single policy measure" (Mayrhofer & Gupta, 2016). However, despite this acknowledgment, there continue to be gaps in our understanding of how to best incorporate and evaluate co-benefits surrounding planning and policy infrastructure activities, particularly in regard to addressing the multi-faceted dimensions associated with meeting climate and resilience goals (Jones & Doberstein, 2022). Questions of co-benefits are further complicated when considering how to best incorporate equitable community engagement practices within work in these multi-dimensional spaces.

The case study of Los Angeles County presents a useful case for exploring the consideration of multi-benefit and community engagement in climate-resilience infrastructure planning. In 2016 and 2018 Los Angeles County voters passed four funding measures that collectively focused on the investment of over $1.2 billion annually in sustainable and resilient infrastructure projects in the Los Angeles region. Many of the advocacy organizations supporting those measures recognized the benefits of leveraging funding to achieve integrated community multi-benefits around water quality, parks, transportation, and housing, particularly in front-line communities. Several nonprofit organizations committed to integrated planning worked to encourage the LA County Board of Supervisors to develop policies prioritizing multi-benefit projects in the County's programs. That effort was active from 2019 through 2022 and served as a catalyst for the formation of the Infrastructure Justice for LA Coalition (formerly the WHAM Coalition). This coalition is comprised of nine organizations and has served as an external body providing an NGO perspective on these issues since late 2021.

To contribute to the discourse on multi-benefit infrastructure planning, this study draws on findings from a qualitative assessment of plans, policies, and stakeholder data to present lessons learned from the assessment of infrastructure planning efforts in Los Angeles County. Specifically, this study centers on addressing (1) how climate

resilience-focused infrastructure projects in Los Angeles County are addressing multi-benefit interests across water quality, parks, transportation, and housing; and (2) how community engagement interests are incorporated within these multi-dimensional spaces. Study findings highlight the current gaps and opportunities associated with the integration of multi-benefit considerations in planning approaches and work to present how planning efforts can better address equitable community engagement practices in cross-discipline infrastructure planning activities.

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Keywords: multi-benefits, infrastructure, community engagement, climate, resilience

PLANNING FOR RISK REDUCTION: HOLLOW STATE AND EQUITABLE HAZARD MITIGATION

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Individual Paper Presentation

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As climate change impacts continue to exacerbate myriad types of climatic disasters, planning for hazard risk reduction becomes increasingly critical. Environmental planners play a pivotal role in combating climate-related risks that impact residents. However, localities encounter challenges such as planner shortages and funding constraints in their efforts to enhance hazard resilience both socially and structurally. This phenomenon of shrinking governance capacity is not only in planning but in local governance in general (Terry, 2005). Outsourcing local hazard mitigation planning to private agencies has become prevalent, yet there is a dearth of studies exploring the impacts of outsourced planning on planning outcomes. This study addresses this gap by examining the impact of outsourcing on planning outcomes through the lens of hazard mitigation planning.

The trade-offs associated with consulting planners are apparent; while they may lack direct access to community groups, local partners, and residents, they excel in efficiently drafting plans to meet federal mandates like the Disaster Mitigation Act (DMA). This norm in hazard mitigation planning leads to the widespread hiring of consultants (Loh and Norton, 2015), potentially undermining communities' capacity to address climate impacts locally. What is financially beneficial for a county – which also meets the legal requirements like DMA – may not be enough for the county's mitigation outcome (Lyles et al., 2023).

Different types of planning agencies have distinct incentives and goals. Public entities like county or city planning departments encounter more bureaucratic hurdles than private consulting firms. Nonprofit planning agencies often rely heavily on government funding and can be influenced by local politics (Linovski, 2021). However, private architecture or strategic planning firms with market-oriented goals may prioritize clients' requests over public interests (Sturzaker & Hickman, 2023). This study delves into how various types of planners shape local planning outcomes. Specifically, we ask to what extent various types of planners affect the plan quality and funding acquisition for local government. Additionally, what are some of the varied understandings of equitable mitigation among different types of planners and across levels of government?

Our methodology includes systematic content analysis to capture planning consultants' involvement in planning processes and plan quality around public engagement, plan integration, and land use and structural protection policies. Additionally, we leverage interviews with mitigation officers across governments. Expanding on an NSF-supported project examining local mitigation outcomes in the Southeastern coastal regions, we include 155 counties in a total of six states in both the Southeastern and Midwestern regions of the US. We conduct hierarchical linear models to predict counties' plan quality and federal funding acquired for hazard mitigation.

Preliminary findings indicate that consulting planners positively impact mitigation plan quality in certain policy areas, and increase the likelihood of federal funding acquisition, yet reveal varying perspectives on equitable mitigation. These findings have significant policy implications for short-staffed local governments collaborating with planning consultants, offering insights into equity-oriented climate change adaptation involving private planners.

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Keywords: Hollow state, planning consultants, equity, hazard mitigation planning, risk reduction

PLANS TO ACTION: DO CLIMATE ACTION PLANS MATTER FOR CLIMATE INVESTMENTS?

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Individual Paper Presentation

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Climate-related public investments are pivotal in reducing greenhouse gas emissions, exposure, and vulnerability to climate change. In California, the California Climate Investments (CCI) supports a range of state-led programs to

reduce greenhouse gas emissions and deliver other social and environmental benefits. Local governments and public agencies need to apply for those grants through statewide programs. The engagements of local governments and public agencies are associated with the climate commitments and roadmaps within local climate action plans (CAP). Although not mandatory statewide, around half of cities and counties in California have completed a climate action plan. However, previous studies suggest that there are limited causal impacts of climate action plans on action outcomes, even sometimes with regressive outcomes (Millard-Ball 2013, Swanson 2023, Tang 2010). Therefore, a more detailed investigation into the range of strategies and policies under climate action planning and their variance across different locales is needed.

This research intends to examine the effectiveness of climate action plans by assessing the impact of municipal and county climate action plans on the received investment from California Climate Investments. We analyze 237 city climate action plans for municipal incorporations and county climate action plans for unincorporated regions. Using large language models (LLMs), we evaluate their comprehensiveness in climate pledges, addressing mitigation, resilience, adaptation, social equity, implementation, and climate finance. Meanwhile, we construct a block-group level index to represent the spatial distribution of California Climate Investments based on the California Climate Investment Implemented Project Dataset between 2015 and 2022. In the end, we conduct hierarchical regression models to examine the relationship between climate investments and climate action plans as well as other key determinants of climate investment, such as natural hazard risk and pollution exposure.

Our preliminary results show whether adopting a climate action plan is not statistically significantly associated with the allocation of climate investments, though some key components, such as the carbon-neutral target and local fiscal policy, do influence the funding distribution. Also, communities characterized by more democratic, higher pollution levels and high white-only populations tend to have better chances of receiving higher climate investments. These results can provide empirical knowledge of the relationship between climate action plans and investment and suggest the need for more targeted and substantive commitment and actions in local climate action plans.

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Keywords: Climate Action Plans, Plan Evaluation, Public Climate Investment

PRACTICAL PERSPECTIVES ON RESILIENCE DEFINITIONS

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Individual Paper Presentation

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Urban resilience has become a central concept in various fields, including disaster management, urban planning, and environmental science. According to Munoz-Erickson et al. (2021), the urban resilience literature organizes the definitions into 5 categories or traits: (1) System property, outcome, and process; (2) Shocks and stresses; (3) Pathways of change; (4) Relationship to sustainability, equity, and anticipation; and (5) Social, Ecological, and technological resilience. While many studies discuss how academics define resilience, little attention has been given to how resilience is conceptualized across different urban contexts and among the actors that build resilience 'on the ground' (Munoz-Erickson et al., 2021).

Academic literature and policy discourse suggest that certain governance arrangements, or networks, are more likely to enhance resilience, leading major urban resilience initiatives to aim for reforms in city governance accordingly (Beilin & Wilkinson, 2015; Fastiggi et al., 2021). The literature on urban resilience governance emphasizes that breaking down organizational silos and fostering collaboration between diverse actors can improve knowledge exchange across different policy sectors and expertise, provide a platform to deliberate on synergies and conflicts in goals, and redress power imbalances among actors. Yet, studies rarely explore drivers of collaboration- more specifically, if whether resilience collaboration networks share similar understanding in resilience definitions, and if they do, which traits are shared by collaborators and which traits are under-represented?

This paper addresses this gap by analyzing collaborative governance networks for flood resilience in four coastal U.S. cities that are at the forefront of resilience planning: Boston, MA; Baltimore, MD; Fort Lauderdale, FL; and Seattle, WA. The paper addresses the following research questions: (1) How do definitions of resilience differ across cities? (2) How do definitions of resilience differ across organization types? (3) To what degree do key actors collaborating on flood resilience planning networks share traits of resilience definitions?

To investigate the collaborative governance networks on flood resilience, we first used name-generator questions through stakeholder surveys and employed social network analysis (SNA). We identified key actors using centrality measures, and categorized actors by types of organization (Hannibal et al., 2023; Prell et al., 2009). Second, our survey asked "The concept of resilience can mean different things to different people. In a few words, what comes to your mind when you think of cities (or your city in particular) as being resilient to climate change?" Two coders independently coded open-ended responses using a deductive coding approach, allowing us to classify the responses into the five key traits of resilience definition based on Munoz-Erickson et al., 2021.

The results of our study highlight that, generally across the four cities, framing of resilience tend to converge around definitions that emphasize (1) System property, outcome, and process; (2) Shocks and stresses; and (3) Pathways of change. However, perspectives related to sustainability, equity, and social-ecological-technological systems (SETS) are rarely associated with resilience.

Notably, there are significant differences across type of organizations in the way resilience is conceptualized. We unpack these differences and discuss their implications for resilience research and practice moving forward.

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Keywords: urban resilience, collaborative governance, Flood resilience, Social network analysis (SNA), resilience definitions

RE-EVALUATING THE LAND USE IMPACTS OF UTILITY-SCALE SOLAR IN VIRGINIA

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Individual Paper Presentation

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Like many states, Virginia is experiencing a rapid increase in utility-scale solar energy capacity. While utility-scale solar provides many benefits related to climate change mitigation, pollution reduction, and tax revenue for the impacted localities, it also raises concerns. These include the possible loss of farmland, forest land, and sensitive ecosystems (Hernandez, et al., 2014; Kaza and Curtis, 2014), as well as environmental justice concerns from concentrating these facilities in low-income and/or minority communities (Mulvaney, 2019). Research into the impacts of existing solar facilities can help planners and policymakers mitigate those impacts, through siting agreements and other local regulations, and guide the future location of utility-scale solar through zoning codes, comprehensive plans, and other policy tools. (Dias, et al., 2019; Poggi, Firmino, and Amado, 2018).

This paper will be an update to research previously presented at the ACSP Annual Conference in 2021. Our earlier work examined the land use impacts of the 38 utility-scale solar facilities (5 MW or greater) that had been installed in Virginia as of January, 2021. In the ensuing three years, Virginia's utility-scale solar industry has exploded, with 86 facilities currently operational and hundreds more in development. We also have access to new data sets that will help us better understand the impacts of this utility-scale solar development on prime agricultural lands. Our key research questions are as follows:

• What is the total acreage of land dedicated to utility-scale solar development in Virginia thus far, and the average acreage per megawatt (MW) of installed utility-scale solar generation capacity?

• Does utility-scale solar development occur disproportionately in counties that are lower-income and/or have high minority populations, compared to the statewide average?

• What types of land uses are most often converted to utility-scale solar development (agricultural, forested, open lands, etc.), and do these patterns vary significantly by region?

• To what extent is utility-scale solar impacting "prime" agricultural or "high conservation value" forest lands, versus farm or forest land with lower agricultural or conservation values?

• Based on current trends, what are the potential future impacts on agricultural and forest land if utility-scale solar grows, as expected, per Virginia's clean energy and climate mitigation goals?

To answer these questions, we have built a new Geographic Information Systems (GIS) database of all utility-scale solar facilities currently operating in Virginia. Maintaining this data set requires meticulous cross-referencing of information from aerial photos, site maps (e.g., from county-level special use permit applications), and other sources to georeference the actual impacted site areas for each new utility-scale solar project. This includes the solar panel footprints as well as additional land converted around the panel area, but not any undisturbed land on the applicable parcels. After georeferencing the individual project sites, we overlay those project footprints with the Virginia Land Cover Dataset to identify the previous land uses at those locations. Our initial findings, presented at ACSP in 2021, showed that over 80% of the impacted acreage has been former forest (58%) and cropland (25%), and that 61% of the impacted cropland was of Very High agricultural value. We also found that the largest utility-scale solar facilities were disproportionately located in Census tracts with a high percentage of African-American residents. These numbers will be updated and expanded upon for ACSP 2024.

This research will inform policy recommendations to support further growth of utility-scale solar, while mitigating negative land use impacts. It will also identify best practices for tracking the impacts of utility-scale solar in a given state or locality. Finally, it will contribute to the evolving research on the impacts of utility-scale solar on forest and agricultural use, as well as related environmental justice concerns.

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Keywords: Solar Energy, Energy Policy, GIS, Land Use, Agriculture

RECOMMENDATIONS FOR LEADING AN URBAN TREE PLANTING INITIATIVE

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Individual Paper Presentation

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Large-scale tree urban planting initiatives (TPIs) have emerged as a prominent strategy to harness the benefits of vegetation in cities and town. More than 60 municipalities worldwide have committed to planting over 11 million trees through the Trees in Cities Challenge, and urban TPIs have become commonplace across the United States (Young, 2011; Eisenman et al., 2021). This has received an additional boost with $1.5 billion in federal funding allocated toward urban tree planting and management in the 2022 Inflation Reduction Act. The scale of this urban greening activity is arguably unprecedented and has the potential to provide a range of environmental and human health and wellbeing benefits. But if not strategically and inclusively planned, TPIs can also generate problems and may not deliver desired or equitable benefits (Roman et al., 2021).

Tree plantings are often celebrated in media-friendly 'golden shovel' events, and success is often framed in terms of the number of trees planted or canopy cover achieved. By extension, the vast majority of economic and human resources that are mobilized for TPIs are typically allocated for tree purchasing and planting (Eisenman et al. 2021). As a result, there is little investment in pre-planting community engagement and post-planting stewardship and monitoring; this has significant implications for environmental justice and long-term sustainability. For example, residents in marginalized neighborhoods may resist TPIs when these communities are not included in the planning process that establishes planting goals and management strategies. Urban tree planting is also costly, ranging from $500 to $3,500 per tree, while 30% of urban tree plantings typically die within five years (Hilbert et al. 2019).

Importantly, TPIs are a type of green infrastructure practice that is directly or indirectly under the purview of urban planners (e.g., Schwab, 2009). Based on a paper that has been accepted for publication in the Journal of the American Planning Association, this presentation will outline concrete actions that urban planners and community leaders can take to promote more sustainable and equitable urban greening across three phases of a TPI: 1) the pre-planting phase that includes goal setting, community engagement, and planning; 2) the installation phase when trees are sourced and planted; and 3) the post-planting phase when maintenance and monitoring is critical. In each of these phases, there are five important cross-cutting themes: 1) ensuring adequate funding for all project phases; 2) cultivating place-based landscape design; 3) engaging and investing in communities; 4) following arboricultural best practices; and 5) evaluating performance and adapting over time.

Recommendations are grounded in scientific literature, including studies from the coauthors who have over nine decades of combined experience with transdisciplinary research partnerships in urban forestry, arboriculture, stewardship science, management and governance of urban trees, and landscape planning and design. The role of planners is especially noteworthy and will be foregrounded in the presentation. This includes community engagement with a range of interdisciplinary stakeholders, especially in the pre-planting phase when planting objectives and landscape design strategies are developed. It also includes the influential role that planners can play in institutionalizing adequate distribution of funds and resources across the pre-planting, installation, and post-planting phases of a TPI.

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Keywords: urban greening, green infrastructure, urban forestry, environmental justice, climate change adaptation

REGIONAL CARBON EMISSION EFFICIENCY ANALYSIS AND FACTOR DECOMPOSITION

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Individual Paper Presentation

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Differences in socioeconomic levels, technology and innovation capacities between regions create unequal relationships that create structures of exploitation. Existing disparities are likely to deepen through cumulative and path-dependent processes and lead to new disparities during the carbon neutrality transition. Regions with a carbon-intensive, low-value-added industrial structure are heavily impacted by regulation. Innovation is necessary for regions to break out of negative lock-in (Martin and Sunley, 2006). Innovation does not happen by chance, but reflects a region's existing capabilities (Martin, 2010). Regions that have grown up with high-carbon industries will seek to maintain the systems already in place (Seto et al., 2016). Creating new pathways out of this carbon lock-in requires not only investment in innovation, but also a base for innovation (Zhang and Du, 2023). So, can regional innovation capabilities bridge the carbon neutrality disparities, and do existing capabilities matter for innovation? The objective of this study is to measure the carbon emission efficiency of different regions and decompose the factors contributing to efficiency disparity among them. According to the IEA, out of the top 20 carbon-emitting countries, South Korea ranks sixth in per capita emissions. In addition, more than half of the country's population is concentrated in the Seoul capital region, which covers only about 12% of the country. It is difficult for even the most economically advantaged regions to achieve carbon neutrality. However, it is necessary to close the gap by reducing carbon emissions at least as much as the economically advantaged regions. We want to measure carbon emission efficiency as an indicator of this. To measure regional efficiency, we use Stochastic Frontier Analysis. To analyze the disparities between regions, we use the Tobit Blinder-Oaxaca Decomposition. In addition to the control variables, we use patents and R&D expenditures as innovation capability variables. To analyze the causes of the carbon emission efficiency gap, we separate the top and bottom 30% of the efficiency score into two groups. The

Tobit Blinder-Oaxaca Decomposition shows that a penalty exists in the bottom 30% of efficiency regions. Of the total efficiency variance, 10.5% is explained and 89.5% is unexplained. The energy industry share and patents are significant in the explainable part. This gap can be explained by the high share of energy industry and low innovation capacity in regions with low efficiency. On the other hand, GRDP per capita and patents are significant in the unexplained part. This means that low-efficiency regions have a disparity even if they have the same GRDP per capita as high-efficiency regions. However, innovation capability appears to be able to reduce the unexplained gap. Among the innovation capability variables, R&D expenditures were not significant, which could be interpreted as being invested in production activities rather than carbon reduction (Wang et al., 2023). This study suggests that the innovation base needs to be strengthened to reduce carbon and improve efficiency. Regions with a high number of patents already have a good innovation base, but R&D is an input to innovation and is more likely to develop into outputs such as patents only if the innovation base is supported. As human capital and knowledge-based industries are concentrated in the Seoul capital region and metropolitan cities, the situation in other regions will continue to deteriorate. In addition, all regions should transition to renewable energy, not just those with fossil fuel-fired power plants. The study found that the share of energy industry is a possible explainable driver of the gap between regions. While major countries around the world are moving to phase out coal, South Korea has been delayed in enacting legislation.

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Keywords: Carbon Neutrality Disparity, Regional Innovation, Carbon Emission Efficiency, Stochastic Frontier Analysis, Tobit Blinder-Oaxaca Decomposition

REGIONAL VARIATIONS IN GREENHOUSE GAS EMISSIONS FROM A SPATIAL PERSPECTIVE

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Individual Paper Presentation

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The global urbanization brings about both challenges and opportunities in the realm of climate change mitigation. While urban concentration of populations and jobs can enhance resource efficiency, particularly in energy consumption, this concentration also brings about challenges in greenhouse gas (GHG) mitigation such as increased congestion, extended commuting distances, and the urban heat island effect. This dichotomy is further complicated

by the growing interconnectivity between cities, transcending administrative borders, and thus rendering localized climate change strategies at the city level less effective. At a broader scale, regional integrated spatial planning emerges as a crucial strategy. It holds potential for optimizing deployment of renewable energy, a reduction in transportation energy demand, and refining resource utilization in the industrial sector. Nevertheless, there is a notable gap in empirical research exploring which specific spatial forms effectively reduce GHG emissions at regional and national scales.

On a broader scale, research focusing on the regional and national impacts of urbanization on GHG emissions has predominantly used urbanization rates as a proxy. Such studies reveal a correlation between escalating urbanization and increased GHG emissions. However, the impact of spatial forms at these larger scales has been less explored (Haberl et al., 2023; Lim et al., 2019). With the intensification of inter-city movement of people and goods, prompted by advancements in mobility, it becomes imperative to examine spatial characteristics beyond the city level.

In this context, this study seeks to empirically assess the impact of spatial distribution patterns of populations and workers on GHG emissions at a regional level, with a case study of South Korea. Specifically, this study aims to address three research questions: (1)

How have the sectoral and total greenhouse gas emissions changed over the past 30 years by region? (2) what are the main drivers of regional GHG emissions variations by sector and how much regional spatial form contribute to the variations? To tackle these questions, this study conducts an empirical analysis of the influence of spatial characteristic changes in six Korean regions from 1990 to 2019 on GHG emissions, using a STIRPAT model (Stochastic Impacts by Regression on Population, Affluence and Technology), which is the most widely used in research for identifying greenhouse gas emission drivers.

The analysis revealed that characteristics of total and sectoral emissions differ significantly by region. Except for the Seoul metropolitan area, which predominantly comprises service industries, the industrial sector accounts for the largest share of GHG emissions in all other regions. In Seoul, the building sector is the primary source of both direct and indirect emissions. Emissions from the transport sector are slightly lower than those from the building sector in every region. Furthermore, the annual growth rate of GHG emissions has decelerated across all regions over time.

The STIRPAT model identified population as the primary drivers of greenhouse gas emissions. Following closely, energy efficiency was identified as the subsequent critical variable, notably influencing emissions in the industrial and transportation sectors. Meanwhile, the density of a region, reflecting its spatial form, exhibited an elasticity ranging between -0.3 and -0.5. Notably, the impact of density was more pronounced in the industrial and building sectors than in transportation. These observations underscore the significant role of a region's spatial attributes not just in transportation but across various sectors affecting greenhouse gas emissions. In order to achieve carbon neutrality, this highlights the critical need for consistent monitoring and adaptable spatial strategies to address the ongoing expansion of urban areas with declining densities, despite a declining population.

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Keywords: Greenhouse Gas Emissions, Reginal Spatial Form, STIRPAT Model

REGULATING TO PROTECT TREES WHILE AVOIDING REGULATORY TAKINGS CLAIMS

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Individual Paper Presentation

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Trees and forests are vital components of terrestrial ecosystems; provide multiple climate adaptation benefits to property owners and society, such as shade and stormwater control; and help to mitigate climate change by sequestering carbon (Schwab, 2009; Safford et al., 2013). Given climate change, the imperative to regulate the removal of trees, and to require mitigation when they must be removed, is only growing. Indeed, local ordinances that regulate the removal and conservation of trees are now commonplace, and there are now numerous guidebooks available to assist localities looking to plan for and adopt or improve such ordinances (e.g., Swiecki and Bernhardt, 2001; Schwab, 2009; Safford et al., 2013; Bardon et al., 2019).

That growing attention to tree protection will surely prompt increased pushback in turn from private property owners who are constrained by regulation. It is not enough merely to justify to those property owners—or to courts—why tree conservation is important; regulations adopted to do so must pass legal muster too. Most contemporary tree conservation guides address the authorities required to adopt such ordinances and the legal protections that apply to them generally. Some identify specifically the potential for a private property owner to assert that a regulation that compels the preservation of trees on site—or payment of fees into a tree replanting fund—amount to the regulatory taking of private property (e.g., Duerksen, et al., 1997; Nichols, 2007). These cautions are abstract, however, without providing much insight into how courts might respond to such claims or how ordinances might be crafted to withstand such constitutional attack accordingly.

Several cases involving a local tree preservation ordinance in Canton Township, Michigan recently worked their way through the courts. In both cases, one federal and one state, the township lost regulatory takings claims, which had the effect of voiding the township's tree mitigation requirements. In a prior paper, we analyzed why the township lost those cases and offered preliminary guidance for localities wanting to protect trees (i.e., especially trees on private property), based on historical and legal analysis of the underlying issues, content analysis of court filings and decisions, and evaluation of the township's prior planning efforts. The legal challenge left by the Canton Township experience is the need to demonstrate clearly to both property owners and the courts that the costs of any demands made by government to mitigate for the removal of trees—either by replanting or paying into a tree replanting fund—would be roughly proportional to the harms (or loss of benefits) caused by removal of the trees.

For this paper, we collaborated with Canton Township planners and: updated our literature reviews of contemporary tree protection studies and guidance documents; reviewed a sampling of current tree protection ordinances widely regarded as leading models for good practice, assessing especially measures used to justify and impose mitigation requirements for tree removal; evaluated systematically an array of on-line tools now available for assessing tree benefits (e.g., iTree), focusing especially on their administrative feasibility and usefulness for demonstrating rough proportionality between harms caused and mitigation required; conducted spatial analyses of Canton Township and evaluated potential outcomes from selected approaches to amending its tree protection ordinance; and developed more generalized guidance materials. Our goal was to provide guidance to help

communities plan for, develop, justify, and administer tree protection regulations that are both effective and legally defensible, especially with regard to regulatory takings claims. This paper summarizes the background issues, setting, study methods, key findings, and recommendations drawn from that work.

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Keywords: tree protection, climate change, regulatory takings, unconstitutional conditions

REPURPOSING LAND GRANT POLICY FOR JUST REPOSSESSION VIA BIOREMEDIATION

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Individual Paper Presentation

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Through centuries of forced and coerced land dispossession, racialized zoning and development policy, and environmentally unjust and exploitative practices, minority and impoverished populations in United States cities have been stripped of ownership over land and agency over urban environments and ecosystem access. The intersections of economic disenfranchisement and property theft and environmental injustice are complicated and inextricable. This paper seeks to address one area of potential redress for this problem through a novel approach to land repossession vis a vis bioremediation and brownfield redevelopment technologies.

This project starts with an intellectual and political history of the idea of land-grant, land-seizure, homesteading, and the historical notion of certain populations having more of a right to own and determine the fate of land and environment. This history both sets up the logic that will be repurposed for contemporary environmental justice and also helps to establish what has led to the current state of environmental dispossession that will be addressed in the paper.

Following this history, current data regarding landownership, environmental degradation, brownfield distribution and environmental impacts of such will be analyzed, with particular attention paid to the disproportionately negative outcomes facing minoritized and disadvantaged communities.

Having established the strength of the link between historic policies of unjust land seizure/granting, urban environmental agency, and socio-economic and health outcomes, this paper will move to propose a potential avenue for redistribution and redressing by both taking advantage of modern bioremediation technologies and repurposing the logic of land-grant policies.

This section of the paper begins by providing an overview of the current state of bioremediation technologies, including benefits and drawbacks, as well as analysing some of the continued systemic concerns of justice impacting their utilization (economically disinvested/disadvantaged communities being unable to afford or access technologies, concerns over gentrification or pricing out of neighborhood, and profitability and ease of developers using other technologies for redeveloping brownfields).

Following this, this paper repurposes logics of land-grant to propose that the government aides in land repossession and ownership granting to communities which have been historically impacted by unjust development, environmental degradation, and land seizures, on the condition that these communities engage with bioremediation techniques.

The hope with this project is that it can simultaneously redress historic injustice while protecting against contemporary concerns regarding gentrification or inequitable distribution of the benefits of brownfield redevelopment. This paper will also acknowledge and discuss potential difficulties and troubles with this proposed plan of action, recognizing constraints and imperfection of such. All in all though, the hope of this work is to push the state of the field forward, and push the multiple fields of scientific bioremediation and planning justice together.

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Keywords: Brownfield Bioremediation, Environmental Justice, Equitable Planning

RESOLVING CONFLICTS IN PLANNING GREEN PATHS TO RESILIENT FUTURES

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Individual Paper Presentation

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Stormwater runoff over roads, streets, and pavements is a major contributor to urban flooding. It also has implications for environmental health and water quality. Green streets or the incorporation of decentralized green stormwater infrastructure solutions in the public right-of-way has emerged as a popular urban solution to reduce stormwater runoffs and reduce urban flooding in dense urban environments where green infrastructure competes with other land uses for space (McPhillips & Matsler, 2018). Like other green infrastructure (GI), green streets also promise to deliver co-benefits such as urban heat island reduction, groundwater recharge, aesthetic enhancements, expansions in access to green spaces, improved pedestrian activity, and greater community engagement in urban environmental governance (Newell et al., 2013). In practice, realizing multiple co-benefits at once has proven difficult. Research has documented tradeoffs between different benefits, which in turn have introduced conflicts between planners, practitioners, and diverse communities involved in GI planning, with implications for realizing distributive and procedure environmental justice through green streets (Diep et al., 2022; Finewood et al., 2019).

The politics of GI planning is an analytical approach that examines the decision-making processes through which tensions between practitioners, communities, (and their desired benefits) get articulated and resolved, i.e., how communities express their diverse desires for urban natures, as well as how the prioritization of GI benefits occurs, decisions around where GI gets sited get made, and who benefits from the outcomes of these decisions (Ernstson, 2013; Finewood et al., 2019; Meerow, 2020, p.2). Whereas scholarship has largely applied this framework to investigate conflicts between expert planners and lay communities, our paper focuses on conflicts that emerge between various agencies involved in managing the urban right-of-way and in environmental governance with regard to their practices for green street siting and maintenance. We examine how these conflicts are resolved in practice and how context-specific environmental justice considerations inform the politics of GI planning to illuminate the practical challenges involved in achieving equity through the development of green streets.

Methodologically, we draw on a detailed review of GI and green streets policies from thirteen major US and Canadian cities, in-depth interviews with twenty-one GI planners and practitioners conducted in 2023-24, and geospatial analysis of green streets distribution for cities with available data. Our findings concur with existing literature in showing that hydrological and stormwater management goals take precedence in green streets' siting compared to other considerations (Finewood et al., 2019; Hoover et al., 2021; Meerow, 2020) but also reveal that many GI planners also seek to piggyback on capital improvements to city streets to strategically expand their portfolio of GI assets. Whereas GI planners seek to expand the provision of green streets in ways that advance distributive environmental justice through their routine and opportunistic approaches, the priorities of other agencies involved in governing the public right-of-way (ROW), the unavailability of land, conflicts with other utilities, and limited budgets constrain them, showing the persistent legacies of 'municipal undergreening' practices (Rivera and Hendricks, 2022). In cities where GI planning agencies have access to a dedicated capital budget and decision-making autonomy, it is easier to achieve co-benefits related to community engagement, equitable distribution of GI assets and investments in their long-term maintenance. In conclusion, the paper underscores that although the ROW is publicly owned, implying fewer conflicts over land ownership and use, realizing equity through green streets planning continues to be political and fraught because of the diverse goals and agendas of the various public agencies involved in controlling the public realm.

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Keywords: green streets, co-benefits, tradeoffs, stormwater management, environmental justice

RESOURCE AND POWER IN FORUM PARTICIPATION IN GOVERNANCE OF WATER COMMONS

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Individual Paper Presentation

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Effective problem-solving necessitates collaboration among entities from different levels and sectors, as no single entity possesses the necessary authority, resources, and expertise to independently translate policy intentions into action. Collaborative forums serve as crucial platforms for engagement and coordination. However, actors often face the challenge of choosing from multiple forums in which to participate. This study takes the Cuyahoga River Basin as a case study, a region that has seen the emergence of numerous regional collaborative forums aimed at addressing water pollution and other problems, particularly in designated Areas of Concern (AOCs). This study adopts an interdisciplinary approach, drawing from the Ecology of Games Framework (EGF) (Long, 1958; Lubell, 2013), social capital theory (Larsen et al., 2004; Putnam, 1994), resource dependency theory (Pfeffer & Salancik, 2015), and power theory (Morrison et al., 2017; Morrison et al., 2019). It also leverages the Exponential Random Graph Model (ERGM) in its analysis. This comprehensive approach allows me to assess how social capital (bridging and bonding), actors' perceptions of forum power (design, pragmatic, and framing), and the forum's capacity to provide access to human, financial, and technical resources influence actors' choice and participation in forums. It shows that forums serve diverse purposes and exhibit varying compositions, with actors' participation being influenced by the forum's ability to assist in accessing different forms of resource capacity and exerting power in policy design and resource mobilization. These findings underscore the importance of considering power dynamics and resource availability in fostering effective participation and coordination to address environmental issues, offering practical insights for environmental planners and practitioners.

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Keywords: Ecology of Games, Power, Collaborative governance, Water commons, Cuyahoga River

RESPONSE TO URBAN WATERLOGGING CONTROL UNDER DIFFERENT TERRAIN CONDITIONS

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Individual Paper Presentation

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In recent years, urbanization has accelerated, and abnormal changes in climate have increasingly threatened and affected cities with disasters. Intense rainstorms have caused urban flooding in highly urbanized areas, resulting in property damage and threats to life. Therefore, the development of flood-resilient infrastructure systems is crucial. However, achieving this goal may be challenging in high-density urban areas due to constraints on land resources. Current studies on flood resilience are limited to assessing infrastructure systems and do not consider dynamic, resilient scenarios based on Blue-Green solutions. This study proposes a framework based on local human wisdom that can withstand, absorb and recover from floods in a timely manner to improve flood resilience in the urban design process. In this study, we analyze the hydrological characteristics of Zhengzhou City and constructs a rainfall and flood security pattern using GIS and hydrological models. Corresponding Blue-Green solutions are determined for different terrain situations based on the above conditions. These solutions include the Trench Ring + Dry Pond mode, Connected Ponds + Sponging Infrastructure mode, and Blue-Green Network + Elevated Groups Mode. Finally, a rainfall and flood mitigation program is established at the macro scale, and its effectiveness is evaluated based on the Storm Water Management Model (SWMM). The results indicate that the Blue-Green program produced 40,000 cubic meters of stormwater storage, resulting in significant economic benefits for the community. The savings are more than three times that of the traditional solutions. Furthermore, from a spatial perspective, the Blue-Green looped network solution improves flood resilience and reconnects previously fragmented lakeshore spaces, while increasing the water storage capacity of abandoned land. This approach can enhance the flood resilience of inland cities, particularly in response to heavy rainfall and riverine flooding.

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Keywords: urban waterlogging, terrain conditions, flood resilience, Blue-Green solutions, SWMM

RISING SEAS: RISK PERCEPTION AND POLICYMAKING IN HAWAII

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Individual Paper Presentation

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According to NOAA's 2022 Sea Level Rise Technical Report, around 2 feet of sea level rise (SLR) along the U.S. coastline is increasingly likely between 2020 and 2100, and failure to curb future emissions could cause an additional 1.5 - 5 feet of rise (for a total of 3.5 - 7 feet by the end of this century). This will dramatically affect coastal communities and ecosystems across the U.S. According to the Fifth National Climate Assessment, US. Coastal communities—home to 123 million people (40% of the total US population)—are exposed to sea level rise, with millions of people at risk of being displaced from their homes by the end of the century. The State of Hawaii presents a "most likely" case study for the rapid advancement of sea level rise (SLR) policy because of its high vulnerability as a remote island state, deep blue politics, high public awareness of climate change, a strong Public Trust Law, and because of historical and cultural ties to living near water. In 2023 a research team from University of Hawaii conducted an online survey of State Legislators and County Council Members in Hawaii, which revealed that 94% of respondents were concerned or very concerned about SLR, and 100% believe it will have serious impacts on Hawaii's residents in the next 50 years. Of these, 34% think impacts will be catastrophic. Despite this high level of concern, however, only 17% of State Legislators (and no County Council Members) placed SLR policy at the top of their priority list, and only 15—mostly minor—bills have been passed in Hawaii over the past decade. How can we account for this disconnect between risk perception and the passage of meaningful, concrete policies and planning actions?

This paper will provide findings of a new survey related to SLR risk perception and policy preferences in Hawaii, to be completed in the summer of 2024, which targets staff in key agencies tasked with planning for sea level rise adaptation. The semi-structured online survey is deployed among Hawaii State agencies and all four county agencies using the SurveyMonkey platform. Agency staff play a significant role in researching, writing, and implementing prospective bills, which significantly impacts the viability of proposed legislation. Therefore,

understanding how agency staff evaluate the risks and policy options is of critical importance to the advancement or stalling out of SLR policy.

Survey results will be analyzed in comparison with the 2023 survey of elected officials to provide a multi-level analysis (Legislature, County, and Agency) of drivers behind local level climate change adaptation policy. The study will provide insight into risk perceptions, strategy preferences and challenges facing state and county policymakers and planners as they consider how best to respond to sea level rise. This research will contribute to planning scholarship on coastal management; how risk perceptions and policy preferences impact adaptation response; and multi-level governance of environmental management. The study will also be of interest to practitioners seeking to better understand the drivers of complex, multi-agency environmental planning.

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Keywords: Coastal Management, Sea Level Rise, Risk Perceptions, Policy Preferences, Multi-level Governance

RISK PERCEPTION IN DISASTER PLANNING PRACTICE IN THE GLOBAL SOUTH

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Individual Paper Presentation

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Risk perception, a judgment of how risk is perceived individually and communicated scientifi- cally, helps clarify local knowledge, know-how, and experience. However, community disaster preparedness and DRR planning have often overlooked community risk perception. This study investigates how risk perception at the community level influences and facilitates local DRR initiatives. It explores southwest Bangladesh as a case study, an area highly vulnerable to climatic impacts such as tropical storms, floods, and rising sea-level. This study analyses media and local narratives, in-depth interviews, and field observations. We find that community risk perception (a) tends to be ignored in local adaptation planning and (b) is shaped by four influential factors relating to local residents: their varied interests; socio-economic opportunities; attachment to place and community; and risk-tolerance capacity. The study advances theory in revealing a dynamic relationship among perception of risk, adaptive behaviour, and tolerance of risk. Prac- tically, it helps local authorities in southwest Bangladesh and similar locales enhance DRR

practices by considering community experiences and perceptions of risk. Though oft challenged by the contemporary socio-political dynamics of the Global South, transferring knowledge of risk perception to inform decision-making is critical to strategic planning in the face of disasters.

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Keywords: Risk perception, Climate change, Local narratives, Global south

RUBBLE TO RESILIENCE-EXPLORING SATISFACTION LEVEL IN POST-DISASTER RECOVERY

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Individual Paper Presentation

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Post-disaster reconstruction is a complex process that must contend with the urgent need to act alongside the often-slow process of involving multiple stakeholders and addressing social, cultural, economic, and psychological dimensions that affected populations face (Tierney & Oliver-Smith, 2012). Despite the annual post-disaster reconstruction of hundreds of thousands of houses by governmental and non-governmental agencies, limited attention is paid to the satisfaction levels of individuals after the reconstruction and its correlation with the broader policies guiding the reconstruction process. Hence, a notable gap remains in understanding how specific components of the wider recovery approach—process and policies—influence the satisfaction levels of those directly affected by disasters. Most research on evaluating the recovery process attributes its findings to the overarching recovery approaches, a broad assertion that is overly simplistic.

Jha & Duyne Barenstein (2010) categorize these reconstruction approaches into three main types: owner-driven, where homeowners take the lead in reconstruction with government compliance and support; NGO-driven, where non-governmental agencies offer community support; and agency-driven, where governments or NGOs hire contractors for centralized or large-scale construction projects. Similarly, following the catastrophic Gorkha earthquake of 2015 in Nepal, which rendered more than five million people homeless, the Government of Nepal pursued owner-driven housing reconstruction, backed by international development partners, while also incorporating NGO and agency-driven approaches.

The implicit assumptions within these approaches regarding the embedded properties of participation, flexibility, and community input, alongside the involvement of homeowners and its empowering and dignified nature(Jha & Duyne Barenstein, 2010; Lam, 2023), exhibit significant variations in a real-world implementation. The study unbundles the critical factors associated with recovery approaches that foster or hinder satisfaction, emphasizing their broader implications for social justice and equitable recovery outcomes.

While previous studies have acknowledged the satisfaction level of individuals as an essential outcome of recovery efforts, more nuanced exploration is needed into the intricate factors within recovery approaches that significantly influence residents' satisfaction levels (Hudson et al., 2021; Taheri Tafti & Tomlinson, 2016). To explore the procedural differences among these approaches and their effects on individuals post-reconstruction, I analyze cases from Nepal with similar socio-economic contexts. By selecting three settlements in Nepal, each representing distinct reconstruction approaches as case studies, this study presents the associated intricacies of the reconstruction process as participation, technical support, and repercussion effect, as well as their enduring impacts on residents. Employing qualitative methodology, I interviewed ten individuals from each settlement, representing marginalized groups and diverse inhabitants. Additionally, comprehensive insights into the reconstruction process were obtained through interviews with local leaders, engineers, and reconstruction officials. Additionally, the study investigates the process and outcomes of various post-disaster housing reconstruction approaches in Nepal, utilizing the theoretical framework of justice, particularly distributive and procedural justice, to understand the correlation between residents' satisfaction levels and different reconstruction approaches.

The research suggests that marginalized individuals supported by NGO-driven approaches reported higher satisfaction levels than those in owner-driven approaches, where they felt overlooked. Engineers and officials in owner-driven reconstruction funded by the government faced heavy workloads, limiting their ability to provide adequate technical support, while NGOs had greater human resources for support and were more considerate of service provision. Larger NGOs tended to employ a bottom-up approach, while smaller local NGOs often adopted a top-down approach and engaged agencies to complete tasks. The study offers cases of individuals with higher social and economic status who had a greater influence on village reconstruction policy meetings. Furthermore, the study reveals that community cohesion weakened as the reconstruction progressed in all cases.

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Keywords: Post-disaster Recovery, Housing, Nepal Earthquake, Disaster Planning

SCALING UP MANAGED RETREAT STRATEGIES AND SCENARIOS IN KAUAʻI, HAWAIʻI

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Individual Paper Presentation

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In the face of rising sea levels, sandy beach habitats are vulnerable to coastal erosion and inundation, amplifying negative impacts on coastal communities. Shoreline maintenance through beach nourishment and protection have historically been the response to coastal erosion (Griggs and Reguero, 2021). However, for many coastal communities, these mitigation options are too socially and financially costly in the long-term. Retreat, the relocation of coastal development (i.e. buildings, dwellings, infrastructure) away from the shoreline, has been proposed as a response that can avoid maladaptive outcomes (Haasnoot et al., 2021). Research by Setter et al. (2023) used sea level rise models to identify the impacted structures over time and assess the public and private costs associated with three retreat approaches and compared them to potential beach gain over time. The retreat approaches, which are distinguished by the relationship to the time of damage occurring to the coastal structures from coastal hazards, are: all-at-once (well-before damage occurs), threshold-based (just before damage occurs), and reactive (after damage occurs). They found that a threshold-based approach offered the lowest cost for the greatest potential beach area gained. However, the study was limited to a single community (Paumalū, Oʻahu) and only explored a limited range of scenarios. This study expands on the Setter et al. (2023) method by 1) increasing the scale to all residential sandy shorelines on the island of Kauaʻi and 2) adding more scenarios by using other sea level rise modeling products. Previously there were six scenarios that differed in the hazard that triggered retreat (coastal erosion or wave flooding), potential land and building value assessments, and clean up costs. New scenarios that were added include ones driven by passive flooding, and by sea level rise exposure area (SLRXA), which is the combination of coastal erosion, wave flooding and passive flooding models. While this research is still ongoing, preliminary findings suggest that the cost of retreat is magnitudes larger for infrastructure than it is for retreating residential structures. The hazard that drives the costs also depends on the area being considered. Of the four hazard triggers, the most buildings affected were by SLRXA, wave flooding, coastal erosion, and passive flooding respectively. Another notable difference was between scenarios of full building value versus no building value. These findings highlight the importance of continued research on costs and collaborative community planning because each community will be affected differently. Policies and plans of retreat should reflect this need for flexibility and private-public collaborations. By examining the financial and ecological implications of each approach and their scenarios, we aim to inform more managed and sustainable retreat policies that balance short-term costs with long-term benefits. Ultimately, our findings contribute to a better understanding of sea level rise response strategies and support coastal management policies in the face of climate change not only for the coastal and ecological resilience of Kauaʻi's community but also for other coastal communities worldwide.

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Keywords: retreat, beach, sea level rise, cost, coastal erosion

SPATIAL DYNAMICS OF SURFACE RUNOFF AND RELATIONSHIP WITH LANDSCAPE PATTERN

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Individual Paper Presentation

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Accelerated urbanization induces substantial alterations in landscape configurations, exerting profound influences on the direction and volume of surface runoff. Recent progress have focused on the effects of changes in the built environment on surface runoff, while less attention has been paid to the nonlinear relationship between natural or unnatural land use and runoff, which is helpful for establishing the synergistic evolution relationship between the landscape and the hydrological cycle, providing an effective way for future urban planning to protect the urban hydrological system, and putting forward a sustainable urban and region planning policy. We used six landscape indicators to explore the relationship between surface runoff volume and the extension, fragmentation, irregularity, and concentration patterns of different land use types in the Yangtze River Delta region, examining these relationships at both the three river basin and city levels.

The findings reveal a substantial escalation in surface runoff volume during the months of June, July, and August, with the highest mean runoff volume observed across the three basins. The Yangtze River Basin exhibits a significant concentration of elevated surface runoff in proximity to the Yangtze River and Taihu Lake. The Southeastern River Basin experiences peak runoff volumes in areas adjacent to the Yangtze Basin from May to July, and along the East China Sea coastline from August to September. Conversely, the southern boundary of the Southeastern Basin, encompassing regions such as Lishui and Wenzhou, witnesses minimal surface runoff during the rainy season.

Urbanization encroaches upon original croplands, while simultaneously driving the conversion of grasslands, shrublands, and water bodies into croplands to meet the increased food demand from population growth, leading to cropland fragmentation and irregularity. In the Yangtze River Basin, approximately 1% of cropland has been transformed into forests, a higher rate than observed in the Huaihe River Basin, suggesting urbanization facilitates cropland-to-forest conversion through policy interventions, potentially exacerbating cropland fragmentation and irregularity. Contrastingly, the Southeastern River Basin exhibited a net cropland outflow to forests, with land use policies contributing to a 146% increase in overall forest cover without escalating cropland fragmentation. The stable fluctuations of forest landscape indicators indicated a dispersed increase in forests. However, substantial

grassland transformation into croplands, forests, and impervious surfaces induced grassland fragmentation in the Yangtze River Delta region.

Significant correlations between forest landscape indicators and surface runoff volume varied by month, with more cities showing correlation in June, July, and August. Larger and less fragmented, regular and connected forest and cropland areas reduce surface runoff volume. The degree of forest extension contributes more than 20% to surface runoff volume compared to other indicators. The larger extension, less fragmentation, more regularity and connectivity of the water area are not conducive to lower surface runoff volume output, especially in the cities in the Yangtze River Basin and in the areas surrounding Luoma Lake, Hongze Lake, and Gaoyou Lake. While the regularity of its shape contributes more than 20%.

To reduce surface runoff and land appropriation in urbanization, preserve natural irregularities and fragmented water bodies. An alternative way to reduce surface runoff volume is to incorporate cropland into the forest to increase plant connectivity and create a larger, less fragmented, and regular-shaped plant tree area. This study concludes that incorporating natural landscape features and strategically planning landscape distribution patterns hold significant practical implications for mitigating surface runoff volumes.

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Keywords: Landscape pattern, Surface runoff, Land use planning, Natural land use, Yangtze River Delta region

TEMPORAL AND SPATIAL PATTERNS IN GREEN COVERAGE IN US METROPOLITAN AREAS

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Individual Paper Presentation

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As urban areas continue to grow, understanding the dynamics of urban green coverage becomes increasingly crucial for climate change, public health, and quality of life. This study provides a comprehensive investigation into the neighborhood-level temporal dynamics and spatial patterns of urban green coverage in 10 major U.S.

metropolitan areas spanning nearly two decades, offering insights with a higher level of granularity than what larger-scale analysis typically offers.

Employing a time-series K-means approach based on the National Land Cover Database (NLCD) data (2001-2019, with intervals of 2-3 years), the temporal green coverage changes at the neighborhood level are clustered into three types. The spatial patterns of these clusters are subsequently examined in relation to urban containment policies. Furthermore, associated socio-economic and built-environment factors, derived from the American Community Survey (ACS) and the Environmental Protection Agency, are analyzed and compared between these distinct groups.

The investigation reveals three main insights: Firstly, while neighborhood-level green coverage has been on a decline since 2001, the rate of this decline has significantly slowed after 2006. Secondly, the clusters with substantial green coverage loss are predominantly found in transition zones between urban and rural lands, highlighting an ongoing correlation between urban sprawl and green coverage loss over the past 19 years. Lastly, the pronounced green loss clusters are associated with higher socio-economic status and shorter commuting times, suggesting that urban sprawl, accompanied by green coverage loss, may exacerbate social equity challenges. This study provides a granular temporal and spatial analysis of green coverage within the U.S. urban context, shedding light on the complex interplay of green coverage, urban sprawl, and socio-economic factors, and providing implications for future environmental planning and urban policymaking.

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Keywords: green coverage, census tract, Temporal pattern, time-series clustering, Metropolitan

THE GIANT IN THE NICHE: PLANNING MEGAPROJECTS AS URBAN EXPERIMENTATION

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Individual Paper Presentation

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The legitimacy of planning is inherently and increasingly challenged by the dilemma between predictability and flexibility in an urban world defined by uncertainty and complex. Calls for more effective and appropriate planning methods prevail both within and beyond the traditional planning field to address the most pressing problem of sustainability and climate change. Two theses have received particular scholarly and political attention. One is the concept of urban experimentation, which stands for a collaborative style of learning and knowledge production towards the goal of innovation and urban transformation (Bulkeley & Castán Broto, 2013). The other one is a renewed interest in large-scale development projects as a platform to deliver green and climate-resilient infrastructures. These "green megaprojects" gain momentum globally with the growth of green new deals led by different national governments (Rizzo, 2020). Together, these two highly-expected mechanisms for solving contemporary urban problems reiterate planning's fundamental paradox between predictability and flexibility, which is articulated in the rhetoric of mega vis-à-vis niche, the principle of delivery vis-à-vis openness, and the conceptualization of uncertainty and risk as something to avoid vis-à-vis "constructive drivers of urban development processes" (Karvonen et al. 2014, p. 113).

This paper bridges these dualisms and interrogates the relationship between traditional planning and the emerging paradigm of urban experimentation through the lens of megaprojects. Focused on a low-carbon city project in Shenzhen, China, it illustrates how an experiment-framed megaproject is advanced through continuously adjusting the boundaries between control and flexibility. Inspired by Savini et al.'s (2015) analytical concept of "dilemma," we examine the negotiation between the open and closed notions of space and time, the general and particular norms of regulation, and the quantitative and qualitative conceptions of income and risk. It is found that the megaproject encompasses a real-time process where tentative negotiation results are trialed or replicated in different parts and stages of the same project through strategic demarcation and phasing. Rather than a single large-scale project, the megaproject constitutes an experiment of experimentation where the effectiveness and adaptability of particular solutions to the planning paradox between control and flexibility are tested and learned.

These findings were based on a review of project-related planning and consultation documents, government reports, and media coverage, as well as in-depth interviews with 39 local government officials, developers, NGOs, planning and architecture consultants, and existing residents and businesses. They contributes to the emerging literature on "planning by experiment" (Scholl & de Kraker, 2021) by demonstrating the mutual constitution of megaprojects and urban experimentation in the area of urban climate governance, indicating planners' strategic role in experiments as definers of scale and scope physically, temporally and politically.

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Keywords: megaprojects, urban experimentation, environmental sustainability, climate governance, low-carbon city

THE IMPACTS OF VACANT LOTS ON EXTREME HEAT AND SOCIAL EQUITY

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Individual Paper Presentation

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Vacant lots in urban landscapes are thought to impart negative socio-economic and environmental impacts on surrounding communities. In addition, their land cover types generally increase the temperature in the local microclimate, rarely are accompanied by shade, and correlate to poor air quality. Vacant lots are disproportionately found in parts of the city where marginalized or underrepresented residents live (Smith et al., 2017; Pearsall, 2017).

Yet these sites represent a potential landscape of solutions to interrelated threats of extreme heat and social inequity. Given that outdoor heat-related deaths disproportionately occur among people experiencing homelessness and indoor heat-related deaths among people with inadequately cool shelters such as mobile homes, affordable housing with affordable energy for cooling technologies is a critical solution set to move the needle among the most vulnerable and exposed to extreme heat (Solís et al., 2023; Phillips et al., 2021).

Thus, the strategic conversion of vacant lots across a city into heat-smart land uses presents a systems-level opportunity to both remove a negative impact and add positive resilient capacity to a city. We call this Heat-Strategic Vacant Parcel Conversion (HSVPC). Thus, if strategically developed in the future, vacant lands can provide a unique opportunity to convert to different land cover that ultimately could cool urban areas and surface temperatures in neighborhoods. However, a number of questions arise. How many discrete vacant parcels must be converted to which kinds of uses to reach the scale of being able to significantly alter both local and city-wide metrics on temperature and air quality?

This paper thus begins the process of designing a dynamic HSVPC model to address these questions. At present, we have the opportunity to work with the city of Mesa, Arizona, where there are 12,260 vacant lots. Our long-term research aim is to determine how these parcels could be developed more strategically into other land covers, as argued above, so that a city-wide HSVPC design could impact extreme heat and social equity positively. The first step to reach this aim is to test the starting assumptions for the selected city case. This paper tests the hypotheses that the thousands of vacant parcels in the city of Mesa indeed exhibit the negative impacts assumed in terms of social equity and extreme heat in a two-part test. The method of testing social resilience to heat is a comparison of all lots to the US Census' newly released Community Resilience Estimates for Heat. Each parcel is assigned a 0 or 1 to indicate if it is vacant (1) or not. Moran's I autocorrelation and Hot Spot Analysis are then used to compare to the corresponding CRE-Heat score. The method of understanding the extreme heat exposure that vacant lots exhibit in Mesa uses the Body Heat Storage metrics, respectively. Then, we used the Geographic Weighted Regression to test whether and how these variables are linked. We finally map these results in order to understand the spatial

patterns with the distribution of vacant lots at the parcel level in the city of Mesa, labeling a subset of the 12,260 parcels for prioritization on the basis of the original baseline vulnerability and exposure. The results of this first phase of the study sets a foundation for highlighting the importance of vacant parcels and their impacts on extreme heat and social equity. In addition, since our HSVPC model is performed at the parcel level, it will form the basis for future steps in our research to design scenarios to support policymakers to more strategically plan for impacting extreme heat, social equity, social vulnerability, and housing affordability using the most appropriate vacant parcels for conversion.

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Keywords: Vacant lots, Extreme heat, Social equity

THE LEGACY EFFECT OF REDLINING ON DISASTER RISK AND COMMUNITY RESILIENCE

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Individual Paper Presentation

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In recent years, the establishment of the National Risk Index (NRI) by FEMA marked a significant advancement in our understanding of community risks related to natural hazards. This innovative tool aims to encapsulate a multi-hazard view of risk, integrating the likelihood of natural hazards with social and community risk factors to offer a holistic perspective on disaster vulnerability. Meanwhile, the historical practice of redlining, initiated in the 1930s by the Home Owners' Loan Corporation (HOLC), has been recognized for its long-lasting impacts on urban segregation, socio-economic disparities, and environmental inequities (Shaker et al., 2023). Despite the prohibition of redlining in 1968, its legacies—manifesting in increased temperatures (Hoffman et al., 2020; Wilson, 2020; Li et al., 2022; Conzelmann et al., 2023), diminished green spaces (Nardone et al. 2021), elevated gun violence (Benns et al. 2020), and reduced healthy food access (Shaker et al., 2023) —continue to influence the resilience and vulnerability of communities today.

This study identifies critical gaps in the existing literature, notably the insufficiency of research linking the historical implications of redlining to present-day disaster risk and resilience, and the effectiveness of current risk assessment tools like the NRI in capturing the nuanced socio-economic legacies of redlined neighborhoods. Additionally, it

addresses the need for actionable strategies that urban planners and policymakers may utilize to alleviate the long-standing disparities caused by historical injustices.

We explore three research questions: (1) How do disaster risk, community resilience, social vulnerability, and estimated annual loss vary across neighborhoods with different historical redlining classifications?, (2) How do historical redlining practices impact community resilience and vulnerability to disasters, controlling urban dynamics, including gentrification and urban redevelopment?, and (3) What strategies can urban planners and policymakers implement to enhance disaster resilience and promote environmental equity in historically disadvantaged communities?

This study utilizes ANOVA and Kruskal-Wallis tests to compare mean values across neighborhoods categorized by the level of redlining and spatial regression models to evaluate the impact of redlining on resilience and disaster risk metrics, drawing on the HOLC data, FEMA's National Risk Index, and the American Community Survey (ACS) 2018-2022 5-year estimates to understand the interplay between redlining, sociodemographic factors, urban dynamics, and disaster resilience in communities.

Preliminary findings suggest that neighborhoods historically subjected to redlining display greater social vulnerability and markedly lower resilience and estimated annual loss, culminating in paradoxically lower disaster risk scores when compared to neighborhoods less affected by redlining. These disparities can be traced back to a legacy of segregation and sustained disinvestment. However, it is important to consider that the observed lower disaster risk scores, likely caused by depreciated building values, may not accurately reflect the actual level of disaster risk. This potential underestimation stems directly from a history of neglect and sustained disinvestment, highlighting the pressing need for targeted urban planning and policy measures to address these deep-rooted inequalities.

This study contributes significantly to the fields of urban planning, disaster management, and environmental equity by underlining the importance of recognizing and addressing the socio-economic legacies of discriminatory practices. By leveraging tools like the National Risk Index and advocating for the incorporation of smart technologies into planning practices to achieve equitable outcomes, this research provides valuable insights for urban planners, policymakers, and researchers on strategically allocating and prioritizing efforts to strengthen community resilience and advance environmental equity.

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Keywords: Redlining, Disaster risk, Community resilience, Environmental equity, National risk index

THE PLANNING IMPLICATIONS OF COASTAL WETLAND MIGRATION UNDER SEA LEVEL RISE

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Individual Paper Presentation

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Coastal wetlands are at risk of catastrophic losses under sea level rise. Humans depend on coastal wetlands for a range of critical ecosystem services that are increasingly important under climate change: shoreline protection, carbon sequestration, and habitat for endangered species, among other functions. Ecological modeling has shown that allowing wetlands to migrate to higher elevations as seas rise is key to preserving this critical ecosystem under long-term coastal change. In fact, they emphasize the importance of removing obstacles to wetland migration, such as levees. In certain areas of the United States, wetlands are already migrating.

Wetland migration under sea level rise presents a significant environmental planning challenge. Wetland migration is already infringing on private property, such as homes and farmlands. In doing so, migrating wetlands can damage property, reduce property values, limit adaptation options, incur legal liabilities, and raise human and environmental health concerns. These impacts could disproportionately harm disadvantaged communities, who are also less likely to armor their shorelines and thereby block wetland migration. Localized modeling studies show that wetland migration could have extensive encroachment into certain developed areas, especially under high rates of sea level rise.

Given the potential for conflicts with private property, planners need more information about the population living in areas that could be wetlands in the future. Currently, there are no estimates of the number of people that could be affected by wetland migration at either local or national scales nor a synthesis of the potential impacts. Based on geospatial analysis, this research quantifies the number and demographic characteristics of people living in potential wetland migration corridors across the coastal United States. With an emphasis on social vulnerability, this research identifies hotspots where disadvantaged communities could be affected by wetland migration. In addition, this research synthesizes the emerging potential impacts of wetland migration on humans based on a literature review. Understanding the impacts on humans is an emerging topic as research on wetland migration has mostly been dominated by the ecological sciences. Yet there is increasing awareness of the need to examine and plan for its societal impacts.

Wetland migration is a long-term phenomenon that will intersect with a range of planning policies, including coastal management, conservation, hazard mitigation, floodplain management, climate adaptation, zoning, and land use plans. The complex impacts of wetland migration necessitate innovation in adaptation policy. For example, conservation of wetland migration corridors could be combined with managed retreat to maximize social-ecological benefits. Protecting future wetland migration corridors through conservation measures, such as easements and land acquisitions, faces challenges in funding and landowner perceptions. Moreover, planners must ensure that policy to conserve future wetlands does not predominately target disadvantaged coastal populations and mitigates potential harm. Fundamental data and knowledge on the potential impacts on humans will help in the development of more equitable, cross-sectoral, and holistic policy that successfully balances wetland conservation goals with human adaptation needs.

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Keywords: climate adaptation, sea level rise, wetlands, coasts, conservation

TREE EQUITY AND HOUSING PREMIUM: MEASURING TREE VALUES IN SAN ANTONIO, TX

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Individual Paper Presentation

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Urban trees are known to bring social, environmental, and economic benefits to communities. To gauge the tree benefits on housing premiums, studies looked at the property as well as greater ranges of tree canopy coverage utilizing a series of rings around each property through hedonic modeling on single-family home sale transactions (Kovacs et al., 2022; Saphores & Li, 2012). Despite the benefits, trees are also known to be less found in low-income and socially vulnerable communities (Riley & Gardiner, 2020) and potentially have adverse health effects in these communities due to poorly maintained trees (Lee et al., 2023). While property trees could have higher premiums in affluent neighborhoods (Seo, 2020), both property and neighborhood-level tree values across different socioeconomic neighborhoods are not extensively examined.

This study aims to fill the knowledge gap on potentially unequal tree benefits on housing premiums in socially vulnerable communities. From the perspective of tree equity and environmental justice, it would be critical to understand who benefits from trees and why. Using San Antonio, Texas, as a case study, we employ the 1m resolution tree canopy data from the 2017 LiDAR, from which we derive the percentage of tree canopy on each property and at the block group level. Traditional hedonic variables such as lot size, square footage, garage spaces, bathroom, etc. are also included. From the buyers’ observation, they gain a visual estimate of the tree canopy for the property and for the neighborhood in which the property is located. Given this imprecise purchaser estimate of

tree canopy, we partition the tree canopy by property and neighborhood into the lowest 25%, the middle 50%, and the highest 25%. Interacting these, we create nine indicator variables to measure the combination of property and neighborhood tree canopy. We then employ a semi-log hedonic pricing model to analyze about 96,000 existing home sales to estimate the value of tree canopy. In addition, we posit the value of tree canopy may depend on the overall area income conjecturing that lower income areas may be more concerned with the housing space while higher valued areas may place increasing value on what may be seen as the amenity of tree canopy.

The results indicate that both property and neighborhood tree canopy generally add value to home sale prices. For the lowest-income area, however, increasing the property tree canopy in a low-canopy neighborhood shows no statistically reliable gain in value. Although property tree canopy does not contribute to value, neither does it reduce value. In the moderate and high canopy neighborhoods, we observe some value gain, but increasing the property canopy in these neighborhoods shows no additional gain in value. The tree value we are examining is directly related to social well-being as urban trees are an essential component of urban living. Socially vulnerable communities already suffer from low levels of tree canopy creating concerns for their well-being. This study provides new evidence that trees might not increase home prices in these communities. For future directions, it is important to identify the root cause of devalued trees in socially vulnerable communities and suggest alternatives to bring tree benefits to promote tree equity.

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Keywords: Tree equity, Urban tree canopy, Social vulnerability, Housing premium

UNDERSTANDING CE INSTRUMENTS IN RAPIDLY GROWING EXURBAN AREAS OVER TIME

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Individual Paper Presentation

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Notwithstanding the significant flexibility and variability in US and global land conservation mechanisms, on private lands, the conservation easement (CE) has become the predominant tool since the 1970s. They are increasingly integral with President Biden's "30 by 30" initiative to combat climate change through land conservation. CEs' permanence, combined with their ubiquity and relative obscurity, generate questions about and growing recognition of their impact on the landscape.

Despite extensive spatial analyses, there is very little research on the CE documents. Only four studies to date focus on their substantive nature. Rissman et al. (2007) and Kiesecker et al. (2007) studied 119 CEs in eight states, all held by The Nature Conservancy, an international land trust. They found that "almost all easements have explicitly identified biological targets, an indication that they were established with clear conservation purposes" (Kiesecker et al., 129). CEs have several purposes, the most common were ecological and "intended to reduce habitat loss and fragmentation" (Rissman et al., 716). Wallace et al. (2008) conducted a study of private land conservation more generally in one county in CO, and studied 178 CEs. Their primary reasons/public benefits were open space, scenic and aesthetic value, and wildlife value. Owley & Rissman (2016) examined 269 CEs in six states, systematically choosing the CEs from multiple regions (and by size). They identified 17 purposes, finding that "the number and specificity of purposes increased over time" but did not display dominant purposes and instead, CEs included conflicting ones (Owley & Rissman, 81). The most frequently occurring purposes were relatively natural habitat, wildlife habitat, open space, preventing inconsistent uses, scenic enjoyment, and wetlands or riparian areas. Reeves et al. (2020) studied working forest CEs and baseline documentation in GA and found themes of protecting natural habitats and preserving the conservation value of the land.

Among other research objectives, we built on this work by amassing a database of information on CE location and characteristics in rapidly urbanizing areas of the US. We chose counties in states with urbanization pressures, 25 or more CEs by county, exurban character and Level 1 ecoregion exemplification of the largest and most representative ecoregions in the contiguous US. These counties include Sonoma and Sacramento, CA; Boulder and Mesa, CO; Douglas and Washington, MN; Lebanon and York, PA; Charleston and Greenville, SC; and Albemarle and Loudoun, VA. We collected 2823 CEs placed between 1997 and 2008/2009 and used intercoder reliability checks to develop our coding instrument through an iterative process for the CE purposes. Two research team members conducted semi-structured interviews with almost half of the land trusts in the study counties. We first cycle coded these results using descriptive coding.

These data allowed us to establish a baseline understanding of the CE instruments, specifically examining the following questions, through two lines of inquiry: (1) the instrument patterns and internal relationships of their content, and (2) the relationship of those patterns with the CE holders. For the first inquiry line, we statistically assessed the level of variation in the CE purposes and identified the most common reasons and their geographic dispersion. We evaluated the volume of variation and commonality in CE purpose(s), conservation intent, public access, etc. that exist despite disparate geographies. We also examined whether the CE reasons internally supported or defeated each other, considering climate change pressures. For the second inquiry line, we revealed the relationships between the CE holder characteristics, their preservation criteria and the variability in the CE reason patterns. These results build a greater understanding of a critical tool for conserving land with future biome shifts, potentially reinforcing or impeding similar local government efforts.

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Keywords: conservation easements, exurban areas, purposes, conservation intent

URBAN DIURNAL HEAT VARIABILITY AND ITS NONLINEAR RELATION WITH URBAN FORM

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Individual Paper Presentation

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As the importance of effectively managing the Urban Heat Island effect and heatwaves grows to enhance quality of life and environmental sustainability in urban areas, numerous studies have explored the relationship between Land Surface Temperature (LST) and urban built-environment form. However, these studies have mainly focused on midday LST, such as noon, overlooking diurnal thermal fluctuations and potential disparities among neighborhoods (Park et al., 2021). This study delves into the diurnal variation of summertime LST, examining how this variability relates to urban planning and environmental elements. Utilizing recently released thermal infrared satellite imagery named NASA ECOSTRESS, which observes LST globally at various times of the day, we investigated diurnal LST changes with a high resolution of 70m. Launched in 2018, ECOSTRESS operates in a non-sun-synchronous orbit, capturing diurnal cycles of surface temperature changes (Chang et al., 2022; Han et al., 2023).

Focusing on Seoul, South Korea, as a case study, this study collected ECOSTRESS data to construct time-series LST data at 70m resolution, covering observations from morning (7:21 am) to evening (5:26 pm) between 2019 and 2022. Based on this data, we quantified diurnal LST variability and visualized its spatial distribution. Subsequently, explanatory variables, including land cover, building form, vegetation density, proximity to natural areas, and point-of-interest (POI) density, were developed to explain diurnal LST variability. Unlike atmospheric temperatures, LST is highly sensitive to physical urban environment forms and may exhibit nonlinear relationships with environmental factors due to heat convection and inertia. Therefore, two different analyses were conducted: first, Seoul was

classified into distinct Local Climate Zones (LCZ) as proposed by Steward & Oke (2012) to examine the characteristics and disparities of diurnal LST variability among them. Second, a Generalized Additive Model (GAM) was used to estimate the nonlinear impacts of explanatory variables on diurnal LST as the dependent variable.

The analysis revealed significant nonlinear effects of all explanatory variables on daytime LST variability. An increase in building footprint ratio exponentially increased daytime LST variability, while increases in both floor area ratio and building height also raised LST variability, though their impacts diminished rapidly as their values increased. NDVI (vegetation density) exhibited a threshold effect, with values above 0.1 contributing to reduced LST variability. Proximity to water bodies and forests turn out to be the most important variables in mitigating LST variability, showing nonlinear effect curves. This study is one of the first to investigate the diurnal pattern of LST variations and its nonlinear association with built-environmental forms, offering insights into potential land use regulations for enhancing thermal comfort for urban residents.

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Keywords: Land surface temperature, Temperature Variability, Urban form, Local Climate Zone, Generalized additive model

URBAN GREEN SPACE AND PATHWAYS TO ADULT ASTHMA

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Individual Paper Presentation

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Urban green spaces (UGSs) play a crucial role in shaping the environmental and public health landscape of cities. This study utilizes a variety of data to investigate the complex interplay between neighborhood-level UGSs, air pollution, land surface temperature, and adult asthma emergency department visits in the Los Angeles metropolitan area. The data we examine include information on asthma, toxic releases, and PM2.5 from the CalEnviroScreen Database, land surface temperature from Landsat imagery, and high-resolution land cover data from EnviroAtlas. Using these data to determine links between UGS and asthma, we examine the interactions these

phenomena have not only with each other (Mueller et al., 2022), but also with air pollution and urban land surface temperature, both of which are known to also interact with each other especially as urban areas become hotter.

Previous studies note the role that UGS plays in helping to reduce urban heat (Grilo et al., 2020). Other studies note the ways that UGS helps reduce air pollution and asthma (e.g., Eisenman et al., 2019), although there is some debate around the direction of effects (Madaniyazi & Xerxes, 2021). In addition, UGS negatively impacts air pollution via its mediating effects on urban heat (Yang et al., 2023). This study builds on these studies by considering health effects and thus examining the various complex pathways UGS effects take in reducing incidences of adult asthma. As we identify in this study, there are both direct and indirect effects of UGS, and these effects vary depending on the racial and ethnic makeup of neighborhoods (e.g., Wolch, Byrne & Newell, 2014)

Using Structural Equation Modeling, we find that neighborhood level UGS directly impacts emergency room visits for adult asthma in both positive and negative ways. Grass cover at the census tract level has a positive relationship with adult asthma while tree cover has a negative relationship. UGS also indirectly impacts emergency room visits for adult asthma through varied pathway. One of the most substantial indirect impacts of land cover on asthma occurs through UGS's effects on land surface temperature. The asthma-reducing impact of UGS is enhanced by the fact that UGS also help to reduce land surface temperature. Significant disparities are noticed between majority White compared to majority People of Color (POC) tracts. More specifically, grasses are positively related to asthma and land surface temperature in POC tracts but not in White tracts. Trees have larger overall impacts on asthma in POC tracts, primarily due to their effects on toxic releases.

The study emphasizes the importance of considering the socio-ecological context across different ethnic communities when developing targeted strategies for UGS planning and asthma mitigation. The findings suggest that planners should prioritize tree cover among UGSs types in addressing public health concerns like asthma, particularly in POC communities. This is likely due to the combination of direct and indirect impacts, with those indirect impacts inclusive of the ways in which tree coverage helps reduce land surface temperature and air pollution. The findings can guide policymakers and urban planners in developing effective strategies to promote environmental justice and public health through the strategic use of urban green spaces.

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Keywords: Urban green space, Asthma, Climate, Environmental Justice, Air Pollution

URBAN MORPHOLOGY AFFECTS CARDIOVASCULAR DISEASE VIA HEAT AND AIR POLLUTION

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Individual Paper Presentation

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Introduction. Cardiovascular disease (CVD) is the leading cause of death in the U.S. and is affected by extreme heat and air pollution. Specifically, high temperatures increase heat-related illness (e.g., heart disease) and death. Also, air pollution contributes to increased illnesses such as asthma and cardiovascular disease. The relationship between urban morphology and climate characteristics, such as thermal environment and air pollution, has been studied extensively, focusing on the buildings' arrangement, density, height, volume, complexity, and number. However, studies have mostly analyzed the relationship between urban morphology and health by looking at walkability and physical activity promotion. Yet the indirect effect of 2D/3D building morphology on CVD via extreme heat and air pollution has not been thoroughly studied.

Research questions. We analyzed the direct and indirect effects of 2D/3D urban morphology on CVD morbidity via extreme heat and air pollution in Los Angeles County.

Methods. We conducted a Bayesian network model focusing on the census tracts in Los Angeles County's urbanized areas. We used data from 2015 to 2017 and considered the complex relationship and chain reaction between CVD morbidity, climate conditions, environmental characteristics, and socioeconomic factors. To model CVD morbidity, we used spatially modeled age-adjusted emergency department (ED) visits per 10,000 data from the State of California. For the 2D/3D building morphology, we calculated 11 variables considering previous morphology studies: mean building area/height/perimeter, building area/height/perimeter range, building area/perimeter/volume/number density, and Sky View Factor (SVF). For climate conditions, we calculated the median daytime Land Surface Temperature (LST) in summer from Landsat 8 and the median 550nm Aerosol Optical Depth (AOD) from MODIS using Google Earth Engine. For the environmental and socioeconomic characteristics, we considered land use, toxic releases from facilities, tree canopy ratio, traffic volume, geographical characteristics (elevation and distance to ocean), aging (65+), race and ethnicity, and various socioeconomic vulnerabilities.

Results. We found extreme heat (LST in the daytime summer) and air pollution (AOD) can directly increase CVD morbidity. Notably, even though increased building surface area can increase extreme heat, compact development with lower SVF in urban canyons can decrease CVD morbidity directly and indirectly by reducing extreme heat in LA County's urbanized area. Also, building morphology complexity and irregularity can reduce air pollution. In addition, the tree canopy cover can reduce temperature significantly, as well as indirectly reduce CVD morbidity. Surprisingly, the area with lower SVF showed higher tree canopy cover. Also, this result showed that socioeconomic characteristics and race and ethnicity are highly related to the selection of building morphology. In addition, we found clear environmental and climate conditions and CVD morbidity gaps by race and ethnicity, especially between White and Latinx. Through further analysis, we found that the worse environmental conditions (e.g., lower tree canopy cover) and built environment conditions (e.g., higher SVF, lower building height range) faced by

the Latinx population (compared to white populations) are linked with inequities in worse climate conditions (higher extreme heat and air pollution) and CVD morbidity.

Implications. This study provides essential information to stakeholders, policymakers, and planners in terms of the legitimacy and importance of smart growth, building morphology complexity and irregularity, and green infrastructure to mitigate climate risk (extreme heat and air pollution) and CVD morbidity. Also, this study shows that a significant gap in the built environment and environmental conditions by socioeconomic vulnerability and race and ethnicity can lead to climate and health inequity. Therefore, our findings suggest that planners should consider not only green infrastructure but also building morphology in the redevelopment initiatives to mitigate climate health risks and inequity, especially for underserved communities.

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Keywords: Urban Morphology, Cardiovascular Disease, Extreme Heat, Air Pollution, Bayesian networks

URBAN SPATIAL STRUCTURE AND AIR QUALITY IN THE UNITED STATES

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Individual Paper Presentation

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Previous studies on the relationship between urban form and air quality: (1) report mixed results among specific aspects of urban form (e.g., urban expansion, form, or shape) and (2) use primarily cross-sectional approaches with a single year of data. This study takes advantage of a multi-decade, longitudinal approach to investigate the impact of urban spatial structure on population-weighted concentrations of PM2.5 and NO2. Based on fixed-effect regression models for 481 urban areas (UAs) in the United States spanning from 1990 to 2015, we found significant associations between various aspects of urban spatial structure and air quality after controlling for meteorological and socio-economic factors. Our results show that population density, compact urban form, circularity, and green space are associated with lower concentrations. Conversely, higher rates of urban expansion, industrial area, and polycentricity are associated with higher concentrations. For large cities (total population: 180,262,404), we found

that increasing key factors from each category (i.e., greenness, population density, compactness, circularity) by a modest 10% results in 10,387 (12,376) fewer deaths for PM2.5 (NO_2). We recommend that policymakers adopt comprehensive strategies to increase population density, compactness, and green spaces while slowing urban expansion to reduce the health burden of air quality in US cities.

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Keywords: urban sprawl, air pollution, particulate matter, landscape metrics, health impact assessment

URBAN TEXTURE AND HEAT RESILIENCE – MITIGATING EXTREME HEAT IN SEOUL

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Individual Paper Presentation

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As climate change intensifies, cities like Seoul face more frequent summer heatwaves, leading to significant surging energy and water demands and public health challenges. How to achieve better heat resilience becomes a major concern in urban planning and management. Numerous studies have delved into urban form factors and their relationship with urban heat island (UHI) effects. However, a gap exists in examining how UHI effects intensify during heatwaves, a crucial component when considering urban resilience. While some researchers have started exploring the relationship between urban form and heat resilience, their efforts often fall short due to a narrow interpretation of heat resilience or the coarse temporal scope of results, which is often attributed to limited satellite imagery data. This study aims to fill the research gaps by examining the relationship between urban form factors and heat resilience in Seoul in summer 2023, using data from 1,058 official weather stations. The study defines heat resilience by measuring UHI variances between heatwave and typical summer days and the recovery time post extreme heat events. Urban form factors are calculated using GIS, such as building density, tree canopy, impervious surface, and proximity to parks and rivers within a 500 m station radius. To draw meaningful and reliable conclusions, the study employs and compares spatial regression and spatially explicit gradient boosting decision trees models for the two heat resilience indicators. All the models are thoroughly interpreted, examining coefficients and feature significance to understand the impacts of urban form factors. Through partial dependence plots, this study further discusses linear and non-linear relationships between urban form and heat resilience. The findings promise to deepen our understanding of urban form's role in improving heat resilience during peak

summer heatwaves. They will also inform policymaking, steering Seoul and cities alike towards effective strategies to combat urban extreme heat.

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Keywords: Heat resilience, Machine learning, Urban form, Extreme heat

URBAN TREE INVENTORIES, STAKEHOLDER MOBILIZATION, AND PLANNING PROCESSES

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Individual Paper Presentation

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The link between spatial patterns and ecology is one that has kept environmental planners busy as they have sought to balance environmental, social, and economic conflicts (Campbell, 2016). Planners see land, air, and water as critical resources to be protected and managed through spatial planning processes. Similarly, conservation and the protection of biodiversity are seen by planners as actions to be integrated into broader work on spatial patterns (O'Neill et al., 2023). The potential for mutually beneficial engagements between conservation science and planning is highlighted in recent literature: Ecologists, particularly those working in or near urban areas, are increasingly called to prioritize cities, urban residents, community development, and human interests (Turo & Gardiner, 2020). These calls respond to increased awareness of the positive contribution that cities can have when it comes to regional biodiversity. Despite these positive developments, the historical animosity between conservation and development (Redford et al., 2008) has led many conservation organizations to undertake activities without actively engaging with communities or environmental planners. Failure to engage often leads to tense relations between conservation organizations and citizens on one hand, and disjointed actions between these organizations and urban planners.

This manuscript examines efforts by the researcher starting in May 2023 to bring together members of conservation organizations, local and provincial planners, and a group of community scientists to carry out an urban tree inventory. The research sought to pair community scientists and planners with members of conservation organizations to inventory the number, species, size, and health of trees growing in the municipality of Puerto Baquerizo Moreno, Galápagos, Ecuador. The findings can be used by planners and conservationists for risk management and conservation planning purposes, while the collection process creates spaces for conservation organizations to interact with urban planners and community members. This research seeks to understand if activities that bring together community members and conservation organizations, such as a tree inventory, help to improve relations among these actors and if these interactions translate into greater participation by conservation

organizations in broader urban environmental planning. Interviews prior to and after the census allowed me to analyze perceptions of conservationists by planners and community members and vice versa, and to assess the interest of these organizations in becoming more engaged in the planning process. Findings shed light on the diversity of difficulties that emerge when attempting to bring these actors together and the potential of perceived win-win activities, such as tree inventories, to help overcome these challenges.

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Keywords: conservation planning, urban tree inventory, community science, stakeholder mobilization, risk management

USING PARTICIPATORY PHOTOVOICE METHODS TO MAP POST-DISASTER COMMUNITY NEEDS

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Individual Paper Presentation

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The active participation of the community is crucial in strengthening resilience and identifying its needs. Although there is an ever-growing literature on planning for post-disaster recovery and resilience, studies that are designed with the active participation of community members to understand their perceived needs and solutions are still lacking. This is an important gap because disaster recovery is a multifaceted and time-sensitive process that evolves through multiple trajectories. While research has examined some of these aspects individually (such as through survey studies on housing reconstruction or business recovery), few studies conceptualize recovery through the nuanced perspective of disaster-affected communities themselves. Importantly, these studies underemphasize the role of community agency and capacity in the process of recovery. As a consequence of this, research and policy practices that follow from this research may overlook aspects of recovery important to the community itself or fail

to capitalize on recovery efforts of the community itself. PhotoVoice, as an emerging participatory action research methodology, holds the power to generate nuanced knowledge of disaster recovery through a self-empowerment perspective, thus leading to more community-informed recovery actions on ground.

This study utilizes data from a PhotoVoice project conducted in two communities in Puerto Rico, Comerio and Loiza that were significantly impacted by the 2017 hurricanes and subsequent disasters, such as Hurricanes Maria and Irma. The PhotoVoice project was funded by the National Science Foundation (NSF). It utilized an innovative community-based participatory research (CBPR) approach, which involved training of 24 community members through ten sessions on visual techniques and research ethics, capturing photographs in their respective communities, having group discussions on them, and showcasing these photos through community exhibits. There were 56 photographs (28 from each community) selected for the exhibits. These photos portrayed community residents' perceptions and experiences regarding disasters. The research team analyzed the photos, their captions, and narratives which listed community members' recommendations under the four stages of disaster management established by FEMA: Mitigation, Preparedness, Response, and Recovery. In addition, the team conducted an analysis of stakeholders targeted by community members to implement their recommendations specifically: (i) Citizens/Individuals, ii) NGOs/Community Organizations, iii) Government, iv) Businesses, v) Collaborative initiative. The community residents proposed 167 alternatives (84 from Loiza and 83 from Comerio) for the current situation addressing their needs or suggestions for enhancing the resilience of their communities. Most of these alternatives targeted the government, followed by citizens/individuals.

The initial findings from the study revealed that the alternatives proposed by the residents of Comerio and Loiza predominantly focused on mitigation, followed by recovery. The results highlight the communities' emphasis on reducing the impact of disasters and preventing them where feasible. The findings from this study have significant academic and policy implications. This study highlights the effectiveness of utilizing participatory methods such as photovoice to gather and incorporate community viewpoints into research. Finally, the results of this study will provide valuable perspectives for planners and policymakers to effectively allocate resources and prioritize initiatives that are better aligned with communities' perspectives.

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Keywords: disaster, recovery, PhotoVoice, participatory action research, community engagement

WATERSIDE WELLNESS: RDD ANALYSIS OF COVID-19 OPENING-UP ON MENTAL HEALTH

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Individual Paper Presentation

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During the Covid-19 pandemic, it was observed that increased exposure to water-bodies had a positive impact on residents' mental health levels, particularly in densely populated urban areas implementing lockdown measures. However, limited research has explored the effects during the transition from strict lockdown measures to reopening in urban settings and the buffering role of water-bodies within this context. In this study, a Regression Discontinuity Design (RDD) was employed, utilizing a unique dataset (N=2545) from two major Chinese cities, Beijing and Shanghai, to investigate how the conclusion of the "zero-Covid" policy influenced residents' mental health and, crucially, how exposure to water-bodies mitigated any adverse effects on mental health. Additionally, subgroup analyses were conducted to compare how the effects of ending the "zero-Covid" policy on residents' mental health varied based on exposures/accesses to various water-bodies. The findings confirm that the conclusion of the "zero-Covid" policy significantly promotes residents' mental health, as measured by CES-D scores ($p<0.05$). Residents living within 400-800 meters from water-bodies, as opposed to those in closer proximity (within 400 meters), experience mental health benefits. Visual exposure to water-bodies through residential windows significantly enhances mental health (CES-D scores) compared to residences with limited visual exposure. Moreover, compared to those without exposure to high-quality water-bodies, individuals with exposure to high-quality water-bodies significantly elevate their self-assessed happiness during this period. These findings underscore the crucial role of urban water-bodies in buffering the psychological impacts of major policy changes during the Covid-19 pandemic, highlighting their significance in urban planning and public health strategies.

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Keywords: water-bodies, mental health, regression discontinuity design, Covid-19 confinement, Subgroups

WHERE DID THE MODEL FAIL? EXPLORE THE MODEL IN LOS ANGELES COUNTY

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Individual Paper Presentation

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Previous studies have proven that exposure to air pollution can have various short-term and long-term effects on individuals' health, such as respiratory and cardiovascular problems; however, due to the limitations in data collecting techniques, it was hard for previous studies to quantify the exposure. Among the air pollutants, particulate matter (PM) 2.5 and 10, made up of tiny particles and liquid droplets suspended in the air, have raised concerns among researchers and practitioners. Although there are demands of studying the factors on PM concentration, previous studies had to depend on the regional air pollution sensors, which may not precisely represent the actual PM exposure to the individuals.

Recently, low-cost air pollution sensors have become increasingly popular and have been used in research and practical projects due to their affordability and ease of use. To date, studies have utilized data from low-cost air sensors to explore the impact of the built environment and public transit on PM concentrations and predict the concentrations in places without sensors, while few explored the disparities in the model performance.

In response to the demand for street-level air pollution studies and research gaps, this study explores the impacts of the built environment and public transit services on average PM 2.5 concentrations through interpretable machine-learning approaches based on the data from Purple Air. There are two research questions: What are the roles of the built environment and public transit on PM 2.5 and 10 concentrations? Where does the best-fit mode perform the worst? Choosing Los Angeles County as the study area, in the analysis, we first developed a data collection. The dependent variables are the average PM 2.5 concentration in the morning, afternoon, evening, and night. The independent variables are land use variables and transportation variables. The control variables include meteorology factors, such as temperature, wind speed, and wind direction. Based on the final data collection, we tested five machine-learning approaches and identified the best-fit model based on the root-mean-square deviation (RMSE). Then, we utilized an interpretable framework to visualize the model results. Last but not least, we calculated the gap between the actual value and the predicted value of each observation (i.e., sensors) and identified those where the gap is significant. Through exploring the sociodemographic and economic situations of the census block groups where the sensors with significant gaps are, we concluded the disparities in model performance.

In the results, first, the X-gradient boosting decision tree model performed best. Based on this model, we developed four sub-models to explore the impacts of land use and public transit services on PM2.5 concentrations at different times. In addition, we found that the temporal disparities in important predictors affecting PM2.5 concentration are significant. For instance, the findings indicate that the distance to the closest public transit stops, the traffic flow of the nearest street, and the distance to the closest commercial land use can significantly be correlated with high PM2.5 concentrations, and the impacts of traffic flow and public transit reach peak in the afternoon and evening. Also, distance to the closest land use turns out to be an important predictor in the morning and evening, while it is insignificant in other periods. Third, we noted that most of the sensors with significant gaps gathered in the neighborhood with low-income (below the regional average) populations.

These findings could have three implications for the researchers and practitioners. First, the interpretable machine learning framework should be worth using in future studies due to its accuracy. Second, the temporal disparities

are significant, so related improvements, such as increasing humidity near the transit stations during the peak hour, should be on the list of actions. Third, the performance in low-income neighborhoods could be tricky, and there should be more sensors equipped in these neighborhoods to collect extra data.

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Keywords: low-cost sensors, particulate matter, air pollution, machine learning approaches, model performance

WILL THE HEAT WAVE DETERMINE WHERE YOU LIVE?

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Individual Paper Presentation

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The ongoing climate change and climate crisis not only has negative impacts on the environment, such as ecosystem destruction, but also poses threats to sustainable human life, such as economic activities. In addition, reports of excess mortality due to high temperatures have raised the need for research on socioeconomically vulnerable populations (Basu & Samet, 2002; Barreca, 2012, Ying et al., 2017). Previous studies have identified three main vulnerable populations to climate change: infants, the elderly, and outdoor workers (Patz et al., 2000; Diaz et al., 2002).

Therefore, the research questions and purpose of this study are as follows. Does heat waves exacerbate residential segregation as an influencing factor? The purpose of this study is to predict and identify residential segregation by vulnerable groups in Korea in the future , and the study consists of three steps. First, we estimate the population by future heat wave vulnerability. Second, based on the estimated population of vulnerable groups, we predict and identify the residential distribution of vulnerable groups. Third, we derive the spatial separation index of the future heat wave vulnerable population.

The research materials and methods used in this study are described below. The population of vulnerable groups in future heat waves is estimated using SHAP, an explainable artificial intelligence algorithm. SHAP is a type of

explainable artificial intelligence algorithm developed to overcome the black box phenomenon of machine learning. The spatial segregation of the future heat wave vulnerable population is identified by applying the dissimilarity index, theil index, and interaction index to identify the characteristics of equality, exposure, concentration, and clustering based on Massey and Danton's (1988) discussion of residential segregation.

As a result of the study, the number of elderly people in Korea in 2050 is predicted to increase by 40% compared to 2024. We found that the exposure to heat is 20% higher and the proportion of green spaces that can mitigate heat is 30% lower in areas where the elderly live than in other areas, confirming the existence of spatial segregation in heat-prone areas. In contrast to the results for the elderly population, the residence of infants and the working-age population was not associated with heat-prone areas.

This finding of residential segregation in response to heat waves may help explain how vulnerable populations are systematically excluded from accessing urban living benefits and services due to climate change. The findings also suggest that Korea should take measures to mitigate heat waves for the elderly population in the future, and that strategies for the elderly population can help build sustainable and socially inclusive cities.

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Keywords: Climate Crisis, Heat Wave, Future Population Projection, Vulnerable Group, Residential Segregation

ADAPTATION DILEMMA: TO MIGRATE OR ADAPT IN-SITU WHEN BOTH ARE MALADAPTIVE?

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Research-in-Motion (RiM)

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Motivation: The world's deltas are facing a planning dilemma — whether to adapt on-site or migrate out. But in the Indian Sundarban, both options are maladaptive. This is because funder-driven theories of climate adaptation have increased vulnerabilities they aimed to reduce. This is maladaptation, an "[adaptative] action result[ing] in an undesirable and unintended outcome(s)" (Magnan, 2016, p.649). Adaptive actions can become maladaptive during exceptional situations, over time, and across space and social groups. With climate change, exceptional situations like epidemics and floods are becoming common, and with that, the multifold precarity of the Sundarbans archipelago — rising sea levels, salinizing drinking water and soil, recurrent cyclones, and subsequent loss in farming — increase the risk of maladaptation. For the 7.5 million people in Indian and Bangladeshi Sundarbans and 500 million in the world's deltas, it is urgent to understand how adaptive actions become maladaptive, especially in the Global South context.

Problem Statement: When suitable adaptation actions are inaccessible, people rely on their social networks to find and adopt an alternative. Thus, studying the social network of Sundarban's vulnerable people is vital to examine maladaptation on site and in migration. This network includes friends, family, grassroots organizations, government agencies, forest officials, and health workers. Adaptation literature disproportionately focuses on positive relations in social networks to explain adaptation (Offer, 2021). These relations are built on trust, endorsement, and reciprocal exchanges of resources, risk, and information (Adger, 2003). However, there is a dearth of theorization on negative relations built on distrust, opposition, and unilaterally beneficial exchanges resulting in strained or severed relations. Thus, I ask: How do negative relations and their negative outcomes in a network shape maladaptation in the Global South context? How do these relations and outcomes differ in in-situ maladaptation versus maladaptive migration?

Methodology: To address lack of theorization, I am using the grounded theory approach to iteratively identify patterns of negative relations and maladaptation. I am using participant observation and semi-structured interviews to collect data. The interview will involve completing sociograms, a diagram, used to visually mark the relationship between the research participant and various actors in their network. The interview and sociogram together will help us understand how the interviewees learned about various adaptation strategies, gained access to them, and how unavailability and inaccessibility to different strategies may lead to adopting strategies that are maladaptive in the long run.

Findings: The research aims to explore four outcomes: negative and positive outcomes of positive relations and negative relations. From my preliminary research, patterns of negative relationship between fisherfolks and forest officers in Sundarban emerge. The officers exercise undue control over boat licenses required to enter mangrove forests for fishing. The negative outcome of such a relationship is that years of mistrust and power disparity could prevent a collaborative effort for mangrove conservation and improving livelihood security. Similarly, an example of positive outcomes of a positive relationship is finding alternative livelihoods. Since jobs are a scarce resource, finding an alternative livelihood for migrants depends on the willingness of friends and relatives to share this valuable information (Louise, 2023). A negative outcome of a positive relationship is that migrant workers often get

tipped about and accept low-paying jobs in precarious sectors where their friends and relatives work (Louise, 2023?).
Relevance to Planning Scholarship and Practice: By examining how negative relations shape maladaptation in-situ and ex-situ in the Global South context, this research brings a multidisciplinary lens to study migration, adaptation, and network analysis, thereby theoretically advancing these fields. The research will also contribute to understanding maladaptation at the intersection of gender, caste, and indigenous identities. Additionally, the research findings will inform policy decisions about in-situ adaptation and planned relocations, helping the Indian Sundarban and other deltas plan better.

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Key Words: Climate adaptation, Migration, Social networks, Planned relocations, In-situ adaptation

ADVANCING THE NATURE ECONOMY LENS

Abstract ID: 1110.0.0.1167.2024
Research-in-Motion (RiM)

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In this research we are further developing a “nature economy” lens to understand the many connections among the various aspects of nature and the ways that local economies function, with a focus on improving access to nature and fostering social justice and climate resilience. Access to the natural environment is critical for the economic, social and ecological resilience of communities. For example, nature contributes to community and economic development through spaces for outdoor recreation, outdoor seating and dining, by providing cleaner air and shade to mitigate high heat events, by absorbing and storing water to attenuate flooding and drought, by creating jobs, attracting workers and increasing youth retention (Rogers et al., In press). However, natural spaces are not always accessible or inclusive, particularly for vulnerable communities in underserved communities. Investments in the natural environment do not necessarily expand benefits for communities and local economies but, instead, can be accompanied by gentrification and exacerbation of conflicts over natural resource use and growth management, especially when professionals and municipal staff working in economic development and environmental conservation work separately. Transportation, infrastructure, cost, and lack of knowledge are examples of barriers to accessing nature that can be a problem even when people live near healthy, natural spaces

(Crytzer, 2023).

This research builds on qualitative, case study-based engaged scholarship by the Nature Economy Collaborative, a partnership based at the University of New Hampshire involving state and local collaborators, which explores the economic benefits of natural assets and efforts to sustainably leverage natural resources for positive economic impact. Existing case studies have focused on how the City of Rochester, New Hampshire is integrating nature access into community recreation and economic development, economic valuation studies to understand residents' willing to pay to mitigate PFAS contamination, and how outdoor recreation career pathway programs can best serve youth and workforce development (Rogers et al., In press). In this next research direction, we integrate existing frameworks for analyzing natural resource and environmental conservation (e.g., the IAD framework (Schlager and Villamayor-Tomas, 2023), community and economic development (French, 2022), and just climate adaptation (Malloy & Ashcraft, 2020). Through qualitative and narrative case studies in New Hampshire we aim to better develop the nature economy as a research framework and set of community action tools for shaping policy and planning.

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Key Words: Nature economy, Community and economic development, Just climate adaptation, Natural resource and environmental conservation, Environmental policy and planning

AN ENVIRONMENTALLY JUST GOVERNANCE OF INFORMAL SETTLEMENTS IN BRAZIL

Abstract ID: 1110.0.0.726.2024
Research-in-Motion (RiM)

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In São Paulo, Brazil, many of its nearly 12 million people live in informal settlements (i.e. slums) located in areas at risk of floods or landslides. Living in slums in environmentally risky sites doubly victimizes these residents; they are victims of environmental risks and are threatened with forced displacement by policies seeking to improve their safety and protect the environment. This creates a well-publicized conflict between two essential human rights; the right to housing and a clean environment (Maricato, 2003). Although research about the conflict between housing and the environment in the Global South has shown the state as a key actor in producing and reproducing

injustices, mainly through informality (Roy, 2016), planners need to consider other actors. Planners can move away from understanding the state as a coherent actor by using the concept of governance – referring to the networks between separate state and non-state actors (Haid & Hilbrandt, 2019). This way, also understand the specific policy and governance mechanisms that create and maintain environmental injustices.

This research focuses on São Paulo as a quintessential example of a Global South city where informal housing conflicts with the environment. It aims to identify the multiple actors involved in creating and maintaining this conflict and identify possible solutions by exploring the history of informal occupation and urban policies in the city. Environmental Justice (EJ) theories pose that minorities and marginalized groups across the world are disproportionately impacted by environmental issues, and suggest that these injustices are historically (re)produced through policies and governance practices involving state and non-state actors (Corburn, 2017). Insurgent citizenship theories refer to the practices through which informal dwellers contest their exclusion from the city (Holston, 2009). By bringing together these frameworks and the concept of governance, this research moves away from narrow explanations claiming that informal settlements are located in areas of environmental risk only because of neglect from governments. This way, this research asks: How does governance introduce conflicts between the right to housing and a clean environment in cities with a high concentration of informal settlements? How can planning reconcile the tradeoffs between citizens' right to housing and the maintenance of healthy urban environments?

To understand how trade-offs between informal settlements and environmental protection were historically resolved, content analysis is used to analyze urban policies since the 1960s – when informal settlements became common in São Paulo – and news articles discussing the informal occupation and environmental risks in the city. Semi-structured interviews with actors involved in environmental protection and those involved in informal settlement governance, such as city staff, public prosecutors, NGO staff, and social movement leaders, help the understanding of how approaches to environmental protection engage with and address the issue of the right to housing, the practical challenges involved, and the outcomes of recent efforts. Visits to informal settlements and conversations with residents also help to understand their experiences of injustices and how these are being addressed through new planning interventions. Taken together, the policy reviews, interviews, and field visits will help assess how environmental injustices have been addressed over time (or not) and how approaches to environmental protection and the right to housing have evolved, even in contradictory ways.

Emerging approaches to environmental protection and climate adaptation often ignore informal citizens' relationships to their housing and environment in the city, reproducing previous inequalities. The approach taken here encourages a more nuanced understanding of how environmental injustices are (re)produced, contributing to advancing EJ research. In a practical sense, understanding how the different actors and specific policies interact to reproduce spatial injustices will help identify target areas for future policy and points to improve in current policies.

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Key Words: informal housing, environmental justice, governance, policy analysis, disasters

CLIMATE CHANGE RESILIENT DEVELOPMENT: HOW TO INTEGRATE NATURAL FEATURES

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Research-in-Motion (RiM)

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For municipalities to balance their plans of developing sustainably with the need for housing, they are increasingly encouraging increased density and intensification to reduce urban sprawl and mitigate greenhouse gas (GHG) emissions. As a result, many city governments are concerned with balancing natural features, like trees and wetlands, with the demand for built up infrastructure, like housing. Maintaining and restoring these natural features in urban areas is critical to not only prevent the loss of valuable carbon stocks, but also to improve urban sustainability by helping cities adapt to a changing climate (McGovern & Pasher, 2016). However, a general inflexibility in governance combined with the relative invisibility of the benefits that natural features provide often results in creating incentives to convert these ecosystems into built infrastructure (Kabisch et al., 2016). Due to the widespread reliance on private industry for development, the choices of private land developers will play a significant role in shaping the structure of new residential developments (Göçmen, 2014). Creating incentives for developers to include more natural features in their site plans could have a significant impact on helping cities reach their goals of mitigating and adapting to climate change (Kabisch et al., 2016). Some developers have already expressed a desire to be able to assess the carbon storage potential of natural features so they can get appropriate credit for mitigating GHG emissions in the growing carbon market (Girardin et al., 2021). It is therefore critical to understand how emerging tools which assess the climate change benefits of natural features can be effectively designed and implemented to make them appealing to key stakeholders and facilitate their integration in the residential development planning process.

Through qualitative coding of interviews with municipal planners and private land developers across Ontario, Canada, our research demonstrates how these stakeholders foresee themselves using these types of tools and what they perceive the essential characteristics of these tools to be. Furthermore, the interviews informed the perceived barriers to using tools that quantify the role of natural features in combatting climate change in residential development, and what is perceived to help circumvent those barriers. This study informs researchers and practitioners how they can develop and implement tools to assess the benefits of natural features and how that information is likely to be incorporated into decision making during the planning process. By helping inform the development of acceptable tools or policies that incentivize private developers to incorporate natural features into residential development, this research can help communities reach their goals of mitigating climate change and adapting to its consequences.

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Key Words: Climate Change, Natural Features, Environmental Planning, Residential Development

CLUSTERING PARKS BASED ON THE MANAGEMENT PRACTICE: A CASE STUDY OF SEOUL

Abstract ID: 1110.0.0.712.2024
Research-in-Motion (RiM)

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Urban parks are essential for sustaining healthy and lively environment for citizens. While it is imperative to procure parks in good quality and quantity, it is equally important to maintain those spaces. Neglecting park maintenance can lead to poor vegetation growth and safety hazards. For example, failure of tree branches and trunks can pose dangers to pedestrians, even resulting in fatalities (Cavalari et al., 2024). This neglect may decrease park visitation over time.

Managing parks is the responsibility of the district office, and the level of maintenance varies depending on the allocated budget. Therefore, evaluating the current state of park management, typically conducted through field surveys, is crucial. However, due to budget and time constraints, experts cannot directly assess all trees and find which parks should be managed. Thus, developing remote sensing techniques to identify parks requiring management is crucial.

Parks are complex environments that feature a range of amenities, species of trees, and other unique characteristics. Effective evaluation of the management status of these spaces requires adaptive strategies that consider the specific features of each element. Therefore, clustering parks based on feature characteristics can significantly boost efficiency. Numerous studies have undertaken the task of clustering parks by analyzing both internal and external factors, commonly, including park size, area of green space, proximity to urban centers, and available amenities (Brown et al., 2018; Nor & Abdullah, 2019).

Unlike such static factors, plants including trees and ground covers constantly change over time and seasons. Some species, such as eucalyptus and platanus, grow faster than others (Xu et al., 2024). However, studies clustering parks based on the temporal changes of trees have not been frequently conducted. Clustering parks with similar arboreal change patterns could significantly improve the management efficiency of trees within these spaces. For instance, maintenance practices like pruning and replanting play a vital role in preserving the visual appeal and safety of urban parks. Therefore, it's essential to cluster parks with a particular emphasis on tree management practices and determine the timing of the latest maintenance activities for each park.

For such purpose, Normalized Difference Vegetation Index (NDVI), extracted from satellite images is a widely used indicator of vegetation vigor. Although it has been studied for identifying tree species and monitoring vegetation over large areas, its potential for park management has not been explored (Hwang et al., 2022; Xu et al., 2024). NDVI within parks demonstrates annual cyclic patterns and long-term trends over time corresponding to tree growth. Thus, analyzing NDVI time series enables us to understand seasonal changes, yearly periodicity, and average NDVI over 10 years or more.

Against this backdrop, this study aims to cluster parks for the purpose of park management. By utilizing Landsat satellite imagery, we conduct time-series clustering of NDVI trajectory, considering seasonal changes and trends, for park clustering. We can then identify the dominant tree species of parks (deciduous versus evergreen) and the average tree density, both of which are crucial factors affecting management practices and the level of care needed. Additionally, detecting turning points in NDVI trends may signal tree management activities, such as pruning, which result in a temporary decline in NDVI. The study site is Seoul, which contains the highest number of neighborhood parks in South Korea. We utilize the neighborhood parks established before 2014 and conduct time-series clustering from 2014 to 2023.

The findings from this investigation will assist in systematically clustering parks to enhance the efficiency of tree management and identify parks that require intervention due to extended neglect. Ultimately, this contributes to the creation of safer, more enjoyable park spaces that fulfill their intended roles for the community.

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Key Words: Urban Park Management, Urban Parks Clustering, Time-series Remote Sensing, NDVI, Sustainable Cities

COMMUNITY DECISION MAKING IN AN EXTREME CHESAPEAKE BAY COASTAL ENVIRONMENT

Abstract ID: 1110.0.0.1174.2024
Research-in-Motion (RiM)

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This Research in Motion (RiM) presentation considers how the Town of Tangier, Virginia as a small island community in the Chesapeake Bay manages change when facing extreme environmental pressures. As the last

inhabited island in Virginia's portion of the bay, the residents of the isolated community still maintain the original Cornish English dialect of the 17th century settlers. The island's historic working landscape of watermen, or sole proprietors catching fish, mollusks, and crabs, are economically dependent on the surrounding natural environment and the bounty of the bay (Lewis and Packwood 2023). However, the island faces climate change's increased impacts of sea level rise and storm intensity which are leading to greater wave action and coastal erosion. According to the U.S. Army Corps of Engineers, between 1850 and 2015 the island has lost more than 66 percent of its land area (Schulte, Dridge, and Hudgins 2015). Tangier once had more than 1,200 residents, however its population is plummeting and now is less than 300. Considering how the town is facing such extreme impacts of climate change, the state-mandated Comprehensive Plan was only last updated two decades ago due to limited local capacity and resources. Currently, planning knowledge is nascent about how local governments with limited capacity and resources engage their constituents and make regulatory planning decisions when confronting extreme environmental impacts, including accelerated climate change. A better understanding in planning scholarship is needed of how local jurisdictions make coastal planning decisions. This is important due to nearly forty percent of the United States' population living in coastal counties according to the United States 2020 Decennial Census (excluding Alaska). Because of this, the RiM project is working to fill the knowledge gap by recognizing the long environmental history of the island, participating in local comprehensive plan making, and considering necessary systems change for the island's survival or managed retreat. The presentation will focus on the project's research methods and researcher positionality due to Tangier's context. For the plan making methods, Participatory Action Research (Kemmis and McTaggart 2005) is being used to assist the town to update its Comprehensive Plan. And local government coding methods by Milz (2018) are revealing the town's decision-making processes regarding key planning strategies, including climate adaptation, community engagement, land use, emergency preparedness, and resiliency. Considering the project context, the researcher's positionality is especially important due to bringing necessary expertise to the jurisdiction and facilitating the plan making process. The RiM presentation will consider the values and ethics needing to be weighed by the planner (Brooks 2002) in comparison to the residents' rejecting the term climate change yet acknowledging the significant erosion happening and other contributing environmental factors. These important considerations factor into resident views, and eventually local government decisions, of whether to adapt or retreat. Findings of the research most relevant to planning scholarship inform community engagement approaches and planners' roles for environmental justice and systems change in low-capacity coastal contexts.

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Key Words: climate change, local government, coastal adaptation, participatory action research, environmental justice

COMPARING PARTICIPATORY COMMUNITY RELOCATION IN POST-HAIYAN REBUILDING

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Research-in-Motion (RiM)

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In post-disaster settings, participation is considered critical to foster better information flows, novel ideas, and a sense of ownership (Hamideh, 2020). Studies find the same with relocating communities after sudden- and on-set disasters; however, research examining how participation works in governance on community relocation – a complex network of stakeholders engaging themselves into the goals of the governmental relocation program through knowledge production (Rogers and Wilmsen, 2020) – is limited, thereby highlighting the importance of examining actual cases on the ground (Ngulube et al., 2024). Because there is as-yet limited understanding about governance, institutional mechanisms and planning procedures to relocate communities successfully by involving members of the community (Bronen, 2015), exploring and cross-comparing post-disaster relocation projects that aim for a participatory process will make an important scholarly and practical contribution to the field of post-disaster planning.

This paper tracks the 10-year process of residents' participation and involvement at three NGO-led relocation sites in Tacloban City of the Philippines after Typhoon Haiyan in 2013. Out of 30 relocation projects that have evolved in the city over the years, NGOs have led seven of them, and the three sites included in this study are particularly renowned for aiming at inclusive processes. The number of relocating households was also significantly large for the selected sites, varying from 400 to 880 (Tacloban City, 2024). This research, through site observation, aims to capture 1) variations of governance for participatory relocation, 2) timelines resulting from different governance, and 3) residents' satisfaction of living in the new sites by measuring recovery levels. Ultimately, the research intends to understand how different participatory processes create distinctive timelines and foster unique outcomes. Other important factors impacting the residents' satisfaction level will also be documented.

The research is part of a study that has been tracking community relocation longitudinally since 2014. For this paper, the central analysis uses interview data collected during 10 days of fieldwork in 2024. It included interviews with community leaders who have overseen site developments as well as residents who participated in relocation. Four group interviews took place with community representatives – one each for three sites and one for former community chairpersons – and a total of 42 interviews with residents in the three relocation sites. Questions covered overall site development processes, relocation paths, participation in relocation, and residents' satisfaction levels post-relocation. Information and understanding gained from relocation projects over the past ten years supplement in-depth site descriptions and interview interpretations.

Initial findings suggest that the ways in which participation is defined vary, ranging from participation in construction work and construction management at relocation sites to simply attending various community development trainings. Each site had a different timeline for resident participation, speed of site development, and level of resident engagement due to different leadership and site specifications. Residents with direct involvement

and longer hours of engagement in site development fostered a greater sense of ownership, while residents with lower levels of involvement and shorter hours of mobilization resulted in residents with lower levels of expectations. However, the level of engagement during site development did not ensure the level of resident satisfaction post-relocation; rather, satisfaction level depended on whether the dynamics of the stakeholders' making decisions about resettlement sites – in other words, the governance – were sustained. This was evident from one of the sites that was considered successful with high community participation prior to relocation; it turned out to be the least satisfactory site, discouraging residents from proactively participating in community activities in the long term. The finding suggests that inconsistencies in governance leave residents feeling unsatisfied at the end of relocation despite the amount of time invested in site development.

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Key Words: Post-disaster relocation, Participatory process, Level of satisfaction, NGOs, Typhoon Haiyan

CULTURAL STEWARDSHIP FOR RESILIENCE IN AN ERA OF RAPID ENVIRONMENTAL CHANGE

Abstract ID: 1110.0.0.669.2024
Research-in-Motion (RiM)

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Cultural stewards and culture bearers actively work to preserve and adapt cultural practices and lifeways along with tangible heritage and landscapes in the face of climate and other community change (Rushfield, 2021). Residents recognize multiple and intersecting forces alongside climate impacts that have shaped their communities through time, and these histories determine adaptation action and resiliency (Knapp et al, 2020: Nelson et al 2020). In the United States, resources are being deployed to facilitate energy transition, make communities more resilient to extreme weather, slow climate-related change, as well as to reflect changing demographics. Although these

initiatives emphasize the need to pursue equity (i.e. Justice40 Initiative), and documents often mention the need to respect and preserve cultural diversity (i.e. Department of Interior's Climate Action Plan), much climate planning fails to address culture and cultural practices (Rumbach et al, 2020). Meanwhile, formal cultural planning often fails to align with residents' lifeways and priorities despite the ways these practices can enhance well-being and resilience (Birch, Nelson and Ehrenfeucht, 2024). In some circumstances, policy and programs create barriers for community cultural stewards who are facilitating change in ways that reflects their values and histories (Nelson et al, 2020).

This project addresses two questions. How are community-based cultural stewards adapting and preserving community cultures at the confluence of environmental and economic change? How do community-based cultural stewards interact with formal institutions in these processes (such as governmental agencies, planning processes, plans, and policy)? The presentation draws on 20 semi structured interviews with cultural resource stewards in New Mexico, Texas and Louisiana alongside an analysis of co-stewardship and power sharing for cultural resources in planning documents. Our preliminary findings suggest that cultural stewards engage in a range of actions to preserve and adapt meaningful tangible and intangible heritage while plans include little or vague commitment to co-stewardship even when cultural resource management is a priority. Fundamental assumptions about property and land tenure, and policies and programs that fail to recognize local knowledge, informal land and water-based ties, livelihoods and cultural practices, create barriers for cultural stewards who cannot access resources needed to assist in resilient transitions.

This study contributes to both planning theory and practice. Because cultures are nuanced and specific, extending far beyond the few tangible resources and landscapes formally protected by governmental agencies, this project uses a grounded theory approach to envision local cultural management and adaptation as communities face rapid change that includes migration and place-based environmental and cultural shifts. This is occurring at a moment when agencies at different scales—from local governments to the federal Departments of the Interior and Agriculture—are developing pathways for co-stewardship for both culturally respectful and pragmatic reasons. This project explores grassroots cultural adaptation in conjunction with analysis of planning and policy documents to better align what cultural stewards need to meet their and public objectives and highlight innovation and potential in collaborative policy and program development.

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Key Words: climate planning, cutlural resource management, grassroots action, co-stewardship

DISAGGREGATED LANDSCAPE REVEALS HETEROGENEOUS LEGACIES OF REDLINING IN HEAT

Abstract ID: April 8th 2024, 7:31 pm

Research-in-Motion (RiM)

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Uneven urban temperature highlights the role of landscape attributes for better climate equity. Heterogeneity in urban landscapes can significantly affect land surface temperature variation. Therefore, social drivers that contribute to landscape heterogeneity should be considered when analyzing disparities in urban heat exposure. In this study, historical redlining is considered a major social driver that still influences the contemporary landscape of US cities. However, although redlining contributes to the overall heterogeneity of the landscape within a city, it does not sufficiently account for surface variation within the Home Owners' Loan Corporation (HOLC) redlining grade. To capture historical HOLC impacts and contemporary landscape features, I additionally use two raster land cover datasets at different resolutions: Landsat-based National Land Cover Database (NLCD) 2019 and Sentinel-based WorldCover 2020. By using these datasets and HOLC grades, I explore the influence of landscape heterogeneity on tree canopy cooling to highlight the significance of considering disaggregated landscape information in developing more equitable heat mitigation strategies.

This research assumes that the influence of redlining policies persists in shaping contemporary urban landscapes but that redlining alone cannot sufficiently account for the observed variations within these landscapes. Based on the assumption, I set three research hypotheses: (1) Disaggregated landscape heterogeneity reveals a more systematically structured pattern in land surface temperature, (2) Disaggregated landscape heterogeneity produces a statistically better model estimating canopy cooling effects, and (3) Disaggregated landscape heterogeneity unveils variance in canopy cooling effects. I select three major Northeast region US cities for this study: Boston, Massachusetts; New York, New York; and Philadelphia, Pennsylvania. The analytical units are grid cells (30 m × 30 m) from Landsat-based data, and only grid cells classified as one of four developed land cover classes in NLCD 2019 and intersected with the HOLC-graded neighborhoods are used in this study. I first create three HOLC-based groups to reflect historical redlining information and contemporary urban landscape features captured at different resolutions, each associated with temperature levels: HOLC group consisting of four classes, Landsat–HOLC group of 16 classes, and Sentinel–HOLC group of 20 classes. Then, I use boxplots to explore the distribution of land surface temperature based on HOLC-based groups. Finally, I develop three mixed-effects models for each city using HOLC-based groups as a group factor.

The boxplots show that all three cities demonstrate a consistent pattern of rising land surface temperatures as the HOLC grade changes from "A" to "D," but the hidden patterns are revealed by breaking down HOLC grades according to degrees of development. In the statistical models, mixed-effects models that consider more detailed landscape information are statistically better. In addition, these models show heterogeneous canopy cooling magnitudes. Overall, the findings of this study support three research hypotheses and indicate the benefits of disaggregating the impacts of redlining in understanding unequal heat exposure. Urban planners and city governments should consider the more comprehensive micro-level landscape features for better climate equity.

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Key Words: Redlining, Landscape heterogeneity, Tree canopy cooling, Climate equity

DO REMOTE WORKERS LESSEN THEIR CARBON FOOTPRINT WHEN THEY MOVE?

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Research-in-Motion (RiM)

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Remote work has an ambiguous relationship to household greenhouse gas emissions and can undermine cities' sustainability targets. The reduction in car-related emissions from commuting less often can be offset by other types of driving and more intensive home energy use (Wu et al., 2024). Remote work has also decoupled residential and work locations, allowing many to move farther from their place of work and to commute much longer distances when they do commute (Akan et al., 2024). Both phenomena – increased home-based energy use and living farther from urban centers – reinforced trends toward greater long-distance commuting and exurban growth that work against achieving more efficient cities and meeting greenhouse gas emissions reduction targets set under the 2015 Paris Agreement (Goldstein, 2020).

This project uses a nationally representative survey to examine how neighborhood, housing, and transportation changes are associated with household-level emissions among people who moved and work under different regimes (full-time remote to full-time in-person). Existing research on migration linked to remote working has found clear aggregate patterns that show people moving from city centers to suburbs and exurbs (usually of the same metropolitan area) (Ramani & Bloom, 2021), and we know that the people able to work remotely are far more likely to be higher wage workers with college degrees (Dingel & Neiman, 2020). However, it is unclear how much people have changed their lifestyles entirely. Moving is expensive. Transit-dependent people and renters generally have the lowest carbon footprint and are unlikely to be the main drivers of migration. Through this research, we can more closely compare people's living arrangements before and after switching to remote work and better understand who is driving emissions changes.

The survey includes over 2200 respondents. IPSOS, a market research firm, administered the survey using their proprietary KnowledgePanel, a pre-selected panel of respondents that is weighted to be nationally representative. Respondents were selected to ensure proportional representation of people along two dimensions: moved or not and worked remotely or not. This selection criterion was implemented to study the joint effect of moving and working remotely. We examine changes in housing, location, and car use to ascertain if people who can work remotely significantly alter their carbon footprint. Each respondent reported their ZIP Code of residence in March 2020 and at the time of the survey in September 2023, where they worked, the size of their home, and the kind of car they drove most often. We link the survey data to the EPA Fuel Economy database to estimate transportation-related emissions and the database Goldstein et al. (2020) created to estimate residential emissions based on the ZIP Code of residence and housing type. We expand on the survey results using the American Community Survey Public Use Microdata Series to generalize the patterns we observe and provide a better sense of the magnitude of the changes in emissions linked to remote work.

This research assesses the conditions under which emissions are reduced and the extent to which, in the aggregate, the trends in remote work are working in favor or against cities' efforts to cut their emissions. We provide a novel approach that leverages individual-level data tailored to study people's decisions under a fundamentally different relationship to work locations. Results will shed light on how cities can incentivize the benefits of a remote workforce and mitigate the downsides.

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Key Words: Remote work, Environmental impact, Migration, Household GHG emissions

ENVIRONMENTAL JUSTICE IN THE LENS OF PUBLIC SCHOOLS

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Research-in-Motion (RiM)

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Public schools have long been a central issue for planners and policy makers, drawing attention to their educational and social benefits for children, families, and communities (Downes & Zabel, 2002; Neal & Watling Neal, 2012). Extensive research on environmental health and justice has scrutinized public schools' siting, building conditions,

maintenance, funding, and surrounding environment (Cohen, 2010; Sampson, 2012). While most research has been devoted to studying the environmental hazards affecting schools—such as their proximity to freeways, presence on contaminated lands, and the condition of their air conditioning systems—the environmental footprint of public schools themselves tends to be overlooked. This includes their role in exacerbating traffic congestion, air and noise pollution, resource consumption, and carbon emissions. This oversight of the dual role of public schools bears significant consequences for community-level environmental planning.

Aiming to shed light on this understudied area, this research delves into the environmental justice (EJ) implications of public schools, exploring both the advantages and challenges they present. Through a comprehensive review of interdisciplinary literature and empirical analysis (e.g., through surveys and housing prices), the study uncovers community preferences regarding school siting, reflecting a nuanced understanding of their dual impact. It also examines innovative approaches that enhance the positive contributions of schools to their communities while mitigating adverse effects.

Numerically, the study further seeks to underscore how examining public schools can enhance our understanding of EJ in nearby communities and elevate overall awareness. The lack of community-level environmental data often poses a significant barrier to thorough EJ assessments. Meanwhile, public schools, which often collect environmental data as a regulatory requirement, offer a valuable resource for higher quality, more regular data than what may be typically available at the community level. We demonstrate this potential in an empirical investigation of Chicago neighborhoods, highlighting the disparity in lead pollution data availability and the mandatory testing in schools as stipulated by Illinois SB 0550 (2017). By linking school-level data with local community characteristics and other environmental indicators, the research expands upon existing EJ studies in Chicago neighborhoods and discusses the value and potential applicability of extending this approach in EJ analysis.

Ultimately, the study not only examines health and student performance impacts but also aims to articulate the important role of public schools in fostering community development, enhancing a sense of belonging, and improving the overall quality of life. It presents public schools as sources of both positive and negative outcomes, discussing planning implications, potential strategies, and overlooked opportunities for harmonizing the educational landscape with environmental justice objectives.

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Key Words: Environmental Justice, Public Schools, Data Analysis, Environmental Impact, Community Planning

ESTIMATING FINE PM DEPOSITION TO URBAN TREES WITH I-TREE AND FIELD DATA

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Research-in-Motion (RiM)

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Digital technologies are increasingly used in cities worldwide to monitor, plan, and manage urban trees and forests for improved environmental and community well-being (Nitosklawski et al. 2019). For example, urban forest assessment and valuation tools quantify the ecological structure (e.g., tree canopy), function (e.g., air pollution removal), and economic value (i.e., dollars saved) of urban forests. Designed to aid land managers and the public in estimating urban forest ecosystem services, i-Tree is perhaps the most well-known and widely applied set of assessment and valuation tools. Yet surprisingly few studies evaluate i-Tree model estimates of ecosystem functions (Lin et al. 2019) despite use of these data for prioritizing tree planting locations and targeting future potential investments (Kroeger et al. 2018).

Our research asks: How do modeled estimates of fine particulate matter (PM2.5) deposition derived from i-Tree, a widely used coarse-scale urban forest model, compare to field measurements of PM2.5 at the census block group scale? To answer this question, we measured PM2.5 deposition to 240 trees total in Salt Lake City, Utah, Eugene, Oregon, and Cleveland, Ohio, in May and August 2024. Social vulnerability index and road density data were used to stratify the urban landscapes. Using urban forest inventory and other tree location data, 80 trees were selected randomly for sampling in each city. Abundant and frequent tree species in U.S. urban forests were chosen given their representativeness of the urban canopy layer. In the field, leaves were clipped from 3-5 m above ground in each cardinal direction, composited, and then transported to the lab where particulate matter was determined using a leaf washing method followed by gravimetric analysis. Leaves were washed with ultrapure water to remove particulate matter and air-dried to press and analyze for leaf area. Rinse water was filtered sequentially through two filters—first through a 2.7-µm filter and then through a 0.2-µm filter—to isolate the PM2.5 fraction (here defined as 0.2-2.7 µm). Pre-weighed filters were conditioned and weighed on a microbalance. We also modeled PM2.5 deposition using i-Tree Landscape, which derives PM2.5 from i-Tree Eco (Nowak et al. 2014). In this Research-in-Motion talk, we compare our modeled and measured estimates of PM2.5 deposition to urban trees (similar to Pace et al. 2021) for each city and for all cities combined at census block group and city scales.

New applications within existing urban forest assessment and valuation tools, such as i-Tree, seek to address inequities in access to urban trees and their benefits. While these technological developments are encouraging, most digital tools model urban tree benefits at coarse spatial scales (e.g., city) that are mismatched with the localized scales (e.g., city block) at which racial and ethnic disparities in air pollution occur. In other words, urban forest assessment and valuation tools and the planting prioritizations generated by these tools may not adequately address equity concerns due to the scale mismatch between the tools and human lived experiences. Our comparison of i-Tree and PM2.5 deposition will inform how spatial scale and approach influence benefits

estimations. Future research will investigate the downstream impacts of such differences on planting prioritizations and distributional outcomes, providing a guide for i-Tree model improvements.

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Key Words: air quality, digital tools, green infrastructure, spatial prioritization, urban forest

FILLING FOR THE FUTURE: GOVERNANCE OF SEDIMENT IN SAN FRANCISCO BAY

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Research-in-Motion (RiM)

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San Francisco Bay is the largest estuary on the United States West Coast and contains 59,000 acres of tidal wetlands around which 7.7 million people live across 7,000 square miles of land. The Bay's coastal dynamics have been greatly altered by urban development, with an estimated 90 percent of tidal wetlands destroyed or seriously degraded. Numerous stakeholders involved in a complex governance structure are working toward a goal of restoring the Bay's natural ecosystems, efforts made more urgent and complicated with projected future sea level rise.

Habitat restoration was traditionally oriented toward the past, with a goal of recreating historic ecologies, but increasingly has been viewed as 'futuristic' restoration that aims to make habitats resilient in the face of a changing climate (Choi, 2007). In urban coastal environments like San Francisco Bay, restoration projects are increasingly called upon to function as natural habitats while also serving as "nature based solutions" for climate change adaptation and as a substitute for traditional 'gray' infrastructure, providing services such as flood protection, wave dissipation, and water filtration.

In practice, orienting restoration toward a dynamic future requires changes in resource use and governance. Coastal managers in the Bay Area envision a need to use large amounts of sediment to maintain coastal ecosystems with sea level rise. They anticipate a "long-term mass imbalance of regional sediment" (Dusterhoff et al., 2021; p.

112) that requires identifying new sediment sources and mobilizing increasing amounts of dredged sediment, waste sediment, and debris for use in creating and maintaining elevation of coastal wetlands. This suggests a view of the urban coastline that involves continuous cycles of replenishment and rebuilding, creating new urban industrial-natural ecologies in which securing an increasing local sediment supply and metabolism is critical management and policy focus for cities facing sea level rise.

Given past histories of filling wetlands to create land for urban development, current federal, state, and local regulations strictly limit the placement of sediment as fill along shoreline. In keeping with an interventionist and reparative vision of restoration, groups promoting Bay restoration have identified environmental regulations as one of the key obstacles to a resilient future (Goodrich et al., 2023), and increasingly characterize permitting processes as obstructive 'green tape.' to alter policies to streamline permitting, allow 'beneficial' uses of fill, loosen standards for sediment quality, and allow projects that use 'nontraditional resources' such as construction debris in climate adaptation projects. These changes have been the subject of debate among planning and coastal management institutions (Pinto et al., 2018).

This research examines the governance and discursive implications of this shift in sediment management, focusing on decision-making processes and regulations around the use of fill for nature-based solutions in San Francisco Bay. It draws on field site observations, document analysis, and interviews with coastal stakeholders. I focus on recent proposed and implemented regulatory changes, as well as decision-making processes around specific projects requiring fill, particularly 'horizontal levees,' a type of constructed wetland used for water quality improvement and flood protection. I discuss the implications of this empirical study for broader conceptions of ecological restoration, which has been critiqued by social sciences as an example of neoliberal 'accumulation by restoration' but also may function as a 'world-making practice' and a generative political and social tool for creating new social-environmental futures (Usher, 2023).

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Key Words: governance, adaptation, coastal, urban, restoration

FOSTERING GREEN BUILDING: THE CASE OF THE TORONTO GREEN STANDARD

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Research-in-Motion (RiM)

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While the state of our natural environment has been a concern for over a century, growing signs of the disastrous impact of human activity on climate, natural resources, biodiversity, and other ecological systems have intensified public-sector efforts to promote more sustainable development. Globally, the United Nations 2030 Agenda for Sustainable Development, adopted by world leaders in 2015, set goals and targets to protect the planet from degradation so that it can support the needs of the present and future generations. A UN Goal of particular interest to urban planners and policymakers is Goal 11, which calls for making cities and human settlements inclusive, safe, resilient and sustainable (United Nations 2015, 2021). While most of my past research has focused on where human settlements are built (i.e., brownfields), I have been increasingly interested in exploring what is being built and how we can get developers to build more sustainably. Indeed, buildings and the building construction sector are responsible for over one-third of total global final energy consumption and energy-related CO2 emissions, in addition to their extensive use of land and natural resources and production of waste (UN Environment Program, 2021, p 29). Moreover, the demand for buildings continues to grow worldwide, with the floor area of the global building sector projected to double by 2060.
One vital tool that has emerged internationally to enable investments in developing sustainable and more efficient green buildings has been mandatory and voluntary green building (GB) and building energy performance measures, codes, and rating systems. Toronto was an early adopter, launching the Toronto Green Standard (TGS) in 2009. The TGS is a two-tier set of environmental performance measures comprised of five performance measure categories: (1) Air Quality; (2) Building Energy, Emissions and Resilience; (3) Water Quality and Efficiency; (4) Ecology and Biodiversity; and (5) Waste and The Circular Economy. Tier 1 of the TGS is mandatory for all new development applications in Toronto, while Tier 2 is a higher voluntary performance level incentivized through refunding fees charged to development. A more stringent TGS Version 2 came into effect in 2014, Version 3 in May 2018, and Version 4 in May 2022.

This presentation is based on research that:
• Examines the history and evolution of the TGS to understand better its alignment with public GB policy and municipal building code policy and research;
• Tracks the scale, character, and location of building development incorporating the TGS since the program's inception and investigates the green performance measures being adopted and rejected; and
• Lays the foundation for future research on the TGS, specifically, and public GB policy, codes, and programs generally, with particular attention to the experience of private developers and consumers, as well as policy, funding, and other measures to enhance their engagement.

Information for this project was gathered via the review of government documents, interviews with policymakers, staff, and others involved in developing and implementing the TGS, and the compilation and analysis of data on building projects involving the TGS submitted as part of the development Site Plan Application for planning approval from 2013 to 2022. As of the writing of this abstract, the dataset with information from over 1000 development projects that have incorporated the TGS is being analyzed. The results of this study will provide important information to scholars, policymakers, developers, and other stakeholders about the scale, character,

and location of buildings incorporating the TGS and the kinds of green features being adopted and rejected by developers.

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Key Words: green building, development, municipal, policy, rating systems

FROM ECOSYSTEM SERVICES TO NATURE-BASED SOLUTIONS: A COMPARATIVE ANALYSIS

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Research-in-Motion (RiM)

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Literature shows a notable rise in the number of green concepts that address the escalating environmental and societal challenges. Ecosystem services, green infrastructure, and nature-based solutions are among the more popular concepts adopted to tackle the issues. While sparking a significant wave of interest across various disciplines, the coining of new concepts has occasioned skepticism. This paper aims to dissect and clarify these concepts by referring to bibliographic data and authoritative definitions provided by respected entities like the United Nations, the European Commission, and the International Union for Conservation of Nature.
The central motive behind this research is to see if the concept of nature-based solutions improves the previous concepts of ecosystem services and green infrastructure or it is merely a rebranding. That is to ask, do these concepts offer unique perspectives to our collective understanding of environmental stewardship? Or are they repackaging the previous concepts? By delving into the boundaries and the notions included in the definitions provided and tracking the records on the Scopus database, this study undertakes a comparative analysis designed to shed light on the distinctions and overlaps between these strategies to capture a clear picture of their roles and significance.
Ecosystem services pertain to the wide array of indirect or direct services humans derive from the ecosystems. The concept highlights the strength of linkages between the categories of ecosystem services and components of human well-being, in addition to the degree to which they can be mediated to ensure sustainability. Succeeding ecosystem services, green infrastructure was systematically defined by the European Commission (2013) as a network of natural and semi-natural areas strategically planned to deliver a wide range of ecosystem services. A

few years later, the same institution promoted nature-based solutions to leverage the benefits of functioning ecosystems.
Together with a juxtaposition of the conceptual frameworks and how they are utilized in a selection of case studies, a quantitative bibliometric and citation network analysis will be employed to understand each concept's perspectives. The results can tell us how informed the latter concepts are by the previous ones. It can help determine if the recent concepts complement the former ones or are merely sporadic attempts that do not significantly add to the contributions of the past strategies. The implications of this study extend well beyond the realms of academic discourse, offering valuable insights for urban planners, policymakers, educators, and practitioners. By demystifying these concepts and providing a nuanced description of their meaning, the paper enlightens the decisions about environmental strategies adopted or communicated in urban planning or policy making. The perspective this paper aims to enlighten informs us about the path taken so far, which is the lodestar that directs tomorrow's decisions.

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Key Words: Nature-based Solutions, Green Infrastructure, Ecosystem Services, Environmental Planning

HOW MAY MUNICIPAL GREENING DETERIORATE URBAN CLIMATE JUSTICE?

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Research-in-Motion (RiM)

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Rapid urbanization has increased built environments, which deteriorated urban thermal inequality. A high proportion of built environments generate the unequal distribution of high temperatures (i.e., urban heat islands), increasing marginalized populations' heat risk (Hsu et al., 2021). From a planning perspective, unequal distribution of heat risk will undermine municipal efforts toward sustainable and just urban environments. Introducing urban green space (UGS) (e.g., parks, greenways, street tree canopies, and green roofs) has been considered a significant strategy for reducing elevated temperatures in marginalized neighborhoods in municipalities' climate action plans. However, recent literature on green gentrification pointed out that socially marginalized residents can be displaced to other neighborhoods due to newly developed UGS (Anguelovski et al., 2018). The presence of well-maintained

and abundant UGS makes marginalized neighborhoods attractive and desirable places from the perspective of real estate speculation, which in turn may result in the displacement of long-time residents who have no means to adjust to the increased financial pressures (Anguelovski et al., 2018; Pearsall & Eller, 2020). It is anticipated that those who enjoy the cooling effects of UGS would be middle- or high-class gentrifiers (i.e., newcomers), not existing marginalized residents. Although previous studies have examined whether UGS development leads to gentrification in marginalized neighborhoods, less focus has been made on extending the issue to climate injustice.
In this study, I explore how municipal greening efforts may deteriorate urban climate justice through the green gentrification case of Atlanta, Georgia. Conducting the Difference-in-Difference regression as a preliminary analysis, I first examine whether constructing the Historic Fourth Ward Park caused gentrification in its nearby areas. The regression results reveal a statistically significant disparity in a gentrification metric in the areas. Next, I compare the temporal dynamics of thermal environments between pre-development and post-opening years via ENVI-met simulation. I set the grid cell size of simulation models and add spatial components, such as land surface cover, buildings, and vegetation. Meteorological full forcing is also applied in the simulation process to make more realistic simulation environments. The simulation results show that mean air temperatures are reduced by up to 2.17℃ during the day and up to 1.87℃ at night due to park construction. The stormwater drainage pond serves as a cold spot, constantly contributing to reducing air temperatures in nearby areas. Lastly, I compare demographic and socio-economic characteristics to understand who had the benefit of the park's cooling effects. Compared to the pre-development year, the proportion of African Americans considerably decreases in the post-opening year. In contrast, the proportion of White and high-income households shows the opposite trend.
These findings imply that municipalities' greening efforts to mitigate thermal inequality in marginalized neighborhoods may lead to paradoxical consequences. Overall, this study indicates that when municipalities introduce UGS in marginalized neighborhoods to mitigate thermal inequality, they should even consider the potentially negative impact it may have on existing residents. In doing so, municipalities will move toward thermal equity.

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Key Words: climate justice, thermal equity, green gentrification, thermal environment, microclimate simulation

INEQUITIES IN THE CAPACITY OF STORMWATER CONVEYANCE SYSTEMS

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Research-in-Motion (RiM)

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The capacity of stormwater infrastructure plays an important role in reducing the damage from urban flooding. In this sense, studies have examined whether the capacity of stormwater infrastructure is equitably distributed across neighborhoods in a city (Baker, et al., 2019; Hendricks, 2017; Mandarano, et al., 2017; Park, et al., 2023; Porse, 2018). However, such studies cannot consider the capacity of different types of infrastructure by examining a single infrastructure type in each analysis.

The purpose of this study is to investigate how the capacity of stormwater conveyance systems, including storm sewers and roadside open ditches, is equitably distributed in diverse neighborhoods. The study addresses the following research questions: Are race/ethnicity characteristics, income, and appraisal value of neighborhoods significantly associated with the density of stormwater conveyance systems? Are housing and neighborhood characteristics, including housing age and vacancy, associated with the density of stormwater conveyance systems? The study area is the city of Houston, Texas, a strong case for examining the equitable capacity of stormwater conveyance systems, since Houston is one of the most flood-prone and racially and economically diverse cities in the U.S.. This study conducts multilevel regressions of the street segment level and the census block group level with the spatially merged secondary datasets in the Geographic Information System (GIS).

Our preliminary results are consistent with the findings of environmental justice and social vulnerability literature. First, Black or Hispanic neighborhoods with lower appraisal values tend to have a lower density of conveyance systems than White neighborhoods having higher values. Second, neighborhoods having older housing are inclined to have a lower density of conveyance systems. The findings of this study provide implications for developing land use plans and capital improvement plans to reduce the impacts of flooding and make them more equitable. This study also adds insight into environmental justice and hazard vulnerability research to understand inequities in flood damages.

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Key Words: Stormwater management infrastructure, Stormwater conveyance system, Environmental Justice, Social vulnerability, Flooding

MAPPING URBAN FLOOD RISK USING REMOTE SENSING & CROWD-SOURCED DATA

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Research-in-Motion (RiM)

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This study proposes a novel approach to map flood risk in Pinellas County, Florida. It uses neural network modeling with inputs from topographic, land cover, demographic, precipitation data, and geographic coordinates to capture the spatial relationships among data points. The ground truth is established using 'flooded' and 'un-flooded' pixels processed from remote sensing imagery. By integrating real-time precipitation data, the model will provide timely flood risk predictions for any given geographic point in the county.

The significance of this research lies in its utilization of both remote sensing data and other crowd-sourced data to address the challenges of flood mapping in densely built-up areas. Various algorithms are being tested and evaluated, with validation against crowd-sourced data such as social media flood posts. For instance, during Hurricane Idalia, time-series Sentinel-1 images were used to experiment with the Normalized Difference Flood Index (NDFI), Ratio Image (RI), and Difference Image Index (DII) for flood extent processing. Comparisons with social media flooding posts revealed that RI-processed flood extent aligned most closely with community reports for this event. Considering the differences in image availabilities and noises for different hurricane events, this experiment-validate approach will be continuously applied for other historical hurricanes like Hurricane Irma, and the index thresholds will be refined iteratively based on validation data. Validated flood extents from various events will enrich the dataset for neural network training.

Furthermore, the neural network incorporates the Bayesian Framework. It predicts a whole distribution of the posterior-predictives for each data point using Monte Carlo Dropout. Compared to the situation where only a single deterministic prediction is available at each point, the availability of a whole distribution of prediction will empower us as urban planners with more information to evaluate model performance with the awareness of inaccuracies inherent in remote sensing data processing. This will also empower us with more freedom in deciding the thresholds to map the final flood extent from the probabilities of flooding.

The implications of this work extend to planning practice by providing a data-driven tool for real-time flood risk assessment. Local authorities can utilize these predictions to prioritize response efforts and allocate resources effectively, even in the absence of direct flood reports. Ultimately, this research contributes to enhancing community resilience to flooding and underscores the importance of leveraging emerging technologies in urban planning and disaster management.

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Key Words: Urban Flood, Remote Sensing, Crowd-sourced data, Uncertainty

NATURE-BASED SOLUTIONS AND SPATIAL PATTERNS OF RISK: A SCALAR MISMATCH?

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Research-in-Motion (RiM)

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The intensification of environmental challenges due to rapid urbanization and climate change has led to widespread use within planning of urban Nature-Based Solutions (NBS) as potential mitigators, often without accounting for the unequal distribution of environmental risks and social vulnerability between neighbourhoods. As a result, the planning and implementation of NBS faces criticisms for overlooking on-the-ground impacts. Particularly, this criticism focuses on the possible intensification of nuanced processes that generate underlying socio-spatial inequalities and continually leave the least-resourced populations at greater risk (Tozer et al., 2020). While it is generally acknowledged that local context determines which benefits of NBS are most relevant and accessible for residents in and around a given site, implementation remains challenging because interconnected social, ecological and infrastructure systems are governed in urban areas by diverse local government agencies with overlapping administrative boundaries and varied mandates. As a result of this complex spatial governance system, the scale of issues that NBS seek to address is often out of line with the actual environmental risks perceived by local populations. This scalar mismatch between NBS governance and local resident risk perception may mean that the NBS fails to address the real challenges faced by vulnerable populations and can exacerbate existing socio-spatial inequalities or may have negative externalities just outside the city's jurisdiction (Anguelovski & Corbera, 2023). While scalar mismatch of urban NBS has begun to be explored in the Global North, the Global South is underrepresented in existing research on interactions between NBS and social dimensions of rapidly urbanizing cities, resulting in limited understanding of the distributional dimensions of urban NBS and potential impacts on socio-spatial inequalities.

Through an exploration of multiple case studies from cities in the Global South, this research assesses (mis)alignments in geographical, social, and ecological dynamics in NBS governance. I develop a conceptual framework leveraging the literature across several disciplines on scalar mismatch (Cummings et al., 2006) to propose a way for practitioners to recognize and rectify spatial, temporal, and functional mismatches within NBS governance. This framework also operationalizes the notion of riskscapes (Müller-Mahn, 2013) to elucidate how various actors and social groups perceive risk across landscapes within the context of NBS. I employ these concepts as a lens to comprehend the spatial dynamics of vulnerability and enhance NBS design to effectively address diverse forms and expressions of risk reduction.

I test the proposed conceptual frame through results from an ongoing text analysis of planning documents and maps across numerous Global South urban NBS case studies that identifies and assesses risk distributions and ecosystem flows in socio-ecological systems, justice considerations, and the complexities of multilevel and heterogeneous governance configurations (Lawhon et al., 2018). Preliminary findings from this comparative case study analysis reveal that scalar mismatches in NBS governance, stemming from power imbalances and institutional constraints, contribute to uneven distribution of benefits, limited political support, and the

marginalization of vulnerable populations. To address these governance challenges, proposed improvements include the implementation of scale-crossing brokers to facilitate collaboration between different scales of governance and bridging organizations to foster collaboration between various types of formal and informal institutions within "hybrid" governance configurations, thereby enhancing coherence and effectiveness in urban planning processes.
This research provides two main contributions. First, it advances knowledge on urban greening, climate intervention, and theories of the geography of scale by proposing a multi-scaled approach for planners to navigate conflicts within NBS governance, bridging gaps between different socio-ecological scales that other approaches may overlook. Second, by addressing the complexities of urban socio-ecological systems and advocating for inclusive and equitable NBS strategies, this study contributes to the discourse on sustainable urban development and resilience building in the face of climate change. Addressing scalar mismatch within NBS governance can lead to more effective and equitable outcomes, harmonizing the involvement of different actors in planning and execution, thereby enhancing the capacity to address socio-environmental risks comprehensively across various scales and stakeholders in urban governance.

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Key Words: Nature-Based Solutions, Environmental Governance, Scalar Mismatch, Urban Environmental Justice, Social-Ecological Resilience

SPATIAL DISPARITIES IN COOLING CENTER FOR VULNERABLE GROUPS IN SEOUL

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Research-in-Motion (RiM)

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As primary strategies for adapting to heatwaves in South Korea, cooling centers play a significant role in preventing harm to vulnerable populations who have difficulty accessing air conditioning facilities. The Ministry of the Interior and Safety recommends that the operation of these centers should prioritize accessibility for populations vulnerable to heatwaves, tailored to local characteristics. Despite these recommendations, Seoul has been criticized for its provider-centric approach, which emphasizes securing a high number of cooling. This has led to not only administrative and financial inefficiencies but also a lack of consideration for the residential situations of the

actual users, who are susceptible to heatwaves. Therefore, this study aims to explore effective strategies for operating cooling centers in consideration the residential situations of heatwave-vulnerable populations.

Research on heatwave adaptation has primarily focused on the spatial dynamics between high-temperature zones and the vulnerable. The focus of research on the spatial fairness of heatwave mitigation efforts has mainly been on green infrastructure. However, there remains a significant gap in research regarding the accessibility of cooling centers and the needs of heatwave-vulnerable populations. To address this gap, the study aims to conduct an empirical analysis of the relationship between cooling center accessibility and the living areas of vulnerable groups at the neighborhood level within Seoul's districts (dong, a neighborhood-level administrative unit within a district in Seoul). It also seeks to investigate how the policy demand for cooling centers varies across these neighborhoods to provide insights into policy adaptations tailored to specific local needs.

To achieve this, Geographically Weighted Regression (GWR) analysis is employed in the study. The analysis commences by selecting cooling centers that meet specific criteria, such as being air-conditioned and having adequate capacity. Subsequently, the kernel density is estimated using the location data of these centers and is used as the dependent variable. Various vulnerable groups, including the elderly, individuals living alone, the disabled, and foreigners, are considered as independent variables, along with meteorological conditions such as the number of heatwave days and tropical nights. Unlike Ordinary Least Squares (OLS), GWR analysis enables the estimation of the impact of independent variables on a regional basis, thereby reflecting regional differences in the model. This facilitates the specific identification of factors influencing access to cooling centers in each neighborhood (dong) of Seoul. Such analysis will play a pivotal role in identifying policy needs based on local characteristics.

Given that Seoul's heatwave countermeasures are implemented at the 'gu' level, which comprises several 'dongs', this study facilitates a more efficient allocation of limited resources and budgets by the responsible local government agencies. This will enable the development of customized heatwave adaptation policies that align with the distinctive characteristics of each area. Moreover, by enhancing cooling center services to meet the needs of heatwave-vulnerable populations and safeguard their health, this study is expected to offer valuable insights into improving the effectiveness of heatwave response policies.

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Key Words: Heatwave, Climate change adaptation, Cooling center, Geographically weighted regression

SPATIOTEMPORAL CHANGES IN THE ACCESSIBILITY OF TORONTO'S GREEN SPACE

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Research-in-Motion (RiM)

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This study investigates the relationship between urban green space (UGS) and walkability within the framework of the City of Toronto's Neighbourhood Improvement Area (NIA) designations. Research finds that urban environments often present a binary between being green or walkable, but the coexistence of both attributes in cities is rare—a conclusion supported by various studies both in Canada and on an international scale (Doiron et al., 2020; Shuvo et al., 2021). Despite the recognized importance of access to urban greenery for environmental justice and quality of life, the relationship between green spaces and walkability, especially within the context of temporal access changes in Toronto, has yet to be examined.

The research sets out to evaluate the effectiveness of the Toronto Strong Neighbourhoods Strategy 2020 (TSNS) in its efforts to enhance the distribution and accessibility of UGS. This research aims to assess the effectiveness of the Toronto Strong Neighbourhoods Strategy 2020 (TSNS) on the distribution and accessibility of UGS. The TSNS, which identified 31 NIAs based on a series of indicators, sought to improve living conditions in neighbourhoods, including green spaces and walkability. However, updates to the TSNS were delayed due to the redirection of funds during the COVID-19 pandemic, leaving the TSNS informed by data that are now nearly a decade old, although the City of Toronto continues to use the NIA designations.

Utilizing a mixed-methods approach integrates publicly accessible data from the City of Toronto and applies multivariate clustering techniques inspired by Doiron et al. (2020) and Shuvo et al. (2021), who have previously assessed greenness and walkability in cities globally. This process differentiates areas that are simultaneously green and walkable ("sweet spots") from those that are not ("sour spots"). Such a distinction serves as the foundation for a nuanced regression analysis conducted in two parts: Model 1 explores the influence of land use and policy, including NIA designations, on UGS accessibility, while Model 2 incorporates sociodemographic factors to assess their potential differential impact on these dynamics.

Preliminary analysis up to the year 2022 reveals a patchwork of progress and decline in the accessibility of neighbourhood green spaces since the inception of the TSNS in 2014. These findings indicate that the strategy's impact has been inconsistent, with some areas witnessing improvements in environmental access, whereas others have experienced significant declines. This variance underscores the complexity of urban environmental planning and highlights a range of influencing factors that extend beyond policy measures alone. The regression analysis particularly illuminates the significant role of land use patterns and sociodemographic characteristics, with Model 2 emphasizing the critical impact of economic, linguistic, and demographic factors on the equitable distribution and accessibility of UGS.

By focusing on the implications of NIA designations and the broader socioeconomic and structural context within which they operate, this research contributes valuable insights into the discourse on urban sustainability, policy efficacy, and implementation. It underscores the necessity for integrated planning approaches that account for the

complex interplay between land use, socioeconomic equity, and demographic diversity, especially as the City of Toronto considers revising the TSNS and updating its indicators.

For urban planners and policymakers, the study's findings serve as a pivotal call to action, urging a reevaluation of current strategies to more effectively address the complexities of urban realities. It advocates for the adoption of comprehensive, context-sensitive policymaking that emphasizes adaptive approaches capable of navigating the intricacies of urban development and striving for environmental equity. Ultimately, this research offers a detailed examination of the impact of NIA designations on UGS accessibility, highlighting the critical importance of socioeconomic and demographic factors in urban environmental transformations. It argues for evidence-based, targeted interventions and contributes to both academic discourse and practical policymaking, aiming for more equitable, healthy, and sustainable urban communities.

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Key Words: Walkability, Urban Green Space, Equity, Spatiotemporal Analysis, Toronto Strong Neighbourhoods Strategy 2020 (TSNS)

STATISTICAL ANALYSIS OF SHORELINE STABILITY ON THE BARRIER ISLANDS, USA

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Research-in-Motion (RiM)

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Barrier islands play a pivotal role in coastal dynamics, primarily due to their distinctive geographical positioning and inherent natural features. These islands not only afford critical protection to adjacent coastal communities but also foster ecological diversity and support offshore ecosystems. The preservation and stabilization of barrier islands have become priorities at both state and national levels, particularly in light of the increased frequency and intensity of hurricanes that exert significant pressure on these islands, contributing to chronic erosion. This phenomenon underscores the vulnerability of these islands to substantial land reduction and erosion, especially within high hurricane activity zones such as the Gulf.

This study delves into the impacts of longshore current flux and human developmental activities on the erosional and accretional changes observed in three barrier islands located in the Gulf of Mexico. These islands are in close proximity to one another and share similar environmental conditions, with the exception of human intervention. Our study examines the relationship between human development and the dune system by conducting a comparative analysis between Dauphin Island, Alabama, and its less developed counterparts, Petit Bois Island and Horn Island, Mississippi. Given the similarities in location, climate, weather events, and ecological regions shared by these islands, human development on Dauphin Island stands out as a unique variable.

Employing the Digital Shoreline Analysis System (DSAS), our research design encompasses a comprehensive comparative analysis that focuses on natural dune formations and ecological preservation. We analyze historical shoreline morphology through regression models over a thirty-year period from 1984 to 2015, utilizing USGS shapefiles derived from aerial imagery and lidar data. This analysis enables us to observe the natural morphological changes of the islands, including patterns of erosion and accretion. Through statistical analysis, including Ordinary Least Squares (OLS) time-series regression, we evaluate the validity of our initial findings, visualize emerging trends, and predict future shoreline changes. This process involves isolating transect datasets from each island's leeward and windward shores, generating OLS models, and visualizing the results through scatterplots and trendline tables. Our findings reveal distinct levels of shoreline stability across the islands, influenced by fluctuation patterns, erosion and accretion ratios, and directional shoreline changes. Unlike its counterparts, Dauphin Island exhibits a unique pattern of windward erosion and nearly exclusive leeward accretion, underscoring the issue of chronic erosion and significant sediment over-wash towards its western bay. In contrast, Horn and Petit Bois Islands display a more balanced dynamic of erosion and accretion, suggesting the presence of a more effective natural stability system that minimizes sediment over-wash.

This research addresses a gap in the literature by utilizing the DSAS to measure and analyze shoreline changes, thereby providing insights into the complex interplay between natural processes and human influences on barrier islands. Our findings highlight the crucial relationship between the health of vegetative dunes and shoreline stability, suggesting that the health of dune systems is a correlating factor in maintaining shoreline integrity. The significance of this study lies in its contribution to the understanding of coastal processes and the implications of human activity on barrier island ecosystems, offering a foundation for informed conservation and developmental strategies.

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Key Words: Barrier islands, Shoreline Stability, Climate Change, Gulf of Mexico, Digital Shoreline Analysis System

THE MULTI-SCALAR LANDSCAPE IMPACTS OF LAND USE REGULATION

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Research-in-Motion (RiM)

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Urban land use has a myriad of direct and indirect impacts on environmental conditions. Direct impacts include concerns such as water quality, heat island, biodiversity, and more. Indirect impacts are typically conceptualized through travel behavior associated with said land use. These include the generation of vehicular emissions and the consumption of natural lands beyond the urban edge (EPA 2013). However, the conceptualization of direct and indirect pathways is underdeveloped. There are more indirect pathways beyond land use and travel behavior.
For example, restricted housing supply and gentrification have led to the suburbanization of poverty (Kneebone and Garr 2010). But this is not just a demographic and spatial phenomenon, there are also landscape implications. The infill development that drives such relocation often intensifies the existing landscape (Muller and Mitova 2023), while the developed landscape in the growing working-class suburbs often lacks ecosystem services and has lower environmental quality, in general. Thus, the direct environmental implications of infill development are not the only environmental outcome, there is also the indirect intense suburbanization that accompanies the displacement of poor residents to peripheral jurisdictions with less stringent land use regulations.
Past research has described how urbanization processes differ across an urban-to-rural gradient (Richter and Bixler 2022), but this needs to be expanded on to understand how different locations within an urban region, through multi-scalar processes, affect and are affected by one another. Multi-level models (MLM) are a useful tool for distinguishing relationships across different scales (Woltman et al 2012). This work leverages applies MLM to three distinct scales - the metropolitan region, local jurisdictions, and neighborhoods - to better understand and articulate the complex indirect pathways linking land use and the environment. Modeling leverages a variety of data sources: land use data comes from the National Longitudinal Land-Use Survey (NLLUS)(municipal) and National Zoning Atlas (NZA)(neighborhood); environmental data comes from the National Land Cover Database, a 30-meter grid that includes developed land, impervious cover, and tree canopy; socio-demographic data comes from the US Census and American Community Survey.
This work contributes to a growing body of literature that conceptualizes cities not as predictable economic engines but as complex, social-ecological entities. In particular, the use of MLM to target multi-scalar patterns provides a new perspective on regional interactions. In addition, this project provides useful insight to policy makers that need to avoid unintended consequences of land-use regulations (e.g. the displacement of vulnerable populations to distant and environmentally underserved suburbs). And the novel combination of the NLLUS and NZA provides an innovative approach to the analysis of land use regulations.

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Key Words: Land Use, Urban Ecology, Multi-Level Modeling

Track 5 – Inclusion an Accessibility in Planning

Track 5 Roundtables

BRIDGING THE GAP: ACCESSIBILITY FOR AGING AND DISABILITY

Abstract ID: 1109.0.0.842.2024
Roundtable Submission

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The demographic landscape is shifting dramatically. Globally, the population aged 65 and over is projected to nearly double by 2050, reaching 2 billion. This trend, coupled with the diverse needs of people with disabilities, presents a growing challenge in ensuring equitable mobility and accessibility for all community members. Navigating existing transportation systems can be difficult for older adults. Physical and cognitive difficulties that may occur with aging can make using public transportation or even driving a car difficult or dangerous. Even within their homes, mobility limitations can be an obstacle if modifications for aging in place have not been made. Similarly, people with disabilities often face significant barriers, from inaccessible bus stops and train stations to a lack of wheelchair-accessible vehicles. Homes lacking disability support features add another layer of difficulty. These challenges can limit people's travel opportunities and lead to social isolation, reduced access to healthcare and employment opportunities, and a diminished sense of independence.

This roundtable discussion brings together a group of planning scholars who conduct research and create knowledge that can support the shaping of the future of our cities. As cities and communities evolve to accommodate an aging population and changing disability demographics, accessibility becomes crucial for continued independence, social connection, and economic participation for these groups. Through facilitated discussions, we will delve into key challenges faced by older adults and people with disabilities. We will explore existing research on accessibility solutions, and identify opportunities for further research and collaboration among scholars who work in disability and aging in relation to the built environment. By fostering knowledge exchange and collaboration, this roundtable discussion seeks to bridge the gap between research on disability and aging. Ultimately, it aims to pave the way for more inclusive and equitable accessibility solutions that allow everyone, regardless of age or ability, to fully participate in the social and economic life of our cities.

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Key Words: older adults, disability, accessibility, transportation, housing

THE GENERAL AUDIENCE OF A PLANNING JOURNAL?

Abstract ID: 1109.0.0.805.2024
Roundtable Submission

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What does it mean when an editor instructs you to make sure that a piece of writing works for the general audience of a planning journal? Who is implied, in that general audience and who's left out? How have, or should understandings of that general audience changed and what does that mean for how we communicate in planning journals and across other forms of planning communication?

This roundtable brings together planning researchers, educators and creative communicators to think through these questions together, inviting the audience into a discussion about communicating planning research in light of the complex politics of the day.

The aim of this conversation is to trouble the normative ideal of who that general audience is. To say out loud that what has been imagined is a white, upper class, able-bodied man. But then, more importantly, to share examples of other audiences. Other ways of speaking and listening. And the generative possibilities for teaching, research and practice that emerge when we all get to say stuff the way we would with friends and family. When the likes and uhms, the intersectionalities and subalterns, the sin fronteras and debwe, the vibes and feels all get to sit together on–or off–the page.

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Key Words: audience, encoding, incommensurability, justice, speech

Track 5 Individual Paper Presentations

ACCESSIBILITY ANALYSIS OF COOLING CENTERS IN THE MOUNTAINOUS AREA

Abstract ID: 1108.0.0.297.2024
Individual Paper Presentation

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The heat wave has garnered less public attention due to its relatively minor physical damage compared to other natural disasters. However, with the recent exacerbation of climate change, the escalating human casualties have led to an increasing risk in urban areas(Klinenberg, 2015). One important finding of epidemiologic investigations of extreme heat-related morbidity and mortality is that poor and minority populations, located in urban neighborhoods, are disproportionately affected(Luber & McGeehin). Among the vulnerable groups, the elderly are particularly susceptible to extreme heat. Owing to their diminished physical capacity and slower recovery, as well as a higher likelihood of cardiovascular or chronic diseases, they face a surging risk of heat-related illnesses during periods of extreme heat(Epstein & Yanovich, 2019). The local governments are developing or implementing response measures to mitigate the adverse effects of extreme heat, among them cooling centers are the representative measure.

Although cooling center is the most representative extreme heat policy for extreme heat, research on whether it is effectively designated and operated, as well as its current status and accessibility, is lacking.

Accordingly, the study analyzes the service area in Busan Metropolitan City, situated in the mountainous terrain of South Korea. The study collected contour data, road centerline data, and locations of cooling centers via open API. Subsequently, the research calculated the service area considering slope using ArcGIS Pro 3.0. Comparing to previous research, the study adjusted walking speeds to 1.3367m/s for general adults and 0.9416m/s for the elderly by applying the method proposed by Satoh et al. (2006) due to considering the slope and the walking speed

of elderly more meticulously. Additionally, reflecting extreme heat as a natural disaster, the study sets appropriate approach time to the cooling centers at 7.5 minutes, based on evacuation times in South Korea ranging from 5 to 10 minutes. Afterwards, the study conducted an analysis of Spatial Autocorrelation between the service area ratios of cooling center and the natural logarithm of vulnerability variables.

According to the result, a total of 1440 cooling centers are operational during nighttime hours, with 891 of these equipped with air conditioner. The service area of cooling centers based on the walking speed of adults/elderly individuals is 60.19 km2/42.56 km2, respectively. Also, the service area ratio of cooling centers in the downtown is high, while the outskirts is low. According to the spatial autocorrelation analysis, the placement of cooling centers appears to be well-established for traditional vulnerable groups however, it is questionable to consider that cooling centers have been adequately positioned to address the needs of the elderly population. In conclusion, it appears challenging to provide effective cooling centers for heat-vulnerable populations in Busan Metropolitan City, as only about 62% of the designated cooling centers are equipped with air conditioning and theoretically capable of nighttime operation. Therefore, it is necessary to implement nighttime heatwave measures in vulnerable communities by providing incentives or financial support for nighttime operation of public facilities.

While the spatial placement of cooling centers considered socio-economic vulnerable groups, doubts linger regarding whether sufficient consideration was given to the elderly population. In future designations of cooling centers, it is imperative not to simply designate more centers in areas with low service area ratios, but rather to comprehensively consider factors such as age, economic status, terrain slope, etc., to designate additional cooling centers.

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Keywords: Extreme Heat, Cooling Center, Service Area, Vulnerable Populations, Climate Change Adaptation

ACCESSIBLE SCHOOL TRANSPORTATION FOR DISABLED STUDENTS

Abstract ID: 1108.0.0.341.2024
Individual Paper Presentation

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School transportation is integral to children's education access (Buliung et al., 2021; Ross & Buliung, 2019). Accessible student transport services are organized and implemented in ways that are intended to support disabled students' education access; however, they can at times contribute to their exclusion from education. Barriers within accessible student transportation services have been cited globally as a key obstacle to disabled students' inclusive education. Examples of such barriers include, but are not limited to bus driver shortages, inadequate bus driver training, arrangements causing disabled students to miss classroom time, and even disabled students being forgotten on school buses or dropped off at the wrong locations. By failing to provide reliable and legally mandated accessible student transportation services, school boards may be failing to satisfy disabled children's right to equal access to education, as enshrined within the United Nations Convention on the Rights of the Child, Canadian Human Rights Commission, and provincial/territorial education legislation; in turn, they are at times denying some disabled children equal and equitable access to education.

Given these issues, we conducted a qualitative study that engages the following questions: 1) How do families living with childhood disability experience school travel in the Greater Toronto and Hamilton Area?; And, (2) How do student transport processes and operations materialize norms of able-bodiedness and able-mindedness?

Specifically focusing on their everyday school travel experiences, semi-structured interviews were conducted with 13 disabled children and 13 parents. Interview transcripts were analyzed and thematically coded in NVivo, using Braun and Clarke's (2021) reflexive thematic analysis approach. This thematic analysis was guided by our use of a critical disability studies (CDS) perspective. The CDS lens lends itself to questioning how bodies that do not fit the regulatory norms are subject to oppression when navigating physical environments and institutional processes that are designed with little attention to their needs. Further, our analysis engaged the concept of 'ableism' (i.e., a set of beliefs, practices, and processes that favour certain abilities over others; Goodley, 2014) to question how ableist norms and values may be allowing the perpetuation of inequitable student transportation arrangements and experiences.

Findings indicate that families living with childhood disability undertake different types of additional access work (e.g., administrative, advocacy, emotional, and physical), and often rely on a constellation of care involving various actors and organizations to fulfil daily school transport needs (e.g., education support staff, health care professionals, private and public organizations, family members, and friends). These findings lead us to question the 'normative' logic underpinning school transport operations which places inequitable and time-consuming work on families living with childhood disability. Informed by the challenges experienced by families as well as their ideas, we identify several recommendations for improving the design and implementation of school transport for students with disabilities.

This study contributes to the limited discourse on childhood disability and school travel (and, by extension, education access) in the transport planning literature by explicitly discussing the role of disability theory in the study's design and analysis. This is particularly helpful for scholars and practitioners who are unfamiliar with critical disability studies. Two key study contributions for planning scholarship and practice are: (1) providing in-depth, user-informed direction from families for improving accessible school transport services; and, (2) supporting the active questioning of normalized ableism in both transport and urban planning research, policy, and practice. We

encourage planning scholars, practitioners, and policymakers to meaningfully engage with families living with childhood disability regarding the organization and implementation of accessible school transportation.

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Keywords: Accessibility, School transport, Disability, Ableism

ASSESSING PARK ACCESS EQUITY PRE AND POST URBAN REDEVELOPMENT

Abstract ID: 1108.0.0.531.2024
Individual Paper Presentation

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[Background] Parks are crucial public and community spaces in neighborhoods, offering diverse benefits to residents. Because of these advantages, discussions on park accessibility and their equity are becoming active. However, most of these studies focus on the state of equity at a single point in time, and while many countries and cities are working to create equitable parks, evaluation of these efforts is still lacking. Therefore, it is time to discuss not only equity in park accessibility but also equity in accessibility changes at the regional scale.

To provide equitable park services, the Seoul Metropolitan Government is aiming for a balanced park supply by analyzing the supply status of parks as “local living service facilities” and establishing a community plan accordingly. Under these policy stances, parks are supplied by several urban projects. In the case of redevelopment projects for residential areas in South Korea, the existing residential areas are completely removed and high-density apartment complexes and infrastructure such as roads and parks are provided. Recently, however, apartment complexes have been in the form of gated communities due to safety and privacy issues, making it difficult for residents to pass freely. Also, because only a part of the project area can be developed as an apartment complex, low-rise houses are still mixed nearby.

[Research Questions] This study aims to analyze the changes in park accessibility and equity in a neighborhood that has changed due to a large-scale apartment complex and park created by an urban redevelopment project. Our study seeks to answer the following questions: 1) Has the urban redevelopment project improved the park accessibility of the residents in the community zone?, 2) Has the change in park accessibility varied by districts?, 3) Has the urban redevelopment project increased equity in park accessibility?

[Data and Methods] To answer these questions, first, the study area was Ahyeon Community Zone, and data were collected based on 2002, 2016 and 2023 so that it could be compared before and after urban the redevelopment projects and community plan. For park accessibility analysis, data on pedestrian networks, parks, park entrances, and buildings were collected. Next, park accessibility was calculated using the distance to the nearest park and the Gravity index using the UNA toolbox. Through this, we tried to measure the proximity to the park and the diversity of the available parks. Finally, We quantified the equity in park accessibility for all buildings in the Community Zone with the Gini coefficient and compared it before and after the project and by zone.

[Findings] As a result, it was found that the distance to the nearest park increased even though additional parks were supplied as a redevelopment project. In addition, the total area of the accessible parks increased, but the rate of change differed greatly depending on the area. In addition, there was a significant difference in park accessibility and accessibility change rate by area. However, as a result of comparison before and after the introduction of the Community Plan, after the introduction of plan, a park was located at the boundary of the apartment complex and in contact with the surrounding area, improving equity in park accessibility.

[Implications] Our results suggest the importance of selecting the park location and opening the complex considering the equity in park accessibility of the entire neighborhood after the urban redevelopment projects. Specifically, neighborhood-level living area plans can play a role, and planners can assign the complex in consideration of accessibility to existing parks at the planning stage.

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Keywords: Park Accessibility, Spatial Equity, Community Plan, Urban redevelopment, Urban network analysis

ASSESSING THE IMPACT OF SILVER ZONES ON ELDERLY WALKABILITY: A SCM APPROACH

Abstract ID: 1108.0.0.487.2024
Individual Paper Presentation

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Silver Zones, pedestrian safety areas specifically designed for the elderly, have attracted attention due to concerns over their effectiveness and spatial mismatch with areas prone to elderly pedestrian accidents. This paper expands the discourse beyond accident occurrence, advocating for an examination of Silver Zone policies' broader impact on overall elderly walkability. With an increasing emphasis on active aging and creating walkable urban environments for the elderly, understanding the implications of Silver Zones on walkability gains significance, particularly at the neighborhood level where elderly mobility is essential.

Situated in the context of South Korea's high rates of elderly pedestrian fatalities, this study examines the effects of Silver Zone implementation on pedestrian safety and vitality. Additionally, by assessing overall walkability, the research aims to provide policy insights to enhance their urban experience and vitality for the elederly. This mutifaceted approach contributes to a comprehensive understanding of Silver Zones' role in shaping urban environments for active aging, providing valuable implications for policy interventions to improve walkability and urban livability for the elderly population.

This study uses the Synthetic Control Method (SCM) to empirically analyze the impact of the Silver Zone policy on walkability, specifically in the traditional marketplace. The SCM, a methodology for assessing policy effects in specific targets or areas with a limited number of subjects, creates a synthetic control group for effect comparison. Since the Jangwi marketplace, the only traditional marketplace designated as a Silver Zone, lacks a control group, this research uses SCM to synthesize a control group by assigning weights to small-scale, neighborhood-oriented, alley-type marketplaces. The analysis focuses on changes in pedestrian accidents and foot traffic before and after the Silver Zone policy implementation in April 2021, drawing comparisons between the Jangwi traditional marketplace and the synthetic control group. Spanning from 2019 to 2023, the data used in the analysis comprise pedestrian accidents, involving the elderly, from Seoul Metro, and commercial district and street-level foot traffic data provided by the Seoul Credit Guarantee Foundation. This comprehensive dataset allows an in-depth examination of the Silver Zone policy's effectiveness in enhancing walkability.

These findings highlight the importance for urban planners and policymakers to consider pedestrian safety measures in broader urban development strategies, especially in areas with significant elderly populations.

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Keywords: Silver Zone, Walkability, Active Aging, Policy Impact, Synthetic Control Method

BEING MIDDLE-AGED AND SINGLE WOMEN IN THE CITY

Abstract ID: 1108.0.0.90.2024
Individual Paper Presentation

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Over the past several decades, the number of single-person households in city centers of large metropolitan areas across the globe has increased significantly (Klinenberg, 2012). Tokyo, the largest city in Japan and one of the most populous cities in the world, is no exception (Ronald & Hirayama, 2009). In Japan, the rise in women joining the workforce alongside heightened economic uncertainty (given that men are becoming less capable of supporting an entire family as sole breadwinners) are the primary factors contributing to both men and women remaining single. For many, especially women, marriage is no longer economically essential and can even be considered a burden or a risk (Retherford et al., 2001). Consequently, a substantial portion of Tokyo's population is comprised of middle-aged singles born in the late 1950s to 1980s. Without immediate family support, these individuals are aging alone, potentially placing a strain on the social welfare system in the future. Additionally, singles are often considered temporary residents with weaker ties to their neighbors and less engaged in neighborhood activities (Rohe & Stewart, 1996). These characteristics of middle-aged singles may hurt neighborhood well-being, especially during times when cooperation is needed, such as natural disasters or unforeseen threats like COVID-19.

However, contrary to single elderlies, middle-aged singles have generally been overlooked in the fields of urban policy and planning. Through a survey (N=2,547) and interviews with singles (N=22) in central Tokyo, this paper explores the social relationships single women maintain within and outside their neighborhoods and the meaning of neighborhood community and activities for them.

The results indicate that social relationships for singles are influenced by one's gender and age cohort. While single women aged 50–64 maintained relatively active social relationships within and outside the neighborhood and felt less fearful of their futures, younger women between 35 and 49 tended to withdraw from neighborhood activities and worried more about their finances, housing, and future isolation. Uncertainty about the future related to social change (including job loss), the threat of natural disasters, and negative social perceptions associated with being single, middle-aged women disincentivized from participating in neighborhood activities and expanding their social networks within their neighborhoods. One apparent reason was that most of the existing neighborhood associations in Japan are traditionally family-based, and the singles felt excluded from such organizations.

At the same time, while holding back from participating in those organizations, younger single women exhibited some interest in neighborhood activities as opposed to men, who often avoided them, and remained open to the idea of staying in the neighborhood as long-term residents. There was also a higher ratio of homeownership among single women compared to men despite women having lower wages (Yamaguchi, 2019). However, although the middle-aged single women were interested in being more active in their neighborhoods, they preferred casual and ad-hoc neighborhood relationships over joining closely-tied and family-based organizations.

Based on the results, this paper advocates for local governments and neighborhood organizations to take a more inclusive approach towards singles, especially younger women, involving them in neighborhood activities through more unconventional means, such as through personal and social interest-based groups. It also highlights the importance of eliminating economic gender gaps and shifting social norms regarding family status as crucial steps in encouraging their involvement in the well-being of the neighborhood.

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Keywords: Singles, Community participation, Gender, Diversity, Japan

BLACK HERITAGE IN THE NATIONAL REGISTER: THE WILLIAMS YWCA IN PORTLAND, OR

Abstract ID: 1108.0.0.1029.2024
Individual Paper Presentation

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In this paper, we analyze the landmarking process of the National Register of Historic Places—a federal program established in 1966—that lists national, state, and local properties considered worth preserving. Using an analytical framework that combines multilevel governance theory (MLG) (Vogel 2007) and Black geography (Summers 2019; Watkins 2013), we focus on the nomination process of the Williams Avenue YWCA in Portland, Oregon, asking: How is its historic significance for Black communities framed? What connects the different levels of government and other actors in the process?

To answer these questions we analyze two key primary documents for the National Register nomination process: the Multiple Property Document (MPD) African American Resources in Portland Oregon, from 1851 to 1973 (Galbraith et al. 2020) and the Registration Form Williams Avenue YWCA (Davis and Ewers 2019). MPDs and Registration Forms are key sources of information and have been underutilized in the academic context, relegating them to a mere bureaucratic function despite the wealth of information they collected about the representation of the ethnic and racial diversity of American history and its influence on the National Register (Hanson et al. 2022).

Built in 1926, the Williams Avenue YWCA offered a place for socialization, recreation, and activism for the African American community, at a time when public spaces were segregated. Today, it is one of the few buildings of the African American community still standing in Oregon's largest remaining Black community.

We start our analysis with how the preservation discourse has shaped perceptions of historical value so that we can better grasp the emergence of attention on Black heritage. Then we outline the key aspects of the National Register process, highlighting its criteria for evaluation of the historic significance, its benefits, the evolution of its framework, and the actors involved over the years. We continue by introducing the City of Portland and illustrating our sources and analytical framework. The analysis articulates the historic significance of the Williams, representing both Black women's history and civil rights and the connections among different actors that flourished during the nomination process. Our conclusions highlight how the broadening of the historic significance and the cooperation

among different levels of government and civil society are instrumental to a racially diverse approach to historic preservation. In particular, cities and their actors play a crucial role in protecting local history, emphasizing the importance of this study and how the overall complexity of the American preservation system contributes to an improved understanding within urban planning scholarship and its contribution to the multifaceted history of places.

The nomination of the YWCA gives voices to African American traditions in Portland that have been not only undocumented but also physically destroyed due to redevelopment because their value was not recognized. Our analysis brings to light how over time the National Register has created a more inclusive listing protecting local realities, enhancing the pluralistic fabric of places, and recognizing the role of underserved communities in the national sphere.

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Keywords: Historic Preservation, Black Heritage, Multilevel Governance, National Register, Oregon

BRIDGING THE ACCESSIBILITY DIVIDE IN BUILT ENVIRONMENTS

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Individual Paper Presentation

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The notion of accessibility has been defined by two distinct audiences in urban studies–ones using it to describe universal access via detailed routes among mobility-challenged populations, the others referring to a more general potential for spatial interaction with destinations and opportunities. Examining both definitions and their practical applications, we propose a unified accessibility framework that combines the concept of spatial accessibility from

transportation and planning literature with considerations of universal design and barrier impedance. Using spatial networks as a common baseline for mobility and interaction, we demonstrate how a detailed documentation of physical accessibility impediments, combined with their impact levels on different population types, can be used to achieve a continuous spectrum of accessibility measures that describe the ability to reach and interact with the same bundle spatial destinations for differently abled population types.

Our analysis diverges from conventional accessibility assessments by considering the interplay between pedestrian infrastructures and the individual needs of three distinct pedestrian groups: fully-abled individuals, mobility aid users (such as those with canes or walkers), and wheelchair users. This differentiation allows us to examine how urban environments cater to or, conversely, inhibit access.

We implement the framework in downtown Seattle, WA, where we combine a crowdsourced dataset of geo-tagged accessibility impediments with a detailed sidewalk network dataset and address-level destinations to measure pedestrian access across different physical ability levels to the same destination bundles. We focus our analysis on four broad categories of destinations– public transit stations, schools, parks, and amenities, with the latter category further subdivided into health, personal service, retail, and food amenities–and use a detailed spatial network representation to examine access to these essential destination types among the three different user groups. Our methodology juxtaposes traditional accessibility metrics with barrier-inclusive observations, thereby unveiling significant discrepancies and underscoring critical planning oversight: sidewalks and pedestrian pathways, while physically present, do not inherently guarantee accessibility for all.

The implications of this research extend across the urban planning spectrum, challenging conventional spatial accessibility applications and advocating for a more inclusive approach to urban accessibility. The unified accessibility framework we present aims to not only quantify accessibility but to also contextualize it, offering a metric that is reflective of the diverse pedestrian experiences within urban spaces. For practitioners, the findings provide a framework capturing spatial accessibility through the lens of universal ability. Academically, our work enriches the discourse on both spatial accessibility and barrier-free routes, offering directions for future research. Educationally, it highlights the imperative to imbue planning curricula with a deep understanding of accessibility's multifaceted nature, preparing future planners to champion inclusivity.

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Keywords: Urban Accessibility, Pedestrian Infrastructures, Sidewalk Networks

BUILDING INCLUSIVE HOUSING INFRASTRUCTURE FOR INTERNATIONAL STUDENTS

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Individual Paper Presentation

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International students are culturally and economically important to Canadian society, contributing to the country's economic prosperity, knowledge networks, and global competitiveness. In 2019, Canada ranked third globally in attracting international students, with 642,000 students contributing annually $22 billion to the country's economy and supporting over 170,000 jobs (El-Assal, 2020). They are also considered as ideal immigrants as they obtain Canadian education, high human capital, and good language skills. However, the admission of over one million international students to the country in 2023, a record high, has heightened public concerns and sparked policy debates about the housing affordability crisis across the country. Many are scapegoating international students, blaming them for driving up housing costs and exacerbating the already limited housing supply.

There is no clear evidence establishing a causal relationship between international students and Canada's housing affordability crisis, which is a complex issue influenced by multiple factors and actors. Instead, many international students have unfortunately become extremely "vulnerable to housing discrimination, rent gouging, rights abuses and sexual harassment," making them susceptible to further exploration (Das Gupta & Su, 2023, para. 1). Additionally, sub-standard, illegal, and overcrowded housing not only threatens the safety of students, but also intensifies public anxiety within local communities and potentially creates tensions with municipalities, which are responsible for creating a safe and supportive environment. Emerging research calls for 'housing justice' for international students and the protection of their housing rights (Pottie-Sherman et al., 2023).

It has become imperative to capture these stories of struggle and to adopt a comprehensive, holistic approach that addresses the needs of international students, encompassing daily necessities, social adjustment, career trajectory, health and wellbeing, and academic life (Calder et al., 2016; Zhuang, 2023). Among these considerations, housing emerges as a pivotal factor profoundly influencing the students' overall wellbeing, academic performance, and their capacity to adapt and integrate into the Canadian society. Building upon the concept of housing as a fundamental human right, this study aims to delve deeper into the housing experiences of international students, examining the involvement of HEIs and community stakeholders in developing inclusive housing infrastructures. It seeks to address the following questions: What are the key challenges international students face regarding housing affordability, availability, accessibility, and associated services, programs, and amenities? How can HEIs and community stakeholders contribute to supporting international students, fostering a sense of belonging, and enhancing community cohesion?

This study emerged from a timely studio project that employed evidence-based methods, including literature reviews, policy analysis, case studies, and semi-structured interviews with key informants. Five stakeholders, representing the for-profit and not-for-profit housing development sectors, student housing providers, and HEI administrative staff, offered their insights into the current challenges and barriers in developing inclusive housing infrastructure and services for international students. Additionally, 24 international students from 14 countries, enrolled across 10 public and private HEIs in Southern Ontario were interviewed to share their housing experiences, encompassing both the positive aspects that support academic performance and wellbeing, as well as barriers and their adverse impacts, such as exploitation by landlords, lack of legal support, limited housing aid, and substandard housing conditions. Interviewed students also expressed a strong desire to build a sense of belonging and a sense of home through their housing experiences in Canada.

The findings offer short-term and longer-term recommendations, including but not limited to increased community and institutional support, intergenerational shared housing, legal and planning policy changes, and incentivizing student housing developments. Specifically, it highlights the need to engage international students and amplify their voices in the ongoing discussion about their housing needs and experiences, to better inform future policies and programs.

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Keywords: Housing, International Students, Infrastructure, welcoming campus, inclusive community

COMMUNICATION BY DOING: INFORMAL URBANISM AS "FIRST UTTERANCE"

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Individual Paper Presentation

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Community participation has become a nearly universal value in planning practice and education. For planners committed to participatory processes, one of the challenges is finding methods and practices that truly rise up the rungs of Arnstein's Ladder to the realm of partnership, delegated power, or citizen control (Arnstein 1969). In this presentation, I argue that two aspects of classic models of participation tend to hinder deeply participatory processes and then, through an example from recent fieldwork, propose a potential remedy.

The classical model relies on two elements that can pose challenges to deeply participatory planning. First, most participatory planning processes are still examples of "invited" spaces of citizenship (Miraftab 2009), where residents are asked to join a process, usually in a designated location, to think abstractly about neighborhood questions. Second, these participatory processes, while they often rely on collaborative methods to co-produce ideas, nevertheless are usually initiated and directed by professional planners. This presentation argues that, while these methods are useful and appropriate in some contexts, they tend to fall short in others. In particular, "invited"

spaces of citizenship are less useful in communities with large, low income, vulnerable immigrant communities, particularly those with large undocumented populations. In these areas, planners must search for "invented spaces of citizenship" (Miraftab 2009) to engage with communities on their own terms about questions of the use and form of urban space.

To this end, I propose the concept of "communication by doing" as a means of engendering a more inclusive, deeper participatory planning. Drawing on the infrastructural turn in urban studies (Simone 2004) and work on informal city-making in the global South, I argue that planners in the North should turn their attention to the informal practices that immigrant groups use remake the city in a way that responses to everyday needs. Like Tactical Urbanism, (Lydon and Garcia 2015) this process seeks to validate citizen-initiated actions, but adds a focus on inequality, and the needs being expressed through informal action (Devlin 2018). It views informal practices not as unproblematic actions to be romanticized or accepted as-is, but rather as valid "first utterances" in a conversation over urban space, as proposals for use made through practice that can be negotiated and revised through ongoing participatory processes.

As an example, I use the case of Corona Plaza in Corona, Queens, New York City. Corona Plaza, a city-managed public plaza became the site of an vendor market that grew informally during the COVID-19 pandemic to nearly 100 vendors, mostly immigrants from Latin America, selling a variety of food and merchandise. For years, city officials worked to negotiate with vendors, accepting their place in the plaza as valid, even though it was technically not permitted. While this negotiation ended abruptly in August 2023 thanks to a mayoral crackdown on "disorder" in the plaza, it has since continued. Using interviews with vendors and vendor advocates, but also with city officials and planners working on the issue, this presentation seeks to understand the mechanisms – both formal and informal, that allowed for this sort of deep participatory process that validated the vendors' occupation of the plaza as a form of communication by doing. In drawing lessons from this example of practice, this presentation seeks to inform theories of participation, urban informality, and the role of planners in processes of bottom-up city-making.

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Keywords: Participation, Informality, Placemaking, Planning Theory

COMPARING RESIDENT- AND PEDESTRIAN-BASED URBAN GREENERY EXPOSURE

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Individual Paper Presentation

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Urban greenery offers diverse and vital benefits to city dwellers. Yet, inequity persistently prevails in individuals' exposure to urban greenery and few cities have managed to prevent it. Realizing such benefits requires various types of contact between humans and vegetation. However, past studies often assess individuals' exposure to urban greenery solely based on their resident or workplace locations, potentially overlooking their diverse mobility patterns, which may result in inaccuracy estimation of actual exposure to urban greenery.

This study introduces a methodology that incorporates street-view imagery to quantify citywide pedestrian volume of different age groups and evaluate pedestrian-based exposure to green spaces. A comparison between this novel method and the conventional residents-based measurement was conducted. We employed both top-down (NDVI) and eye-level (GVI) to measure urban greenery. The combination of these methodologies yields four distinct measures of green exposure: resident-based NDVI exposure, resident-based GVI exposure, pedestrian-based NDVI exposure, and pedestrian-based GVI exposure. We found significant spatial heterogeneity of greenery exposure in terms of value ranges, Gini index, and spatial distribution. Furthermore, a notable contrast between greenery exposure for residents and pedestrians was identified. Additionally, there exists a significant socioeconomic inequity in all forms of green exposure, particularly evident in the considerably higher green exposure among high-income TPU residents compared to their lower-income counterparts. These findings suggest that a more fine-grained and multi-dimensional metric is needed for evaluating environmental justice in terms of green exposure. The study also identifies a positive association between all forms of green exposure and median household income, uncovering inequity in green exposure.

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Keywords: greenery exposure, street view images, environmental justice, deep learning, pedestrian volume

Connectivity between Urban Rail Transit Stations and Pediatric Outpatients
Abstract ID: 1108.0.0.254.2024
Individual Paper Presentation

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Rail transit constitutes a crucial conduit for children accessing hospital care under familial escort. This investigation targets ten tertiary-level institutions in Shanghai, comprising pediatric specialty centers, comprehensive hospitals with pediatric units, and maternal and child health facilities. Methodologically, the study involved mapping the nearest subway stations to the pediatric outpatient sections of these hospitals, delineating concentric circles with radii of 300 and 150 meters to formulate time-path diagrams. Furthermore, an 800-meter square perimeter was established around the subway stations and hospitals to generate spatial information tables for the interlinking streets. The research meticulously analyzed the spatial functionalities proximal to the pediatric outpatient facilities accessible from the rail transit stations, identifying patterns within the connective street spaces. Conclusively, by integrating relevant higher-level medical policies, this study explores the pediatric subway healthcare environment within Shanghai and other urban locales, scrutinizing the specific application of rail transit in the developmental paradigm of urban pediatric hospital infrastructure.

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Keywords: Urban Rail Transit, Pediatric Outpatient Clinics, Connectivity Corridors, Spatial Patterns, Urban Healthcare Infrastructure

Demographic Shifts: Strategic Planning for Education Access
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Individual Paper Presentation

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This study examines the impacts of demographic shifts, notably population decline and aging, on the spatial accessibility to education. Education is an essential mechanism for enhancing social mobility, and existing inequities are closely intertwined with the unevenness of educational resources(Xu et al., 2018). Population structure changes are intricately linked to the erosion of tax bases, exerting pressure on local government finances and necessitating adaptations in urban planning and infrastructure demands(Wisniewski et al., 2021). The dual trend of declining and

aging populations is reshaping how educational resources are distributed. Outcomes from tax base erosion include a reduction in school resources, prompting school closures and mergers (Egelund and Laustsen, 2006). The distribution of high-quality educational resources and their spatial accessibility represent critical concerns for day to day government operations and for advancing spatial equity. Therefore, to effectively address these changes, it is imperative to analyze the impact of demographic shifts on urban spatial structures and develop strategic and flexible planning strategies based on these analyses.

Despite the critical role of demographic changes in influencing the accessibility of social infrastructure, the broader implications of an aging population and declining numbers have not been thoroughly considered in policymaking and practical applications toward spatial justice. This research proposes a two-phase methodology that combines an evaluation of the quality of schools paired with spatial accessibility to schools. The initial phase involves using K-means clustering to evaluate the quality of schools in Chicago, Illinois, based on essential indicators such as dropout rates, age/grade distortion rates, and students per class. Subsequently, the research employs a refined version of the gravity model, specifically the Three-step Floating Catchment Area (3SFCA) method, to assess the spatial accessibility of these K-12 schools. This approach not only provides insights into how demographic trends impact the availability of 'good quality' educational services but also facilitates the identification of spatial disparities that arise from these demographic shifts (Pizzol et al., 2021).

This study connects spatial changes, particularly physical accessibility to education to demographic transformations, in this case population shrinkage. Such analysis empowers urban planners and policymakers to adapt school districts and educational service distribution to such demographic shifts, ensuring equitable access to high-quality education across all communities. Furthermore, this research offers critical insights into addressing urban shrinkage beyond mere convenience, highlighting the importance of equality and justice in urban planning and societal structures, and contributing to the development of strategies that foster inclusive and equitable urban environments.

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Keywords: Educational equity, Spatial accessibility, Demographic change, Urban Shrinkage

ETHICS AND PRACTICE OF MOBILIZING COMMUNITY NARRATIVES OF URBAN CHANGE

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Individual Paper Presentation

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Research funders are increasingly emphasizing the importance of community knowledge of the social determinants of health, opening new possibilities for supporting health equity through urban planning. Moving away from previous paradigms that emphasized technical and top-down solutions, there is now greater attention to the root causes of health disparities (Corburn et al., 2023). Structural racism, gender and wealth disparities, and colonial legacies are thus currently more prominent in urban health conceptualizations. However, this paradigm shift faces significant challenges and limitations related to knowledge and power. Funders, researchers, governments, and other actors will need to adopt new modes of practice and ways of knowing, which can be undermined by traditional power dynamics and interests (Anguelovski et al., 2020).

Understanding how systemic changes for urban sustainability and equity are achieved is the focus of Change Stories, an international research partnership of academics and community-based organizations (CBOs) that aims to spark dialog and learning through storytelling. The project is funded by a U.S. philanthropy that seeks to promote global learning for U.S. solutions. The three case study cities were selected as examples of substantial multi-sectoral urban change, most recently focusing on physical and social infrastructure for women caregivers in Bogotá, food security in Belo Horizonte and housing rights in Belfast. In this paper, we reflect on a two-year process of co-production leading to an actionable research framework that strives to better understand the role of storytelling in equitable and sustainable urban change and policy mobilization.

The Change Stories research approach was developed iteratively, with an initial grant supporting participatory and social research to define overarching research questions, case study locations and routes to impact in the U.S., as required by the funder (Pineo et al., In Press). A second stage of study conceptualization began once all academic and CBO partners were funded, culminating in a four-day knowledge exchange session with 37 participants, including advisory group members, in Bogotá in March 2024. The meeting's purpose was to build trusted relationships, identify shared goals, engage with decolonial research approaches and find ways to centralize underrepresented community voices in urban change narratives, building on other research (Castán Broto et al., 2022).

Our extended project conceptualization resulted in more radical project ambitions and a greater diversity of methodologies to avoid epistemic injustice (Ortiz, 2022), summarized through the following three outcomes. First, we discussed the colonial and epistemic injustices that tend to dominate the production and circulation of stories of urban planning change. We agreed on the necessity of centralizing residents' voices about urban change, acknowledging that their narratives may conflict with each other and dominant narratives within a city. Such conflict puts responsibility on the partnership to accurately portray diverse understandings of urban change, despite academic and policy community's desire for a simplified story. Second, we agreed that integrating storytelling and other arts-based methods with active participation from our local community members could produce more nuanced stories from the study cities that are more visible, both to global audiences and to the people who live these urban changes. Lastly, we found that experiential learning, specifically visiting infrastructure for caregivers in Bogotá, sparked valuable learning for the visiting CBOs. With simultaneous translation, community partners were inspired by their peers' strategies and the event provided valuable space for reflection.

At a time where funders are increasingly looking for community-based research, our approach highlights the methodological and practical (significant time and financial resources) requirements of developing multi-country research studies that can avoid epistemic injustice. Through Change Stories, we highlight new modes of practices in planning research to facilitate learning from other cities and avoid epistemic injustice.

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Keywords: Equitable and sustainable urban development, Storytelling, Public health, Community-centered urbanism, Decolonial research

EXPLORATION OF THIRD PLACES BY OLDER ADULTS: GENDER AND AGE DISPARITIES

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Individual Paper Presentation

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In South Korea, rapid economic growth, coupled with advancements in living conditions and medical technology, has led to an increase in life expectancy and a decline in birth rates, resulting in an unprecedentedly rapid aging population. Concurrently, enhancement in physical health and activity levels among older adults have underscored the need for third places, i.e., spaces where they can spend time unencumbered, particularly post-retirement. However, there is a dearth of empirical research that delves into the exploration and attachment processes of urban older adults to these third places. Existing studies often overlooked the nuanced characteristics of older adults segmented by gender and age group.

This study aims to analyze the characteristics of third places that older adults voluntarily frequent and use on a regular or routine basis. It delves into their processes of place exploration, interaction, and attachment processes, thereby understanding their urban spatial utilization and demands. A combination of in-depth interviews and participant observations were conducted with a sample of 40 older adults residing in the Seoul metropolitan area and 10 stakeholders, adhering to the principle of theoretical saturation for analysis.

The findings from this grounded theory analysis suggest that "the availability of spare time" and "the pursuit of health in old age" have emerged as direct causal conditions for the exploration of older adults' third places. A supporting policy in South Korea that provides free subway rides for older adults enables them to explore various places within the metropolitan area without constraints. The primary conditions older adults seek in third places are spaces where they can "spend time," "engage in physical exercise," "have flexibility in dates and times of usage," and "bear a low economic burden." Older adults aged 75 and above demonstrate a preference for places where "social activities are possible," "minimal interaction with younger generations" is encountered, and "gender-separated usage is possible." In contrast, older adults aged 65-74 place increased importance on "places for learning" and the "pleasantness, aesthetics, safety, and participation of spaces," while their preference for separation from younger generations and gender separation appears to decrease. This discrepancy is interpreted as a reflection of sharp age-related differences within the contextual backdrop of rapid societal, economic, and ethical-cultural consciousness shifts experienced in South Korean society.

Male older adults, characterized by a preference for "commuting-style mobility," "discomfort with deep social relationships," and a "preference for outdoor spaces" tend to explore various places alone for the purpose of spending time, thereby enjoying multiple third places. In addition, male older adults who had left their hometown in the past tend to regard Jongno 3-ga, an old downtown area in Seoul as a second hometown, evoking a sense of nostalgic attachment. Conversely, female older adults characterized by "spatiotemporal constraints due to household chores" and a desire for "intimate relationships with frequent interaction" tend to seek places of relational hometown such as home or community centers. They generally move with clear purposes within the vicinity of their residence, enjoying one or two third places. They often change their visited third places due to recurring conflicts.

Attachment to places formed during the exploration process of third places results in increased vitality and life satisfaction among older adults. Conversely, when places are consumed without attachment, leading to a view of third places as spaces replaceable at any time within the urban area, it did not lead to increased vitality and satisfaction in life. Collectively, the study identifies the key factors leading to third place attachment and offers insightful policy implications.

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Keywords: Older Adults, Third Places, Exploration, Gender, Age

EXPLORING PERCEIVED (IN)ACCESSIBILITY OF PEOPLE WITH VISUAL IMPAIRMENTS

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Individual Paper Presentation

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The transportation system plays a key role in facilitating access to opportunities for people to engage in spatially dispersed activities. Ensuring equal participation across all groups, without barriers, is necessary to make the transportation system inclusive and equitable (Pot et al., 2021). However, persons with visual impairments (PVIs) face considerable accessibility-related challenges while traveling independently due to their reduced ability to identify and experience visual elements of travel (Qiao et al., 2023). It has been argued that, to a large extent, this reduced ability stems from perceived travel challenges rather than visual impairment. Literature also suggests that the ability to participate in spatially dispersed opportunities through various transportation modes depends not only on their availability but also on how the surrounding environment is designed and perceived (Low et al., 2020; Pot et al., 2021). This perceived accessibility is argued to be a real basis for decision-making while traveling. To design inclusive transportation systems, policymakers must understand how such perceptions are shaped. Although prior literature on perceived accessibility has sought to explain mechanisms and developed evaluation measures, the consideration of visual impairment is missing (Lättman et al., 2016). Furthermore, studies that have attempted to understand the travel-related challenges of PVIs have not explored the perceived accessibility of PVIs in their surroundings (Mogaji & Nguyen, 2021). In this study, we aim to explore how PVIs perceive their opportunities to engage in spatially dispersed activities through various transportation modes. We also analyze factors that affect the perceived accessibility of PVIs.

We adopt a qualitative research approach involving semi-structured interviews with PVIs in India. This enables us to delve deep into PVIs' travel experiences within the existing transportation system and explore perceptions of accessibility. Using snowball sampling, we recruited 30 PVIs with varying visual challenges (specifically, totally visually impaired by birth, totally visually impaired due to illness/accidents, and partially visually impaired) from various Indian cities. Each interview lasted between 60-90 minutes. We asked participants open-ended questions about their daily activity-travel behaviors and associated problems within the city. We also captured their perceived accessibility based on previous literature, in addition to sociodemographic characteristics. Interviews in regional languages were audio recorded with consent and transcribed in English before thematically analyzing them in an iterative process with ATLAS.ti software. This helped categorize and organize interview data into meaningful and emergent first-, second-, and third-order conceptual categories. Throughout the research process, we tried to ensure the trustworthiness criteria of qualitative research, i.e., credibility, confirmability, dependability, and transferability.

Our study reveals three significant factors influencing the perceived accessibility of PVIs. First, infrastructural support and maintenance play a crucial role, aiding in the identification and interpretation of the surroundings, like station announcements, tactile pathways, seamless movement between platforms and bus/trains/metros, pedestrian space management, design elements of transportation modes, etc. Second, the advent of emerging assistive technologies, such as artificial intelligence-based chatbots and apps, offer promising solutions for interpreting and describing surroundings. These technologies, along with IT support at stations/roads and ride-

hailing apps, help to make travel decisions, especially at unknown locations. Third, people-level support and behaviors exhibited by train/bus/airport/ride-hailing staff and the public significantly impact accessibility perceptions. Instances of misbehavior and associated safety concerns can detrimentally affect the accessibility experience. These factors collectively shape perceptions of accessibility across different transportation modes. Our study presents a framework for targeted and strategic improvements in transportation systems, particularly aiming at improving the accessibility of persons with visual impairments in developing countries. Theoretically, our research underscores the limitations of existing measures of perceived accessibility in the literature and offers improvements.

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Keywords: Visual impairment, Perceived accessibility, Equity, Inclusion, Transportation planning

EXPLORING URBAN EMOTIONAL MAPS UNDER THE PERSPECTIVE OF GENDER DIFFERENCES

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Individual Paper Presentation

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The urban built environment produces a profound effect on public emotions. Current research on emotional geography has revealed the non-linear relationship and synergistic effect between public emotions and built environment, and has explored public emotions under gender differences in waterfront areas. However, only a few studies have been conducted on the relationship between the built environment and public emotions of various land uses under the gender difference perspective. With the development of the Internet, social media has become a window for the public to perceive the city and express their emotions, providing a large source of data for public emotions research. As the central city of China's Yangtze River Delta region, which has a permanent population of more than 9 million and a complex built environment, Nanjing is a typical representative for conducting this study. This study puts forward new research approaches and perspectives based on more than 56,000 geolocated social media data posted in Nanjing over one quarter. The main content is: (1) classify social media data based on geolocation into six land use types: green space, residential, transportation, public service, commercial and office,

and industrial; (2) use deep learning methods to analyze the emotional intensity and polarity, and construct emotional maps of various land uses; (3) compare the public emotional characteristics of different genders; (4) use a text-subtraction statistical analysis method based on the Jieba and Wordcloud modules to explore the perceptual elements behind public emotions; (5) compare the differences in the perceptual elements of different genders, and propose spatial optimization suggestions to improve urban emotional states. Our empirical study constructs a model of public emotions of different genders in different land uses at the urban scale, and provides feasible technical approaches and planning guidance. This will contribute to helping urban governments to identify the different characteristics of the public emotional perception of different genders in different land uses, and to reveal the perceptual elements that generate the differences. This study supports the development of built environment optimization measures and policies to promote a more positive urban emotional environment.

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Keywords: built environment, urban emotional maps, gender differences, social media data, deep learning

GENDER DYNAMICS IN PLANNING: THE IMPACT OF FEMALE LEADERSHIP ON PLAN-MAKING

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Individual Paper Presentation

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Throughout planning history, females have played significant roles in various city movement and reshaped modern urban planning theory and practice. However, few empirical studies have examined the role of females and how their leadership influences plan-making. In this research, we construct an innovative dataset of comprehensive plans of 168 California cities based on gender information of 2785 planners, 2019 California Planning Survey, 2017 Census of Governments, and 2020 US Census. Our research examines the role of females and their leadership in shaping plan-making. We connecting feminist theory with leadership theory, and representative bureaucracy theory, to explain how the involvement of women and their leadership in three major institutions of planning – city council, planning commission, planning advisory committee, would shape local plan-making. Our models control for local contexts including population size, local government fiscal revenue per capita, and local government fiscal,

managerial and civic capacities. The descriptive statistics show that female leadership in city council is comparatively rare than that of planning commission and planning advisory committee. The regression analysis indicate that the involvement of women results in more progressive plans – that plans have greater focus on climate adaptation, aging and health, and affordable housing. Overall, our research advances scholarly understanding of the role of females and leadership in urban planning theory and practice.

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Keywords: Gender, Comprehensive plans, Planning commission, Feminist theory, Inclusiveness

GEOGRAPHIES OF MISSING DATA ABOUT FEMINICIDE

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Individual Paper Presentation

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Feminicide is the gender-related killing of cisgender and transgender women and girls. It reflects patriarchal and racialized systems of oppression and reveals how territories and socio-economic landscapes configure everyday gender-related violence. In recent decades, many grassroots data production initiatives have emerged with the aim of monitoring this extreme but invisibilized phenomenon. We bridge scholarship in feminist and information geographies and planning with data feminism to examine the ways in which space, broadly defined, shapes the counterdata production strategies of feminicide data activists.

Drawing on a qualitative study of 33 monitoring efforts led by civil society organizations across 15 countries, primarily in Latin America, we provide a conceptual framework for examining the spatial dimensions of data activism. We show how there are striking transnational patterns related to where feminicide goes unrecorded, resulting in geographies of missing data. Activists' experiences of data monitoring revealed that some feminicide cases tended to be more legible or “mappable” than others, especially when these “others” intersected with forms

of socio-spatial segregation and inequality. Uneven state planning capacity and infrastructure availability, for example, made it more difficult to identify information about cases in remote or vulnerable communities.

In response to missing data challenges, activists deploy multiple spatialized strategies to make these geographies visible, to situate and contextualize each case of feminicide, to reclaim databases as spaces for memory and witnessing, and to build transnational networks of solidarity. We show that activists navigate and creatively confront geographies of missing data on feminicide through four evolving counterdata strategies: reach, emplace, reclaim, and cruzar (crossing). By reach we refer to counterdata strategies that seek to amplify activists' ability to identify cases and access information from different parts of the territories they cover. The emplace metaphor relates to how activists collect, produce and visualize geographic data in order to situate feminicides in place and in context. Reclaiming refers to spatial strategies that aim to memorialize and contextualize feminicide as a structural phenomenon. Cruzar or crossing highlights how activists' counterdata strategies often involve building connections across territories, practices, and experiences. Our use of cruzar / crossing borrows from the idea of cruzar datos / crossing data put forth in a recent call for Latin American and North-based activists and scholars to collectively reflect on "engaging with data across the borderlands of disciplines, practices, migrations, and languages'' (Alvarado Garcia et al., 2022).

In this sense, we argue that data activism about feminicide constitutes a space of resistance and resignification of everyday forms of gender-related violence. More broadly, our work demonstrates the importance of counterdata strategies employed by civil society organizations in revealing planning inequalities and improving planning practice. The strategies we present are relevant to planners working in partnership with civil society groups and activists to understand and address data gaps or address data gaps or missing data about many issues related to minoritized groups, including structural violence, environmental harms, and housing insecurity.

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Keywords: feminicide, missing data, data activism, data infrastructures, spatial uneveness

HEALTHCARE EQUITY AMONG RURAL RESIDENTS IN METROPOLITAN AREAS: A CASE STUDY

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Individual Paper Presentation

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Spatial inequality poses a significant global challenge (UN, 2021), extending across critical domains such as housing, transportation, public health, and safety, affecting urban centers, suburban areas, and surrounding rural areas. Peri-urban and rural communities face additional hurdles, underscoring disparities in the allocation of public resources. Despite ongoing debates over a standardized understanding of spatial equity across economic, social, and cultural variations, there is consensus that it has become pivotal in urban planning.

In terms of healthcare equity, early studies conducted by Shannon et al. (1982) were among the first to investigate healthcare accessibility for indigenous populations in urbanized areas. Later, Luo et al. (2003) introduced the 2SFCA method, considering supply and demand scales, to explore healthcare accessibility with GIS, which has become a cornerstone approach in relative studies. Nevertheless, McGrail et al. (2009) exposed shortcomings in the 2SFCA method when quantifying accessibility in rural areas. Technologies such as Information and Communication Technology (ICT) and online-to-offline (O2O) platforms have reshaped public resource distribution dynamics. Scholars are exploring new approaches, such as the I2SFCA method (Zhang et al. , 2023), which translates online service accessibility into offline parameters for calculation. However, its improvements over the traditional 2SFCA method remain limited.

Healthcare equity among urban-rural residents in China has become a foundational element as the Chinese government has been striving to achieve the goal of equalizing basic public services for many years. In this study, we conduct a case study on healthcare accessibility in the southern Jiangsu region, aiming to reveal the spatial accessibility patterns of healthcare services among rural residents in this region and the resulting spatial inequality and injustice with integrated online and offline methods. This involves:

1) Developing a methodological framework for measuring accessibility: A spatial service network consisting of online booking systems and offline service delivery systems is used to assess the accessibility of healthcare facilities such as pharmacies. Parameters for online services, including supply scale, demand scale, and distance impedance, are recalibrated within algorithms based on real-time factors such as the number of choices, delivery times, and delivery costs.

2) Depicting the spatial pattern of medical accessibility in metropolitan regions: Facility Point of Interest (POI) data is utilized to conduct kernel density analysis, examining spatial clustering patterns of healthcare services. Origin-Destination (OD) path analysis is employed to calculate spatial distance or time cost from demand points to the nearest service supply points. Then, a new algorithm is proposed with necessary data collected by online service platforms to calculate online accessibility. Eventually, the integrated online-offline method provides a refined depiction of the medical accessibility pattern.

3) Evaluating the inequality of medical accessibility patterns and injustice for rural disadvantaged cohorts: Utilizing the Lorenz curve and Gini coefficient, this study assesses disparities with socio-demographic factors to investigate healthcare disparities among rural communities. Additionally, a comparison is made between the traditional 2SFCA method and the integrated online-offline approach, shedding light on the impact of the trend towards online service integration on healthcare equity.

As the research is ongoing, some primary findings have been identified: 1) The integrated online-offline healthcare accessibility pattern aligns with the "central place" theory in multi-centric setups. 2) Online services significantly improve access in suburban areas but have minimal impact on rural areas. 3) Urban areas benefit more from online services, exacerbating healthcare accessibility inequality between urban and rural areas.

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Keywords: accessibility measuring, Online-to-Offline (O2O), spatial justice, healthcare facilities, 2SFCA

HOUSING AS A MEDICAL DEVICE: ACCESSIBLE HOUSING FOR ENVIRONMENTAL ILLNESS

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Individual Paper Presentation

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This paper focuses on the intersection of urban planning and environmental illness (EI). EI refers to medical conditions in which exposure to everyday pollutants and toxins, ranging from pesticides to synthetic fragrance and low levels of radiation from power lines and wireless devices, trigger adverse and potentially disabling health reactions, such as difficulty breathing, brain fog, chest pain, seizures and anaphylaxis (Steinemann, 2016). Three of the most common types of EI are known as Electromagnetic Hypersensitivity Syndrome (EHS), Multiple Chemical Sensitivity (MCS), and Toxicant Induced Loss of Tolerance (TILT). About six percent of the general population report having a doctor-diagnosed EI and EI is one of the most frequently cited complications of post-acute sequelae of SARS-CoV-2 infection, or long COVID (Kreutzer et al., 1999). In 2016, EI was recognized as a disability by the United States Department of Justice Civil Rights Division under the Americans with Disabilities Act.

People diagnosed with EI experience a range of accessibility barriers to housing and public facilities such as community centers, healthcare facilities and public transit. Housing represents one of the most acute accessibility barriers for people with EI (McCormick et al. 2023). At present, there is no ‘cure’ for EI. The most commonly prescribed ‘treatment’ for disabling conditions of EI is avoidance of triggering environmental exposures (Ziem, 1992). Avoidance represents a considerable challenge considering the sheer range and volume of chemical exposures in virtually all aspects of modern life (Nadeau and Lippel, 2014). Healthy housing, or housing which does not trigger an individual’s EI symptoms, can be extraordinarily difficult to identify (Peek and Lyon, 2015), leading one EI advocacy organization to refer to housing as a ‘medical device’ in and of itself, one that is critical to general health maintenance (Environmental Health Association of Quebec). The case of a 51-year-old woman in Ontario, Canada, who died after an unsuccessful two-year search for healthy housing, is but one example of the critical need for EI-accessible housing (Favaro, 2022).

This paper builds on current scholarship on EI to better understand the unique architectural and planning-related needs of people with EI, with particular attention to access to healthy housing. The paper is motivated by three central research questions: What are the distinct housing needs of people with EI? What are best practices in the provision of housing for people with EI, including construction strategy and materials selection? And which purpose-built EI housing development projects might serve as a global model for EI-accessible housing?

To answer these questions, the paper draws on two months of field research conducted at four different residential communities for the environmentally hypersensitive: the HUD-sponsored Ecology House in San Francisco, California; a chemical-free apartment complex in Zurich, Switzerland; a faith-based housing development near Ottawa, Canada; and the rural EI community of Snowflake, Arizona. The paper adopts a mixed-methods approach, which includes spatial analysis, observational analysis, and semi-structured interviews with architects, building managers, construction firms, public health leaders, and individuals with EI.

Through this analysis, I draw attention to the different strategies that are being taken in Canada, Europe and the United States to provide accessible and affordable multifamily housing for people with EI. I argue that there is a critical need for new approaches to healthy housing for this population. The paper concludes with a more generalizable discussion of how planning practice can better meet the needs of people with EI.

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Keywords: Environmental Illness, Accessibility, Disability Studies, Healthy Housing, Urban Public Health

HOW PERCEPTIONS AND ATTITUDES TOWARDS RAIN GARDENS DIFFER BETWEEN GENDERS

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Individual Paper Presentation

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Rain gardens have been recognized as essential elements of urban green infrastructure, offering multiple benefits. However, the rain garden design typically commences from a gender-neutral viewpoint, inadvertently overlooking

the variances in gender-specific necessities, particularly women's enhanced environmental sensitivity (Rosa et al., 2020).

Understanding the divergent perspectives across genders on rain gardens is crucial for promotion environmental justice. Literature has identified some gender-based disparities in landscape perceptions, such as safety concerns and social demands. Specifically, some research indicates that women visit parks less frequently, especially large parks with dispersed management and extensive natural views. Additionally, women exhibit a stronger demand for urban green spaces and prioritize their recreational, health, and social benefits more than men (Ma et al., 2023). However, despite rain gardens being promoted as urban green spaces, there is a lack of investigation into gender differences in perceptions and attitudes towards rain gardens.

Therefore, this study poses following questions: 1) Whether and how variant genders perceive rain gardens differently regarding experiences, ownership, and ecosystem services? 2) Are there any disparities in attitudes towards rain garden, including tradeoffs between cost and benefits, and willing to pay across genders? If so, how? 3) Are those findings remaining constant between the two countries?

This study uses questionnaire survey to answer these questions. This survey covers six topics, ranging from rain garden experience, ownership and maintenance, ecosystem services, tradeoffs, economics, to demographics. We employed AI to removal of any identifying national indicators in images, such as vehicles. Respondents were asked to select and provide comments on their preferences as well as reasons for various types of rain gardens and offer insights into their decision-making processes. We use presentative samples of residents in Columbus, Ohio, USA and multiple Swedish municipalities, echoing sociodemographic context of these cities. Questionaries are distributed by Qualtrics. This survey gathered 600 responses, evenly split between the two countries.

This study counts the frequency of each option selected and utilizes descriptive statistics to identify variations across genders and examine consistency across different social contexts. Nonparametric analyses, specifically the Mann-Whitney U test and Kruskal-Wallis H test, are employed to assess the significance of differences across genders. Logistic regression is subsequently used to identify the variables contributing to the variability in perceptions and attitudes towards rain gardens among different genders. Gender as well as interaction variables between gender and other socioeconomic factors are included as independent variables, while controlling for socioeconomic variables such as age, race, education level, income, occupation type, and housing conditions.

This research identifies gender disparities in perceptions and attitudes toward rain gardens. Women prefer well-organized designs, while men prefer wilder gardens with more biodiversity. Despite higher motivation for participation, women express lower satisfaction with planning outcomes and communication during rain garden planning and construction. These findings underscore the importance for planners and policymakers to address gender-specific sensitivities and expectations, aiming for more equitable participation and benefits from urban green spaces.

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Keywords: urban feminism, landscape perception, rain garden, survey, urban green spaces

IDENTIFYING BANQUET HALLS AS IMPORTANT SPACES FOR ETHNO-CULTURAL PRACTICES

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Individual Paper Presentation

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The Greater Toronto Area is home to people with diverse ethno-cultural backgrounds, many of whom are increasingly bypassing dense downtowns to live in the suburban areas and municipalities in the region. Despite the growing ethno-cultural diversity in the area, local municipal planning efforts do not comprehensively accommodate the ethno-cultural practices and spatial needs of these communities (Viswanathan, 2009; Zhuang, 2021a). This has resulted in ethnic entrepreneurs taking on the responsibility of creating spaces such as places of worship and event spaces, many of which are located in areas zoned for industrial uses (Basu & Fiedler, 2017; Zhuang, 2021b). These spaces serve as critical community infrastructure but are not often formally recognized or supported by local municipalities.

Using the example of privately-owned event spaces serving South Asian communities in the municipalities of Toronto, Brampton, and Mississauga, this paper interrogates cultural planning efforts in these cities to ask: Are privately-owned event spaces currently understood and recognized as being culturally important spaces per planning definitions and regulations? Do these event spaces qualify for any municipal support or protection? What are some of the ways in which these spaces can be integrated into or accommodated by local cultural planning efforts?

This paper uses an analysis of policy documents and interviews with owners and operators of event spaces, and municipal staff working in cultural planning or cultural services to answer the questions posed. Initial findings indicate that most municipal cultural planning efforts focus on cultural production from an economic lens, and fall short of accommodating spaces for the practice of ethnic cultures. Cultural planning efforts currently also do not adequately support the emerging Do-It-Yourself event community, which rely on spaces like banquet halls for their work. This paper contributes to the emerging body of literature on the ethno-cultural use of space and multicultural planning practice.

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Keywords: Cultural planning, Ethnic culture, Cultural infrastructure, Event spaces, Cultural production

IMPACT OF NEW METRO LINES ON THE ACTIVITY SPACE OF THE ELDERLY

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Individual Paper Presentation

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The rapid aging of population has emerged as a pressing concern in many countries. With declining physical health with age, the elderly face increasing difficulties in traveling and shrinking activity space, which could have severe negative effects on the well-beings of the elderly and raise significant equity concerns. Metro, as a driver-free transit mode, offers promising potential to improve the mobility of the elderly and expand their activity spaces. Despite its policy significance, there remains a notable gap in research investigating the causal relationship between a new rail transit line and the activity space of the elderly. Existing studies predominately rely on cross-sectional travel surveys, facing the limitations of small sample size and difficulties in establishing causal inference.

To fill this gap, we develop a mobile-phone-data based approach to assess the causal impact of the metro on the activity space of the elderly, using the opening of Shanghai Metro Line 15 in January 2021 as a natural experiment. The mobile phone data used in this study are from a major operator in China, which contain the trajectories of hundreds of thousands of anonymous users in every November from 2017 to 2022. We classify the users into four age groups, representing the youth (19-24), the adults (25-59), the younger elderly (60-69), and the older elderly (70+). With the mobile phone data, we construct a panel dataset to track the evolution of activity space of users at 250-m grid cell level for different age groups over time. The activity space is characterized by metrics including the number of activity spots visited, the area of standard distance circle, and the maximum travel distance.

We calibrate a set of difference-in-differences models to assess the impact of Metro Line 15 on the activity space for individual age groups. We classify grid cells within 500-m of the new metro stations as the treatment group and those within 500-1000-m as the control group and compare the activity space attributes of the treatment and control groups before and after the opening of Metro Line 15. The results show that the opening of the new line has led to an increase in the number of activity spots visited and the size of activity spaces for all age groups, with the elderly enjoying greater benefit in activity space than the adult group. On average, the opening of Line 15 has increased the number of activity spots visited by 8.5 % and the area of standard distance circle by 29.7%, respectively.

As a robustness check, we perform an event study to show that the parallel trends assumption required by a DID analysis is satisfactory. We further use the difference-in-difference-in-difference model (DDD) to explore the heterogeneity of the new metro line effect over space. We find that (1) the elderly living in areas without any metro stations before the opening of Line 15 gain more activity space increase than those living around an intersection station of Line 15 and another pre-existing metro line; and (2) the elderly living outside the suburban areas gain more activity space increase relative to those living in the urban core, which implies that: (1) a new line

in an area that previously lacked a rail network can provide a greater enhancement to the mobility of the elderly in the station areas; and (2) the opening of the new line can help the elderly living outside the suburban areas to gain access to the rich amenities in the urban core.

Our findings provide empirical evidence demonstrating the significant role of metro in enhancing the elderly mobility, which can assist policymakers in planning for age-friendly cities.

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Keywords: The elderly, Urban rail transit, Activity space, Mobile phone data, Difference-in-differences

IMPROVING EQUITY ANALYSIS IN REGIONAL TRANSPORTATION PLANS

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Individual Paper Presentation

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Metropolitan planning organizations (MPOs) in the United States develop long-range Regional transportation plans (RTPs), which are required in order for municipalities to receive federal funds for transportation projects. Title VI of the federal Civil Rights Act of 1964 requires MPOs to submit an equity analysis to demonstrate that their RTPs do not discriminate against protected groups. This paper aims to address two research questions: (1) what is the current (range of) practice(s) associated with equity analysis at large MPOs in the US and (2) how can planning agencies improve their equity analyses conditional on their current travel forecasting model capabilities? To identify the range of practices, we perform a content analysis to assess how MPOs define equity goals, identify populations of concern, integrate their equity analysis into their RTP documents, use community input, and whether they meet or exceed legal standards. Additionally, we evaluate how MPOs use travel forecasting models in their equity analyses and the quality of their models; we also describe practical steps for MPOs to improve their equity analyses along this dimension. We find significant variability in how MPOs define fairness in their equity goals, define populations of concern, use community input, and use travel forecasting models in their equity analyses. For example, several MPOs conduct in-depth equity analyses using advanced travel forecasting models, synthetic populations of households, and various classifications of populations of concern. In contrast, other MPOs only display the locations of RTP projects on a map with geographies labeled as disadvantaged or non-

disadvantaged. We also find that MPOs with more restrictive state requirements than federal guidelines produce higher quality equity analyses—an important finding considering the Biden Administration's review of Executive Order 12898, a potential avenue to alter guidelines to improve MPO equity analyses. Despite differences in resources and approaches, we are able to identify ways in which MPOs, regardless of current practices, can advance their equity analyses towards the state-of-the-art equity analysis framework going forward.

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Keywords: equity, accessibility, transportation planning

Inclusion and Emergency Response: Identity, Location, Politics, and Trust

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Individual Paper Presentation

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The erosion of willingness to call the police in emergencies reflects the public's view of the appropriate role of policing and consent to be policed (McLean et al., 2023). The fact that Black, indigenous, and people of color, younger people, and urban residents are increasingly wary about calling 911 speaks to the connections between place, identity, and safety (Quick, 2022). This is a planning problem of place-associated aspects of inclusion and exclusion (Zapata and Bates, 2015; Jackson et al., 2023), relating to Whiteness as an "encompassing and veiled" quality of access to the advantages of government policies and protection (Goetz et al., 2020, p. 145).

Issues of access to and trust in emergency response have been particularly acute in Minnesota, the location of this study, following the 2020 murder of George Floyd by Minneapolis police officers and ensuing protests. Fearful of biased or violent police responses, some communities now advise against calling 911 and are self-organizing other resources for safety and support in emergencies. Police departments across the Twin Cities metropolitan area have faced significant staff recruitment and retention challenges. Meanwhile, the growing need for emergency services to respond to mental health and addiction crises places new demands on police officers as well as other first responders. Altogether, these patterns increase the risk that those needing help in emergencies may not be willing

and able to access needed support. In addition, the lack of trust in public safety professionals and the heightened anxiety of people interacting with first responders during emergencies may elevate responders' burnout, risks, and trauma (Jacob, Rossler, and Scheer, 2024).

This paper explores what Minnesotans expect from first responders, including 911 dispatchers, police officers, firefighters, and emergency medical technicians (EMTs). We examine public expectations descriptively (i.e., respondents' assessment of the quality of these aspects of emergency response) and normatively (i.e., what values they believe should be prioritized in improving emergency response). Through an anonymous survey, we collected data from 907 consenting adult residents of Minnesota in late summer 2023. Respondents were asked ten short, close-ended questions about their recent use of 911, whether they do or do not feel safe around different first responders (police officers, firefighters, and EMTs), the reasons they might feel more or less likely to call 911 for help, their confidence in different kinds of responses to mental health emergencies (including social workers), and which values they believe should be prioritized in the implementation of and investment in the emergency response system as a whole.

Through descriptive statistics, data visualization, and statistical tests, we explored whether there are patterns of difference in attitudes between urban and rural residents (classified by zip code) or by gender, race and ethnicity, age, income, and political affiliation. Our analysis demonstrates that a substantial majority of respondents have a positive perception of 911 dispatchers, though less so in the context of mental health emergencies. Respondents' feelings of safety are weakest around police officers (compared with other firefighters and EMTs), with statistically significant differences by age (with those aged 18-34 feeling least confident), race (with less than half of BIPOC respondents feeling safe), and income. Political affiliation was also statistically significant, with Republican respondents not only markedly more confident of their safety around police but also being the only group with a majority disagreeing that social workers should respond to mental health emergencies. Before ACSP, we will be performing additional analysis of differences by rural, suburban, and urban places of residence. We will conclude the paper with recommendations for improving the quality of residents' interactions with 911 dispatchers and first responders.

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Keywords: Policing and public safety, Equity, inclusion, and anti-racism, Trust in first responders, Urban, suburban, and rural differences in public attitudes, Minnesota

INCLUSIVE VOICES: NAVIGATING COMMUNITY DEVELOPMENT THROUGH DISABILITY LENS

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Individual Paper Presentation

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The revitalization of lower-income communities often sparks conflict among community development organizations, planners, preservationists, and residents. In Chicago's Pilsen neighborhood, a demolition application emerged quietly during COVID setting in motion a landmark ordinance to preserve approximately 975 buildings and triggering distrust in the community development process, particularly surrounding a contested parcel - the 18th and Peoria Project. Amidst the COVID-19 pandemic, stakeholders, including the Alderman, residents, and activists, contested this ordinance and won; only to find themselves fighting for another transparent and inclusive process to create affordable housing against a backdrop of gentrifying forces at multi-scale levels. As there are many voices in the community development process, this paper examines whose voices speak on behalf of whom, specifically, "How are the myriad of disability community voices being included in inclusive participation of gentrifying communities and how are accessible engagement processes rolled out by City of Chicago and contracted developers?"

Conducted within a larger 35-year longitudinal study of Chicago's Pilsen community, we employ a historical genealogy and grounded critical visualization's mixed-method by the authors who have carefully followed the politics of gentrification in the neighborhood. Drawing on a variety of sources, including published and unpublished materials from archives, secondary data, research publications, photo-voice, interviews, and participant observations, this portion of the research purports on the ethnographic lens as both a disability researcher and impacted resident. The power dynamics between the city's strategies and residents' struggles against gentrification and for community participation are documented and analyzed through the lens of a handful of Pilsen disability activists.

This paper demonstrates the challenges that planners face with engaging the disability community - through a superficial understanding of accessible and inclusive disability communities. Disability continues to be seen as a health descriptor of the person with a disability and not part of the racial and ethnic intersections of multiple social identities that continue to evolve with each generation and cultural privilege. This paper starts the conversation on the need for developing cultural competency disability planning discourse through the introduction of a "Tribrid" model of disability community participation through the intersection of political and capitalistic forces of under/overdevelopment alongside the social production of disability space(s) that is situated in LatDisCrit theories and Disability Justice tenets. This paper also adds to the literature on gentrification and community participation by adding disability voices and their involvement, long missing in the urban development academic literature.

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Keywords: Disability, Gentrification, Pilsen Chicago, Planning Practices, Latina/o/xs

INSIGHTS ON THE APPLICATION OF ACCESSIBILITY INDEX TO PHARMACY SERVICES

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Pharmacy plays a crucial role in the U.S. health care system and often goes beyond the traditional prescription services, as it can also provide vaccination, immunization, diagnostic, preventive and urgent care among others. Inspired by the urgent need for combating the COVID-19 pandemic, authorities are increasingly considering pharmacies as strategic community partners for promoting public health and handling health-related emergencies.

Although community pharmacies are large in number and distributed across broad geographical areas, there is evidence suggesting that their risk-adjusted accessibility to all U.S. residents are not equitable, when risk factors such as age, income, transportation, and health conditions are considered (Chen and Suen, 2023; Guadamuz et al., 2021; Pednekar and Peterson, 2018; Qato et al., 2014). In fact, researchers argue that disparities in accessing community pharmacies are worsening over time and could be an overlooked contributor to disparities in the public health outcomes. Therefore, there is a pressing need for research and development in accessibility to community pharmacy, and pharmacy deserts have emerged as a promising study.

This research uses Jefferson County, Kentucky as a case study to explore an enhanced Pharmacy Accessibility Index (PAI) by integrating additional socio-economic factors relevant to potential pharmacy users. Many existing measures of pharmacy accessibility heavily rely on distance metrics and demographic data at the neighborhood level (Guadamuz et al., 2021; Pednekar and Peterson, 2018). By employing these standardized accessibility measures, we identified non-pharmacy deserts in areas lacking quality pharmacy services in Jefferson County. Our enhanced PAI incorporates several key components: the spatial distribution of pharmacy services and potential users, the quality of pharmacy establishments assessed through Google reviews, and the actual usage of pharmacies based on smartphone location data from Placer.ai. This multifaceted approach allows for a more comprehensive assessment of pharmacy accessibility, considering not only geographic proximity but also service quality and user behavior.

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Keywords: Accessibility Index, Pharmacy

MULTIGENERATIONAL SHARING IN URBAN PLAY SPACES: A CASE STUDY OF WUHAN

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Individual Paper Presentation

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The accelerated pace of urbanization has precipitated a decline in the availability and dispersion of public play spaces within urban environments, posing significant challenges to child development and the overall well-being of city dwellers. In the context of China's "multiple-child policy" and an increasingly aging population, the transformation of family structures has underscored the urgency of child care and companionship, paralleled by the growing prominence of in-home elderly care. The rise in intergenerational caregiving and community interactions has underscored the importance of multigenerational space sharing as a vital urban strategy to address these evolving societal problems and thus redefine the role and boundaries of urban play spaces. The concept of play spaces has transcended their singular recreational purpose to become multifunctional hubs that facilitate educational development and social interaction within community life., making the construction of play environments that meet the shared needs of multigenerational families increasingly vital.

Despite this evolution, research and practical projects often disproportionately cater to the needs of children, neglecting the potential for elderly and broader family member interactions. This oversight limits the potential for urban play spaces to be fully inclusive and comprehensive in their design. Wuhan, a major city in Central China, has made significant progress in urban planning and child-friendly city construction in recent years. Nevertheless, crafting urban play spaces that both cater to children's play needs and encourage interactions among the elderly and various age demographics persists as an unresolved issue.

Leveraging advanced international and domestic insights into play space design and multigenerational inclusion, this study selects Wuhan as a focal point. The research involves categorizing the city's play spaces by functionality, scale, and child-friendliness. Field observations were conducted across 30 targeted sites, enhanced by in-depth

interviews with residents of diverse ages and detailed quantitative analysis, incorporating thirteen indicators across four major dimensions—sociability, growth potential, autonomy, and natural appeal. Aims to explore the dynamics of shared play experiences across generations, the investigation pioneers the introduction of "play imagery," mapping out the dynamic interplay between behavioral patterns in play and the evolving characteristics of physical spaces over time.

The study's findings reveal a notable inverse relationship between physical play activity levels and the accessibility of urban play spaces, suggesting that the most engaging play areas are not always the most accessible. Additionally, the investigation into the time patterns of multigenerational play within a single day indicates variability. It underscores the diverse needs and preferences of different age groups but also suggests that thoughtfully designed shared spaces could serve as a solution to the limitations posed by urban spatial constraints. Participants reported a noticeable increase in physical engagement when spaces were shared across generations, as well as enhanced emotional well-being, contributing to a healthier, more integrated social environment.

Overall, this research delineates the diverse play requirements and preferences of urban populations and contributes scientific evidence for urban play space innovation, advocating for inclusive and comprehensive "people-centric" urban planning to serve the needs of an intergenerational society.

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Keywords: Multigenerational Sharing, Play Spaces, Child-friendly City

PLANNING FOR AGING: ARE WE MAKING PROGRESS?

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Individual Paper Presentation

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Aging is a global trend that creates an opportunity to rethink economic structure, urban form and approaches to social wellbeing. In this paper, we provide a demographic overview describing current and projected demographic trends by global region using UN and World Bank data (Guillemot, Zhang & Warner, 2024). Then we review the implications of such a change for planners.

Planners have been addressing the implications for cities (Forsyth and Lyu, 2024; Warner and Zhang 2022), but women are still invisible in many comprehensive, economic development and transportation plans (Zhang, Warner, Xu, Wang, 2024). While demography may be destiny, societies can choose the destiny they want. Aging can help us rethink economy, urban form, and societal response.

We present data from three national surveys, conducted from 2013 to 2023 to show how US communities are responding in their planning, zoning, land use and services. We find only slight improvement in the attention to aging in comprehensive, economic development and transportation plans, little movement at all in zoning and land use, and little improvement in service delivery to address the needs of an aging society.

What delays this planning response? It is more than inertia; it is the inability to conceptualize the significant paradigmatic changes required to address the needs of an aging society. These paradigmatic changes include the need to: rethink economic development and recognize its foundation in the care economy, reframe transportation from a commuting to a mobilities paradigm, and shift from separated to integrated land use. But progress has been slow. The American Planning Association (2014) has proposed a comprehensive framework for age-friendly cities that addresses services, built environment, economic and social organization. Concerns over social inclusion and inter-generational equity are centered in these approaches. Aging has the potential to widen our lens as planners to the needs of women, children and others, but greater attention to the social organization aspects is needed if we are to make progress.

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Keywords: aging, gender, economics, planning

PLANNING HIERARCHY OF COMMUNITY FACILITY AND RESIDENTS' TERRITORY COGNITION

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Individual Paper Presentation

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Background and question: The overemphasis on community territory segregation is one potential cause of social segregation. With the global focus on social inclusion, community planners have been trying to optimize the

distribution of facilities at different planning hierarchies to shape the community's activity circle and promote participation for different groups of residents. Although facility planning affects residents' cognition of territory, previous studies have indicated that residents' cognition is not the same as the planning structure. The question of what elements in which planning hierarchy have more significant impacts on residents' territory cognition is one important research gap and deserves further study for better urban inclusion. This study hopes to explore how facility planning at different hierarchies affects residents' territory cognition.

Methodology: The empirical research was conducted in a mixed residential area (new town) in Singapore. Based on the cognitive map method, the study asked respondents to draw their perceived community boundaries on a map and collected their willingness to share the community during the on-site survey. Then the study calculated the distribution of different types of transportation and functionality facilities within the 200m, 500m, and 1000m range of each respondent's residential location referring to the different hierarchies of new town planning, including the precinct level, neighborhood unit level, and 15-minute walking circle scale, using GIS data. The study built multilevel regression models of territory cognition scopes and planning features under different hierarchies to examine their relationships.

Research findings: The study confirms a positive correlation between territory cognition scope and the sense of exclusivity, suggesting that a compact territorial scope rather than an expansive one is conducive to inclusion. The study also finds that the factors affecting residents' territory cognition vary at different hierarchies. At the 200m level, the distribution of functional facilities has no significant effect, but the fewer the vehicular arterial road space, the more compact the territory cognition; at the 500m level, sufficient facilities for service functions significantly reduce the scope of perceived territory and promote sharing; at the 1000m level, pedestrian roads have a greater impact, with the more sideways having a more compact territory cognition.

Research implication: At the theoretical level, the research provides new perspectives on community inclusion based on territory cognition, suggesting that territoriality is crucial to interpreting inclusivity. At the policymaking and design practice level, the study suggests different emphases at different planning hierarchies to efficiently promote inclusion. For service facilities, a radius of 500m can be considered the appropriate scale to maximize their role; for road layout, attention should be paid to creating a car-free environment at the 200m scale and optimizing the pedestrian environment at the 1000m level.

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Keywords: community inclusion, cognitive map, territory cognition, community planning hierarchy, facility planning

POWER TO THE PEOPLE: HOW ACCESSIBLE ARE ELECTRIC VEHICLE CHARGING STATIONS?

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Individual Paper Presentation

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Electric vehicles have gained significant popularity as the world transitions towards a more sustainable future. Yet, the full potential of this shift is hindered by the accessibility of electric vehicle charging infrastructure, both physically and socially (Wu & Yang, 2020). This study, focusing on the Detroit and Grand Rapids metropolitan areas, embarks on an exploration of the multifaceted nature of accessibility to electric vehicle charging stations (EVCS), probing the efficacy of various metrics employed in prior research, disparities in access based on different social characteristics, and the influence of geographic location. The study first employs Principal Component Analysis to dissect and compare four metrics previously used in scholarly papers to measure EVCS accessibility: distance-based metrics (Falchetta & Noussan, 2021), time-based metrics (Falchetta & Noussan, 2021), concentration-based metrics (Khan et al., 2022), and hybrid metrics (Li et al., 2022). The results indicate a strong similarity between distance-based and time-based metrics, suggesting these two metrics can be substituted for each other. The findings also show that there is no significant variability in considering the road network or measuring straight-line distance for distance-based accessibility. The study then conducts descriptive analysis and multivariate regression, uncovering potential disparities in accessibility from home and work based on demographic groups such as race, income, and education, and highlights the contrast in EVCS accessibility between urban and rural settings to understand how location affects electric mobility opportunities. This study seeks to address key questions regarding the effectiveness of different accessibility metrics, the extent of access disparities among specific populations, and the variance in accessibility from urban to rural areas. It enables policymakers and investors to identify gaps and opportunities in the existing infrastructure, promoting an environment of social equity.

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Keywords: Accessibility, Electrical vehicle charging station, Equity

PRIORITIZING UNHEARD VOICES IN EXTREME HEAT RESILIENCY PLANNING.

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Individual Paper Presentation

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Increasing extreme heat conditions resulting from climate change have threatened cities worldwide. Previous decades have seen a dramatic increase in extreme heat events attributed to climate change, resulting in increases in heat morbidity and mortality. These trends have initiated considerable new research into the study of heat waves and urban heat island effects (UHI). Despite this, the dangers posed by extreme heat have mainly remained unseen, and awareness of the impacts on most marginalized communities is largely unknown. This study adopts a transdisciplinary, mixed methods approach, integrating theories of community-engaged research, participatory action research, advocacy planning, and decision sciences. This study documents the lived experience of low-income seniors in Boston, a socially and racially marginalized group. Findings highlighted chronic heat issues among residents related to diverse challenges such as a crumbling-built environment, weakened social infrastructure and community response, and lack of space for elderly residents to voice their concerns. This reinforced the often-stated observation that heat is not a singular issue but a cascading, dynamic, and complex multilayered problem related to race, socioeconomic conditions, age, health, and physical and social infrastructure. The dynamic and heterogeneous nature of extreme heat impacts low-income seniors of color due to the crumbling-built environment, financial insecurity, lack of social networks, and physical immobility drive heat vulnerability. Secondly, lack of investment in community-level response and support systems largely absent in the city's environmental justice communities often deprive elderly residents of essential services and resources needed to combat extreme weather events. Finally, the findings highlighted the need for inclusive and equitable planning processes and democratic spaces to create pathways that include the voices of our most underrepresented communities in efforts to co-create community-centric, equitable, and just resiliency interventions.

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Keywords: Heat waves, Urban heat island, Heat resilience, Vulnerability, Inclusion

Queering Home – 2SLGBTQI+ Older Adults' Housing

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Individual Paper Presentation

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Access to safe, affordable housing and care is a pressing concern for all older adults (aged 65+) in Canada (City of Toronto, 2021). Those who identify as 2SLGBTQI+ (Indigenous Two-Spirit, lesbian, gay, bisexual, transgender, queer or questioning, intersex, and other sexual orientations and gender identities), face additional concerns about the potential for discrimination, homophobia, or transphobia from neighbours, staff, or fellow residents as they transition from independent to congregate living settings (Baynes, 2022). Inclusive housing and related services are required to support 2SLGBTQI+ older adults' self-determination and identity (Gahagan, 2020). Some inclusive housing models have begun to emerge in the US and elsewhere that offer various levels of independent and communal elder housing, but there is limited research on inclusive housing feasibility and planning within the Canadian context (Baynes, 2022).

2SLGBTQI+ groups have typically been concentrated in large urban centres and neighbourhoods across the country. Once considered social sanctuaries, these inner "gaybourhoods" typically do not allow for aging-in-place due to a lack of older adults' housing and services (Bitterman & Hess, 2021). As the first generation of openly 2SLGBTQI+ individuals in Canada age (Bitterman & Hess, 2021), there is an increasing demand to develop affordable housing models and policies that meet their needs not only in typical "gay enclaves" but in cities at large. It is also essential to understand the necessities of different 2SLGBTQI+ older adults to avoid generalizations between groups, especially for individuals that identify as transgender, queer, and account for intersectional issues affecting racialized and migrant 2SLGBTQI+ older adults.

This paper investigates the spatial manifestation of age-inclusivity and aging-in-place in Toronto while expanding the definition of inclusivity to encompass 2SLGBTQI+ identities. Theoretically, this paper frames how heteronormative ideals of relationships, family roles, and co-habitation have influenced the development of housing opportunities for older adults, which marginalizes those that do not conform to heteronormative societal standards (Savage, B., & Barringer, 2021). Building on previous research on affordable housing for older adults in Toronto and the extensive expertise of our research partners, this paper contributes to theories on aging-in-place for 2SLGBTQI+ older adults and informs equitable and inclusive design in architecture and urban planning. Specifically, the paper explores 2SLGBTQI+ social configurations, and 2SLGBTQI+ housing studies, using a three-phase mixed method research approach. The research involves multiple modes of quantitative data collection methods, including demographic studies, case studies, and a policy evaluation.

This paper helps 1) advance the age-friendly and aging-in-place housing design discourse; 2) foreground inclusion, equity and diversity in housing for 2SLGBTQI+ as they age; and 3) provide not-for-profit organizations and municipalities with empirical data about existing housing while offering architecture, urban design and planning recommendations to engage in the development of housing guidelines that will enable 2SLGBTQI+ older adults to be safe, supported, and included.

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Keywords: Housing, 2SLGBTQIA+ Older Adults, Aging-in-Place, co-habitation, Toronto age-inclusivity

SPATIAL-TEMPORAL IMPACT OF BUILT ENVIRONMENT ON WOMEN'S SAFETY IN MUMBAI

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Individual Paper Presentation

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Urban environments frequently witness incidents of sexual violence against women, posing a significant threat to public safety and societal sustainability. Crime Prevention Strategies through Environmental Design (CPTED) to create gender-inclusive cities has been a focus of urban planning. However, due to the lack of data on violence against women and its relations to street-level environment in some large geographical urban areas, the influence of the built environment on such crimes remains largely unaddressed. Furthermore, the spatial-temporal relationship between the macro and micro characteristics of the built environment and sexual violence is still largely unknown.

This research employs Street View Images (SVI), Computer Vision (CV), and Machine Learning (ML) to measure the eye-level street features of Mumbai streets. It addresses the deficiency of street environment data, and provides more environmental variables not previously considered, thereby enhancing the model predictive capabilities for crime rates. In order to more accurately capture the correlations between environmental variables and crime events, this paper divided the macro built environment variables with functional differentiation into four parts: crime defense sites, crime attraction sites, crime generation sites, and crime neutral sites. Then, the data on sexual violence against women are classified into four time periods. Four Geographically Weighted Regression (GWR) models were constructed to capture the geospatial non-stationary of criminal behavior across different periods, and temporal variations in correlations were captured by comparing coefficients across different periods. Meanwhile, this study takes socioeconomic variables as the baseline model, constructs regression models based on micro street view variables, macro built environment variables, and both of them, respectively, to compare the

performance of the models, and analyzes the spatiotemporal changes in the explanatory ability of the explanatory variables in the two groups.

The study reveals that both macro and micro-built environment variables play complementary roles in explaining sexual violence. Specifically, the complexity of street facades, general stores, and fire stations can provide territoriality and surveillance, thereby reducing the incidence of gender-based violence. Maternity homes, casinos, cyber-cafes, and public toilets have been identified as potential hotspots for gender-based violence. In addition, the temporal differences in the same urban variables cannot be ignored. The effects of some variables (e.g., schools, trees, worship) on violence against women varied over time and space, with differences observed between day and night and between southern downtown and northern suburbs. The results of these studies yield several planning and management recommendations.

The results of this study can help planners address the problem of violence against women by improving the built environment and implementing effective management strategies. The consideration of time factors will also help planners optimize resource allocation with maximum efficiency. At the same time, this study demonstrates the potential of leveraging multi-source data and artificial intelligence tools to analyze the correlations between macro- and micro-scale built environment and gender-based violence, providing a practical and scalable method to study women's safety issues in other regions.

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Keywords: Sexual Violence, Gender-inclusive Urban Planning, Spatial Heterogeneity, Machine Learning, Crime Prevention Strategy Through Environmental Design (CPTED)

The ABCs of DEI in ACDs: Fostering Belonging in Arts and Cultural Districts

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Individual Paper Presentation

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Arts and cultural districts (ACDs) grew as an economic development strategy in the 1990s and proliferated in the 2000s, often in reaction to state, regional, and local programs and incentives (Stern & Seifert, 2010). More recently, the increased emphasis on placemaking as an economic development strategy, including within ACDs, has sharpened critiques from scholars and activists. They argue that place-based arts and cultural economic development or creative placemaking may emphasize aesthetics and promote gentrification rather than focusing on belonging and ensuring inclusiveness (Barry & Agyeman, 2020). In response, some arts policymakers, planning scholars, and advocates are increasingly focusing on how to support diversity, equity, inclusion, and belonging in arts infrastructure and arts interventions (Ashley et al., 2022; Crisman, 2020; Redaelli, 2018). We draw from an original national survey of ACDs in the U.S. using regression analysis to better understand ACDs' prioritization and outcomes of DEI efforts. We unpack the relationship between ACDs DEI efforts and several ACD characteristics including district and organizational type, political environment, and human and financial capacity to understand the degree to which these characteristics enable or inhibit DEI efforts. These insights can provide planners engaged with arts and cultural policy, ACDs, and efforts to integrate the arts into planning practice a better understanding of how to ensure their work contributes toward equity, diversity, inclusion, and belonging rather than gentrification or disbelonging.

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Keywords: arts and cultural districts, arts and cultural policy, creative placemaking, DEI, belonging

The Persistence of Spatial Mismatch in Metropolitan America

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Individual Paper Presentation

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Problem: Kain's (1968) spatial mismatch hypothesis (SMH) first described the lack of access to job opportunities experienced by Blacks in declining inner cities due to housing segregation and limited accessibility. Over subsequent decades, various legislative and policy interventions in housing and transportation have targeted on the alleviation of spatial mismatch problem faced by Black workers. These interventions may have been effective, but scholars have not reached consensus on the severity of spatial mismatch still facing Black workers. Meanwhile, scholars' attention to other low-income worker groups prompts us to consider if the spatial mismatch for Black workers is more a consequence of structural racism and restricted suburban housing access than the limited commuting options, exacerbated by low wages. These questions establish the need to comprehensively assess the scope and magnitude of spatial mismatch experienced by Black workers and other marginalized individuals in the U.S., including low-income workers.

Research strategy and findings: We provide new evidence on the severity of spatial mismatch experienced by Blacks and low-wage workers in metropolitan America in 2019 for automobile- and transit-based commutes at two time thresholds (i.e., 30 and 60 minutes) using two measures, job accessibility and accessibility-based dissimilarity indices (ADIs). We test the hypotheses: Black workers experienced greater spatial mismatch than white workers; and low-wage workers experienced greater spatial mismatch than middle-/high-wage workers. We find ADIs provide more theoretically valid measures of spatial mismatch because they account for workers' housing locations; whereas job accessibility tends to underestimate the severity of spatial mismatch for Black workers. We find Black/white disparities universal for auto-dependent Blacks across metropolitan areas, but Black transit-commuters do not face disadvantaged statuses in 43 of 100 metros. Disparities experienced by low-wage workers relative to middle-/high-wage workers are not as severe as those of Blacks relative to whites.

Takeaway for practice: These findings comprise evidence that the legislative and policy efforts during the past few decades have not resolved the spatial mismatch problem for Blacks. More effective policies to address structural racism and break patterns of historic housing segregation are still necessary, including housing policies like a rent or purchase subsidy and transit policies like more rapid connections between the low-wage jobs and low-income, minority neighborhoods to better serve the urban poor, and extended transit schedules for night workers. Other solutions such as creating more entry-level jobs near the rapid transit lines with supportive policies and proposing zoning plans to better connect jobs and housing spatially could also be considered to alleviate the spatial mismatch.

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Keywords: Spatial mismatch, Black-white disparities, Low-wage workers, Job accessibility, Accessibility-based dissimilarity index

The Pursuit of Procedural and Distributive Justice in Hurricane Recovery
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Individual Paper Presentation

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Hurricane Maria, a category 4 tropical cyclone, hit Puerto Rico on September 20, 2017, causing damages estimated at $112.5 billion, the fourth costliest in US soil (NOAA, 2024). Nearly eight years after the event, some of the lessons from ongoing recovery efforts have matured and crystallized in the minds of participating community organizers, local government officials, and members from academia residing in two of the municipalities assessed as most physically and socially vulnerable in the context of the Puerto Rican archipelago.

Santiago et al. (2022) explored nature-based solution relief funding distribution in coastal regions after Hurricane Maria, documenting intended distribution patterns that did not match the population's social vulnerability profiles. This study explores the pursuit of procedural and distributive justice in hurricane recovery efforts. The central question is: how do procedural and distributive justice challenges affect the ability of local governments and community organizations to collaborate effectively in long term recovery efforts? Justice is explored as a multi-dimensional phenomenon, considering distributional and procedural dimensions. While distributional justice explores the extent to which environmental harms and economic benefits are equally distributed (Cutler, 1994), procedural justice focuses on the ability to influence existing government processes, requiring community engagement in the planning process. It ensures meaningful participation of communities in decisions that affect them to counteract past oppression (Van den Berg and Keenan, 2019). If necessary feedbacks and meaningful engagement are not in place, adaptation processes after extreme weather events are challenged to gain social and political traction due to a weakened state of procedural justice (Van den Berg and Keenan, 2019).

Two facilitated conversations were conducted in 2021 and 2022 to document challenges to achieving procedural and distributive justice through recovery efforts. Data was analyzed using Corbin and Strauss (2014) coding categories to identify and differentiate emerging challenges in collaboration to achieve distributional and procedural justice after Hurricane Maria.

Our working hypothesis is that local government, while more effective in short-term recovery efforts, faces procedural challenges that limit its capacity to collaborate in relief efforts with community organizers and members, particularly in addressing structural inequality issues in the medium and long term. Preliminary findings show that local NGO's and municipal governments played a significant role in short-term recovery efforts, but procedural justice issues impeded broader scale long term recovery efforts. This study contributes to planning scholarship and practice by emphasizing the importance of addressing procedural and distributive justice collaborative challenges in recovery efforts to achieve more equitable long-term outcomes.

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Keywords: Procedural Justice, Distributive Justice, Hurricane Recovery, Community Organizing, Puerto Rico

Towards Inclusive Autonomous Vehicles Society for Underserved Populations

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Individual Paper Presentation

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New inventions in transportation have consistently disrupted mobility patterns while presenting improvements and challenges each time. Trains, cars, and other innovations have changed how humans live, and cities are planned and organized (Taylor 1951). With each successive wave of technological revolution, mobility for various population groups has changed. Autonomous vehicles are poised to do the same thing again, perhaps more than any other burgeoning innovation today (National Highway Traffic Safety Administration 2017). The rapid evolution of autonomous vehicles (AVs) promises a transformative impact on transportation. As AVs inch closer to mainstream adoption, understanding the perceptions of different user groups becomes paramount.

Studies were conducted to examine the perceptions of AV from population groups. Dicianno et al. (2021) revealed diverse attitudes and concerns among different populations towards AVs. For instance, older adults perceived higher levels of safety, while individuals with visual impairments expressed optimism about AVs but also had significant safety concerns. On the other hand, Ho et al. (2023) undertook a bibliometric research study, analyzing a vast array of scientific articles to discern emerging trends in public acceptance of AV technology. Their study identified key themes such as attitude, trust, technology, and impact, which are pivotal in understanding the user experience of AVs. These studies underscore the multifaceted nature of public acceptance and the importance of considering both the general population and underserved populations in the development and deployment of AVs.

While these previous studies primarily touched upon aspects of safety and technology, the nuances of cost and willingness to pay were less studied. In addition, most studies were cross sectional in nature and conducted at one point in time. To date, very few studies have examined the longitudinal evolvement of AV perceptions over time, especially coving all socio-economic groups and underserved populations in a society. This study aimed to delve deep into the comparative and evolved perceptions of the various groups, focusing on multiple AV perceptions on safety, technology, cost, and economic opportunity with emphasis on underserved populations. The significance of this study lies in its comprehensive investigation of perceptions on AVs. By identifying population groups with low acceptance and affordability but limited mobility choices, interventions can be targeted to mitigate mobility

disparities among the underserved population groups, promote inclusive society with the revolutionary AV technology.

Two Michigan statewide surveys of 2017 and 2022 were used to understand the factors and evolvements of AV perceptions from socio-economic groups. Preliminary results revealed significant disparities between AV perceptions and mobility needs. Those socio-economic groups which have more mobility choices, for example, younger, male, high education, high income socio-economic groups, were more acceptive to AVs, feeling safer, and willing to pay more. In addition, the results showed an overall statewide declining trend on familiarity and comfortableness of AV technology for the 5-year period. However, contrary to the statewide trend, those socio-economic groups which were more acceptive to AVs showed growing receptivity of AVs. The findings offer some reasonable warnings about the mobility disparities exacerbated by the AV technology that those who have more mobility needs will not likely be provided by the AV technology alone.

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Keywords: Autonomous Vehicles, inclusive mobility, mobility disparity, Autonomous Vehicles perceptions, public acceptance

Towards Inclusive Urban Parks

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Individual Paper Presentation

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Towards Inclusive Urban Parks: A Case Study of Shanghai People's Park and Recommendations for Design Diversity

China's urban parks have their roots in ancient royal and aristocratic gardens, initially catering to the elite and their guests, with limited access for the general public. However, as history unfolded and Western influences permeated society alongside rising living standards, Chinese urban parks underwent a continuous evolution. Gradually transitioning from mere green spaces, they developed into comprehensive public areas, offering an array of facilities and services, thus becoming more inclusive and accessible. Today, urban parks have become integral components of cities, providing diverse benefits and opportunities for citizens. Among their primary functions is the fulfillment of physiological and psychological needs across various demographic groups. Systematic observation, analysis, and research of park usage play a pivotal role in bridging the gap between user demands and the planning, design, and management of urban parks.

This paper focuses on Shanghai People's Park, the largest and most comprehensive urban park in downtown Shanghai. It conducts systematic observation and evaluation of its design, management, and user engagement, delving into community participation mechanisms in its planning and management processes. Furthermore, it analyzes the cooperation and interaction between park managers and citizens, while also discussing how the park fosters equitable enjoyment and community cohesion among urban residents. The research methodology involves meticulous on-site observations, recording user activity patterns at various times and days, encompassing user demographics, types of activities, and utilization of park amenities. Subsequently, qualitative and quantitative analyses are employed to graphically represent these observations, providing a visual depiction of park usage trends. Finally, the observation results are synthesized and analyzed to discern the primary park users, their behaviors and activities, and the efficacy of park design and amenities in catering to diverse societal needs.

The findings gleaned from this research offer invaluable insights into the factors driving diversified park usage and those contributing to territorial segregation in park design. They shed light on whether contemporary parks embody inclusivity, fairness, and diversity. In contexts of constrained public funds, evaluating existing parks becomes essential not only for their future design but also for their renovation and enhancement, ensuring their continued relevance as public spaces within cities. The research underscores the importance of certain design elements that exhibit greater utility and applicability across a spectrum of users. To foster more equitable urban parks and accommodate diverse user groups, designers and planners should incorporate features such as enclosed or open green spaces for leisurely walks, picnics, designated children's play areas, interactive fountain squares, recreational facilities, and spaces tailored for senior activities. It's crucial to note that the aim is not to provide a standardized, homogenous ideal meeting space for everyone. Instead, the paper advocates for considering spatial and amenity types that effectively cater to the needs of different user groups. Ultimately, the paper proposes additional recommendations for designing urban parks with diversity in mind, aiming to enhance inclusivity and community engagement within these vital urban spaces.

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Keywords: Urban Parks, Inclusion, Design Diversity, Equity

TRANSIT-INDUCED GENTRIFICATION IN PLACE: 25-YEAR OF RESTRUCTURING IN TOKYO

Abstract ID: 1108.0.0.145.2024

Individual Paper Presentation

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Transit-induced gentrification is a rising and still debated theme in critically understanding transportation infrastructure's influence on neighborhood change. The theme emerged following the global boom of transit infrastructure construction and transit-adjacent land development, often labeled as Transit-Oriented Development (TOD). However, scholarly works so far have primarily focused on newly built transit infrastructure, leaving existing infrastructure's long-term influence on transit-induced gentrification a research gap. A plain but notable fact here is that all the infrastructure and development age over time, while early urbanized cities with historical transit have regretfully not received equivalent attention as their growing counterparts.

Emerging transit metropolises worldwide will confront challenges from existing instead of newly built transit infrastructure sooner or later. This research contributes to understanding such neighborhood changes in Tokyo, a relevant global case for observing the changes, with its century-long history of transit-development synthesis and constantly changing built-up environment causing transient housing tenures. A mixture of the above two dynamics is that Tokyo's existing station areas have become hotspots of land redevelopment, framing the common practice known as station front redevelopment (ekimae saikaihatsu) and inducing an incremental decrease in residential and commercial affordability with no or minor changes in transit infrastructure. The paper identifies the changes as an alternative form of gentrification: transit-induced gentrification in place.

This ongoing study is mobilizing an explanatory sequential mixed-method research design, quantitatively analyzing the block-scale (chōchō moku) population and employment datasets of the greater Tokyo from 1995, right after the collapse of the Japanese bubble economy, to 2020 in the national census. Longitudinal spatial data for land price, railway infrastructure, and various facilities support the analysis. Then it qualitatively looks into policies and project documents to engage the result in recent debates on transit-induced gentrification. The quantitative analysis preliminarily confirms that Tokyo is physically intensifying and spatially polarizing, while proximity to station front redevelopment projects raises the neighborhoods' socio-economic conditions. The qualitative interpretation discusses that the process is endorsed by various statutory pro-development policies, leading to a private sector-led practice redeveloping myriad and piecemeal land parcels with or without updating transit infrastructure.

Transit-induced gentrification in place is peculiar from the threefold roles of transit as mobility, infrastructure, and capital in the station front redevelopment projects. Tokyo's path dependence on rail transit mobility guarantees the agglomeration of people and resources around stations, but beyond that, it is indispensable to note that transit entities are social and political. They tie to actors from public policymakers and private investors, carrying out infrastructure and property projects to earn profits from Land Value Capture (LVC), and, in Tokyo's case, the capital provision for property development is more prominent than the less active infrastructure construction. Recently, transit entities-related redevelopment projects have shaped unprecedentedly luxurious urban spaces serving local and, remarkably, transnational consumers. The past 25-year change in Tokyo preliminarily demonstrates that transit-induced gentrification should go beyond the mindset of new transit infrastructure changing old communities. Tokyo reveals a "post-TOD" challenge that emerging transit metropolises across the world will confront when their transit (entities) become(s) popular among most demographic groups, embedded in the urban political economy, and desirous of leveraging neighborhood changes for profit.

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Keywords: Transit-Induced Gentrification, Transit-Oriented Development, Urban Redevelopment, Land Value Capture, Land Use Planning

TWO GENDERS IN ONE RESTROOM: A CASE STUDY OF WOMEN'S RESTROOM IN SHENZHEN

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Individual Paper Presentation

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The persistent prevalence of son preference has led to sex-selective abortions and skewed sex ratios at birth in China. For instance, the full implementation of the third-child policy resulted in a male-predominated baby boom: in 2020, the average gender ratio was 132.93 (female newborns: 100). In response to the rising needs for childcare, in 2023, a design featuring male-style standing urinals in a women's restroom emerged as a "resolution" accommodating the new demographic of children. In this case, how did a restroom define a desired gender and reveal motherhood oppression? This paper answers the question by focusing on one woman's restroom with installations of male-style standing urinals, located at a children's indoor playground in Shenzhen, China.

Through interviews, ethnography, and engaging with survey data, I argue that the presence of male-style urinals perpetuates systemic oppression, particularly towards motherhood. The design reinforces traditional gender roles by assuming mothers as the primary caregivers accompanying children to such spaces(both the playground and the restrooms). Specifically, this space establishes a 'vacuum' wherein the absence of the father is tacitly assumed by transferring the duty of childcare, bringing children to the restrooms, as familial responsibilities to mothers. From the perspective of the children's playground, the unique design of the women's restroom provides convenience and toilet facilities for mothers with male children, yet simultaneously reveals a broader oppression manifested as women involuntarily and collectively relinquish the public space for men.

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Keywords: infrastructure, China, childcare, gender, motherhood

UNDERSTANDING THE RISKS OF NATIONAL POLICYMAKING FOR MARGINALIZED GROUPS.

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Individual Paper Presentation

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Integrated transport governance structures at higher levels of government holds the promise of reducing fragmentation along governance boundaries, minimizing service gaps for marginalized groups, integrating services across operators, and increasing ridership due to ease of transfers (Miller et al., 2005).

While these important benefits to transit governance integration have been defined in the literature, the drawbacks have not. This paper explores the risks of higher-level governance integration by examining an “extreme case” (Yin, 2009). While much of the literature has examined European and North American cases of transport governance, we look here at a case in Israel, chosen for its highly centralized decision making process combined with a history of ethnically-based decision making.

Israel’s minimal local autonomy allows integrated national decisions over things like regulation of bus services (Israeli Government Decision 3988, 2011), leading to extensive national coordination of even the most local services. At the same time, this paper demonstrates how Israel’s centralized national governance also exists without strong checks and balances, and without a written constitution protecting equal rights to government services across ethnic groups. This leads to a capricious governing environment, where decisions over mundane but essential services like access to public transport are subject to the policies negotiated by each governing coalition and its respective constituency.

This paper demonstrates how nationally integrated service distribution policies has benefits for service coordination, but risks leaving politically marginalized groups without equal service and subject to the whims of national politics. In Israel this is especially true for its Arab population, a large portion of the 21% of all Israeli citizens classified as non-Jewish in 2018 (Central Bureau of Statistics, 2018). [Note that the occupied territories are governed separately under military rule, and are outside the scope of this paper]. This paper uses interviews with local and national policy makers at the city level and the national Ministry of Transport, as well as the many consultants that develop transport plans for the government to understand the process that has limited transport accessibility to Arab Cities.

Israel has a history of neglecting to provide robust public transport to (ethnically) non-Jewish cities within the Green Line (UN-recognized) areas (Yiftachel, 1999), a problem recognized by the Israeli government with its approval of Resolution 922 of 2015, with the intention of increasing spending on non-Jewish services including transport by 2022 (Israel Government Resolution No. 922, 2015).

This paper focuses on Nazareth and Ulmm al-Fahm, two of the largest Arab Cities in Israel. It examines state documents on transport services provided, and interviews policy makers in the national and local governments in order to understand the reasons for providing services to Arab Cities, as well as reasons not to. This paper makes findings regarding how long-term infrastructure disinvestment has led to ineligibility for many transport services, compounded by political marginalization. Interviews with local policy makers in non-Arab cities indicate it is difficult for any local government to have an influence over the services they receive from the central government, leading to a disconnect between service and local needs, but the impact of this process is most stark in the Arab community.

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Keywords: Marginalization, Inclusion, Accessibility, Governance, International

UNVEILING THE CLOSET-CITY: URBAN BINARY CONSTRUCTS IN BELO HORIZONTE

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Individual Paper Presentation

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Belo Horizonte, the meticulously planned capital of Minas Gerais, Brazil, embodies a paradox at the intersection of urban design and social reality. Conceived at the turn of the 20th century with modernist, positivist, and sanitary aspirations, the city was intended as a beacon of order, cleanliness, and societal hierarchy. However, its streets tell a different story—a vibrant mosaic of diverse voices, including those of marginalized groups and non-normative identities, challenging the very principles upon which the city was built.

This paper navigates the intricate dance between Belo Horizonte's planned orderliness and the messy, multifaceted reality of its inhabitants' lives. Through a critical lens, it examines the deliberate inclusion or exclusion of societal groups within the city's urban fabric, shedding light on the implicit biases and power dynamics embedded in its

plan. Drawing parallels between physical closets and metaphorical ones, it explores how normative social constructs dictate visibility and invisibility, perpetuating marginalization and erasure.

By dissecting the binary nature of Belo Horizonte's urban structure, where clarity and darkness, inclusion and exclusion coexist in uneasy tension, this paper endeavors to challenge the status quo of urban planning. It advocates for a paradigm shift towards inclusivity and diversity, recognizing the richness inherent in the city's diverse tapestry of identities and experiences. This exploration poses a fundamental question: Can urban planning evolve beyond its historical constraints to embrace queerness and create spaces that authentically reflect and accommodate the needs of all inhabitants?

In grappling with this question, this paper not only interrogates the specificities of Belo Horizonte but also serves as a broader call to action for urban planners worldwide. It invites a reimagining of urban landscapes as dynamic, inclusive spaces that celebrate differences and foster belonging, transcending the limitations of binary thinking to embrace the full spectrum of human experience.

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Keywords: Queer City, Queer Planning, Dichotomies, Belo Horizonte, Urban Planning

WORLDVIEW MOSAIC APPROACH TO URBAN DEVELOPMENTS WITH DIVIDED PUBLICS

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Individual Paper Presentation

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This paper addresses the emerging challenge of planning with a divided public and rapid urban change. Numerous cities around the world have committed to ambitious climate actions and are mobilizing their plans and policies to facilitate decarbonization. Other cities have prioritized addressing housing affordability crises by supporting and fast-tracking non-market and rental housing. The City of Vancouver is attempting both by committing to the greenest city initiative, and partnering with the Provincial Government to build thousands of new housing units. It is doing so while also upholding its commitment to the United Nations Declaration on the Rights of Indigenous Peoples. From one perspective these efforts in Vancouver are laudable, and a beacon of progressive planning. From another perspective these efforts are misguided, draconian and threaten to erode the very character of Vancouver’s precious neighbourhoods. Resistance to change has been strong, organized and litigious.

This paper introduces the worldview mosaic as a theorized approach to planning with a divided public. It combines science with art; reason with emotion; and precision with abstraction. If thoughtfully constructed, a mosaic can

harmonize disparate objects into a spectacular composition. It is powerful and beautiful, and can be reproduced in endless combinations of patterns with different meanings, each with its own rationality and beauty. The metaphor is chosen to undergird the importance of appreciating the unique rationality and beauty of different perspectives and worldviews, while recognizing that some perspectives are deliberately destructive and anti-social and resistant to harmonization with the whole. The mosaic metaphor also suggests that there is much greater diversity within seeming homogeneity, and much greater commonality within seeming difference, in the individuals and communities that make up our society.

In theorising the worldview mosaic this paper builds on Lederach's Moral Imagination (2005), ethnocentrism and intercultural communication, therapeutic planning, trauma informed practice, and inclusive public engagement. It allows for multiplicity and complexity in framing individual and community perspectives, while underscoring the fundamental power of othering in creating social order or disorder. Voicing and elevating the lived experience of the people affected by urban development, along a broad temporal frame, is at the core of the worldview mosaic approach, particularly as it relates to decolonization.

Using four highly publicised development projects in Vancouver, this paper applies the worldview mosaic approach to ask the question: how can public dialogue leverage contested urban development projects to bridge across polarization and division? Each of the projects experienced strong opposition against resilient support. Using a combination of grey literature, news and social media, public meeting archives and legal judgments, the author builds a series of narratives for several different actors in the various projects. Applying the mosaic approach the author finds that local discourse is more nuanced than the facile depiction of NIMBY against YIMBY. The discourse also borrows liberally from global discourses that pit right against left, and liberal against conservative, but it does so selectively and strategically. For example, to make an argument more persuasive conservative values are disguised in liberal language.

Ultimately the mosaic approach reveals that discourse is primarily self-referential, on both sides, with little attempt to engage deeply with the other, or with the other's worldviews and lived experience.

Managing expectations and reactions to the inevitability of a singular outcome, when there is a multiplicity of desired outcomes, is an emerging challenge for planners working with diverse and divided publics. While planning has always been political, urban development projects are increasingly becoming arenas that reflect the societal trends of politicization, fracture and polarization. The worldview mosaic approach offers conceptual and practical tools to help planners with this growing challenge.

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Keywords: conflict, worldview, narrative, polarization, diversity

Track 5 Research in Motion (RiM)

A GIS-BASED ACCESSIBILITY AND EQUITY ANALYSIS OF URBAN PARK DISTRIBUTION

Abstract ID: 1110.0.0.938.2024
Research-in-Motion (RiM)

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Accessibility is a multifaceted concept essential for evaluating the spatial relationship between origins and destinations, encompassing factors like distance and speed (Nicholls, 2001). In recent decades, accessibility, particularly concerning the quality and distribution of urban parks, has become integral to urban green space development. Scholars discuss that when the distribution of parks aligns with the population density, accessibility to urban parks is enhanced (Tsou et al., 2005). Optimizing accessibility is pivotal for determining park locations, ensuring ease of access for the maximum number of people. Parks are deemed suitable and convenient when they adequately serve densely populated areas. It is imperative for urban green spaces to be sizable enough to accommodate the local population and be easily reachable within walking distance, as emphasized in previous studies (La Rosa, 2014; Wright Wendel et al., 2012).

Dallas, a rapidly expanding city in Texas, has experienced significant population growth, with the metropolitan area witnessing a 25% increase in population from 2010 to 2022 (See: https://texas.reaproject.org/). As urban sprawl continues unabated, concerns about sustainability have heightened, particularly regarding the preservation of urban green spaces amidst rapid development. The rapid urbanization trend poses challenges for city planners and decision-makers, necessitating sustainable strategies to guide new projects while safeguarding the city's green spaces from various threats. Despite numerous studies on urban growth, research specifically addressing urban green spaces remains scarce.

To address this gap, this study aims to assess the distribution and accessibility of urban parks in Dallas, TX through conducting socio-spatial analysis. We conducted comprehensive mapping of Dallas's 195 parks across various categories, including pocket/mini parks, civic plaza parks, linear parks, neighborhood parks, community parks, special purpose parks, metropolitan parks, and dog parks. To achieve this, we employed diverse data sources and mapping tools, including Google Earth Pro, City of Dallas GIS Services, land use data, and Census Bureau Data. Initially, our analysis focused on examining the geographical distribution of urban parks within the city. Subsequently, we utilized the network analyst tool in ArcGIS Pro to delineate the service regions of these parks. The

study further employs the Lorenz curves strategy to delve into the equity scenario regarding park accessibility in Dallas. This method allows for a detailed analysis of the distribution of park resources across different segments of the population (Delbosc & Currie, 2011), providing valuable insights into potential disparities and informing equitable planning strategies.

The study reveals that urban parks in Dallas are predominantly concentrated in the city center, with special-use parks catering to both locals and visitors. However, this clustering leads to an uneven distribution of parks, posing accessibility challenges for many citizens. Specifically, there is an evident scarcity of neighborhoods and pocket parks in the southern part of the city, impacting a significant portion of the population. This shortage underscores the need for a more equitable distribution of parks throughout Dallas to effectively serve all residents.

By employing the Lorenz curve method, the study will further analyze the equity scenario regarding park accessibility in Dallas, shedding light on potential disparities. These findings are crucial for improving the accessibility and spatial sufficiency of parks in the city. City planners can utilize this information to better understand the current adequacy of parks and identify locations for future urban park development. Ultimately, the study's insights can inform more equitable and effective urban park planning and design strategies in various geographical location in the United States.

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Key Words: Urban Parks, Accessibility Analysis, Spatial Analysis, Equity in Access, Lorenz curve

MINDFUL STREETS: PLANNING FOR NEURODIVERSITY

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Research-in-Motion (RiM)

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Planning for equitable and inclusive built environments is critical in contemporary planning practice and theory. We are now aware of, and actively attempting to unsettle, systemic ableism, racism, sexism, and genderism produced and upheld by historically unjust planning practices. Part of this effort is deploying more progressive approaches to planning for disability, wherein we design with respect and consideration to the full spectrum of (dis)abilities and different abilities (Ross et al., 2023). Such thinking led to the introduction of planning for neurodiversity (Kenna,

2023).

Planning for neurodiversity acknowledges, respects, and uplifts neurodiverse people within urban planning processes and practices. Neurodiversity is a comprehensive term that encapsulates diagnoses of autism spectrum disorder (ASD) and attention deficit and hyperactivity disorder (ADHD), as well as other learning disabilities. In recent years, social and medical understandings of neurodiversity have changed drastically leading to the destigmatizing of neurodiverse identities and a rise in diagnoses, especially among adults and women.

Despite this prevalence, there has been very little attention given to neurodiversity, even in planning efforts that strive to be inclusive. For example, the efforts of transportation planners to accommodate 'all ages and abilities' in transport infrastructure, seldom consider neurodiversity and different mental capabilities (Elliot, McLeod, Bopp, 2022). Yet, the limited body of research that examines neurodiversity and the built environment, suggests that experiences in transportation (regardless of mode) have the potential to impede and limit accessibility for neurodiverse-identifying people (Kenna, 2023; Toronyi, 2021). This study fills a gap in understanding the relationship between neurodiversity and transportation accessibility more broadly and provides recommendations for how to better accommodate neurodiverse experiences in how we plan our streets and mobility networks. This session will introduce exploratory research about transportation behaviours among neurodiverse populations as well as the potential avenues to integrate neuro-inclusivity into transportation planning processes and practices. An important facet of planning for inclusion is centring the voices of those with (dis)abilities or different abilities in the work (Ross et al., 2023), and this study adopts this approach through the use of walk-along interviews conducted with Ontarian residents who identify as neurodiverse and actively travel around their communities. This method allowed participants to share their embodied experiences of walking along different street typologies and reflect on their infrastructure preferences and perceived comfort and safety.

In addition to the interviews, a knowledge mobilization activity was conducted with professional planners to co-develop practical design guidelines for neuro-inclusive streetscapes and transportation systems. The recommended guidelines address common barriers to accessibility, comfort, and perceived safety on the street, and provide a way forward for neuro-inclusive planning in transportation policies and practices.

Preliminary findings from this work suggest that planning for neuro-inclusivity is both a process and a product that requires urban planners to reframe their positionality, common sense, and preconceptions to reimagine planning processes that can be truly inclusive and progressive to accommodate 'all ages and abilities'. Designing for neurodiversity in transportation planning is needed to make streets and transportation networks more accessible and comfortable. Such thinking aligns this work with the ongoing struggle for mobility justice (Sheller, 2018) and provides a novel lens into how we can envision neuro-inclusive and mobility-just futures.

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Key Words: neurodiversity, transportation planning, mobility justice, planning for disability

PUBLIC-PRIVATE COOPERATION TO METRO-BASED ACCESSIBILITY AND EQUITY

Abstract ID: 1110.0.0.555.2024
Research-in-Motion (RiM)

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Public transit can connect people to many destinations within a reasonable travel time at reasonable costs, thus safeguarding people's decent level of motorized accessibility to (essential) opportunities and ensuring related equity. In practice, such accessibility and equity depend on not only the government's endeavors but also on those of the private sector. However, the existing scholarship has rarely considered the role of the private sector in the (initial) supply and continued stabilization of accessibility. In this manuscript, we use empirical data from Hong Kong to illustrate how the public and private sectors can work hand in hand to improve and sustain metro-based accessibility and related equity. We theorize three typical urban forms concerning the metro-based accessibility supply: adaptive cities, adaptive transit, and mutual adaption. Based on empirical data such as census data and geo-spatial data, we quantify the recent metro-based accessibility and related equity in Hong Kong. Specifically, we compared how accessibility varies across different time intervals in different geographical areas and income groups. Based on the understanding of recent metro-based accessibility and related equity, we use the above theorization and case study method to examine the roles of the public and private sectors in producing/ensuring metro-based accessibility and related equity at both the metro line and station levels. We find that achieving/ensuring/sustaining the metro-based accessibility and related equity requires cooperation between the public and private sectors, regardless of the urban forms. Our cases/findings illustrate how public-private cooperation can come about and evolve.

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Key Words: Metro-based accessibility, Accessibility equity, Public-private cooperation, Planning practices, Hong Kong

TYPOLOGIES OF COMMUNITY ENGAGEMENT IN ZONING REFORM: LESSONS FROM OREGON

Abstract ID: 1110.0.0.774.2024
Research-in-Motion (RiM)

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Oregon is at the forefront of the middle housing policy debate as the first state to push middle housing zoning changes at the state level, requiring cities over 10K in population to allow duplexes on lots zoned for single homes, and larger cities over 25k to allow triplexes and quadplexes in addition to duplexes (ORS 197.758). In requiring that cities update ordinances to allow middle housing, the state provided a model code that could be implemented. For cities that did not want to implement the model code, cities could choose to adopt their own ordinances consistent with minimum standards in the Oregon Administrative Rules. In either case, cities chose the type and level of community involvement in adopting state-mandated ordinances. HB2001 was supported by a broad coalition of interests including the development sector, environmental groups, housing nonprofits, and social justice organizations.

Research on adoption and implementation of middle housing reform is sparse to date. There has been tremendous attention paid to zoning reform by think-tanks and special issues of academic journals like the Journal of the American Planning Association which published several articles debating the merits of middle housing zoning reform (e.g., Wegmann, 2020; Manville, Monkkonen, & Lens, 2020). However, there has been limited research examining the implementation of Oregon's zooning reform policy and limited research on how the community is engaged in adopting zoning reform at a local level. This study fills an important gap in knowledge of community engagement and zoning reform.

We examined the public engagement efforts of the 11 largest cities in Oregon to consider what role equity played in designing public engagement methods, and whether or how engagement with underrepresented community groups informed the code adopted at the local level. We focus on equity, as it relates to either how cities structured public engagement processes that amplified historically under-represented voices and/or on outcomes of the zoning changes that prioritized reducing restrictive regulations. Advocates of affordable housing and organizations that voice under-represented community interests typically recommend eliminating regulations given how research suggests that eliminating zoning restrictions can increase the production of a wider range of housing options and lower the price of such units (Calandrillo, & Dunn 2024).

To run our study, we conducted extensive web research to document public engagement processes. We also conducted interviews with key city and local stakeholders. Finally, we coded the public engagement efforts against ideals of democratic practices, using Smith's framework (2009) for innovative designs for public engagement.

Our findings highlight key strategies different cities undertook to engage underrepresented groups. These strategies varied in size and scope, from a more top-down approach in Bend, to a more bottom-up approach in Eugene that included a lottery selected panel. Surprisingly, our findings suggest that the method of engagement did not determine the level of restrictiveness of the zoning code. This might suggest the double-bind embodied between a pluralist versus advocate approach to planning (Davidoff, 1965). Overall, we found that most cities, even when they went out of their ways to engage in the public, performed poorly when evaluated using Smith's framework, failing to advance democratic ideals. We will highlight the exceptions and end with key lessons for

moving beyond common engagement efforts that have taken root in planning practice even when they fail to design beyond outreach efforts that prioritize collecting input and communication.

Citations:

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Key Words: Zooming reform, middle housing, public engagement, equity, Oregon

Track 6 – Housing

Track 6 Pre-Organized Session Summaries and Abstracts for the Sessions

BALANCING STATE AND LOCAL POWER FOR HOUSING PRODUCTION AND AFFORDABILITY
Abstract ID: 1112.0.0.140.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.250.2024, 1108.0.0.185.2024, 1108.0.0.377.2024

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The high cost of housing and limited production of new housing have prompted state legislatures throughout the country to consider policy solutions that can tackle housing affordability. One such policy option has been state preemption of local control. This session brings together five papers that grapple with the challenges and effects of such state preemption. Presenters will discuss concrete cases of state preemption of local zoning and land use, the administration of housing choice voucher program, and the implementation of comprehensive plan mandates. Contemporary developments in the states of California, Florida, Indiana, Iowa, and Texas will be discussed and analyzed. Presenters will share the processes, politics, implementation, and effects of state preemption, with particular focus on how such preemptions have affected housing affordability. This session contributes to the growing literature on zoning reform for housing affordability and sheds a renewed light on the longstanding power struggle between state and local governments by considering the variations in the political and socioeconomic contexts within and across the states.

Learning Objective(s):

- Explain contemporary examples of how state legislatures have stepped in to limit local control over zoning and land use and administration of housing programs and policies
- Understand the opportunities, efficacies, and pitfalls of using state preemption for addressing housing affordability
- Compare state preemption approaches across different states and explain how the outcomes of policy interventions may differ due to the variations in political and socioeconomic contexts

STATE ZONING OVERRIDE AND THE COST OF HOUSING: FLORIDA'S LIVE LOCAL ACT
Abstract ID: 1108.0.0.250.2024
Pre-Organized Paper Presentation

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Restrictive land use regulations, particularly those requiring discretionary approvals or zoning changes to build apartments, have been one of the primary and most powerful tools to keep out low-income households of color from affluent suburbs (Davidoff & Davidoff, 1970; Whittemore, 2021). More recently, scholars have shed light on how such discretionary land use approvals are likely to increase the cost of housing production (Manville et al., 2023; Kim, 2020). One strategy to tackle these issues, gaining popularity in recent years, is the state preemption over local zoning ordinances (Ifranca, 2019).

In March 2023, the Florida legislature passed a landmark legislation referred to as the Live Local Act (LLA), signed into law by the governor on March 29. It was an omnibus housing bill that included funding and tax incentives for affordable and missing middle housing. Moreover, LLA created new laws that override local zoning ordinances to promote the construction of income-restricted, affordable housing projects.

The original 2023 LLA overrides local zoning on three aspects: use, density, and height. On the use front, LLA allows affordable housing projects to be built on any land zoned for commercial, industrial, or mixed-use if at least 40% of the units are reserved for households earning up to 120% AMI for at least 30 years. On the density front, LLA allows affordable housing projects to be built up to the highest residential density allowed within the locality. On the height front, LLA allows affordable housing projects to be built up to the highest allowed height for commercial or residential development within one mile or at least three stories. The 2024 amendment to the LLA further eliminated minimum parking requirements in transit-oriented development areas and clarified that LLA projects can be built up to 150% of the maximum allowable Floor Area Ratio (FAR) within the jurisdiction.

Developers of Low-Income Housing Tax Credit (LIHTC) projects, referred to as “tax credit developers” in the real estate industry, are the natural and intended beneficiaries of LLA. LIHTC projects automatically meet the income threshold and thus can potentially be built on any land zoned for commercial, industrial, or mixed-use and ignore the density and height limits. This paper examines how LLA has affected the tax credit developers and their projects. I answer this question by analyzing 154 LIHTC applications for the 9% tax credit program in 2023, 24 of which were ultimately selected, and compare those with LIHTC applications and recipients in 2022, prior to LLA. I also present lessons learned from interviewing tax credit developers.

LLA was intended to ease the construction of LIHTC projects. However, beyond this obvious and direct effect, I find that LLA has had a serendipitous positive effect on non-LLA, LIHTC projects. These projects reported seeing lower land acquisition costs due to the increased competition in the land market. Landowners that used to command monopoly prices due to the scarcity of land suitable for LIHTC projects were losing ground. I corroborate this serendipitous effect by analyzing the land acquisition costs of 2022 and 2023 LIHTC applications, developer interviews, and case studies. The findings from this study contribute to the growing literature on the efficacies of zoning reform for housing production and affordability. The study also sheds light on the longstanding literature on the economics of land values and regulatory stringency.

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Keywords: Zoning reform, State preemption, Affordable housing, LIHTC, Land value

STATE PREEMPTION FOR AFFORDABLE HOUSING: FLORIDA'S "LIVE LOCAL ACT"

Abstract ID: 1108.0.0.185.2024
Pre-Organized Paper Presentation

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Central theme: The dearth of affordable housing has become a pressing issue in many US metro areas. While there are many factors shaping housing markets, in the past decade we've seen increasing focus on land use and zoning codes as barriers to the expansion of the housing stock. This paper studies the local implementation and impact of Florida's 2023 "Live Local Act" which among other things has preempted some local commercial and industrial zoning to encourage more housing production. It includes case studies of three counties and two cities in the Tampa Bay region, with the goal of determining 1. Whether local officials are enthusiastic, neutral, or resistant to this new policy approach, and 2. Whether this policy has resulted in new housing starts (and if so, where and for which income levels).

Methods: This research is primarily qualitative case study research. We use several data sources to capture the local government response to the Live Local Act. First, we will be following housing projects that invoke the Live Local Act to build housing in areas zoned industrial or commercial. Secondly, we are downloading, transcribing and analyzing City Council and County Commission meeting minutes where the implementation of Live Local is discussed. Finally, we are interviewing planners, elected officials, housing officials and affordable housing builders in our study area to get further insight into their response to the Live Local Act.

Findings and Relevance: Our findings will provide insight into the responses of local housing and planning actors when confronted with a state preemption aimed at encouraging housing development. Our research will allow us to identify local government characteristics that inform different responses to the Live Local Act preemption. Because such policies are relatively new everywhere and just a year old in Florida, these findings will be novel. Moreover, Florida differs from several other states and cities overriding local zoning to encourage housing in that the Florida preemption only involves commercial and industrial land. This provides an interesting contrast to preemptions or local zoning changes that seek to change challenge single family zoning.

As more states and communities consider ways to alter zoning to promote housing development, this research is quite salient to planning scholars and practitioners. It addresses the political and practical implications of zoning changes as tools of affordable housing policy, and contributes to the literature on state-local government relations.

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Keywords: Affordable Housing, zoning, preemption, Florida

SOURCES OF POWER OVER SOURCE OF INCOME DISCRIMINATION

Abstract ID: 1108.0.0.377.2024
Pre-Organized Paper Presentation

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Tensions between cities and states over home rule and the powers of cities to innovate are long standing, as are political differences between city councils and state legislatures (Frug, 2001). The increasing political polarization over the past decade has been accompanied by a long-standing but growing geographic sorting based on political affiliation, both across states and between cities and rural areas (Rodden, 2019). State preemption of housing laws, cutting in multiple directions, has grown rapidly over the past decade, such as state laws preempting local single-family zoning provisions (e.g. California, Oregon, Maine, and Montana) and state laws preempting local tenant protections (e.g. Texas, Florida, etc.). As Congress has shifted funding from public housing to Housing Choice Vouchers, the Housing Choice Voucher program has become an increasingly crucial lifeline for more than 2 million low-income households across the country. Although Congress allocates funding for the Housing Choice Voucher program, the federal Fair Housing Act does not prohibit discrimination against voucher holders, commonly known as source of income discrimination. The number of states and localities enacting laws protecting voucher holders from discrimination has grown rapidly over the past decade (PRRAC Appendix B). At the same time, in response to local laws prohibiting discrimination on the basis of source of income, four states have passed laws preempting source of income protections: Indiana (2015), Texas (2015), Iowa (2021), and Florida (2023), with other related laws under consideration in additional states. This paper analyzes the political dynamics leading up to the passage of these four laws and the similarities and differences in their design, relating them to literature on the political dimensions of state preemption (e.g. Fowler and Witt 2019; Goodman and Hatch 2023) and on the collective action dimensions of progressive and conservative efforts to affect local and state legislation. It also reviews developments in preemption legal doctrine and implications for housing policy and home rule more broadly (Briffault et al. 2017).

Citations:

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Keywords: Fair Housing, Civil Rights and Racial Equity, Housing Choice Vouchers / Section 8, Preemption, Law

EVERYDAY STRUGGLES OF TENANTS ACROSS GEOGRAPHIES

Abstract ID: 1112.0.0.129.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.342.2024, 1108.0.0.224.2024, 1108.0.0.344.2024, 1108.0.0.324.2024

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As housing affordability, availability, and quality become growing concerns in cities and regions, struggles experienced by tenants are also growing. Accounts of evictions, rent increases, and everyday struggles with landlords are spanning across geographies – from urban to rural, in Canada and Chile. While tenant struggles have persisted through time, pressures related to financialization, digitization/platformization, and globalization of rental housing have brought about new terrains of dispute and resistance.

Housing struggles have been studied - among others - by looking at everyday experiences focusing on low-income families navigating the housing market, tenants being subjected to displacement, social movements demanding housing access in the global south, or theoretical and right-based approaches to conceptualizing housing. Taking account of tenants' perspectives on housing struggles gives space to understanding the daily interactions and struggles tenants are confronted with. In light of this, we invite contributions from scholars in all geographies working on telling the stories of tenants confronted with everyday or systemic struggles around housing. In this Paper Panel, we welcome papers with a tenant-focused perspective, whether qualitative or quantitative, empirical or theoretical, historical or contemporary. Possible research topics include but are not limited to:

Evictions, renovictions, and demovictions;
Rent increases;
Landlord-tenant relations;
Roommates and co-living;
Surveillance and property technology;
Tenant resistance and organizing and counter methods;
Differentiated tenant experiences based on landlord type or tenant type;

Comparative studies on tenant struggles;
Historical perspectives of tenant struggles.

Learning Objective(s):

- Have a global perspective of the current tenants' struggles
- Expand the theoretical and right-based approaches to conceptualizing housing

EQUITY ACHIEVED? RENTERS' COMPLIANCE IN SEOUL'S REDEVELOPMENT SITES

Abstract ID: 1108.0.0.342.2024
Pre-Organized Paper Presentation

Euna Kim [Cornell University] ek683@cornell.edu, presenter

Urban residential redevelopment is one of the oldest housing programs in Korea. While the program has gone through minor changes, the structural framework has remained unchanged since its first introduction in the early 1980s. In essence, redevelopment projects remove entire areas of old low-rise houses, which are homes to many low-income households, and replace them with high-rise apartment complexes. The program has played a dominant role in housing production for 40 years and continues to boast its presence in shaping Korean cities. In the early days, due to forced eviction and displacement, the program mobilized social movements that fought for the rights of evictees, who were mostly tenants in the area. Due to these efforts, tenant compensation and public housing for evictees were introduced in the 1990s, greatly placating evictees' movements against residential redevelopment (Kim, 2010). Since then, conflicts between residential evictees and developers have greatly subsided. Seemingly, equity issues have been "resolved." Yet, there has been little examination into understanding the nature of such abatement, and the question of whether equity issues have been resolved remains unanswered. Some scholars have hinted at the notion that the lack of public resistance should be understood in relation to Korea's history under a developmental state but provide little empirical support (Shin & Kim, 2016). Hence, discussions regarding redevelopment in Korea have proceeded without a deep understanding of residents' experiences of eviction, displacement, and redevelopment. This study addresses this gap of knowledge by taking on a qualitative approach in which the experiences of to-be evicted residents in two redevelopment sites in Seoul are examined. Based on 33 semi-structured in-depth interviews accompanied by site visits and document analysis, I argue that the working of a "culture of redevelopment" renders opposition meaningless and irrelevant. Interviews reveal that renters remain excluded during the entire process, receive little or no information about compensation, and due to the stringent eligibility conditions, only very few renters receive full compensation. Despite weak tenant compensations and the destruction of affordable housing, tenants do not express strong opposition toward being evicted and displaced. Rather, they remain indifferent or submissive to their circumstances, while viewing redevelopment as a positive and necessary change. I argue that such an attitude is rooted in a culture of redevelopment that constructs social values closely tied to property rights. The notion of rights to the city is understood in relation to property rights which shape renters with no property rights irrelevant, a phenomenon similar to the working of a "cultural hegemony of property" in Hong Kong (Ley & Teo, 2014). This shared norm makes it extremely difficult for a complete restructuring of the program and poses distinct challenges for changes to be brought about via equity planning and insurgent planning. I explore alternative approaches that may be more plausible and can have meaningful impacts in shaping the current redevelopment program more equitable. The

paper concludes with possible modifications within this context to produce more equitable outcomes and processes, and calls for planning scholars to place more attention on cultural dimensions to pursue contextualized and equitable alternatives (Abram, 2011).

Citations:

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Keywords: Residential Redevelopment, Renters' Struggles, Absence of Opposition, Rights to the City, Property Rights

ALTERNATIVE VISIONS OF HOUSING POLICY IN A NATIONAL TENANT CAMPAIGN

Abstract ID: 1108.0.0.224.2024
Pre-Organized Paper Presentation

Chenab Navalkha [Massachusetts Institute of Technology] chenab@mit.edu, presenter

Recent tenant mobilizations shed light on the contradictions and instabilities brought on by the transformations in housing provision, including neoliberal policies and financialization. This paper examines tenant organizers' efforts to politicize housing and pursue policies to protect tenants against the impacts of these in the United States.

Scholarship on the housing question has long debated the role of housing in the capitalist political economy, and the extent to which inequality is resolvable at the site of housing. These debates trace the transformation of shelter, as housing, into a commodity governed by the logic of the market, and argue that this process renders land and housing into technical objects and policy a domain of technocratic knowledge (Li, 2014). This way of seeing shapes both how the "housing crisis" is understood and what is seen as possible and viable solutions. Where housing is understood as a resource allocated through the market, the housing crisis is understood in terms of production, and attempts to address housing problems are relegated to the sphere of experts and removed from public purview (Pattillo, 2013). Scholarship on current and past tenant movements analyze how these movements' politicization of housing counter hegemonic conceptions of housing as a commodity to be allocated through market-oriented policy. Tenant movements' visions of housing justice entail discursive and epistemological interventions that assert the social meaning of housing, reinterpret dominant notions of the "housing crisis" and displacement, and build alternative infrastructures of knowledge production (Camp, 2012; Lancione, 2020; Lima, 2021). These alternative knowledges not only disrupt what is taken for granted in market-based housing allocation but also inhere alternative ways of being and shaping society.

In this paper, I report findings from ethnographic fieldwork of an ongoing national tenant campaign in the United States fighting for federal policy that encodes tenant protections. I investigate how this campaign complicates ideas of housing policy expertise through its focus on tenant experiences as lived expertise and the translation of tenant

priorities into concrete policy positions. How do tenants engaged in this campaign define and describe their experiences of the "housing crisis"? How do causes and solutions that tenants identify of crisis differ from or align with dominant policy framings? To what extent do institutionalized participatory processes accommodate tenants' political claim-making? My analysis draws on 14 months of participant observation at weekly virtual meetings of tenant leaders working both in their local communities and coordinating with the national campaign, as well as a weeklong in-person convening of tenants in Washington, D.C. It also incorporates analysis of media coverage, public hearings, and public comments solicited by federal agencies.

Through local base-building, direct action, and narrative strategies, this seeks to politicize rental housing and tenancy in the United States. Tenants working with this campaign work together to translate their experiences and struggles with safe and affordable housing into both policy goals and narrative change. The campaign's emphasis on tenant expertise and leadership brings to the fore the disjuncture between housing as shelter and home and housing as a commodity that has accelerated with the expansion and consolidation of corporate ownership of rental properties, and pursues the inclusion of tenants in the policy-making process. This project's findings shed light on how tenants and community organizers identify avenues for claim-making across the local and national scales in today's financialized housing landscape, and how they navigate constraints therein. This paper has implications for how planners might re-examine pathways for participation in policymaking across scales and calls for greater attention to the work of claim-making and knowledge production undertaken by local organizers working toward housing justice in the United States.

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Keywords: Housing justice, Tenants, Community organizing, Knowledge production, Participation

INVISIBLE LANDLORDS:TENANTS COPING WITH CORPORATE LANDLORDS IN CHILE.

Abstract ID: 1108.0.0.344.2024
Pre-Organized Paper Presentation

Andrea Urbina Julio [Cornell University] aru8@cornell.edu, presenter

The tenure patterns of the Latin-American population tend to move towards the rental market, changing the traditional relationship between finance and housing through homeownership. These tenure changes have been tied to transformations of city centers, leading to the emergence of dense high-rise housing developments via

models of verticalization, creating new vertical enclaves (Harris, 2015), attracting young families and Latin American migrants. Institutional financial actors, such as investment funds, insurance companies, and family firms, are increasing their investment portfolios by owning and managing residential buildings, transforming them into financial capital assets. In Chile, corporate landlords oversee over 130 buildings, which make up 3% of the city's housing market. This number is expected to grow by 65% in the coming years as they expand a high-rise, multifamily model in downtown areas of the city.

At the same time, Chile has become an economically attractive destination for migrants. The last Chilean National Socioeconomic Characterization Survey (CASEN) 2022 estimated the presence of 1.628.223 migrants, representing 8.2% of the population, mostly coming from Venezuela, Colombia, Peru, and Haiti. 65% of the total migrant population lives in Santiago (CASEN, 2022), where the labor force is concentrated (Rodríguez-Vignoli, 2022). Most migrants in Santiago access housing through rental arrangements in the formal and informal markets. In the US and Europe, Institutional investors purchased thousands of homes after the subprime crisis, raising multiple concerns about property conditions, poor management, increasingly high rents (Semuels, 2019), and higher eviction rates than other multifamily properties (Seymour, 2022). However, given the recent incorporation of corporate landlords in the Latin American housing market, not much research looking at tenants' perspectives have been conducted in buildings managed by institutional investors. Thus, using a qualitative approach that includes 63 interviews with tenants (Chilean and migrants), participatory observation and site visits in 10 buildings, this paper looks at how corporate landlords transform the daily experiences of renters in Santiago. To answer this question, the research analysis focused on the application process of tenants, building experience, and landlord-tenant relationships. This paper argues that although tenants' experience varies depending on the building and the tenant's socioeconomic background, many renters feel a cost burden, perceiving high costs and extra fees from living in these buildings. At the same time, there is a lack of accountability and communication from management. Furthermore, Chilean tenants differ from migrant tenants in that the latter group often has no choice but to remain in these buildings due to their migratory status, rental requirements, or financial capacities. This paper contributes to planning theory and practice to rethink regulatory mechanisms on rental housing and how to counteract the impacts of institutional investors.

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Keywords: Corporate Landlords, Housing Financialization, Latin America

'SMALL' LANDLORDS AND OWN-USE EVICTIONS: PREVENTING TENANT DISPLACEMENT

Abstract ID: 1108.0.0.324.2024

Pre-Organized Paper Presentation

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No longer can we call the housing situation in Canada a 'crisis.' Escalating housing costs and decreasing availability have been a fact of Canadian life for over a decade. Policy discussions and reporting on topics related to housing are pervasive and housing organizers are demanding better protections to ensure tenants' right to remain. Two key areas of concern are the growing cost of rent and the rise in evictions. Over the past year, there has been an emerging media scrutiny of 'own-use' evictions (or repossessions), an eviction subtype. Wachsmuth and colleagues (2023) found that own-use evictions were the most common type of evictions amongst their interviewees, and also the least likely type to be contested formally through housing courts. Own-use evictions also tend to be very difficult for tenants to resist because the onus to prove abuse rests on the tenant. Despite the unlikeliness of tenants to challenge eviction cases in housing courts, the number of cases of landlords evicting tenants to repossess rental units for their personal use have been increasing substantially in multiple Canadian provinces. As an example, in the province of Ontario alone, 6634 own-use evictions were filed in 2022, representing a 28% increase over 2021 and a 447% increase compared to 2012. In other provinces, with few rent controls, notably New Brunswick, the number of own-use evictions has been marginal and steady.

And yet, even among a wave of scholarly literature on evictions, 'own-use', evictions remain under-researched, with research tending to focus on corporate landlords (Leung et al., 2021; Seymour & Akers, 2021), which are typically unable to use the own-use clause to instigate an eviction attempt. This paper aims to fill this research gap by answering the following key questions: What have been the trends regarding own-use evictions in Canada? Why are they growing at different rates based on the jurisdiction? How can housing policy and planning prevent unlawful displacements associated with own-use evictions? We employ a mixed method approach combining 88 semi-structured interviews from 2022-2023 and twelve years (2010-2022) of 'own use' eviction data from housing courts in British Columbia, Ontario, Quebec and New Brunswick. We show that in Canada's three most populous provinces, each with relatively robust rental protections, own-use evictions have risen rapidly. In contrast, we document how in New Brunswick, own-use evictions remain marginal. As rental housing availability is low and costs are high across the country, we hypothesize that in provinces with relatively strong evictions protections, landlords are resorting to using 'own-use' clauses as a loophole to evict tenants and raise rents, whereas in jursidctions without strong protections, landlords can non-renew leases, or raise rents according to the market.

We also argue that formal data on evictions represents a great underrepresentation of the current state of own use evictions by showing how most of our interviewees having been evicted between 2017 and 2022 had not contested their repossession in housing court. Interviewees who did not resist stated a sense of hopelessness in the outcomes of housing courts regarding own-use evictions and a lack of adequate legal protections from own-use evictions. Even in cases of multiple evictions (where entire buildings were evicted in near succession), tenants reported own-use clauses being used systematically, with multiple family members allegedly moving in multiple units. In light of other stricter tenant laws being "back on the agenda of policymakers in light of rent inflation in many global cities" (Kholodilin & Kohl, 2021: 1), we argue that planners should take own-use evictions seriously as they represent regulatory evasion of existing and potential rent control legislation. We conclude by offering relevant pathways for planners, policy makers, and tenants to help mitigate the negative outcomes of own-use evictions on tenants by presenting case studies from Vancouver, Canada and Berlin, Germany.

Citations:

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Keywords: housing, landlord, tenant, eviction, planning

MARKET AND NEIGHBORHOOD IMPACTS OF INVESTOR-OWNED SINGLE FAMILY RENTALS

Abstract ID: 1112.0.0.782.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.839.2024, 1108.0.0.803.2024

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The growth of investor ownership in the single family rental markets across U.S. cities is having significant impacts on those markets, on tenants, and on the communities in which the properties are located. These four papers provide recent research findings from four different metropolitan areas on the impact of ownership and changing landlord strategies on rents, rental markets, and neighborhood outcomes.

Learning Objective(s):

- How do investor single-family rental acquisition strategies vary across housing market types?
- How do landlord strategies relate to rent-setting vary by portfolio size and geographic location?
- How does investor ownership of single family rentals affect the self-sorting of tenants across neighborhoods?

INVESTOR ACQUISITION OF RESIDENTIAL PROPERTIES IN NEW JERSEY

Abstract ID: 1108.0.0.839.2024
Pre-Organized Paper Presentation

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Concern is mounting about investor ownership of residential properties. Investors, from small proprietors to private equity firms, account for an increasing share of home purchases since the foreclosure crisis and through the pandemic. Many investors hold properties as rentals, and research indicates recent buyers, particularly large corporate landlords, are associated with negative outcomes for tenants, including excessive fees, poor maintenance, and faster eviction (Raymond et al., 2018). Further, there is concern that investors are crowding out affordable home purchase opportunities (An, 2023). While research on investor-buyers has focused on large landlords and either on single-family homes or rent-stabilized apartments in major cities, there has been little study of the housing that lies between, like the 2-4 unit rental properties that populate the rental landscape in many communities and the type of investors seeking them out (Decker, 2023).

This paper investigates the geography, timing, scale, and business models of investor acquisition of small residential properties in New Jersey since 2010. We focus on seven geographically dispersed municipalities reflecting the wide range of housing market conditions present in the state: Asbury Park, Millville, Montclair, New Brunswick, Passaic, Phillipsburg, and West New York. We draw on historical real estate transaction and tax roll data to identify investor activity and the types of investors present in these different communities. This research draws primarily on the NJ MOD IV HIstorical Database (HDB), a historical database of tax parcel data maintained by Rutgers in partnership with the state of New Jersey. We use these data to examine changes in the degree of investor ownership of 1-4 unit residential properties at the parcel-block level over time and their association with housing market and demographic characteristics. We also link these trends with recent histories of high-risk mortgage lending and foreclosure, which we hypothesize have destabilized historically Black neighborhoods and facilitated investor acquisition. We draw on interviews with community based organizations and other stakeholders along with contextual housing market and demographic data from the Census to explain these patterns.

Our research suggests the presence of at least three types of market-based investor strategies. There are (1) investors purchasing properties in areas with strong demand who are converting or upgrading rentals to serve higher-income households; (2) those buying in relatively lower-cost areas where renters have few options and are ineligible for vouchers, allowing them to capture relatively high rents for lower-quality homes; and (3) those specializing in the conjunction of lower-priced properties and the presence of racially or otherwise segregated markets and cater to voucher holders possessing few alternatives.

This research has implications for understanding a broad range of issues involving investor acquisition of residential properties, including those affecting historically Black neighborhoods and communities and places experiencing high levels of recent immigration. Increased investor activity can remove housing units from affordable submarkets contributing to increased competition for limited supply and rising prices. These trends also contribute to the challenges of finding affordable starter homes in New Jersey and beyond, preventing working-class households from building wealth and widening the racial wealth gap. This research also has implications for understanding the changing geography of residential investment over time as investors search for the next location to generate profits as locations in and near New York City become increasingly expensive.

Citations:

- An, B. Y. (2023). The influence of institutional single-family rental investors on homeownership: Who gets targeted and pushed out of the local market?. Journal of Planning Education and Research, 0739456X231176072.

- Decker, N. (2021). Affordable housing without public subsidies: Rent-setting practices in small rental properties. Journal of the American Planning Association, 87(1), 62-72.
- Raymond, E. L., Duckworth, R., Miller, B., Lucas, M., & Pokharel, S. (2018). From foreclosure to eviction: Housing insecurity in corporate-owned single-family rentals. Cityscape, 20(3), 159-188.

Keywords: housing, investors, rentals

RENT CONTAGION: A SOCIOLOGICAL ACCOUNT OF RISING RENTAL COSTS

Abstract ID: 1108.0.0.803.2024
Pre-Organized Paper Presentation

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This article considers landlords' decisions to raise rent as a case of social contagion. Employing a ten-year study of rental ownership and housing market dynamics in Austin, Texas, the author finds that rental pricing tends to be linked through shared ownership and shocked by nearby new multifamily construction. In the case of shared ownership, rental prices at properties owned by the same owner tend to rise and fall in tandem. In the case of multifamily construction, rents at lower priced properties tend to rise near new market-rate construction where rents tend to be higher. Finally, the author shows that landlords exposed to market-rate construction tend to raise rents at all their lower-priced properties in the year after exposure regardless of where properties are located. Paradoxically, these findings suggest new multifamily construction can create short-run rent contagion in low-income housing which spreads through co-owned properties, even when construction prevents overall rent from rising exponentially. These results advance a relational and actor-centered account of housing systems which views landlords' behavior as not only shaped by their characteristics or context, but also by organizational and relational mechanisms that can facilitate processes of diffusion.

Citations:

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- Shelton and Seymour 2024. Horizontal Holdings: Untangling the Networks of Corporate Landlords.
- Schwartz et al. 2006. The external effects of place-based subsidized housing.

Keywords: Rental Costs, Construction, Ownership Consolidation

RESEARCH ON RESIDENTIAL MOBILITY: NEW HORIZONS AND CHALLENGES

Abstract ID: 1112.0.0.343.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.400.2024, 1108.0.0.407.2024, 1108.0.0.438.2024, 1108.0.0.355.2024

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Residential mobility, as “a process that changes lives and neighborhoods” (Coulton, Theodos, and Turner, 2012), is deeply implicated in a wide range of phenomena of policy interest, such as gentrification and residential displacement, neighborhood effects and individual outcomes, and housing instability. Consequently, improvements and innovations to capturing and operationalizing household-level residential mobility can have far-reaching impacts on many fields, including demography, planning, housing, and public health. The recent availability of big data, novel consumer trace data, and newly unlocked large administrative data has pushed the frontiers of research on residential mobility. Previously having relied on proxy or traditional survey data, researchers now have access to address (and other) data for significant shares of the population. However, while these datasets provide unprecedented coverage and granularity for the study of residential mobility, some uncertainties remain regarding their accuracy, bias, and, ultimately, usability. Our session explores the topic of residential mobility using novel data and/or methodological approaches.

Learning Objective(s):

- How has the measurement of residential mobility benefitted from new data in recent years?
- What are the impacts of MIH, HOPE VI, and naturally occurring affordable housing impacted residential mobility?
- What are some of the new challenges brought on by new methods and data on residential mobility?

MOVING UP OR MOVING OUT? INCLUSIONARY ZONING AND MOBILITY OUTCOMES IN NYC
Abstract ID: 1108.0.0.400.2024
Pre-Organized Paper Presentation

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As urban America experiences rising housing costs and the withdrawal of the federal government from direct housing subsidies, inclusionary zoning (IZ) has emerged as a popular tool for local governments to increase the supply of affordable housing. IZ typically requires or encourages developers to set aside a certain percentage of housing units in market-rate residential properties for low-income households (Office of Policy Development and Research, 2013). Offsets such as expedited approval processes, reduced development fees, or density bonuses are provided to allow the development to remain profitable while cross-subsidizing the affordable housing component (Mukhija et al., 2016). New York City’s Mandatory Inclusionary Housing (MIH) program requires rezonings that significantly increase density to include an affordable housing component. As of early 2020, the city designated eight large MIH zones ranging from roughly 1.7 million square feet to nearly 10 million square feet, representing a few city blocks to large sections of a neighborhood.

In addition to producing affordable housing, another goal of IZ is to reverse the widespread trend of exclusionary zoning in the late 20th century, which features zoning practices championed by NIMBYs to keep affordable housing out of their neighborhoods. In this view, IZ functions as a desegregation tool, building mixed-income communities and improving the upward mobility of low-income households.

Despite the putative power of IZ to encourage residential mobility, opposition has surfaced from an unexpected source, questioning whether IZ will make neighborhoods affordable for low-income households to move to or stay

in at all. Affordable housing advocates have likened the market-rate development component of IZ to a Trojan horse that spurs gentrification (Roberts, 2015; Stein, 2014). The act of IZ designation itself might also serve as a signal to landlords and would-be tenants that the neighborhood will soon be an up-and-coming neighborhood and bring higher housing costs along with it.

The literature thus far has discussed the efficacy of IZ to produce affordable housing, and concerns over whether IZ stifles future residential development (Kontokosta, 2015; Mukhija et al., 2016). The fate of residents remains an important yet understudied outcome of IZ. In this study, we examine the early effects of New York City's MIH program on residential mobility patterns and ask: Who moved to MIH neighborhoods? Is there a difference in the origination neighborhoods they moved out of, before and after the destination neighborhoods became MIH? Mirroring the questions we ask about in-movers, we ask the following questions regarding out-movers: Who moved from MIH neighborhoods? Is there any difference in the destination neighborhoods they moved to, before and after their origination neighborhoods were rezoned for MIH?

To answer these questions, we use data from Infutor Data Solutions. Infutor combines information from multiple sources such as telephone data, deed and property information, and subscription services, into a national database that details individual-level residential address histories. We use Infutor data from three years before MIH designation to 2020, to identify the census tracts of in-movers and out-movers, and the characteristics of tracts to/from which they moved. By employing an Adjusted Interrupted Time Series approach with controls for time trends, we compare neighborhoods exposed to the designation of MIH with those not exposed, both before and after the designation of MIH, to determine whether MIH contributes to changes in residential mobility patterns. Our findings would inform debates on whether IZ meets its goal to promote upward residential mobility by incentivizing households to relocate from lower-income neighborhoods, or whether IZ contributes to gentrification by hindering the entry of low-income households while displacing current residents.

Citations:

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Keywords: Inclusionary Zoning, Residential Mobility, Gentrification, New York City

WHERE DID THEY GO AFTER HOPE VI?

Abstract ID: 1108.0.0.407.2024
Pre-Organized Paper Presentation

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The HOPE VI program funded the demolition of nearly 100,000 public housing units across the country between 1993 and 2010. Initial evaluation studies documenting where the displaced residents moved suggest that the outcomes varied by their destination and mode of relocation, with those who moved into private market units living in better housing and neighborhoods with improved employment, social, and environmental conditions (Popkin, Levy, Buron 2009). However, these studies were limited to select sites within cities and were typically only able to track about 2/3 of the displaced residents. Moreover, with redevelopments incomplete at the time of study, return rates to newly developed HOPE VI sites were still low.

In this longitudinal descriptive study that spans 1990 to 2020, we analyze the long-term destinations and residential trajectories of households displaced by the HOPE VI program in four cities–Chicago, New York, Philadelphia, and Atlanta. Using a novel residential mobility dataset and address data on public housing developments, we identify those who lived in demolished public housing developments and their subsequent addresses and examine their patterns of residential mobility and neighborhood attainment. In particular, we assess how their neighborhood conditions differ based on whether they lease or own private market units, transfer to other public housing developments or relocate to newly constructed HOPE VI mixed-income communities—analyzing not only the initial post-displacement move but subsequent moves thereafter.

We leverage hierarchical linear and logistic regression models to estimate the likelihood of households moving to neighborhoods of higher, lower, or similar opportunity relative to their origin neighborhoods of severely distressed public housing. We hypothesize that: i) the majority of residents who moved as a consequence of HOPE VI moved into private market housing; and ii) while attaining higher-opportunity neighborhoods than their counterparts who moved to other traditional public housing units, residents who moved to private market housing subsequently moved more frequently. We also anticipate these patterns will vary by city, based on market-rate housing affordability and the proportion of developments demolished by HOPE VI.

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Keywords: residential mobility, public housing, HOPE VI, novel data

LEVERAGING CREDIT DATA TO MEASURE RESIDENTIAL MOBILITY OUTCOMES

Abstract ID: 1108.0.0.438.2024
Pre-Organized Paper Presentation

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As housing costs have risen over the past decade, lower- and middle-income households in major metropolitan areas across the United States have faced an increasingly difficult trade-off: devoting an ever-growing share of their income to pay for expensive housing in centrally-located urban neighborhoods, or moving to neighborhoods that are more affordable but further away from employment opportunities (Blumenberg & Wander, 2023). This dynamic is associated with broader regional socioeconomic stratification, contributing to both the gentrification of central city neighborhoods and to the suburbanization of poverty (Hochstenbach & Musterd, 2018). The impacts of these residential moves have not been fully explored due to a lack of robust granular data on residential mobility outcomes, but the growing availability of proprietary and administrative microdata opens up new avenues for the analysis of residential mobility and neighborhood change (e.g. Greenlee, 2019).

This project leverages a novel panel dataset – consisting of administrative data for 100% of individuals with a recent credit history in the state of California – to examine a heretofore underexplored mechanism shaping residential mobility outcomes: household credit and debt. Specifically, I ask: how do intraregional residential moves impact household consumption of housing, auto loan, and credit card debt? Household debts – which have been steadily rising over the past decade – are influenced in part by residential location, as neighborhood housing costs and access to transportation can greatly impact the extent to which households rely on mortgage loans, auto loans, and credit card debt (Walks, 2013). Consequently, identifying the relationship between residential moves and household debt consumption can reveal an important and novel dimension of residential mobility outcomes at the household level.

Leveraging the comprehensive and longitudinal nature of the credit panel dataset, this project employs a two-stage modeling framework that is increasingly employed in research on neighborhood effects (van Ham et al., 2018). First, I use a conditional logit model to analyze the relationship between individual household characteristics and residential location, establishing the household characteristics that are most strongly associated with moves between urban, suburban, and exurban contexts. Second, I incorporate the results of this model into a second-stage analysis that measures the impact of neighborhood destination on household debt consumption outcomes, controlling for neighborhood selection effects. This modeling framework is used to test the hypothesis that households moving to lower-cost suburban and exurban neighborhoods will utilize higher levels of auto loan debt to facilitate access into those more affordable but auto-dependent neighborhoods, while households moving into comparatively higher-cost urban and suburban neighborhoods will utilize higher levels of mortgage loan debt and credit card debt.

This research contributes to the existing research on residential mobility in several key respects. First, this analysis highlights the benefits and challenges of using a large credit panel dataset for residential mobility research. Second, the use of comprehensive data on residential moves elucidates both the household determinants and aggregate patterns of intra-regional moves. Finally, this project raises attention to a novel residential mobility outcome by considering the impact of neighborhood destination on household debt consumption.

Citations:

- Greenlee, A. J. (2019). Assessing the Intersection of Neighborhood Change and Residential Mobility Pathways for the Chicago Metropolitan Area (2006–2015). Housing Policy Debate, 29(1), 186–212. https://doi.org/10.1080/10511482.2018.1476898
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Keywords: consumer debt, residential mobility, big data, housing affordability, neighborhood effects

USING RESIDENTIAL MOBILITY DATA TO ANALYZE NOAH DISPLACEMENT

Abstract ID: 1108.0.0.355.2024
Pre-Organized Paper Presentation

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Concerns over gentrification and displacement remain at the forefront of urban planning research and practice, and research has highlighted the complexities of both the phenomena and the challenges of measuring these dynamics empirically (Zuk et al. 2015; Hirsh et al. 2020). While research has captured neighborhood changes over time—particularly as it relates to a loss of lower-income, Black and other structurally marginalized populations—the actual measurement of urban and economic processes that lead to residential displacement is underexplored (although, see Raymond et al. 2021).

In this paper, we examine a specific mechanism thought to spur gentrification and displacement: the purchase of naturally occurring affordable housing (NOAH) by investors, the subsequent investments that are made in the property, and the eviction (formal or informal) of existing tenants as a result of that process. Using parcel-level assessor data for California matched to household-level consumer reference data, we answer the following research questions: What types of NOAH properties do investors target for flipping, and in what kinds of neighborhoods? What are the impacts of NOAH sales on property investment and valuation? And what characteristics of the NOAH sale—such as investor type, neighborhood, or increase in valuation—increase the likelihood that renters are displaced from their units?

We find that the sale of NOAH properties is an under-explored dimension of neighborhood change: in major metropolitan areas in California, over 60 percent of NOAH properties change ownership within a 10-year period. The pace of these sales has accelerated, especially with the COVID pandemic, and are associated with a significant increase in both property valuation, mortgage debt, and taxes – with attendant implications for the building's rents.

Preliminary results suggest higher residential turnover at these properties compared to those that don't change hands, particularly in neighborhoods that are experiencing significant investor activity.

This research has direct relevance for scholarship trying to better understand the causes of displacement, as well as for local efforts by community land trusts and other nonprofits to acquire and preserve NOAH. It also offers insights into the strengths and weaknesses of using consumer reference data to track residential mobility.

Citations:

- Hirsh, H., Eizenberg, E., & Jabareen, Y. (2020). A New Conceptual Framework for Understanding Displacement: Bridging the Gaps in Displacement Literature between the Global South and the Global North. Journal of Planning Literature, 35(4), 391-407. https://doi-org.libproxy.berkeley.edu/10.1177/0885412220921514
- Raymond, E. L., Miller, B., McKinney, M., & Braun, J. (2021). Gentrifying Atlanta: Investor Purchases of Rental Housing, Evictions, and the Displacement of Black Residents. Housing Policy Debate, 31(3–5), 818–834. https://doi-org.libproxy.berkeley.edu/10.1080/10511482.2021.1887318.
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Keywords: Residential mobility, Displacement, Consumer reference data, Naturally Occurring Affordable Housing (NOAH)

TACKLING HOUSING AFFORDABILITY: RESPONSES FROM PUBLIC AND PRIVATE SECTORS

Abstract ID: 1112.0.0.111.2024

Pre-Organized Session Summary

Session Includes: 1108.0.0.115.2024, 1108.0.0.617.2024, 1108.0.0.429.2024

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The United States is in a housing crisis. In 2022, a record-high 22 million renter households, or half of all renters, and another 20 million owner households were spending more than 30% of their income on housing. While exclusionary zoning and discriminatory housing practices remain a pervasive barrier to homeownership, especially among people of color, sharply increased mortgage interest rates in recent years put the dream of homeownership out of reach. To address this defining issue of our time, efforts to improve housing affordability and accessibility have been gaining momentum at all levels of policymaking. Four papers in this session will present up-to-date research on the impacts of various housing programs (i.e., shared equity, PRO Housing, upzoning, LIHTC) implemented by different levels of public and private organizations across the country. The findings will deepen our understanding of the housing policies designed to make our communities more affordable and accessible.

Learning Objective(s):

- Understand the severity of the current housing crisis and the reasons why public efforts are needed

- Explain what types of efforts have been made by diverse public and non-profit agencies to address housing affordability and accessibility issues
- Identify factors and conditions associated with housing policies that have successfully improved housing affordability and accessibility

PURSUING HEALTHY HOMEOWNERSHIP

Abstract ID: 1108.0.0.115.2024
Pre-Organized Paper Presentation

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Background: Shared equity homeownership – a model in which low- and moderate-income households purchase homes at affordable prices on the condition that the houses remain affordable upon resale – has been shown to produce several health-enhancing housing outcomes. These include permanent affordability, housing stability, and modest wealth-building. However, studies suggest low- and moderate-income households often sacrifice neighborhood quality when becoming homeowners, which may undermine the health benefits of homeownership. To more fully understand the health impacts of the shared equity homeownership model, it is important to evaluate participants' neighborhood health trajectories – how their neighborhood health environments change when they move into homeownership – and how these compare to the trajectories of households entering traditional homeownership and those continuing to rent.

Methods: We conducted difference-in-differences analyses comparing changes in neighborhood health characteristics (walkability, food access, socio-economic vulnerability, and life expectancy) for US households moving into shared equity homeownership between 1997 and 2017 compared to households moving into traditional homeownership and those continuing to rent. Shared equity homeowner data was obtained through the Grounded Solutions Network HomeKeeper National Data Hub and households from the Panel Study of Income Dynamics served as matched controls for the analysis. All data on neighborhood characteristics were obtained from publicly available, census-tract level datasets.

Results: Compared to traditional homeowners, shared equity homeowners experienced neighborhood changes with relatively better walkability (difference-in-differences 0.92, $p<0.01$), better food access (difference-in-differences 0.13, $p<0.001$), worse socio-economic vulnerability (difference-in-differences 0.05, $p<0.05$), and similar life expectancy. Compared to households moving to rental units, shared equity homeowners experienced similar neighborhood changes in terms of walkability, food access, and socio-economic vulnerability, but experienced a relative decrease in neighborhood life expectancy (difference-in-differences -0.78, $p<0.01$).

Conclusions: Shared equity homeowners have neighborhood health trajectories similar to households that continue to rent. Importantly, shared equity homeowners avoid the sacrifices in neighborhood walkability and food access that are associated with moving into traditional homeownership, but they experience increased neighborhood socio-economic vulnerability. While understanding the net impact of these factors on household

health requires further study, these results can inform the siting and design of shared equity homeownership units to maximize the health benefits of the model.

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Keywords: housing and health, homeownership, shared equity housing, community land trusts, neighborhood health

CARROTS WITHOUT STICKS: ANALYZING PROPOSALS TO REMOVE OBSTACLES TO HOUSING

Abstract ID: 1108.0.0.617.2024
Pre-Organized Paper Presentation

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How can the federal government increase local housing production? Debates on this question tend to focus on one of two strategies—voluntary carrots to incentivize cities to remove barriers to housing or penalizing sticks for those that continue to obstruct. In this paper, we examine how cities respond to one such voluntary, incentive-based federal grant program. By analyzing grant proposals, we document how cities frame their barriers to new housing production and what they propose using federal grant funding to overcome them.

We analyze approximately 100 municipal proposals developed in response to HUD's Proactively Removing Obstacles to Housing funding opportunity. This program offers grants to state, county, and local governments to address existing barriers to housing production. In their proposals, applicants must document their current obstacles and propose solutions using the grant funds to overcome them. Analyzing these proposals shows how cities respond to a voluntary, incentive-based grant program targeting barriers to new housing production.

Our analysis suggests that applicants focus on non-regulatory barriers to housing, such as insufficient subsidies for affordable housing development, outdated permitting systems, and high development costs. Few applicants mention land use or other development regulations as barriers to new housing production. While our analysis is

limited to a single grant program, it reveals some limitations of voluntary, incentive-based programs to tackle meaningful barriers to housing production.

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Keywords: Housing, Land Use Reform

SPILLOVER EFFECTS OF UPZONING IN NEW YORK CITY

Abstract ID: 1108.0.0.429.2024
Pre-Organized Paper Presentation

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As housing affordability crisis continues and housing options remain limited for low- to middle-income families, there have been growing calls for zoning reform to increase housing supply and lower housing costs. In the United States, such zoning reforms have also garnered support as a strategy to further fair housing and expand access to high-opportunity neighborhoods, especially for people of color. One example of such a zoning reform is upzoning, a policy intervention that amends existing zoning ordinances to increase the allowable densities. A number of cities (e.g., Minneapolis, Seattle) and states (e.g., California, Oregon) have adopted or have been considering upzoning to address both housing affordability and equity.

However, critics of upzoning have continued to question whether increasing the supply of market-rate housing can improve housing affordability, and empirical research has yet to offer a definitive answer (Been et al., 2019). On the one hand, new housing construction can result in the supply of low-income housing through filtering process, in which homes built for richer families trickle down to relatively lower-income families as the properties deteriorate (Rosenthal, 2014). On the other hand, recent studies indicate that the rate of downward filtering substantially varies across housing markets and that even upward filtering may occur in tight markets (Liu et al., 2022). Besides, recent studies on the upzoning effects provide mixed evidence in terms of housing production and costs within upzoned areas, while none of them have yet examined its external effects on surrounding neighborhoods (Freemark, 2023).

To address these research gaps, we investigate how upzoning initiatives affect property values and housing production on nearby parcels, and how such spillover effects vary across housing submarkets. We analyze 53 upzoning initiatives implemented in New York City (NYC) under the Bloomberg administration (2002–2013). During the period, more than 120 rezoning initiatives were approved in various parts of the city, enabling us to examine the long-term effects of upzoning (ranging from 10 to 20 years) and compare across diverse housing submarkets.

We will further analyze whether and how pre-upzoning local market conditions (e.g., land use characteristics, racial composition, socioeconomic status, housing demand) are associated with the spillover effects of upzoning.

We constructed a database of properties in NYC and their sales transaction records and identified parcels within and near the 53 upzoning initiatives. Similar to the methodological approach employed by Diamond and McQuade (2019), we examine whether changes in housing prices and construction of new units vary by the physical distance from the upzoned site. We do this by creating multiple ring zones around the upzoning initiatives and comparing the changes in housing prices and new construction across the different zones. In addition to the aggregate results, this paper explores spatial heterogeneity in the spillover effects across housing submarkets. The findings of this paper will deepen our understanding of the broader effects of upzoning beyond the parcels directly upzoned and thus contribute to our understanding of the efficacy of zoning reforms for housing supply and affordability.

Citations:

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Keywords: zoning, land use, housing, spillovers, real estate

Track 6 Roundtables

BEYOND NIMBY & YIMBY: FINDING FRESH PERSPECTIVE ON THE AFFORDABILITY CRISIS

Abstract ID: 1109.0.0.655.2024

Roundtable Submission

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While housing affordability has long been a concern for planning scholars and practitioners, it is increasingly recognized as one of the key policy challenges of our time—especially, though not uniquely, in North American cities. Improving housing affordability is now a major priority for local, state/provincial, and national governments. Yet housing scholarship—for all its productivity—has yet to reach any consensus regarding the causes of declining affordability and their relative importance across different contexts. Some scholars focus on supply constraints and emphasize the importance of deregulation and upzoning to boost housing production, while others point to the financialization of housing and the growing influence of corporate landlords seeking to maximize returns on an increasingly important asset class. New geographies of housing demand, rising scarcity of developable land in dynamic areas, and increasing labor market inequality are likely causal factors as well, though they have received less treatment in the literature. Affordability is also a fundamental concern for racial justice; White flight and disinvestment in majority Black and Brown urban cores throughout much of the 20th century, followed by subsequent urban "revitalization" and coupled with weak labor market opportunities, has subjected marginalized communities to a particularly acute affordability crisis. In this context, it has become increasingly difficult for planning practitioners and policymakers to navigate the complex evidence on housing affordability – let alone design solutions capable of addressing one driver of declining affordability without inadvertently reinforcing another.

Against this backdrop, this roundtable will engage a diverse group of housing scholars who use different disciplinary frameworks and methods to understand our contemporary affordability crisis. By juxtaposing different perspectives, we aim to chip away at the thorny question underlying a key contemporary housing debate: What are the root causes of declining housing affordability, and to what extent are current policy and planning approaches capable of addressing those structural issues?

Citations:

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Key Words: housing affordability crisis, supply and demand, financialization, inequality,

HUD CENTERS OF EXCELLENCE: ESTABLISHING HOUSING RESEARCH CENTERS.
Abstract ID: 1109.0.0.626.2024
Roundtable Submission

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In an effort to support academic housing research, the Department of Housing and Urban Development (HUD) has begun providing funding to establish housing centers of excellence. These opportunities have, to date, targeted minority-serving institutions—Historically Black Colleges and Universities (HBCUs) in the first two funding rounds and Hispanic-serving institutions (HSIs) in the third. In this roundtable discussion, we convene planning academics participating in these centers to discuss their experiences developing proposals and establishing centers. We will discuss the strategies for successful proposals, challenges in establishing new research centers, avenues for cross-center collaborations, and opportunities this funding provides to advance academic scholarship on housing issues.

Citations:

- N/A
- N/A
- N/A

Key Words: Grant Funding, HUD, Housing Reserach

THE STATE OF HOMELESSNESS RESEARCH: VIEWS FROM ACADEMIC RESEARCH CENTERS
Abstract ID: 1109.0.0.856.2024
Roundtable Submission

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Homelessness is one of the largest health, economic, political, and humanitarian challenges of US cities. The Department of Housing and Urban Development Point-in-Time count estimates 653,104 people have experienced homelessness in the United States with 35.2% of this population living on the West Coast in California, Oregon, and Washington (PD&R, 2023). However, the National Law Center on Homelessness & Poverty claims the actual number is in the range of 1.4 to 5.6 million due to a severe undercount caused by inconsistent methodologies, neglect of unsheltered and other uncounted subgroups, and infrequency in counts of homeless people (NLCHP, 2017). Despite the growing prevalence of homelessness, research on the topic in urban studies and planning is multifarious and typically subsumed in broader housing research. Yet, interdisciplinary homelessness research centers are emerging with the support of urban planning departments and faculty throughout the US, especially on

the West Coast. These centers are producing cutting edge research with innovative methodologies, by determining best uses of available data, and in partnership with multiple stakeholders including those who have or are experiencing homelessness.

This panel will delve into the research and findings of multiple academic research centers throughout the US West Coast that focus on homelessness. Dr. Mirle Rabinowitz Bussell (Faculty Director) will discuss the Homelessness Hub at University of California, San Diego and its commitment to applied and community-partnered research, as well as the development of a comprehensive geospatial database on homelessness. Ryan Finnigan (Associate Research Director) will discuss his work at the Terner Center for Housing Innovation at University of California, Berkeley, which has become a leader in housing and homelessness research and policy in California. Marisa Zapata (Center Director) will discuss the Homelessness Research & Action Collaborative at Portland State University and its solutions-oriented research to reduce homelessness and associated negative impacts, particularly for communities of color. Finally, Gregg Colburn (Co-Chair and author of the recent book, Homelessness is a Housing Problem) will discuss the Homelessness Research Initiative at the University of Washington and its focus on drivers and consequences of homelessness and housing access and associated findings for policymakers and nonprofits.

The panel brings together center researchers to create awareness of the state of homelessness research in urban studies and planning. It thus asks the following questions: What is each center's research focus and what methodologies are emerging from their projects? In an environment where individuals' stories are left out of policy conversations (Smith et al., 2021), how are centers engaging people with lived experience of homelessness? Being that groups already marginalized by race/ethnicity, gender, sexuality, disability, age, and vulnerability to climate change are most at risk of falling into homelessness (PD&R, 2023), how are centers dealing with intersectional identities of people experiencing homelessness? What stakeholders are centers targeting with dissemination and how is their research informing local, state, and federal policy? Finally, considering how homelessness research and policy are usually shaped by what is "allowable or sayable (or fundable)" (Farrugia & Gerrard, 2015, p. 277), how are centers pushing the boundaries of what is acceptable in homelessness research and policy?

Homelessness research in urban studies and planning is more needed than ever, making this an ideal time to examine the state of the field. Much current research examines pathways into and out of homelessness—particularly evaluation of programs that help with the latter—but the topic requires multidimensionality and stories to truly understand homelessness beyond episodes of being unhoused and receiving assistance (Somerville, 2013). This panel brings together researchers at the field's forefront to share their approaches, learn from each other, and provide insights into the future of homelessness research.

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Key Words: Homelessness, Housing Policy, Housing Interventions, Housing Data, Academic Research Centers

Track 6 Individual Paper Presentations

"PREVENTING EVICTION: STATE AND FEDERAL INTERVENTIONS DURING THE PANDEMIC"

Abstract ID: 1108.0.0.1001.2024
Individual Paper Presentation

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During the COVID-19 pandemic, households who lost income streams quickly became unable to pay their rent and faced eviction. Local, state, federal agencies responded by creating a bevy of housing precarity interventions aimed at stemming eviction and keeping people in their homes. Two of the most notable interventions included eviction moratoria designed to temporarily halt eviction and the US Treasury Department's Emergency Rental Assistance Program (ERA) that distributed $46 billion to help renters cover their rental debt.

As the dust has begun to settle, much is still unknown about the success of these interventions. This paper seeks to fill this gap by addressing four broad research questions: (1) How did state tenant protections and moratoria impact eviction filing rates during the COVID-19 pandemic? Not only is there significant variation in eviction moratoria, but there is also important variation in state tenant protections (e.g., length of eviction filing notice and grace periods). (2) How did the receipt of ERA funds and program design impact housing stability during the study period? ERA funds were distributed to programs in different amounts and to varying degrees of success. In this analysis, we are particularly interested in how program effectiveness impacted county-level filing rates during the study period. (3) Despite these housing stability interventions, some households remained at higher risk than others. Following previous research on high eviction demographics, we seek to understand how counties with high concentrations of these communities fared during the study period. (4) Finally, to what extent did housing market conditions continue to impact housing stability? It's likely that housing stability was even more precarious in counties that had already had tight housing markets and high rents.

We combine several data sources to answer these questions. First, using eviction filing data provided by the Legal Services Corporation and the Eviction Research Network, we calculate an eviction prevention ratio (EPR)—the

observed eviction filing coun over the expected county-level eviction filing count had there not been a pandemic—from March 2020 (the start of the pandemic) to August 2022 (when the U.S. returned to historical average eviction filing rates). Second, we use the US Treasury Department's ERA payments data aggregated to the respective counties within the same time-period. We then join these data with state-level data on tenant protections and eviction moratoria, as well as US Census county-level data on hundreds of socio-demographic and housing market characteristics. Our resulting data has information on approximately 1,200 counties across 32 states during the study period. Using a Bayesian machine learning framework, we identify important predictors associated with suppressed eviction filing rates and then evaluate how each variable, particularly ERA and policies, impacted eviction prevention.

Preliminary findings suggest that the duration of state-level moratoria (days) and various state-level tenant protections played outsized roles in keeping eviction rates low during the pandemic. However, by the time that ERA money arrived to counties, we find that filing rates had already begun to rise as eviction moratoria were ending. Moreover, given that eviction is concentrated in the most disadvantaged communities and tight housing markets, we find that counties with higher levels of Black-White segregation, higher unemployment rates, and higher median rents experienced higher eviction rates than would be expected. Together these findings provide strong evidence for the importance of state and federal legislative interventions designed to prevent eviction filings and slow down the eviction process. Despite eviction moratoria and strong tenant protections, we find there that eviction filings remained concentrated in highly segregated, poor, and low-income neighborhoods.

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Keywords: Eviction, COVID-19 pandemic, Eviction moratoria, Tenant Protections, Machine Learning (BART)

A CRISIS OF QUALITY: IDENTIFYING VARIEGATED HOUSING CRISES IN THE US

Abstract ID: 1108.0.0.1172.2024
Individual Paper Presentation

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When housing researchers consider the modern 'housing crisis', they often consider one or two instances in US and global history: the housing bubble of 2008 or the ongoing housing shortage and affordability crisis. Most commonly, especially today, the US housing crisis is commonly defined through the experiences of tight market cities. This results in a housing crisis centered on housing shortages and increased housing costs. Leading research centers, affordable housing organizations, and scholars highlight increasing barriers to affordable housing due to skyrocketing housing costs and its relationship to supply (Been et al, 2019; Joint Center for Housing, 2023). Scholars in the field also focus on land regulation challenges, NIMBYism, and the tools necessary to increase access to affordable housing in these higher barrier markets (Glaeser et al, 2006; Walter et al, 2016). The continued centering of tight housing markets in both scholarship and policy lends itself to growth-oriented biases in measurement systems and the proliferation of some response strategies over others. This centering of large (usually coastal) cities in planning and policy scholarship, or "metrocentrism", leads to inherent "hierarchies of attention and value" (Bunnell and Maringati, 2010, p. 417). These hierarchies explain how scholars and policy makers frame our modern-day housing crises through the lens of a select few cities that are perceived as the best expression of urbanism while other cities are seen as "devoid of [. . .] theoretical significance" (Bunnell and Maringati, 2010, p. 417). In the case of the United States housing crisis, the field's theoretical and practical groundings are based on the experiences of the households and markets of large, growing cities while small and midsized cities (often stagnant or declining) are made invisible. The inherent othering of places outside of large metro areas results in an inadequate construction of space and place – cities are reduced to the experiences and framings of our larger metro areas. This reduction inherently results in mismatched policy and planning strategies throughout the country.

The goal of this research is to make visible the heterogeneity of housing markets and their crises in the United States through statistical and spatial analysis while highlighting the need for varied and flexible policy responses. Seeking to expand the scholarship on housing crises, I present a statistical analysis of the United States housing markets using principal component analysis and hierarchical clustering to bring into focus the multiscalar heterogeneity of housing markets in the US. Ultimately, statistical and spatial analysis make visible a housing crisis not often addressed or focused on by state and federal policy. It highlights the vast number of communities and neighborhoods that may have abundant affordable housing stock, but ultimately struggle with housing quality and difficulty accessing equity to address quality concerns. This crisis is due to older housing stock, high vacancy rates, and high poverty rates and it requires different policies and funding mechanisms for stabilization. Varied and flexible federal policy responses are needed to address the diverse crises that have manifested throughout the country.

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Keywords: housing, housing quality, markets, principal component analysis, hierarchical clustering

A MOSTLY PUBLIC CONSENSUS ON HOUSING? RESULTS ON A SURVEY FROM CALIFORNIA

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Individual Paper Presentation

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High and increasing housing costs are a source of stress for households in many cities across the world. Housing issues have been particularly oft discussed in California, where 81 percent of low-income residents, 48 percent of middle-income, and 54 percent of renters are overburdened by housing costs. In many venues, such as among policymakers, in media, and in academic literature, there has been much debate about the causes and potential solutions to housing unaffordability.

Leaving aside the question of what perspectives best describe or would best address housing unaffordability, what does the public-at large think about housing issues? What perspectives have broad support? Are there perspectives that are less popular, but said loudly? As the cliché goes, is social media real life? Previous research has shown disconnects between the perspectives of the public at-large and participants of public meetings, highlighting challenges in making planning decisions that accurately reflect public sentiment.

This study explores the results of a survey of 962 Californians on housing-related topics fielded from May to June 2023. Survey response were solicited from the CalSpeaks California statewide survey panel, administered since 2016 by the Institute of Social Research at Sacramento State University. Administration of the survey was mostly online via Qualtrics, but a paper option was available for respondents. The survey was available in Spanish in addition to English. An incentive of $5 was offered to respondents for the completion of the survey.

In popular discourse, debates over housing are often described as support versus opposition to more housing construction or specific policy interventions. That said, there is much more than binary thought in the debate, particularly in the why of opposition. Along these lines, this survey attempted to unpack underlying perspectives related to housing that might lead individuals to oppose certain policy changes, but for different reasons. Among the survey themes explored were:

1) Do people think housing-related issues such as rent increases, overcrowding, and jobs-housing imbalance are even a problem? Related to this, do people think governments should prioritize low housing prices (to benefit renters and first-time homebuyers) or prioritize high housing prices (to prioritize existing homeowner equity)

2) If people thinking housing issues are a problem, do they think it is a societal problem (that should thus be addressed with public policy), or rather an individual problem?

3) Does the public at-large find infill housing problematic?

For seven different potential problems related to high housing prices, between 74-94% of respondents reported they thought they were moderate or major problems. Respondents also indicated they thought housing was a societal issue, disagreeing 58-19 with a statement that housing was an individual problem.

In terms of new construction, only 36% of respondents thought new homes altering the physical look, feel, or character of an area was a moderate/serious problem. Additionally, respondents disagreed 48-20 with a statement that infill housing degrades quality of life in those areas.

Looking at crosstabs, results were generally consistent across multiple categories such as gender, housing tenure, age, income, education, race ethnicity, and political lean. That is not to say there were no differences between categories, but they tended to be in the magnitude of agreement rather than the holding of opposing positions. For example, a supermarjority of both progressives (95-5) and conservatives (74-26) thought that government should prioritize low rents/first-time buyer costs than existing owner returns.

Overall the results of the survey may suggest to planners and policymakers that there are broadly popular housing takes in their communities. They may hear contrary positions, but they may be less popular than comments in other venues (e.g public meetings) may indicate.

Citations:

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Keywords: housing, public opinion, housing opposition

A MULTISTAKEHOLDER ASSESSMENT OF ILLINOIS HOUSING CODE ENFORCEMENT OUTCOMES

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Individual Paper Presentation

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Housing code enforcement reflects a form of "law in action" (Ross, 1995) that brings the state's regulatory power inside the home. Like other forms of policing, code enforcement officers apply standards in ways that are principled, but subjective. Bartram (2022) describes these discretionary actions as "stabs at justice" occurring outside of criminal law enforcement. The proliferation of crime free and nuisance housing ordinances in states like Illinois, increasingly align criminal law enforcement with housing code enforcement, calling upon code enforcement officers to force the removal or displacement of renters based upon encounters with criminal law enforcement.

In this paper, we draw from a novel spatial analysis of code enforcement administrative data and more than 30 hours of documentary interviews to analyze and interpret where code enforcement actions accumulate in 7 Illinois

cities, focusing on how distinct burdens are placed on certain neighborhoods, property owners, and tenants. We describe the primary findings regarding code enforcement action and displacement potential, and also focus on the application of participatory multistakeholder research methods in this project to fostering local community conversations about code enforcement action and resulting outcomes including displacement.

Findings from this work underscore how highly spatialized burdens further compound other forms of regulatory authority to increase the potential for the displacement of tenants and the disenfranchisement of small landlords. Based upon these findings we suggest ways in which local community conversations can form the building blocks not only for solidarity but also for structural reform of code enforcement ecosystems.

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Keywords: Housing, Code Enforcement, Displacement, Mixed Methods, Evaluation

A QUALITATIVE REVIEW OF SUPPORTIVE SERVICE IN HOUSING FIRST PSH PROGRAM

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Individual Paper Presentation

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Stable housing is defined as residence in an independent apartment, room in a congregate living facility, or house; residence in a family members home with intended stays of 6-months or more; or transitional housing programs with a minimum 6-month stay. Measures of housing stability in the literature include percentage of time stably housed, Number of days stably housed, and percentage of group/individuals stably housed at given intervals. These measures are a component of success rate of several Housing First Program, the US Program that serves different needs and types of people experiencing homelessness [PEH]. Literature shows that the most calculated outcome for PSH trials are measures of housing stability. This paper focuses on Permanent Supportive Housing [PSH] as one of Housing First Programs. PSH is housing typology with access to services including long-term leasing or rental assistance as well as health and physical services. Services are provided to assist households with at least one adult or a child with a disability in achieving housing stability. This paper focuses on exploring different parameters associated with the location, type, and frequency of service access. It examines the issues contributed to a long-lasting impact on individuals housing stability by questioning the efficiency and other external factors that might be associated with current housing affordability gaps and landlord's agreement in two cities: San Antonio, Texas and Boulder, Colorado.

Access to mental health service for PSH clients is critical and attempts to address many of the mental and physical health problems of homeless individuals fail when clients are denied access to safe, affordable, sanitary, and

reliable housing. Consumer choice in the two primary types of PSH, scattered site, or congregate/project housing, in addition to the prioritization process of housing placement process impact client's retention.

To understand the extent of challenges of client retention as a measure of housing stability, a review of literature was conducted to identify research indicators that will be further examined. The indicators include housing instability, health and wellbeing, substance abuse, Community integration, and child and family outcomes. qualitative approach to understand the issues associated with the efficiency and ease of system exit to independent and self-sufficient life. While quantitative data from the Homeless Management Information System (HMIS) analysis provide an idea of the frequency that clients sought housing-related service or legal counsel, it did not suffice as an overall source to understand the root of these conflicts.

Thus, the author conducted a 90-minute focus group with service providers and social service managers was conducted to enrich quantitative study with first-person experience from front-line (FL) providers. Eight providers from five agencies in the district participated. The focus group findings revealed that manager and supervisor/director (M/S) participants stress the need for outreach and education aimed at property owners and managers to increase awareness of the difficulties faced by this marginalized population. They stress the lack of landlords that are sensitive to the needs and are willing to work with clients. While scattered-site (non-project-style) housing is central to the original conception of housing first models, many providers and researchers have cited problems with isolation and lack of sympathetic community. Participants in this focus group also suggested that formerly homeless people in scattered-site housing may rely on pre-existing social networks from the homeless community to decrease feelings of isolation or stigmatization. Additionally, they identified a source of conflict between landlords and clients, which typically occurs when clients reconnect with old friends or acquaintances to ease the stress of new surroundings and unfamiliar routines. The research suggests a broader educational outreach to landlords and providers to bridge the gap of multi-homelessness episodes and ensure long-term housing stability.

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- Chronically Homeless

Keywords: Permanent supportive housing (PSH), Housing instability, Homelessness, Wrapped around service

ADAPTIVE REUSE: LESSONS FROM THE DEREGULATORY APPROACH TAKEN IN ENGLAND

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Individual Paper Presentation

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Given changing use patterns of commercial space post-Covid, particularly offices, and housing crises occurring in many places internationally, there is growing interest in adaptive reuse of commercial buildings for residential purposes, including in multiple North American cities. Sustainability considerations regarding embodied carbon within buildings and the potential to revitalize downtowns with mixed-use development also make such changes of use increasingly appealing. Alongside this, a supply-side understanding dominates responses to the housing crisis is many national contexts, leading proponents to call for ever further deregulation of urban planning and related governance as the means to resolve the crisis, in a neoliberal imaginary.

In England, in 2013 central government changed planning regulations so that developers could convert office buildings and, from 2015, retail and light industrial spaces, into housing without needing the traditional case-by-case planning permission from the local authority: a process called “permitted development” (PD). Existing research has demonstrated how deregulation has led to numerous quality issues, including in relation to the size of the dwellings, natural light, access to outdoor space and the location of housing in relation to neighbouring land uses and accessibility (see Ferm et al, 2021).

Health and wellbeing are two measurable outcomes of housing quality that have multiple societal impacts, such as healthcare costs and productivity. Given the multi-scalar relationship between housing, health and wellbeing and societal inequities, there is a key role for urban planning in partnership with public health to ensure housing availability and quality (Pineo, 2022; Bird et al, 2018). Given the increasing amounts of time some people are spending within their homes post-pandemic, the housing and health relationship is important, particularly in socio-economically deprived neighbourhoods where residents may be more vulnerable to housing exposures than the general population.

There are a range of potential causal pathways linking health and wellbeing outcomes with a decline in housing quality and wider neighbourhood conditions found in some converted non-residential buildings in England, but a lack of empirical research (Marsh et al., 2020). We therefore undertook an exploratory study in a sample of PD properties in London. Working with housing charity Groundswell, we conducted an online survey and interviews with occupants of PD housing. We used the Warwick-Edinburgh Mental Wellbeing Scales (WEMWBS) wellbeing outcome measure and undertook a questionnaire survey with 218 responses and 41 in-person interviews (Pineo et al., 2024).

Our exploratory study found that deregulated non-residential conversions to housing pose potential health and wellbeing risks in the areas of space, overheating, amenities and perceived safety. Residents also highlighted problems with windows and outdoor space. Having sufficient space for socialising, eating together as a household and studying was strongly associated with higher mental wellbeing. A lack of cooling options in the homes was associated with significantly higher risks of probable clinical depression, after controlling for household income. Individual agency and co-occurrence of housing-related challenges (for example insecure tenure) may play a role in modifying potential wellbeing impacts. We are have recently expanded this study to a national sample.

Despite the differences between English and North American office buildings and urban form, there remain transferable lessons from our study to inform office to housing conversions in other settings. In this paper, we present the results of our exploratory work and preliminary findings of our national study. We then consider the implications for the relationship between planning regulations and public health, and the importance of design quality in broader debates about urban governance and housing. We argue this is particularly important when adaptive reuse is proposed for existing buildings, which may not have been originally designed for residential uses, with implications for policy-makers and planning practitioners.

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Keywords: Housing, Office conversion, Commerical to residential change of use, Health, Deregulation

AIRBNB AND HOME SHARING ORDINANCE IMPACTS ON RENTS IN LOS ANGELES COUNTY

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Individual Paper Presentation

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Short-term rentals revolutionized the accommodation industry by allowing people to rent part or all of their housing units as a more affordable option to a hotel room. Airbnb users appreciate the authentic experience of being embedded in residential areas and interacting with the owners. Airbnb owners appreciate the extra income from an unused bedroom or from their temporarily unoccupied housing unit. The extra income can increase the owner's ability to pay the rent or mortgage for the unit.

However, as more short-term rentals are offered, the increased income of owners can increase rents and housing prices. Property owners start evaluating properties from the perspective of the higher revenues from hosting short-term rentals versus having long-term leases (Deboosere et al., 2019). With many Airbnb customers preferring full-unit rentals, owners converted many housing units into full-time short-term rental units (Lee, 2016). The full-unit short-term rental units then reduce the housing availability for residents and increase rents and housing prices (Horne & Merante, 2016).

Units offered as Airbnbs tend to concentrate in certain types of neighborhoods. Generally, they are in tourist-oriented areas near the center of town that are either high-income or gentrifying low-income (Deboosere et al., 2019; Gutiérrez et al., 2017; Lee, 2016). Rent increases are higher in neighborhoods that are more attractive Airbnb locations. This can lead to displacement of long-term rental residents, and can speed up the gentrification process.

To protect long-term residents and the impact of short-term rentals, cities have created Home Sharing Ordinances which vary from complete bans on short-term rentals to limiting short-term rentals to the owner's primary residence to creating a fee structure for operating a short-term rental.

Studies on short-term rentals and their impact on rents have been increasing. And while some studies have evaluated the impact of homes sharing ordinances, fewer have evaluated the effect on rents once the ordinances are in place. Koster et al. (2021) did find that the ordinances did reduce rents in Los Angeles.

We collected data on Airbnb units for 2017 and 2021 for Los Angeles County from Inside Airbnb and combined it with US Census data at a census tract level for the same years. Using ArcGIS Pro, distances to important locations were also assessed including downtown Los Angeles, Hollywood, and the Pacific Ocean. For the 88 cities in Los Angeles County, the presence and type of Home Sharing Ordinance and year of implementation was also determined. Initial results indicate that a decrease in Airbnb units decreases the increase in rents after controlling for income, change in income, change in housing units and distances to important locations. Home Sharing Ordinances generally reduce Airbnb availability and help slow rent increases in the market.

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Keywords: Airbnb, Short-term Rentals, Home Sharing Ordinances, Housing Affordability

ALIGNING TRANSPORTATION AND HOUSING: ADVANCING ETOD UNDER THE NEW IIJA

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Individual Paper Presentation

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The 2021 Infrastructure Investment and Jobs Act (IIJA) was the largest single investment in transportation and public works in decades. Despite the IIJA's potential to upgrade the nation's transportation infrastructure and its provisions to encourage localities to adopt transit-oriented development (TOD), there was no allocation of funds to address the nation's affordable housing shortage. While TOD can help create more affordable options near high quality transportation services, research has found that despite the best efforts of local governments and their transportation departments, TOD projects generally do not include affordable housing for low-income residents and often unintentionally burden existing residents and small businesses in the area. The benefits that come along

with TODs – new businesses, restaurants, retail, public amenities, and neighborhood services – also attract new residents to the area. With increasing demand, rents and property values increase, and existing neighborhood residents are often priced out.

Significantly, the IIJA includes a new process by which Metropolitan Planning Organizations (MPOs) engage in a "Housing Coordination Plan" with local stakeholders. The IIJA also continues the competitive Transit Oriented Development (TOD) planning program that provides funding for efforts associated with an eligible transit project for which the project sponsor will seek funding through the Federal Transit Administration's (FTA) Capital Investment Grants Program. The focus is to grow TOD around transit stations to create compact, mixed-use communities with easy access to jobs and services.

This paper investigates how the IIJA's new process by which MPOs engage in a "Housing Coordination Plan" with local stakeholders has resulted in the formulation of planning strategies and policies that align planned transportation investments with expanding the affordable housing supply near transportation hubs and increasing the share of households with affordable access to transportation networks. The IIJA offers an unprecedented opportunity for communities to align transportation, land use, and affordable housing and, in doing so, address inequality and improve sustainability. The research focuses on the inextricable link between housing affordability and accessible transportation incorporated into the Equitable Transit Oriented Development (eTOD) framework in assessing the extent to which MPO Housing Coordination Plans have adequately aligned planned transportation investments with housing affordability. The eTOD planning framework provides for the creation of sustainable communities for existing and future residents of all income levels and where transit is truly accessible, and displacement is avoided. Significantly, the eTOD concept prioritizes equity at every step of the planning process to enable inclusive communities around transit hubs. This paper draws on pre-IIJA and current eTOD project case studies to determine how localities have addressed the challenges and created the opportunities for developing inclusive and sustainable communities. These experiences should help inform the formulation of Housing Coordination Plans under the IIJA.

This research provides cutting-edge analysis of IIJA's Housing Coordination Plans and more broadly the critical elements of an inclusive stakeholder process and eTOD plan. This should benefit educators, MPOs, local governments, housing advocates, and CBOs.

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Keywords: Infrastructure Investment and Jobs Act, housing affordability, equitable transit oriented development

ANALYZING ADU & TINY HOME REGULATIONS IN US CITY & SUBURBAN JURISDICTIONS

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Individual Paper Presentation

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Over the past few years, some U.S. jurisdictions have facilitated small, affordable housing solutions by changing their zoning. These housing solutions have relatively small footprints, resulting in lower construction, rehabilitation, or renovation costs and, thus, lower property values or rents, which makes them affordable for many lower- and moderate-income households.

As Pfeiffer (2019, n.p.) states, "[d]espite the rising prominence of ADUs, little is known about the types of communities that build them […]." While there are some U.S. jurisdictions that have permitted Accessory Dwelling Units (ADUs) and tiny homes, there are few systematic, national analyses about U.S. jurisdictions that have permitted versus not permitted these solutions. There are even fewer analyses that compare principal cities and suburbs. The goal of this study is to analyze variations in demographic, socioeconomic, and housing characteristics between principal city and suburban jurisdictions that offer permits versus do not offer them for ADUs and tiny homes.

The geography of this study is the U.S. The unit of observation is the jurisdiction. I utilize two datasets to analyze the variation between jurisdictions that regulate ADUs and tiny homes. First, I use the National Longitudinal Land Use Survey (NLLUS), conducted by the Urban Institute in collaboration with Rolf Pendall in 2019 (Pendall et al., 2022; Urban Institute, n.d.). The NLLUS 2019 Land Use Dataset includes data on jurisdictions with populations over 10,000 within the top 50 Core Based Statistical Areas (CBSAs) and a sample of land use planning empowered jurisdictions with populations under 10,000 in select CBSAs (Pendall et al., 2022; Urban Institute, n.d.). The NLLUS 2019 data set contains the following two variables of interest:

- ADUs permitted or ADUs permitted by discretionary use permit by right or with ministerial use versus not permitted [NLLUS 2019 question 18] and
- Tiny homes permitted versus not permitted [NLLUS 2019 question 16].

Second, I use the American Community Survey (ACS) 2015-2019 (5-year averages), conducted by the U.S. Bureau of the Census annually since 2005 (U.S. Bureau of the Census, n.d.). ACS questions focus on demographic, socioeconomic, and housing characteristics.

My methods are descriptive statistics and Welch's independent samples t-tests. I utilized nine demographic, one socioeconomic, and 11 housing variables in my analysis (21 variables total).

Preliminary results indicate that principal city jurisdictions that permit ADUs have a high proportion of Asians, principal city jurisdictions that permit tiny homes have a high proportion of Blacks/African Americans, suburban jurisdictions that permit ADUs have a high proportion of Whites, and suburban jurisdictions that permit tiny homes have a high proportion of Hispanics/Latinos, possibly indicating that these groups have the power to effect regulatory change.

Principal city and suburban jurisdictions that allow ADUs and tiny homes have very high housing unit values, possibly indicating that jurisdictions that are permitting these housing solutions try to address housing affordability issues.

This research may provide guidance for federal, state, and local governments that would like to understand demographic, socioeconomic, and housing characteristics in connection with reforming regulations for ADUs and tiny homes. Permitting these solutions may partially solve the U.S. national housing affordability crisis (Anacker, 2019).

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Keywords: Housing, Affordable, public policy

ANALYZING EVICTION FILINGS AND ABOVE GUIDELINE RENT INCREASES IN ONTARIO

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Individual Paper Presentation

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While there are other structural drivers of evictions, an important one is the role of legislation in shaping the rental housing landscape, which can create the conditions for evictions to occur (Merritt & Farnworth, 2020). However, rent control legislation can help with eviction prevention by maintaining affordability through limiting the amount rents can be increased each year, although this effectiveness is undermined if loopholes exist (Hartman & Robinson, 2003). Landlords in Ontario, Canada, can only raise rents annually in rent-controlled buildings by a provincially-set 'guideline' amount. However, landlords can bypass these rent control limits by applying for 'above guideline increases' (AGIs) to pay for eligible capital costs, extraordinary property tax increases, or operating costs related to security. AGIs, thus, enable landlords to increase rents above what would legally be permitted in a rent-controlled building, which can lead to evictions as tenants become increasingly unable to afford the higher rents. Despite growing awareness of the affordability problem associated with AGIs and potential displacement (Zigman & August, 2021), the impacts of AGIs have yet to be rigorously examined.

Evictions research has grown significantly in recent years and has yielded important insights into how and where evictions occur (e.g., Goodspeed et al, 2021), and how different policy landscapes exert strong influence on the spatial distribution and occurrence of evictions (Merritt & Farnworth, 2020). Crucially, research has also spotlighted serious racial and gender disparities in the eviction process (Merritt & Farnworth, 2020), as numerous studies illustrate that racialized neighbourhoods tend to experience disproportionately higher rates of eviction (e.g.,

Howell & Teresa, 2022). However, the geographic focus of this growing body of work has primarily been the United States. Little research, until recently, has been conducted in the Canadian context. This research seeks to address this gap.

This paper is part of a larger research project to better understand the impacts of AGIs on rental affordability and tenant displacement in Ontario. Our main focus in this paper is to examine the spatial and temporal dimensions of AGI applications and eviction filings (2010-2021) across the province to provide a broad comparative overview of the incidence and prevalence of AGIs in different housing markets and geographic contexts (e.g., small city vs. mid-sized city; urban vs. rural). To do this, we use a dataset (n=4889) of AGI applications obtained from Ontario's Landlord and Tenant Board (LTB). One application can cover a few buildings, so each building has been separated out for geocoding purposes. Each building in the database has been mapped and we calculated location quotients (LQs) at the census tract level to identify and compare spatial concentrations over time.

This paper also explores the relationship between AGIs and the incidence of eviction filings. To explore potential connections between affordability and displacement, we linked the AGI buildings in the dataset to a second database that contains over 765,000 eviction filings (2010-2021). This database has been cleaned, geocoded and cross-validated to ensure that eviction filing addresses have been accurately attached to the correct census geographies.

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Keywords: Evictions, housing insecurity, displacement, rental housing affordability, housing policy

ANYPLACE ARCHITECTURE? EVALUATING PODIUM AND WRAP APARTMENTS

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Individual Paper Presentation

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The proliferation of two distinct, yet related, apartment types across the United States over the past decade has been praised for providing much needed housing, but also criticized as monotonous, placeless, and formulaic (Kode, 2023; Lefkowitz, 2021; Nishimura, 2022). "Podium" buildings, which stack apartments over a concrete base, and "wrap" buildings, which wrap units around a concrete core, can be found on urban infill to exurban greenfield

sites in cities of all sizes across the U.S. Both are working to alleviate the housing crisis in high-growth cities like Nashville, Raleigh, and Austin, which finally built enough housing to moderate rents, down 7% in 2023. Public conversations about these buildings, however, discount the important role podiums and wraps are playing in housing production and question the future of cities with a concentration of these building types. In these venues, podium and wrap apartments are "blandmarks," which are "everywhere, but look like they could be anywhere" (Nishimura, 2022).

Why do so many new podium and wrap apartments built across the U.S. look somewhat different yet still all the same (Kode, 2023)? Anecdotal explanations from those in the industry are myriad. Developers cite rising land, material and labor costs, but also say that location, massing and architectural style is driven by restrictive local planning and zoning codes (Lefkowitz, 2021). Architects identify inherently risk averse developer clients and bare bones budgets that require the use of low quality materials, but also the International Building Code, used by most U.S. jurisdictions, which enables the hybrid podium and wrap structural type (Lefkowitz, 2021; Nishimura, 2022). And planners recognize that even this comparatively cheap mode of construction is costly, discouraging experimentation that might require discretionary approval and encouraging fully built out sites that maximize density (Lefkowitz, 2021). All note the anodyne effects of the high returns required by institutional capital and the consequences of consolidation in the building industry, meaning most housing is constructed by national, not local, actors (Lefkowitz, 2021). In other words, housing homogeneity comes down to codes, costs, clients and capital (Lefkowitz, 2021).

But, which codes, costs, clients and capital are the most homogenizing, and in what contexts? How are these "5 C's" working dampen regional character and place identity? To better understand the role of the 5 C's in standardizing housing practice, this paper presents a comparative case study of three clusters of podium and wrap buildings in the East Austin, Mueller and South Lamar neighborhoods in Austin, TX. It will use the 5 C's as a framework to evaluate and categorize outcomes. Data collected on each case will include drawings, renderings and photos to evaluate project design, planning and zoning code parameters, design guidelines, applications for discretionary approval, and design review requirements to assess planning context, and ownership information, land and construction costs as well as rental and cap rates to appraise the real estate development and investment environment. The study will use these materials to ask:

1. How similar or different are these buildings from an architectural perspective? Do they exhibit the degree of sameness across multiple locations as alleged by their critics?

2. What are the urban planning, real estate development and political forces shaping these specific physical outcomes? Are they those cited by industry players or are other forces at work? Of the forces involved, which work to create the most similarity, which might be used to create difference?

By answering these questions the study hopes to provide data that could ground a deeper conversation about this kind of "anywhere architecture," and ask whether the current proliferation of podium apartments is really any different than housing shortages in the past, which were also addressed with repetition and sameness.

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Keywords: Housing, Urban Design, Real Estate Development, Place

ASSESSING FAIR HOUSING PROGRESS: LIHTC AND OPPORTUNITY NEIGHBORHOODS

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Individual Paper Presentation

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The efficacy of the Low-Income Housing Tax Credit (LIHTC) program in advancing fair housing remains a contentious issue. Research indicates that LIHTC neighborhoods only marginally outperform those created through other housing subsidies like voucher programs, particularly in aspects such as poverty exposure, crime rates, school quality, and employment access (Ellen et al., 2018; Lens & Reina, 2016; McClure & Johnson, 2015). However, the past decade has seen a concerted effort within state-crafted Qualified Allocation Plans (QAPs) to elevate LIHTC projects into areas offering greater opportunities. This shift, largely attributed to fair housing litigation's influence (Fischer, 2018; PRRAC, 2023), prompts an in-depth examination of QAPs' alignment with fair housing principles.

Our study aims to discern how the Texas Department of Housing and Community Affairs v. Inclusive Communities Project, Inc. (2012) litigation has impacted QAP modifications to foster fair housing. We problematize the oversimplified definition of "opportunity" as poverty reduction and the enhancement of affluent conditions, as it fails to address the complex realities of accessing substantial opportunity structures—such as institutional intermediation and educational and employment resources—essential for achieving economic mobility (Balachandran, 2023; Reid, 2019).

Our methodological approach involves a longitudinal analysis of Texas' QAPs spanning 21 years (2002-2022), divided into four distinct phases – pre-litigation (2002-2007), litigation (2008-2011), remedial action (2012-2016), and post-remedial action (2017-2022). We complement our document analysis with qualitative data from in-depth interviews with a diverse pool of developers and fair housing organizations. Further, building upon Ellen and Horn's (2018) methodology, we evaluate the relationships between quantified fair housing criteria and the probability of tax-credit housing in better neighborhoods across the study period using LIHTC project-level data from the Department of Housing and Urban Development (HUD). This mixed-methods approach provides nuanced contextual insights into the policy's practical implementation.

Our findings reveal a significant, albeit unintended, policy shift: a five-percentage point decrease in criteria strength aimed at promoting access to neighborhoods with high economic mobility potential and dismantling barriers for

underserved groups during and post-litigation. Additionally, we observe a dilution of criteria incentivizing location in low-poverty neighborhoods and deeper income targeting. Poverty thresholds at the tract level changed from “10% or lower” to “20% or higher,” with a similar reduction in median income criteria. The maximum points for affirmative marketing were reduced from 22 to 16, requiring a lower set-aside. Despite these shifts intending to simplify project approval processes and potentially increase affordable housing development, developers report mounting challenges stemming from intensified but potentially misaligned deconcentrating poverty criteria. This misalignment has led to a scarcity of viable low-poverty locations willing to accommodate tax credit housing, indicating an unintended consequence of the policy's evolution. Finally, while tax credit units are increasingly located in lower-poverty neighborhoods, there is considerable variation in access to better schools, jobs, transportation, and local factors vital for upward economic mobility.

This study's innovative, state-focused temporal analysis illuminates the complex interplay between social-political changes, market behaviors, and policy responses. It underscores the necessity of continuous monitoring and recalibrating QAPs to effectively align with fair housing objectives. For planning education, the study emphasizes the importance of adaptive policy design and offers a case study on how legal actions can drive, but also complicate, policy evolution. In scholarship, it contributes a critical perspective on policy effectiveness, highlighting the dynamic relationship between regulatory intention and lived reality. It challenges the field to reconsider how policies are crafted, implemented, and evaluated over time.

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Keywords: Spatial Justice, LIHTC, Fair Housing, Economic Mobility, Opportunity

ASSESSING THE DRIVERS AND FEATURES OF SOCIAL RENT ADOPTION IN BRAZIL

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Individual Paper Presentation

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While the homeownership rate has surpassed 70% in Brazil, rent burden has become the main cause of the housing deficit, affecting about three million households in 2019. These numbers illustrate the complexity of the housing issue in Brazilian cities, which is based on interlacing spectrums between homeownership and rent, as well as formal and informal housing. Recent efforts from organizations such as the Inter-American Development Bank and the United Nations to mobilize interest in social rent, coupled with the fact that some of the country's largest municipalities have adopted this policy model indicates the possibility of continued growth. Whether diffusion happens or not, much can be learned from the current trend. In fact, processes of diffusion that do not lead to policy adoption may be as important as processes of diffusion that do lead to adoption, as they demonstrate the challenges in adding a new policy to the agenda. In this study, the following questions will be investigated: What are the domestic conditions, external pressures, and individual behaviors that drive the adoption of social rent in Brazil? What factors explain the policy design similarities and distinctions between local social rent policies? From September to December 2023, I conducted fieldwork in four Brazilian municipalities that either have adopted or are in the process of adopting social rent: São Paulo, Belo Horizonte, Recife, and Campo Grande. During this period, I conducted approximately 55 semi-structured interviews with elected officials, civil servants, researchers, consultants, investors, program beneficiaries, and housing movement leaders. Codes and themes will be identified within and across the four case studies. Furthermore, documents such as reports, meeting minutes, conference presentations, news articles, and press releases have been collected from publicly available sources and interview subjects. These materials will be used for additional information and validation purposes. This study aims to enrich the burgeoning literature on renting practices and policies in Brazil and Latin America at large. By providing insights into the characteristics and expansion of rental policies, it can inform the development of affordable housing strategies focused on rental solutions in locations where such initiatives have been scarce. Moreover, it invites practitioners to reflect on locally adaptable mechanisms that could ensure the sustainability of such initiatives over time.

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Keywords: affordable housing, policy diffusion, social rent

BEST PRACTICES FOR HOMELESS SERVICE CENTERS IN SPOKANE, WASHINGTON

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Individual Paper Presentation

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Abstract: Homelessness continues to pervade cities in the United States (US) today. According to the US Department of Housing and Urban Development's Annual Homelessness Assessment Reports to Congress in 2022, more than 500,000 Americans are homeless on any given night. The objective of the study is to identify and examine existing best practices for an emergent kind of emergency response shelter facility: the "homeless service center," which is low-barrier and increasingly incorporates wrap-around services like mental health counseling, addiction treatment, and housing service providers. Considerable evidence from surveys and annual Point-In-Time (PIT) data has revealed that most shelter-resistant homeless people avoid shelters due to fear of theft, violence, sexual assault, anxiety, rules that disrupt their communities, abusive or dehumanizing treatment from shelter staff, etc. Yet, very little peer-reviewed scholarship exists on how best to respond to this long-standing phenomenon. The study asks how and in what ways local governments, both within and beyond the US, are responding to this dilemma. In the process, evidence-informed interventions and policies that promote quality, safe, and attractive homeless service centers, yet are also adaptable to contextually specific conditions (e.g., housing market conditions, vacancy rates), are presented.

The research employs a mix of primary and secondary qualitative methods, including content analysis of existing grey literature on homeless service centers and semi-structured interviews and surveys with shelter managers and/or representatives at existing facilities in Spokane, WA; Seattle, WA; Colorado Springs, CO; Houston, TX; Boise, ID; and Vancouver, Canada. Interviews delve into the operational model of the homeless service center facility, focusing on criteria that encompass the capacity of the facility, the security measures in place, health and sanitary conditions, accessibility for individuals with disabilities, and the level of integration or interaction with neighboring communities. The study's findings suggest that trauma-informed frameworks are critical for those who operate such facilities. The findings also suggest myriad implications for policymakers, urban planners, non-profit organizations, and individuals who are interested in improving the efficacy of homeless service centers. This is crucial in urban contexts with limited supplies of affordable and/or subsidized housing stock. However, it is also revealed that congregate shelters are being eliminated in some places (e.g., Seattle). While this may sound initially counter-intuitive, insofar as sufficient temporary and permanent housing units are available into which unhoused people can be placed, homeless service centers do not necessarily need to invest in providing warehouse-like modes of emergency shelter, which is often connected to the reasons for why unhoused people avoid seeking assistance at shelter facilities.

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Keywords: Homelessness, Homeless service centers, Housing, Homeless shelters

CHILD DEVELOPMENT IN PUBLIC HOUSING: UNRAVELING SOCIAL DISORGANIZATION

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Individual Paper Presentation

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Throughout U.S. history, there have been numerous accounts that attest to the negative and dissatisfactory impacts of public housing projects, which led the U.S. housing policy to divert from project-based to household-based assistance, as well as initiating experimental programs, such as the Moving To Opportunity that tested out the transition of public housing residents into different neighborhoods. Given that most public housing residents live in highly segregated and poverty-concentrated neighborhoods, the notion that public housing signifies disadvantaged areas has been widely accepted and used as a measure of disadvantage. Furthermore, the negative perception of public housing is supported by Shaw and McKay's (1942) and Wilson's (1987) social disorganization theory, which attributes the concentration of financial and residential instability as the cause of institutional resource deprivation in neighborhoods.

However, despite the common belief that views the effect of public housing as negative, whether living in a public housing project brings more disadvantages to distressed families remains empirically ambiguous. This study specifically focuses on young children whose access to opportunities is determined early through participation in quality child care (Dupere et al., 2010). The study examines the impact of public housing on early child development, particularly in terms of access to center-based child care, and aims to answer whether there is a correlation between the prevalence of public housing and child care availability after controlling for state and local characteristics.

The analysis takes place in the Chicago Metropolitan Statistical Area. To account for community and family characteristics, U.S. Census data, the American Community Survey, and A Picture of Subsidized Housing are utilized. Additionally, the addresses of child care centers are geocoded and allocated to census tracts. The mode of analysis involves hierarchical spatial autoregressive models (Dong & Harris, 2014), which assess neighborhood and regional fixed and random effects, as well as the additional neighboring effect of public housing.

This study aims to yield results that provide an all-encompassing evaluation of how public housing influences early childhood development and accessibility to center-based child care. By delving into the lived experiences of children nurtured in these environments, it explores the intricacies of public housing's role in shaping opportunities available to children and their life outcomes. The findings promise to shed light on this critical social issue and make a significant contribution to the ongoing discourse surrounding the role and impact of public housing. The implications of this research could potentially extend far beyond academia, influencing policy-making and shaping the futures of children living in public housing communities.

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Keywords: Public Housing, Social Disorganization, Child Care, Early Child Development, Hierarchical Spatial Model

CORPORATE OWNERSHIP AND SINGLE-FAMILY RENTAL HOUSING IN LUCAS COUNTY, OHIO

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Individual Paper Presentation

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National trends towards declining homeownership rates and increasing numbers of Americans in rental housing over the past decade have led to a renewed focus on the rental housing market in the United States. Research has found that the location of rental housing is changing; renting is becoming more expensive, even compared to homeownership; and there is increasing consolidation of the ownership of rental housing.

Our previous research on the changing geography and ownership of single-family rental (SFR) housing in Lucas County, Ohio, and the county seat, Toledo, found that SFR housing in Lucas County accounted for over half of all rental housing units and ownership of these units is increasingly concentrated into the hands of a few large owners who operate in multiple housing markets across the country. Many of these properties are being sold multiple times in short time periods. Analysis showed some differences between local and multiple market LLCs that were owners of large numbers of SFRs in the city and county, and a link between SFRs and foreclosures. There was also significant variation among LLCs based on how clustered they are and on the value of the houses that they choose to purchase.

In this paper, we seek to build on this research to examine the practices of these large corporate owners to better understand the reasons and effects of the increasingly rapid changes of ownership of SFR properties. In addition, we begin to explore the role of large property management firms. Such firms are often local and offer management services from collecting rent to paying property taxes. For small scale landlords, a management firm makes it possible to efficiently manage properties as absentee owners. For larger regional or national operators, property management firms can sometimes be used to make limited ownership in a market economically viable. Our initial research in Toledo suggests that while there is concern about larger SFR owners, especially in potentially pricing prospective homeowners out of the low- and moderate-income market, many more tenant complaints focus upon the management firms, most of whom are local. We explore the impact of these firms through interviews with several actors in our housing market including representatives of SFR operators who are active locally, local housing activists, representatives from the city's Housing Court, and local government officials. We will use MAXQDA to analyze this data.

The rise of rental housing and the increase in the precarity of this housing for many of the county's most disadvantaged residents is cause for concern among local fair housing advocates. Gaining a deeper understanding of the strategies that large real estate and property management firms are pursuing in our county can help our policy makers and advocacy community to develop housing policies that are more equitable while also helping individual renters.

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Keywords: Single-family rental housing, Corporate landlords, Landlord consolidation;, Rental property management

CULTIVATING SUSTAINABILITY TRANSITIONS IN AFFORDABLE HOUSING EXPERIMENTS

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Individual Paper Presentation

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Fostering urban sustainability transition is an urgent global challenge. To navigate through the complex governance of transitions (Rotmans & Loorbach, 2008), one of the most prominent approaches are Sustainability Transition Experimentations (STEs). STEs encompass real-world, multi-stakeholder, learning-oriented, and place-based processes aimed at fostering innovative strategies, ideas, and policies to addressing pressing urban issues (Sengers et al., 2018). In Canada, diverse experimentation approaches and theories have organically emerged in recent years, particularly in response to the ongoing housing affordability crisis.

However, research on the internal and context-specific dynamics of experimentation governance, as well as their impact evaluation, is limited. Academic literature has only started to explore the effectiveness and complexities of governance in STEs (Hughes et al., 2017; Williams, 2019). This gap persists despite expectations of governments to not only adopt new approaches amid uncertainty and austerity conditions, but also to facilitate experiments and learning to discover innovative solutions to address complex and systemic issues across various levels and scales.

This paper investigates strategies for guiding STEs in housing affordability in Vancouver toward transformative results. The interplay between socio-political configurations - including regulations, institutional arrangements, power dynamics, knowledge exchange, policy integration, and cultural narratives – significantly influences the success or failure of STEs and their impacts. For emerging urban experiments to become less of an 'isolated experiment' and transform into 'governance experimentations' (Bulkeley & Castán Broto, 2013), there is a need for

effective approaches to facilitate the uptake, mainstreaming, and embedding of their results to urban planning, policy, and broader governance frameworks.

This paper aims to introduce relevant interdisciplinary literature and evidence-based suggestions for guiding and evaluating Sustainability Transition Experiments (STEs) in Canada, focusing on the Vienna House demonstration case study. This project, a collaboration between Vancouver and the city of Vienna, represents a prominent effort in the sustainability transition of social housing in Canada. This research seeks to address the following questions: How can the governance of urban sustainability experimentations be effectively guided towards transformative results to address complex housing affordability and environmental sustainability challenges? and what are the key enabling factors that contribute to their success or failure in achieving impacts? Data collection involved conducting 15 semi-structured interviews with key stakeholders of the project from December 2021 to June 2023. Additionally, participation and observation of decision-making processes in project meetings and events were undertaken. Furthermore, this study was complemented by analyzing project documents and reviewing relevant policy documents across various levels of governance.

The results of this study underscore the necessity and commendable efforts undertaken to foster experimentations in partnership with multi-level governance actors for housing transition. However, the study also highlights entrenched systemic, innovation, and learning constraints that pose a significant impediment to the transformative potential of this experimentation. It concludes that these constraints have the potential limit the short- to long-term impacts of this experimentation to primarily incremental changes. Furthermore, this research provides a comprehensive framework based on literature review and reflections on the case study. It delineates pivotal governance factors essential for enhancing knowledge capture and dissemination in STEs. Planners, policymakers, evaluators, and facilitators can derive considerable insights from this framework, as it elucidates critical pathways for harnessing experiential learning, refining procedural methodologies, and deploying evaluative strategies conducive to navigation experimentations toward transformative results. The framework includes 9 key themes, each encompassing sub-categories that suggest governance, research, and evaluation strategies for supporting the likelihood of transformative change. Drawing on the findings of this study and evidence of positive dynamics and deficiencies in the experimentation process, the framework proposes a spectrum of actions and strategies across initiation, process, and impacts of collaborative experiments in sustainable social housing.

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Keywords: Urban sustainability experimentation, housing affordability, transition experiments, collaborative governance, social housing in Vancouver, Canada

DO LONGER HOUSING SEARCHES LEAD TO BETTER MATCHES? EVIDENCE FROM VOUCHERS

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Individual Paper Presentation

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As rental markets have gotten increasingly tight across the country, households may find it more difficult to find adequate and affordable rental housing that meets their needs. This can be an exceptional challenge for low-income households, who may lack the time and resources to partake in longer and more costly housing searches. One group in particular that may struggle to find housing is participants in the Housing Choice Voucher program, the largest rental assistance program in the US. The program is designed to allow voucher recipients to live in communities of their choice, as tenants rent homes on the private rental market. However, this means that the housing search process becomes a crucial step in the program.

While voucher holders may enjoy a more relaxed budget constraint than unassisted renters, they still face many challenges, including discrimination from landlords, operating within the program's rent guidelines, and time constraints on their housing search. In fact, almost 40% of voucher households are unable to use their vouchers due to the difficulty of this search process, and for households who are successful, searches have increased in length over time. Households that are able to use their vouchers often live in similar neighborhoods to unassisted renters, despite the core programmatic goal of expanding neighborhood choice.

In this paper, I evaluate the effect of search time on housing match quality. I focus on two different sources of variation in search time. The first is variation across households, within a housing authority- holding constant the amount of time that households are given to search by the housing authority that administers the program. To identify a causal effect, I leverage the random timing of voucher issuance in an instrumental variables strategy. The margins of match quality that I look at are housing turnover (the likelihood of moving units or exiting the program in a short time period after entering), and neighborhood outcomes, including the poverty rate of the destination neighborhoods.

The second source of variation in search times comes from different allowable search times that are used across housing authorities. While PHAs must give households at least 60 days to search, there is no upper bound on search times, and PHAs across the country take vastly different approaches in managing initial search terms and extensions. I collect original data on allowable search times and extensions for over 500 PHAs. Using the collected metrics, I classify PHAs based on both their initial search frames, and calculated measures of leniency based on how their observable search times differ from stated policies. I then evaluate the effect of allowable search time and leniency on the same dimensions of match quality.

This paper makes two major contributions. First, I apply frameworks of job search and match quality from labor economics to the rental housing context. Second, I provide evidence on setting optimal policy for search time within the voucher program, an important lever that housing authorities can use to promote success for voucher recipients.

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Keywords: Housing vouchers, Housing policy, Rental markets, Housing search

ELEVATION CHOICES: AN ANALYSIS OF HOUSTON'S HOUSING ASSISTANCE PROGRAM

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Individual Paper Presentation

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Amelia (pseudonym) is a Latino older woman part of the Texas Housers Caucus whose home was destroyed after Hurricane Harvey in 2017. Under the Texas General Land Office (GLO) Homeowner Assistance Program (HAP), some of Amelia’s neighbors had chosen to raise their houses wary of the floods that accompanied life in this community. When asked why she didn’t opt for a home like her neighbor she replied, “I’m not fond of those beach houses.” Her statement carried a determination as she expressed her dislike for the design of elevated homes at least one foot of freeboard for structures in the 100-year floodplain. Amelia also explained that her area didn't face flooding as bad. She believed that the risk of future flooding was minimal and didn’t warrant the changes that came with raising her new GLO house. Another factor that seemed to be influencing her decision was her mobility issues related to age. Although these homes are built with a long ramp, she found the idea of climbing stairs or going around a long ramp to enter her home inconvenient. This story raises the question of why do individuals choose not to have an elevation for their new construction when it is offered at no extra cost?

By examining the Houston locations where people participating from HAP opt to raise their homes, this study will provide information about the distribution of elevated homes. This data can be used to to assess whether there is a need for elevation for HAP homes and identify patterns and trends shedding light on the physical and sociological factors that influence people's decisions to elevate their homes (e.g., distance to waterway, previous experiences with flooding, flood duration, extent of damage incurred, property damages, perception of longer time for construction for elevated homes, beliefs about flood risks, cultural aesthetic perceptions of home design, perceptions of lower home values due to elevation, perception of old structure being better quality than new construction, community expectations and norms, etc.). Additionally, this study seeks to investigate the decision-making process of individuals who accept to raise their homes or not due to factors such as interest of aging/staying in their homes, expectation of increasing instances of flooding over time, and other personal or community trends. It is crucial to note that this research considers the importance of considering subgroups and social factors such as age, race, nationality, citizenship, language, income, length of time in a particular neighborhood, and ability. By examining how these factors intersect with people's choices to raise their homes this research can uncover personal preferences as well as disparities and inequalities in awareness of elevated housing options.

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Keywords: Disaster, Home elevation, Mitigation, Climate change, Flooding

EMPIRICAL EVIDENCE ON THE IMPORTANCE OF COHORT EFFECTS TO RRPO SATISFACTION

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Individual Paper Presentation

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According to the old chestnut, the most important elements of real estate are “location, location, location.” But there are reasons to believe that temporal cohort effects condition the experiences of Residential Rental Property Owners (RRPOs), in particular those that are non-institutional in ownership structure (i.e., those sometimes shorthanded as “mom and pop”). Non-institutional RRPOs may not enjoy the ready access to capital, professionalized property management, and other advantages of institutional RRPOs (Apgar et al, 2008). The particular time period when an RRPO enters the business matters to their financial health and by extension satisfaction with their work in at least two ways. First, their cost of debt is conditioned by nationally prevailing interest rates. And second, their properties’ performance is affected by locally prevailing fundamentals at the time of entry into the market, such as the ratio between acquisition prices and rents, within the multifamily rental market. If there are widespread cohort effects resulting in dissastisfaction and in turn prompting the simultaneous exit of many non-institutional RRPOs from a given market, there could be important consequences for their tenants. For instance, researchers have found evidence that low-income tenants under duress can find more lenient treatment from their RRPOs if they are small and nonprofessionalized (Garboden et al, 2018; Balzarini & Boyd, 2020). In this study, we operationalize the satisfaction of non-institutional RRPOs from a cluster of variables from the Iowa State RRPO Survey (ISRRPOS) collected in two waves from 3644 responding non-institutional RRPOs in 9 US cities. Controlling for a number of other relevant factors harvested from the ISRRPOS, we regress temporal cohort effects (via the two pathways listed above) on owner satisfaction. In this way, we evaluate the extent to which cities may face risks of large-scale waves of exits from the multifamily rental business by their populations of non-institutional RRPOs.

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Keywords: cohort effects, Residential Rental Property Owners, multifamily rental housing, market fundamentals, interest rates

ENTRY TO HOMEOWNERSHIP BY AGE COHORT AND RACE IN THE UNITED STATES

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Individual Paper Presentation

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Entry to homeownership is a significant event in an individual’s life cycle and a milestone on the journey to the middle class. The timing of the first entry bears important socioeconomic implications on childbearing, labor supply, wealth accumulation, and tenure security. However, the 2000, 2010, and 2020 Decennial Census data show

that younger households achieve lower homeownership rates compared to older households born ten years earlier at the same age. The homeownership gap measured by age group and race is more evident among African American households. The article addresses two main questions. First, do younger households postpone their first-time homebuying, and by how many years the homebuying is delayed? Second, how do the cohort changes contribute to the homeownership gap among ethnic and racial groups?

While the census data shows the aggregated homeownership patterns by age group, it does not follow individuals during their life course or provide information on the length of time between splitting off from parents' families and buying their first homes. Therefore, using the Panel Study of Income Dynamics (PSID) data, this article applies the survival analysis approach to investigate the probability of entry to homeownership at different ages by age cohort and race. This article addresses left-censoring by assuming the risk of homeownership starts at age 18 after one moves out of parents' house. The sample includes children or grandchildren of PSID families who later became heads or spouses of households in the survey between 1985 and 2021. Sample observations are grouped into four cohorts based on birth year using 10-year spans. A discrete-time logistic model is employed to estimate the effects of age cohort, race, education attainment, household income, parental assistance, and employment status on the likelihood of entry to homeownership.

The results reveal that younger cohorts are more likely to postpone homebuying to later ages. The cumulative probability of entry to homeownership between age 25 and 44, the critical ages for first-time homebuying, also drops by each cohort. Moreover, the effect of age cohort on entry to homeownership differs by race. African American households have a significantly lower probability of first-time homeownership compared with Hispanic or non-Hispanic white households at the same age, contributing to the well-documented black-white homeownership gap. The finding implies that younger cohorts are more likely to miss the advantageous positions to invest early in housing markets for home equity gains. Housing policies should provide more support for young households to transition into homeownership.

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Keywords: Homeownership Gap, Entry to Homeownership, Survival Analysis, Age Cohort

EQUITY IN DISASTER RESPONSE: THE CASE OF EMERGENCY RENTAL ASSISTANCE

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Individual Paper Presentation

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In response to the COVID-19 pandemic's economic devastation, the federal government launched the Emergency Rental Assistance Program (ERA) to help struggling renters stay housed. While prioritizing historically underserved populations was a key objective, the Oregon Emergency Rental Assistance Program (OERAP) faced significant implementation challenges that hindered its ability to reach those most in need. Using OERAP administrative data, this study examines the extent to which OERAP successfully targeted vulnerable groups from application to fund allocation. The study finds that the program design favored early applicants and resulted in a situation where vulnerable groups' chances of receiving assistance were significantly influenced by the timing of their applications. For instance, extremely low-income households had a lower probability of receiving aid compared to higher-income households within the eligibility range. This lower probability was due to both late applications (indirect effect) and a lack of prioritization in case processing (direct effect). On the contrary, female- / nonbinary-headed households had a higher probability of receiving OERAP compared to male-headed households. This advantage stemmed from both earlier applications and prioritized processing. The findings highlight the mixed outcomes of prioritization efforts in disaster response programs.

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Keywords: Rental Housing, Disaster, Vulnerable Populations, Emergency Assistance, Outreach

EVICTION, SPATIAL INEQUALITY, AND FINANCIALIZATION IN TORONTO

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Individual Paper Presentation

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Financialization is driving intensified socio-spatial inequality in cities around the world. The financialization of multi-family rental housing is contributing to these trends, as financial firms (private equity groups, institutions, publicly-listed firms, real estate investment trusts [REITs], and asset managers) increasingly consolidate ownership of apartments. In Canada, financial firms have amassed an estimated 30 percent of rental housing stock, with levels in some cities and neighbourhoods much higher. Researchers have argued that financialization is intensifying crises of affordability and security of tenure, as financial firms are structurally motivated to pursue investor returns in ways that are more aggressive than other types of landlords. While advocates and researchers expect that financialization is associated with an increase in evictions, only a few studies (in the US, focusing on single-family rentals) have demonstrated this link. This paper explores whether financial firms file higher rates of evictions in multi-family housing in Toronto, Canada, and spatially analyzes the connections between eviction and gentrification. Drawing on a unique database of all evictions filed in the 10-year pre-pandemic period of 2010-2019, applying to all Toronto rental housing properties (over 20 units), we find that financial firms file to evict at dramatically higher rates than chain owners, multi- and single-property owners, and non-profit and public firms. We also analyzed all building transactions during this time period, finding decisively that financial firms have a higher rate of filing after purchasing properties. This is most significant when buying from small-scale one-property owners, with a six-fold increase in filings going forward each year after purchase by a financial firm. Spatially, filings are concentrated in low-income communities (often in Toronto's inner suburbs), indicating that lower-income, racialized, and newcomer populations are most affected by the financialization-driven housing insecurity. For planners, these patterns show that ownership matters when it comes to rental housing stability.

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Keywords: Housing, Evictions, Financialization, Inequality, Displacement

EVICTIONS IN A HISPANIC COMMUNITY POST-COVID-19: MARYVALE, PHX CASE STUDY

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Individual Paper Presentation

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Millions of renters across the U.S. lose their homes through eviction each year. During the COVID-19 pandemic, the federal government feared that evictions would reach unprecedented levels and contribute to the spread of COVID-19. In response, they distributed billions of dollars in rental assistance to state and local governments and implemented a federal eviction moratorium. Still, house prices skyrocketed nationwide while household income

fell. Researchers have explored different adverse eviction outcomes (1) on a small scale by studying household vulnerabilities and (2) on a larger scale by establishing neighborhood eviction patterns. However, few studies have focused on evictions' impact on neighborhoods and how minority communities attempt to address their challenges, especially during societal disruptions.

This paper addresses this research gap by using a case study approach to explore how high eviction rates shaped cultural, social, and economic dynamics and resident responses in one majority Hispanic community in Phoenix, AZ, over the pandemic: Maryvale. Maryvale is an ideal case study, as it has a supermajority of Hispanic residents (81%), one of the highest eviction rates in the country (32% compared to the 6.2% national average), and a long history of displacement and resilience. I triangulated three forms of data in this research: 1) qualitative meta-analysis of news articles, scholarly articles, and planning and policy reports, 2) direct observation of community events reflecting neighbors' interactions and cultural dynamics that enhance community cohesion, and 3) semi-structured interviews with residents and local institutions, non-profits, and community coalitions in Maryvale. The data obtained from this research offers insight into how evictions changed Maryvale's character and what strategies the community used to build resilience during and after COVID-19. The results are an assessment of Maryvale's eviction resilience and an overview of community resilience tools. Overall, this study contributes to the theory of how evictions affect minority neighborhoods during societal disruptions and how these disruptions also offer an opportunity for planning for community resilience.

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Keywords: Evictions, Community Resilience, Hispanic Communities, COVID-19

EXAMINING THE EFFECT OF DIVERSE PUBLIC HOUSING APPROACHES ON SOCIAL CAPITAL

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Individual Paper Presentation

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Social capital is a crucial element for achieving positive outcomes in economic, social, and political realms, promoting sustainable communities. However, public housing residents often experience lower levels of social capital, accompanied by social exclusion. This phenomenon could be linked to the inherent structural issues in public housing. In many countries, public housing residents face social isolation and stigma, a situation mirrored in Seoul, Korea. Due to limited residential land, public housing in Korea is typically comprised of high-rise buildings

within large complexes, making them distinct from conventional housing. Also, antisocial activities have been observed in public housing sites along with concentrated poverty. These problems together can negatively affect social capital among public housing residents.

In response to these challenges, Korea has developed various public housing programs. Initially, public housing primarily involved the construction of large complexes. However, over time, the approach evolved to include social mix housing complexes, integrating private and public housing units. Additionally, the government has started purchased public housing, purchasing existing low-rise detached houses for public housing, thereby moving away from the development of new, large-scale complexes. These later iterations of public housing may have a different impact on the social capital of residents, potentially alleviating some of the associated problems.

Despite the significant influence of public housing on residents' quality of life, there is a scarcity of research exploring how different types of public housing affect social capital. Addressing this gap, this study asks a research question, "Does the type of public housing influence different levels of social capital among its residents?"

To investigate the relationship between public housing types and social capital, this study utilizes data from the 2021 Seoul Public Housing Residents Panel Study, conducted by the Seoul Housing and Communities Corporation (SH). The dependent variable is social capital, including trust, network, and norm of reciprocity. The primary independent variable is the type of public housing, which includes independent public housing, public housing within social-mix complexes, and purchased public housing. Control variables comprise housing characteristics, neighborhood environment, and demographic factors. The regression analysis shows that different public housing types are associated with varying levels of social capital.

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Keywords: public housing, social capital, social exclusion

FAIR LENDING IN CRISIS: FHA LOANS AS A SAFETY NET FOR MINORITY GROUPS?

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Individual Paper Presentation

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Homeownership, often seen as central to the "American Dream," faces significant challenges related to affordability, extending beyond major metropolitan areas to secondary cities across the United States. Data from the 2023 median multiple report by Demographia highlights the pervasive nature of this issue. While cities such as San Jose, Los Angeles, and San Francisco have long been recognized for their high housing costs, even areas like San Diego and Raleigh now confront serious affordability crises.

Credit enhancement mechanisms, notably FHA, VA, and RHS mortgage insurance, play a crucial role in enabling traditionally underserved households to access adequate financing for home purchases. In 2018, 40.6% of Black or African American borrowers utilized FHA loans, a higher proportion than conventional loans, while 37.6% of Hispanic borrowers benefited from FHA loans, compared to only 16.3% of White borrowers. This underscores the significance of FHA loans as a financial resource for minority groups in the housing market. However, White borrowers have historically constituted the majority of FHA lending recipients, with shares ranging from 50-60% over the past two decades, while FHA shares for Black and Hispanic borrowers declined from 30.58% in 2019 to 26.92% in 2022.

While prior research has demonstrated that Black and Hispanic borrowers face higher denial rates with conventional loans, there appears to be a decline in FHA loan approvals for these groups during the COVID-19 pandemic. Consequently, this study seeks to elucidate the challenges encountered by Black and Hispanic FHA loan borrowers amidst COVID-19 (2020-2022) compared to the pre-COVID period (2018-2019). It aims to determine whether Black and Hispanic borrowers are less likely to be approved by FHA compared to White borrowers during the pandemic, and in comparison to their own approval rates in pre-COVID times. Additionally, the study will examine regional disparities to determine whether these differences are more pronounced in tight housing markets.

Utilizing data for Massachusetts from the Home Mortgage Disclosure Act (HMDA) and the American Community Survey (ACS), this research employs stratified regressions to examine the relationship between regions and FHA loan shares among racial groups over time, logistic regressions to compare approval and denial probabilities across races, and a Regression Discontinuity Design (RDD) model to compare FHA shares for Black and Hispanic borrowers during the pandemic with pre-COVID times. The findings can provide insights into fair lending practices within housing finance companies (e.g., Fannie Mae, Freddie Mac, and Ginnie Mae) and raise awareness of regional disparities in housing markets and social equity for local governments.

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Keywords: Housing Affordability, Fair Lending, FHA Loan, Racial Discrimination, Social Equity

FEAR AND COMPLIANCE:WOMEN MIGRANTS' EXPERIENCES IN NANJING'S SHARED RENTALS

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Individual Paper Presentation

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This study investigates the shared housing experiences of women migrants, focusing on the challenges and constraints they face during the process of finding, securing, and living in a housing unit. By using mixed methods of quantitative analyses, field study, and interviews, this study examines how gender identity, shaped by social norms in China, interacts with the characteristics of the shared housing market, resulting in experiences that unequally disadvantage women tenants.

First, we collected 46,273 shared rental listings, which included the gender information of roommates and detailed unit and complex information from the largest shared rental website in Nanjing, a large metropolis. We identified housing complexes where female tenants outnumber male tenants. We then conducted a field study to further identify physical attributes of female-majority complexes and compare them with male-majority complexes. From the field study, it is evident that complexes preferred by professional migrant women have specific physical attributes.

Secondly, through fifteen in-depth interviews, both in-person and virtual, conducted with women tenants, we employed qualitative content analysis of the interview data to uncover the nuances of these experiences. Findings indicate that, although varying to some degree, women migrants encounter difficulty in locating a unit that is both affordable and can meet their needs for safety and better quality. Moreover, despite their dissatisfaction, they often feel compelled to share accommodations until they are in a position to purchase their own property. The participants attribute their disadvantages to gendered preferences, gender dynamics and inequality, and the lack of regulation within the shared rental housing market. Thus, we show how gendered preferences in the shared housing market are shaped by the interaction between gender identity, social norms, and market features. We advocate for intervention by state and local governments to regulate the shared rental housing market in China more effectively, aiming to address and mitigate the gender-specific challenges identified. This study not only sheds light on the challenges faced by female migrants in urban China but also contributes to the broader discourse on gender, migration, and housing policy.

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Keywords: shared rental, women migrants, gendered needs, gender identity

FISCAL ROOTS FOR DISCRETIONARY REVIEW

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Individual Paper Presentation

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Beginning in the 1970s, U.S. cities have expanded political discretion within formerly rules-based housing development systems (Sagalyn 1997). Why? Planning scholars have mostly scrutinized the rise of "negotiated zoning," in which cities leverage land use variances and permitting to exact public benefits (Kim 2020; Manville et al. 2023). I argue that discretionary review has parallel origins and related functions in local property tax policy. In high-tax communities like Detroit and Chicago, local legislative bodies can selectively subsidize property tax rates on new housing developments (Craft, Drucker, and Weber 2021). These decisions attract public bargaining and development conditions, a process which diverts project subsidies to outside interests. I ask two primary questions: First, do discretionary tax subsidies dominate the development agenda in some housing markets? Second, given strong legal presumptions against tax disuniformity and the economic inefficiency of these diversions, why are discretionary tax procedures adopted and retained?

To find the prevalence of discretionary tax subsidies in weak markets, I exploit ten years of local legislative proceedings for the City of Detroit. Using semi-supervised classification methods, I identify project-level housing development interventions and measure the frequency of legislative action for land use variances, tax subsidies, and other exceptions and exemptions. I code these according to the state and local statutes that provide for legislative review. If the quality of legislative records allow, I will also use HUD annual permitting data to estimate the fraction of new housing units subject to these discretionary reviews.

Second, I use state bill files and legislative records to understand the arguments originally made for local discretionary review of tax subsidies in Michigan. I supplement these records with available personal archives for sponsors of tax subsidy legislation. I expect that city officials sought ways to selectively lower local costs of capital without diminishing tax revenue. As fiscal conditions continued to limit housing investment, these review procedures later took on bargaining functions. Although these records only actors' stated positions, I expect these records to reveal significant contest over the role of local government intervention in development finance.

The primary result of this paper is to document the significance of local discretionary review in domains other than land use regulation. As a secondary result, coding local legislative proceedings may offer a new approach to identifying local policies that visibly limit housing development. As planners evaluate the effect of discretionary zoning decisions in restricting housing production, discretionary tax subsidies warrant similar review.

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Keywords: Discretionary review, housing development, tax incentives, property tax

FOUND MONEY: FAIRCLOTH-TO-RAD AND NEW FEDERALLY ASSISTED HOUSING IN THE US

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Individual Paper Presentation

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This paper examines the Faircloth-to-RAD conversion process as an emerging path for public housing authorities to expand the supply of federally assisted, deeply affordable housing. Specifically, it will delve into the origins and structure of the program and discuss the opportunities it opens and limitations it faces. The Faircloth-to-RAD process, its creation, and its implementation are an excellent example of a core aspect of the Congress theme: it illustrates the emergence of innovative, trailblazing programs through an understanding of the complexity of policies and their implementation mechanisms.

Introduced in 2022, Faircloth-to-RAD draws together several existing aspects of federal public and subsidized housing programs and policy. The first is “Faircloth Authority”, dormant public housing unit capacity available to certain public housing authorities. Passed by the US Congress in 1998, the Faircloth Amendment, placed a cap on the maximum number of public housing units that could receive federal capital and operating subsidies. Many public housing authorities, through demolition and redevelopment, are now below this maximum number. The second is the Rental Assistance Demonstration (RAD) program, which allows conversion of public housing subsidies to project-based assistance. Combined these provide a path for public housing authorities to potentially create approximately 235,000 new affordable units through mixed-financing (HUD, 2022; Metcalf, Garcia, and Hacnik, 2023).

Through interviews and review of documents and development plans, this paper explores the structure and mechanics of this new program, discussing both its policy innovation and practical implementation. Initial findings highlight the potential of this program, but also the complexity of execution and continuing limitations imposed by both Faircloth limits and RAD rent levels.

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Keywords: Public housing, Rental Assistance Demonstration (RAD), Faircloth Amendment

GARAGES AND DRIVEWAYS: AN ADAPTABLE NEIGHBORHOOD INFRASTRUCTURE

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Individual Paper Presentation

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Residents of America's single-family home neighborhoods have adapted their car-oriented built environments in resourceful and creative ways (Brand 1994; Chase et al. 2008; Mukhija & Loukaitou-Sideris 2014). They have integrated gentle housing density, repurposed streets for arts and socialization, and established community gardens, which may help them lead more socially connected and healthier lives. Garages and driveways are relatively underexamined within literature on single-family home neighborhood adaptation. Garages have sparked moderate attention from pop culture, architects, and housing planners as "programmable" spaces that can jumpstart billion-dollar tech revolutions or contribute to the toolkit of local housing affordability strategies (Erlanger & Govela 2019; Mukhija & Loukaitou-Sideris 2014). Attention to driveways is sparse, with a few noteworthy efforts to explore their function as interstitial quasi-public sites of yard sales and pickup basketball games and sociable spaces during the COVID-19 pandemic (Chase et al. 2008; Mukhija & Loukaitou-Sideris 2014; Pfeiffer et al. 2022).

This research advances this conversation by using a mixed-methods qualitative approach to comprehensively describe residents' adaption of two underexamined single-family home neighborhood spaces: garages and driveways. We ask: 1) How often do residents use single-family home garages and driveways for purposes other than to park cars? What kinds of uses are present? 2) What might drive residents to use garages and driveways in these ways? 3) How might these uses affect residents and neighborhoods? We answered these questions through a thematic analysis of over 6,000 photographs of single-family home garage and driveway adaptations in 13 Phoenix region neighborhoods with diverse demographic, socioeconomic, housing, and ecological conditions and 26 interviews with stakeholders representing neighborhood, planning, and real estate industry perspectives.

Our findings help to theorize these spaces as an adaptive neighborhood infrastructure that may help households and communities thrive. We show that a sizable minority of residents are using these spaces for purposes other than to park cars and articulate a holistic typology of adaptation that includes expression, consumption and production, housing, recreation, social engagement, nature restoration, and surveillance. Choices to adapt are motivated by a culture of consumerism, lifecycle changes, and desires to engage with neighbors. Adaptations enable households to age in place and communities to socially connect but also break land use rules and fuel

neighbors' anxiety about ruined aesthetics, reduced parking capacity, and community decline. Together, these findings reveal that single-family home garages and driveways are an overlooked infrastructure within neighborhoods worthy of integration into frameworks of neighborhood systems.

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Keywords: neighborhood, housing, garage, driveway, adaptation

HERITAGE AND HOUSING ON NANTUCKET: A NATIONAL HISTORIC LANDMARK CASE STUDY

Abstract ID: 1108.0.0.1079.2024
Individual Paper Presentation

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Nantucket's prized tourist economy was developed as government policy in the mid-twentieth century, during the same period that the entire island was granted National Historic Landmark status and became a nationwide precedent-setter for land conservation. Though the island has long struggled with balancing affordable housing needs of the year-round community with the needs of the seasonal community and economy based in tourism, the needs have reached crisis level with year-round residents providing critical services, such as healthcare, emergency response, and teaching, unable to find affordable rentals, much less ownership.

This paper explores Nantucket's numerous obstacles to "attainable" housing (up to 240% AMI) through a historical assessment of the island's constraints in policy, ethic, advocacy, and land development. The results of an online resident survey will be discussed to illustrate and quantify the actual housing needs. Finally, we present an assessment of current strategies the Town of Nantucket is undertaking and compare with other tourist-destinations in the United States for viability of policy. The paper will conclude with recommendations that consider the priorities of preservation, conservation, affordability and tourism as interconnected and equally important.

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Keywords: housing, heritage, tourism, equity, affordability

HOUSING AFFORDABILITY AND DEMAND FOR SPECULATIVE REAL ESTATE IN MEXICO

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Individual Paper Presentation

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Housing affordability and demand for speculative real estate in Mexico.

The rapid rise in housing prices has become a social justice issue at the national and international levels. Between 2019 and 2020 alone, home prices in Mexico increased 27.1%. At the regional level, INFONAVIT (2022) identifies that the effects are more accentuated in tourism markets with significant demographic growth dynamics, such as Baja California Sur, Quintana Roo, Nayarit, Sinaloa, and Baja California. In these states, the increase in the price of housing ranges between 34% and 40% for the same period. Increases in the price of housing have real effects on the well-being and development of the population. Based on the results of the National Income Expenditure Survey (ENIGH), in 2020, Mexican families spent a higher proportion of their income on housing and transportation than in 2018, effectively reducing the percentage of their spending on food, education, and recreation. (INFONAVIT, 2022) (INEGI, 2020).

While housing prices are influenced by a complex interplay of supply and demand market dynamics, a line of research has focused on how the financial acetification of housing is driving housing inflation. However, empirical evidence of the underlying mechanism is scarce for markets in the global south. To breach this gap, this paper focuses on speculative housing demand in Mexico to explain housing price inflation. It analyzes recent increases in buy-to-rent investments in the six most significant metropolitan areas: Mexico City, Monterrey, Guadalajara, León, Toluca, and Tijuana. Furthermore, the research goes in depth with actors in the real estate industry in Tijuana, Mexico, to understand the role of speculative housing demand in that market. The present research seeks to answer the following questions: How is speculative housing demand impacting housing affordability? Who are these investors? And what is driving their interest?

This paper uses a mixed research methodology. Speculative demand is measured by market indicators in Mexico's main metropolitan areas. Meanwhile, through interviews with real estate agents and housing developers, it seeks to delve into the type of investors and the real estate products that have been in demand in the Metropolitan Area

of Tijuana in the last ten years. Finally, data collected from applications for permits to develop housing in this city provide us with an approach to the role of flexible regulations in housing prices.

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Keywords: Housing, Financialization, Buy to rent

HOUSING DECAY IN THE CLIMATE CHANGE ERA: A CITY-SENSING APPROACH.

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Individual Paper Presentation

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In the last years, the San Antonio (TX) area has endured some of the hardest winters and summers in their history. In 2021 they witnessed the URI winter storm, and in 2022 and 2023 they endured grueling summers with 58 and 60 days over 100 Fahrenheit degrees (38 Celsius) respectively. This paper describes the current efforts of the Historic Westside, a lower income and predominantly Mexican- and Hispanic-American neighborhood of the city, and their struggle to maintain their stock of affordable housing supply in a rapidly growing city that has recently been highlighted for high demolition rates (Way et al., 2021), and the potential of code enforcement bias (Lopez Ochoa & Zhai, 2024). Using a community-led approach, a housing conditions form was developed to prioritize housing repair needs in the neighborhood. The community leaders and UTSA researchers also collaborated to install PurpleAir sensors in neighborhood homes to record temperature and air quality metrics inside and outside of homes with poor (treated) and good (control) homes. The results will discuss the main efforts, organizing challenges, contested spaces between the neighborhood association and city officials, the metrics collected from the sensors, as well as the learning experiences in using these new community-generated environmental evidence to advocate for more resources to maintain and rehab those structures falling in disrepair. These first set of results are in direct communication with current and past literature in housing decay and its role on urban issues such as decline-induced displacement and gentrification (Seymour & Akers, 2023; Suglia et al., 2014; Weber et al., 2006); the deep need of housing repair assistance, and the effects of climate change and extreme weather events in households with repair needs. In addition, this paper will reflect on the cultural clashes between city officials and code enforcement staff whom have an ideal of home beautification that conflicts with the ideals of the community, since

the community uses inexpensive and repurposed materials to maintain their homes, namely rasquachification (Marcuse, 1985), while the city uses white- and high-income ideals to enforce the building standards code.

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Keywords: Housing decay, housing deterioration, displacement, extreme heat, city sensing

HOW DISPLACEMENT HAPPENS: LIVED EXPERIENCES OF TENANTS ACROSS ONTARIO

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Individual Paper Presentation

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Displacement is one of the biggest challenges facing tenants. While displacement is a complex process commonly associated with gentrification (Marcuse, 1985), there is a growing body of research that demonstrates how it can be found in a range of neighbourhood types, as well as in both urban and rural communities (Jones, 2023; August, 2020). However, displacement is notoriously tricky to empirically measure, with statistical analysis unable to capture either the scale of displacement, or the uneven power relations that underpin it (Elliott-Cooper et al., 2020; Slater, 2009). As a result, there is a need to utilize qualitative approaches that focus on the lived experiences and lived expertise of displaced tenants (Jones, 2023).

This paper discusses the results of a large partnership project between academic researchers and community advocates. The aim is to better understand how displacement happens through deep and meaningful engagement with tenants who self-identified as being displaced. In total, 113 tenants were interviewed across four communities in Ontario, Canada's largest province.

Through interviews with displaced tenants, three types of landlord tactics were identified. The first are informal tactics, where landlords simply tell tenants that they need to leave. In some cases, tenants are offered a payment, known as 'cash for keys.' Many tenants end up leaving through these tactics, particularly if they are not aware of their rights, or if they fear being homeless. The second is semi-formal tactics, where official eviction notices are presented, but landlords do not follow official timelines, or file notices with the Landlord and Tenant Board (LTB).

As with informal tactics, the aim is to get tenants to leave 'voluntarily.' These are somewhat fluid categories; in many instances, landlords progress from informal to semi-formal tactics, which collectively cause trauma and a sense of inevitability for tenants. The third tactic is a formal eviction enforced by the courts.

Informal and semi-formal tactics comprised almost all the displacement experiences in this research. But because they are considered 'voluntary' and do not end up at the LTB, they are not recorded in any statistical database. This poses a challenge for planners who lack important information about the scale of displacement, and what it means to tenants. Therefore, informal, and semi-formal tactics should be seen as directly contributing to involuntary displacement: landlords want to evict long-term tenants to take advantage of a lack of rent control on vacant units while tenants are harassed, intimidated and exhausted.

With so little displacement visible within statistics, it can be 'officially invisible': an issue to monitor rather that an urgent problem to address. Therefore, it is essential to centre the lived experiences of tenants within housing planning and policymaking. While there is still work to be done, several municipalities across Ontario are now doing this, which is leading to the development several important anti-displacement measures, in part informed by this research.

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Keywords: displacement, tenants, housing, eviction, Ontario

HOW MANY UNITS ARE NEEDED? MEASURING THE HOUSING SHORTAGES IN THE U.S.

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Individual Paper Presentation

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The lack of housing supply has become a recognized crisis drawing attention from the Federal Government (White House, 2024). The estimated national shortages from the various reports are greatly different, ranging from 1.5 million to 7.3 million depending on the methodology and data (Harvard JCHS, 2024). However, most of the estimated amounts of shortages focus on the national level rather than the regional level. Moreover, there has been no academic discussion on the indicators, and thus no agreement is reached on methodology. This study addresses these gaps by investigating three questions. First, what theoretical framework is needed to explain the current housing shortage crisis? Second, how well does each measure of the shortage correlate with rising house

prices or other affordability measures? Third, what characteristics are associated with housing shortages in a metropolitan area?

To answer these questions, this study reviews and tests the methodologies from the publicly available reports and materials on housing shortages. The reports include the ones from federal to private agencies such as FreddieMac, Fannie Mae, National Association of Realtors, National Association of Home Builders, and National Low-Income Housing Coalition. First, by reviewing the reports and academic literature, we categorize the three operational definitions of housing shortage indicators based on their own implicit assumptions and approach: vacancy rate approach, headship rate approach, and jobs and housing growth relation approach. This categorization allows us to modify and develop the indicators based on theoretical concepts in the academic literature such as price-adjustment mechanism (Gabriel & Nothaft, 2001) and decomposition method for household formation (Myers, Pitkin, & Park, 2002; Myers et al., 2016). Second, to estimate the alternative indicators on housing shortages, we use the Decennial Census, American Community Survey Public Microdata Series, and employment data by Bureau of Economic Analysis for the 100 largest metropolitan areas. We estimate the metro-specific shortages of housing by calculating 1) the difference between natural vacancy and actual vacancy rates, 2) the difference between simulated and actual household formation based on the demographic and socio-economic characteristics, and 3) the comparison of employment and housing growth.

Our findings reveal that housing shortages have grown over time and become severe in the largest metros aggravating housing affordability. Using the levels of household formation by age, race, tenure, and structure type in 2000 as the baselines, national housing shortages increased from 1.4 million in 2006 to 8.1 million in 2019. And it dropped by 3.4 million in 2022. Over 90 percent of housing shortages are concentrated in the 100 largest metros. The average number of units of shortages for 100 metros grew from 38 thousand in 2006 to 91 thousand in 2019. Then, we estimate the correlations between shortage and other affordability indicators across the largest metropolitan areas. Preliminary regression estimates indicate that a 1%-point decrease in housing shortages corresponds to a 0.5%-point reduction in cost-burdened households who pay 30% of income for gross rent. Also, a 1%-point decrease in housing shortages is associated with 0.1%-point increase in residential mobility by renters.

The metro-specific shortage indicator reflects the unmet needs for housing and the would-be homeowners. The increase in internal migration from different metro areas is positively associated with housing shortages, especially owner households. High price-to-income ratio is associated with greater shortages in a region. We argue that a metro-specific housing shortage measure that helps local policymakers to build a shared recognition on the exact housing shortages in the region could help build consensus about housing increases needed for greater affordability.

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Keywords: housing shortages, shortage measure, household formation, housing affordability

INSIGHTS FROM A FORMATIVE EVALUATION: A SHORT-TERM HOUSING MOBILITY PROGRAM

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Individual Paper Presentation

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Housing mobility programs aim to diminish inequalities and encourage fairer access to improved living conditions by expanding housing choices for low-income communities and communities of color (Chetty et al. 2016; DeLuca et al. 2016). However, the scarcity of federal Housing Choice Vouchers (HCVs) limits the capability of such programs to meet the housing needs of our nation (Moore, 2016). Currently, fewer than 1 in 4 eligible individuals have access to an HCV, and voucher programs often have waitlists that extend over several years (Ellen, 2020). HCV holders encounter difficulties in utilizing vouchers in high-resourced areas due to cost constraints and landlord resistance. Additionally, a drawback of traditional housing mobility programs is their dependency on traditional federal housing assistance programs to subsidize participants’ long-term housing. With income eligibility requirements, families with housing vouchers risk losing their voucher if their income exceeds program limits, creating a significant “benefit cliff” for families to increase their incomes.

As an alternative, the City and Regional Planning program at The Ohio State University and community partners in Central Ohio created a program with the aim of increasing the supply of affordable housing while improving life outcomes for children and their families by creating opportunities for residential and financial stability using a short-term rental subsidy model. Columbus is ranked as the second most economically segregated metro area in the US (Florida & Mellander, 2015), and central city and inner ring suburbs are isolated from community resources such as higher paying jobs, grocery stores, accessible green space. The rental market is difficult to successfully navigate for people who have traditionally been marginalized from resources, including rental assistance. Moreover, many individuals who do not meet the eligibility criteria for HCVs still require housing assistance. With escalating housing needs nationwide, innovative solutions are necessary to provide affordable housing in high-opportunity areas. The program, Families Flourish, addresses these issues with a multi-faceted intervention that offers housing support through a privately funded $400 monthly rental subsidy, access to high-quality rental units in high-resourced and safe neighborhoods, and life coaching over a three-year period. The program primarily serves socioeconomically disadvantaged families who qualify as very low income but do not receive an HCV.

This paper presents a formative evaluation addressing the development and progress of the program’s implementation along with immediate program outcomes. Using in-depth qualitative methods, this study comprehensively examines the implementation and adjustments throughout the program’s first four years through

engagement with program coaches, participating landlords, and property managers. The formative evaluation elucidates how the program changes and responses to unexpected challenges were navigated using information from both participants and service providers. Additionally, we collected annual data from surveys and interviews from 10 pilot participants over a five-year period, spanning from 2018 to 2022, covering periods approximately four months after relocation to three months after their program exit. Overall, landlords and coaches reported positive experiences with the program. The evaluation results document substantial impacts on the life outcomes of 10 families, with participants experiencing multifaceted improvements in health, mental health, child development, financial security, employment stability, and income. These positive outcomes led to the expansion of the program.

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Keywords: housing mobility, formative evaluation, affordable housing, fair housing, housing choice voucher

INVESTIGATING THE TENANT SELECTION PRACTICES OF ADU LANDLORDS

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Individual Paper Presentation

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Landlords are powerful vectors of residential sorting, opening up or constraining access to stable housing, neighborhood choice, and ultimately, social opportunity (Rosen, Garboden, & Cossyleon 2021). Although landlords play a key role in shaping subsequent housing outcomes, landlord behaviors and management practices have largely gone unobserved until recently. An emerging body of scholarship, however, has started to explore the behaviors of various housing market intermediaries – from housing inspectors, to real estate brokers, to landlords – and the ways in which their behaviors contest or reproduce social and racial inequalities (Decker 2023; Korver-Glenn, Bartram & Besbris 2023). Although previous research has started to explore how landlords shape subsequent housing outcomes, minimal research to date has focused on the behaviors or management practices of landlords renting accessory dwelling units (ADU) specifically, in particular their tenant selection practices when they live on-site. ADUs are independent residential dwellings that are located on the same parcel of land as a single-family home, either as a subsidiary internal, attached, or detached structure.

The lack of research into the tenant selection practices of ADU landlords matters for several reasons. For one, ADUs offer some of the most affordable housing options available on the market (Chapple et al. 2017). As a result, examining the tenant selection practices of landlords in this market has the potential to reveal how landlords control access to housing that is affordable to tenants along the economic margins. For another, the unique spatial arrangements of an ADU, in which a landlord is living in especially close proximity to their tenant, could mean that the tenant selection practices of ADU landlords are qualitatively different from those observed in the broader rental market. Previous research has indicated that small-scale landlords often exercise heightened discretion in the tenant selection process (Decker 2023; Rosen, Garboden, & Cossyleon 2021), raising the question of whether ADU owner-occupiers will act accordingly. Finally, the fact that planners and policymakers have increasingly touted ADUs as a core solution to address rising housing costs raises the need for increased scrutiny into this emerging, but understudied, market.

Seeking to fill part of this gap in the literature, this research explores the tenant selection practices of ADU landlords who live on-site on Long Island, which historically has been home to a high concentration of accessory apartments (Anacker & Niedt 2023). Specifically, this research asks: How do on-site landlords of ADUs select tenants for their units? And how do the unique spatial arrangements of an ADU impact those tenant selection criteria? To answer these research questions, we recruited landlords who advertised their units on various online platforms and conducted in-depth, semi-structured interviews with landlords on Long Island. After conducting conventional content analysis on our interview transcripts, we find that on-site ADU landlords often exercise a high level of subjectivity when selecting their tenants, using “gut checks” and highly discretionary criteria to select their tenants, at times factoring in tenants’ physical appearance, personal comportment, and neighborhood “fit” when selecting tenants. We further find that landlords consider specific criteria that are reflective of the unique spatial arrangements of the ADU and the fact that they live on-site, some of which are discriminatory. Our findings point to the need for further research into landlord practices in general and the need to repeal the “Mrs. Murphy” legislation, which allows owner-occupiers with fewer than four units to be exempt from certain provisions of the Fair Housing Act.

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Keywords: Landlords, Accessory Dwelling Unit (ADU), Housing, Fair Housing,

IS SALT LAKE CITY, UT GENTRIFYING? - EVALUATING ALTERNATIVE INDICATORS

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Individual Paper Presentation

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Even though so much time and effort has been invested in the study of gentrification, there is still relatively little agreement regarding what this process is and how to measure it (Hawkins, 2022). While some scholars see fast increasing rent levels and property prices as the main indicator of gentrification, others focus their attention on the human component and point to significant shifts in ethnic, racial and income level composition of neighborhoods (Baker, 2019). All seem to agree that gentrification is associated with significant socio-economic changes, but there is not much agreement on how to measure them or how much change constitutes gentrification - where lies the thin line between natural progression and gentrification. Similarly, the crucial question regarding factors driving gentrification remains to be answered. In this case, some scholars stipulate that gentrification may be caused simply by an increase in the number of housing units in a neighborhood, while others argue that the cause may lie in residents' increased demand for amenities (Hwang, 2016).

Although this study does not answer neither of the questions, it attempts to demonstrate how using different indicators of gentrification affects which city neighborhoods appear gentrified. It also shows how setting different thresholds for change affects which and how many neighborhoods are seen as gentrified. Lastly, it examines whether socio-economic characteristics (e.g. the age of housing stock, proportion of elderly population, median income) commonly believed to be associated with gentrification are good predictors of gentrification. All analyses are conducted for Salt Lake City, Utah.

To illustrate how different definitions of gentrification affect the perception of the process I selected four alternative indicators of gentrification – changes in (1) the proportion of Latino population, (2) the proportion of population with higher education, (3) median gross rent, and (4) median income. Changes in indicators are measured between year 2011 and 2019 using ACS 5-year data. The lowest threshold (LOW) for change is equal to the city-wide mean change in that criterion in the same time period, while the highest one (HIGH) is set at a level that results in a number of gentrified tracts that allows to build a meaningful linear regression model. The medium threshold (MEDIUM) is set to generate approximately half of the gentrified tracts. I use multivariate linear regression models to examine which characteristics of the gentrified tracts in 2011 are best predictors of gentrification by year 2019. For independent variables I use a set of factors that have been widely acknowledged to affect or cause gentrification, e.g. median household income, percentage of owner occupied housing units, percentage of Latino population, percentage of structures built before 1939, percentage of single family homes (single unit structures), median gross rent.

Even after considering the many limitations of this simple study, some facts emerge that might affect the way we think about gentrification. First, there is either very little or no correlation between the four indicators of gentrification selected for this study, which are also commonly used as criteria for identifying gentrified areas in general. This means that using any of the four indicators individually will always yield different results – show different sets of tracts as gentrified. Second, applying different gentrification indicators (in this case four of them) results in very different sets of tracts deemed as gentrified. Third, applying all four indicators jointly results in no tracts showing as gentrified. The overly simplified conclusion is that not only there is no one definition and indicator of gentrification, but most importantly that the choice of definition and indicators determines what areas are perceived as gentrified.

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Keywords: Gentrification, Indicators of gentrification, Measuring gentrification

LAND BANKING AND SOCIAL CAPITAL: A CASE OF DETROIT, MICHIGAN, USA

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Individual Paper Presentation

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The rise in urban vacancy, especially in depopulating cities, has drawn increasing government attention (Heim Lafrombois & Park, 2021). This is because abandoned structures may be hazardous and undesirable, lowering nearby property values (Newman et al., 2018). Unused property taxes make it difficult for the local government to provide enough public services (Alm et al., 2014). As a result, after the 2008 US subprime mortgage crisis, land banking (LB), first proposed in the late 1960s, has acquired popularity (Sands & Skidmore, 2015). The basic goal of LB is to maintain, repair, demolish, lease, or sell empty homes to put them on the tax rolls (Tappendorf & Denzin, 2010). LB also involves working with local governments and connected organizations to use tax-delinquent properties to provide affordable housing, parks, and green spaces (Center For Community Progress, 2019). Consequently, numerous shrinking US communities have constructed land banks, with several programs supporting them. Center For Community Progress (2023) reported 311 land banks and LB programs in 2023, among cities, states, and municipalities.

Studies on LB have demonstrated their ecological, economic, and social significance. Nevertheless, there is a scarcity of studies about their impact on social capital (SC). Several studies have examined how turning vacant lots into community gardens or public green spaces promotes community involvement and ownership. Still, out of 140 land banks in the US, the most common ways to dispose of vacant lots are either demolition or private ownership (Bollwahn, 2019). According to Rigolon et al. (2021), empowered citizens who seek a social purpose in purchasing and transforming property improve lot conditions through private ownership. Anderson and Minor (2017), on the other hand, emphasized that excessive urban vacancy lowers SC, underscoring the need to revitalize unoccupied structures.

Given these facts, this study attempted to explore the direct and indirect impact of LB programs on the SC using 481 Detroit residents' 2021 survey responses. Detroit, one of the most shrinking cities, has lost 10.5% of its population and seen 28.4% more vacant dwellings over the past decade (Census, 2020). Since 2014, HUD's

Neighborhood Stabilization Program has funded the Detroit Land Bank Authority (DLBA) to grow into its current form and fight urban vacancies. As of 2021, DLBA offers Demolition, Auction, Own It Now (sold as is at $1,000), Rehabbed & Ready (sold as remodeled), Partner Sales (sold to community partners to improve neighborhood quality), Side Lots (sold for $100 to residents who took at DLBA properties), and Neighborhood Lots (sold for $250 to residents within 500 feet) (Detroit Land Bank Authority, 2021).

We used structural equation modeling to look at how neighborhood conditions affect the link between reoccupied and transformed properties and social capital (SC) at both the individual and community levels. Research questions were whether properties that are recently occupied, demolished, or maintained would directly (H1) or indirectly through neighborhood condition improvement (H2) help to promote SC as proponents of LB. Furthermore, Halpern (2005) asserts that one can observe SC at both the micro- and meso-levels. This suggests that SC changes at the individual and community levels may occur simultaneously or have different effects. At the micro-level, SC focuses on individual elements such as social networks, trust, and reciprocity, whereas at the meso-level, it includes aspects of the community such as a sense of community, social cohesion, and collective action. The results of this study could provide valuable insights for the creation and execution of successful LB programs that encourage SC at both the personal and communal levels and contribute to beneficial outcomes for neighborhood rehabilitation.

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Keywords: Land Banking, Social Capital, Neighborhood Condition, Shrinking Cities, Vacant Property

LIVING TOGETHER, LIVING APART

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Individual Paper Presentation

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Living Together, Living Apart: A Big-data Approach to Activity-based Segregation between Residents of Public Rental Housing and Commercial Housing Projects in Beijing, China

Social mix has been claimed by planning and policymakers as an effective way to reduce segregation while enhancing social integration. Thus, housing policy in the last few decades have emphasized mixed-income developments, with the hope to enhance inter-group interaction and integration. Empirical observations of the effectiveness of mixed-income development, however, have had mixed findings. Merely living together does not necessarily mean more inter-group interaction or equalized daily-life experiences. Lower-income public housing dwellers suffer from limited access to transport resources or job opportunities compared to relative affluent residents of market-price housing. Scholars have argued that public housing dwellers may have limited exposure to their affluent neighbours during daily activity-travels despite living in the same locations. Nevertheless, empirical evidence has been limited, especially in the context of urban China where, in the past decade, public rental housing has emerged into the largest program of government-funded of affordable rental housing for lower-income residents.

In this study, we contribute to this literature by investigating disadvantages in daily activity-travel patterns of public housing renters relative to commercial housing dwellers in Beijing, China, using activity information derived on anonymous mobile phone data of November 2021. We obtained the list of 78 public rental housing projects owned by Beijing Municipal Government, and were able to identify the geographical boundaries of 63 PRH projects and for each PRH project, one nearby commercial housing project built around the same time. Upon initial cleaning of the mobile phone data, we identified users living in these public rental housing projects and a matched sample of users living in nearby commercial housing projects. We first contrast distinct activity-travel patterns of two social groups including total number of daily activity locations, total distance of daily travel, and spatial fragmentation of daily activities. We then explore to extent to which residents of these two housing types exhibit paralleled lives with limited potential of inter-group contact and interaction in public spaces.

Our research contributes to the emerging literature on the socio-spatial segregation in daily activity-travel patterns between two social groups with distinct housing access, while offering policy insights for inclusive urban planning and housing policy.

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Keywords: Public rental housing, Activity-based Segregation, Inclusive urban planning, Mobile phone data, China

MAKING CHOICE NEIGHBORHOODS WORK FOR OLDER ADULTS LIVING IN PUBLIC HOUSING

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Individual Paper Presentation

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The aging of the U.S. population has stoked interest in how federal rent assistance programs can better serve older adults aged 65 and up, who now account for 30% of the 4.3 million adults receiving rent assistance from the U.S. Department of Housing and Urban Development (Eggers, 2022; Reina & Aiken, 2022). Prior work has suggested that, in particular, public housing redevelopment initiatives may need to be revamped in the coming years, as these initiatives have often failed to equitably serve older adults Dubbin & Yen, 2023; Ruel et al., 2013; Tester et al., 2011). However, the question of how exactly such initiatives should be revamped remains open for discussion, for we still know little about why public housing redevelopment initiatives fail to equitably serve older adults much less how local housing agencies can address this issue going forward.

In this study, we advance the literature by considering how the Choice Neighborhoods Initiative (CNI) – the nation's largest public housing redevelopment initiative – can more equitably serve older adults. We do so by providing a case study of the City of Tucson's experience implementing CNI at a 408-unit public housing community where older adults account for 75% of all residents. Our case study uses a variety of data sources, including survey data from residents (N=269), qualitative data from resident focus groups (N=25), and supplemental interviews with local program administrators (N=6).

While our research is still ongoing, our initial findings indicate that many of the older adults have endured the trauma of long-term housing instability before entering public housing and therefore have especially strong place attachments to their units and especially strong concerns about temporary or permanent relocation. Many senior residents have also spent years developing a network of doctors, food provisioning strategies, and networks of friends/family and are concerned about accessing these resources while temporarily relocated. Interviews with local program administrators have further revealed that, because CNI was mainly developed with families and working age adults in mind, legislatively mandated planning and implementation timelines and requirements afford them little flexibility to address the unique needs of older adults.

In light of our results, we argue that CNI could better serve older adults by: (a) allowing more flexibility in program planning; (b) providing longer planning timelines for CNI sites primarily occupied by older adults; (c) developing alternative tracking requirements and metrics that are more relevant to older adults; and (d) providing more resources and technical guidance to support the equitable relocation of older adults during the redevelopment / rehabilitation process.

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Keywords: Public Housing, Redevelopment, Rehabilitation, Older adults

MANUFACTURED HOME COMMUNITIES IN NORTH CAROLINA AND ACCESS TO WATER SERVICE

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Individual Paper Presentation

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Mobile/manufactured home communities (MHCs) are highly vulnerable to natural disasters, owing to natural hazards risk (floods, hurricanes, wildfire, heat, etc.), structural integrity, and socio-economic status of the residents (Gregory Pierce, Gabbe, and Annabelle Rosser 2022; Ash 2015; Baker, Hamshaw, and Hamshaw 2014). Mobile home units and parks are significantly negatively correlated with reliability of water service, resulting from service cut-offs, and water quality violations (Pierce and Jimenez 2015). Utility planning in mobile homes require thorough assessment of their utility service access. However, one of the major challenges in analyzing hazard risk and service accessibility is the lack of comprehensive publicly available records of mobile homes. In addition, the information about areas served by water utilities is also incomprehensive and inaccurate. An in-depth characterization of accessibility of water utility service can help in equitable planning for essential services, making MHCs more climate resilient.

We used a computer vision approach to detect individual manufactured housing from satellite imagery and identify manufactured home communities in North Carolina using a combination of spatial clustering and matching parcel records. We created a training dataset of size 4500 for object detection comprised of 2500 double wide manufactured homes, 1000 single wide manufactured homes, and 1500 potential false positives such as subdivision homes, roads, industrial and commercial buildings, etc. We retrained a pretrained YOLOv8 object detection model (considered one of the state-of-the-art architectures for object detection) on the curated training dataset resulting in in-distribution performance of overall 97% recall and 93.3% minimum average precision (mAP50) across the two classes of single wide and double wide manufactured housing. We used high-resolution aerial imagery (15 cm resolution) collected by the state of North Carolina. We identified MHCs from individual detections by matching detection with parcel boundaries as well as spatial clustering using DBSCAN.

Our preliminary analysis in selected counties shows that this approach identifies MHCs that are not publicly available in datasets such as the Homeland Infrastructure Foundation Level Data (HIFLD) dataset of Mobile Home Parks at a much granular level (from a geocoordinate for a MHC to individual bounding boxes for each manufactured housing structure). We have also characterized their distribution in North Carolina and their water utility service accessibility using publicly available information of water utility service boundaries and Safe Drinking Water Act (SDWA) datasets. In addition, we delineated the boundaries of Public Water Systems (PWS) that primarily service MHCs, identified from SDWA dataset by matching neighborhood parcel boundaries akin to a knapsack problem. The effort contributes to an ongoing collective initiative to delineate accurate water utility service area boundaries and adds the boundaries for 300+ PWS in North Carolina for which accurate boundaries are not currently publicly available. We will present the spatial characterization of MHCs in North Carolina as well as their water utility service accessibility. Additionally, we will also present the evaluation of the computer vision technique compared to an alternative approach of identifying Mobile Home Parks from building footprints using Machine Learning classifiers (Durst et al. 2021). This paper thus makes both methodological and domain specific contributions to equitable housing and utility planning literature. The results validate the use of computer vision techniques and increasingly accessible high-resolution imagery in planning research and practice. The records of MHCs in North Carolina created as part of this research (to be made publicly available later) makes utility planning for resilient unsubsidized affordable housing possible at a much granular level.

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Keywords: Mobile/manufactured housing, Water utility service, Computer vision, Climate resilience, Housing equity

MIGRANTS' HOUSING STRUGGLES WITHIN RENTAL HOUSING COMMUNITIES IN CHINA

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Individual Paper Presentation

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Today, over 370 million internal migrants cross jurisdictions and live in unauthorized rental housing communities. The housing struggles of migrants challenge China's urban governance structure. As the governing strategies of the household registration system have proved inadequate, China has launched an initiative to reconfigure the largely informal rental housing market and develop an affordable rental housing market through state-sanctioned corporate projects. Unauthorized rental housing communities are being converted into affordable rental housing respectively for rural migrant workers and migrant college graduates. At the conjecture of increasing migration and a crisis in China's real estate market, I ask 1) how China's shifting from homeownership to rental policies reconfigure the governance and management of migrant populations? 2) how do the housing struggles of migrant communities contest the state power and call for a redefinition of urban citizenship?

Based on a 10-month ethnography of planning processes and of migrant tenants' everyday lives in Guangzhou and Shenzhen, I suggest that the rental housing initiative marks a reterritorialization of the state strategy to fix and govern the heterogeneous migrant populations. I present the following findings: 1) by reconfiguring the unauthorized rental housing market and reorganizing migrants into different housing communities, local government, planning bureaus and real estate companies render the migrant communities and individuals legible and governable. 2) the affordable rental housing communities are mobilized by the state and non-state governing actors to mold industrious and docile rural migrant laborers as well as high-quality (suzhi) (Anagnost 2004) and globally competitive talents. 3) A significant proportion of migrants fell out of the government's categorization, particularly migrant families. In a protest against a rental housing project in Shenzhen, mobilizing the rhetoric of children's constitutional rights to in situ compulsory education, mothers spearheaded a rare protest for the right to the city in China.

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Keywords: Housing planning, Rental housing, Internal migration, Housing struggle

ONLINE HOUSING LISTINGS AND ZONING CHANGE

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Individual Paper Presentation

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Over the past decades, online housing listings have become the primary way of marketing homes to buyers. Realtors and sellers write housing listings to appeal to the type of buyer they expect to be most interested in their property. In their free text sections, listings draw attention to features of both the homes themselves, as well as to those of its surrounding areas, such as nearby amenities or infrastructure. Listings have become the object of scholarly research as a form of so called "Big Data", due to their coverage of market segments not recorded

otherwise (Harten et al. 2021), or the ability to reflect features not covered otherwise (Su et al. 2021). Recent studies have demonstrated text in housing listings can be employed for tracking neighborhood dynamics over the course of decades (Nilsson and Delmelle 2022), or changes in consumer preferences for different housing attributes during the Covid-19 pandemic (Lee and Lee 2023).

However, no study to date has employed online housing to evaluate how the marketing of residential properties reflects legal changes in what an owner can do with a lot. By applying Natural Language Processing methods to a monthly panel of free text sections of online housing listings in Los Angeles and Orange counties, California spanning from April 2020 until April 2024, I track references to accessory dwelling units ("ADUs"), as well as to new two state laws that liberalized zoning – SB9 and SB10, both of which entered law during the observation period. I find that within months, housing listings change to reflect the legal possibilities offered by these legal changes. In particular, the share of listings referencing ADUs increases substantially; however, adoption is not even across space, and many references merely refer to the ability to construct an ADU on a given lot, rather than to the presence of an ADU.

As a secondary object of study, I track references to new public transit infrastructure within the same data to demonstrate that references to transit infrastructure are responsive to changes in actual nearby infrastructure.

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Keywords: Online Housing Listings, Housing, Accessory Dwelling Units, Zoning, Natural Language Processing

OUTCOMES AFTER EXITING FEDERALLY ASSISTED HOUSING IN MULTNOMAH COUNTY, OR

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Individual Paper Presentation

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Despite the high demand for housing assistance among low-income families, only a small number are able to receive subsidies after long waits to reach the top of waiting lists due to limited resources. According to McClure's (2018) research, the median duration for households receiving public housing assistance is three years, while those receiving vouchers last 4.8 years. Many families leave federal housing assistance programs for a variety of reasons,

both voluntary and involuntary. Yet, there has been little research on the economic and housing stability of those who leave these programs (Smith et al., 2015; Kang, 2021).

This research examines the characteristics and experiences of families who left Home Forward, Public Housing Authority of Multnomah County, Oregon, from 2009 to 2021 through a racial equity lens. In particular, the study asks the research questions: 1) What happens to employment and income after households left Home Forward programs by exit type? 2) What racial disparities exist in post-exit outcomes for employment and economic security? 3) What are the factors associated with experiencing economic hardships (participating in the social safety net programs) for households who left Home Forward's programs?

The primary focus of this research is to illuminate the disparate outcomes in economic mobility, employment stability, and engagement with self-sufficiency programs, considering race, ethnicity, and exit type. Utilizing a dataset collaboratively collected from the Oregon Employment Department and the Oregon Department of Human Services, this research compares the outcomes for families that have exited Home Forward programs and explores how these outcomes are associated with the type of assistance program exited.

The findings contribute to our understanding of what happens when families leave public housing assistance, with a focus on racial equity. Because re-entering housing assistance after leaving it is complicated, families who leave the program need extra care to prevent sliding into extreme poverty again. This study also provides insight into how to improve housing assistance programs and policies to support families that leave or lose their assistance by providing a safety net for economic mobility and housing stability. Further, the research highlights racially equitable strategies with a more focused approach that can mitigate racial gaps in economic outcomes of households at risk of leaving based on the exit type.

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Keywords: Housing assistance leavers, Racial equity, economic outcome

POWER IN THE EVALUATION OF INCLUSIONARY HOUSING PROGRAMS

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Individual Paper Presentation

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Inclusionary housing (IH) programs are an increasingly popular tool for increasing the amount of affordable housing and creating mixed-income communities. IH programs incentivize or require developers of new developments to provide housing below market rate for people with lower incomes, and have created at least 110,000 below-market-rate inclusionary units and about $1.8 billion in fees (Wang & Balachandran, 2021), making IH a significant source of affordable housing. Analyzing the degree of residents' participation in evaluating IH programs sheds light on visible, hidden, and invisible power (VeneKlasen & Miller, 2002) shaping this form of affordable housing.

This study uses mixed methods, including semi-structured key informant interviews, archival research of municipal IH reports, and a systematic literature review, asking ask how municipalities and external researchers evaluate IH programs, and whose perspectives they include. Through interviews with nine IH administrators in municipalities across the country, we found that few municipalities report doing any kind of formal evaluation of their programs. In updates to policymakers or annual reports, the data they collect and use to assess the impact of their programs centers the developers' and municipalities' interests, with residents' interests deprioritized. Even when municipalities collect information on criteria in residents' interest, they use information from developers or their own records, failing to ask those residents directly. Similarly, few researchers consider residents' experiences as part of IH evaluations; only two of twelve academic articles evaluating the outputs or outcomes of specific IH programs considered the program's effects on intended beneficiaries.

Visible power (VeneKlasen & Miller, 2002), which relates to who wins overt conflict, appears in IH evaluations as insufficient attention to residents' interests. To increase resident visible power, we recommend collecting data directly from residents in evaluations of IH. Hidden power (VeneKlasen & Miller, 2002) is the power to set the agenda. In IH evaluations, hidden power emerges in the epistemological assumptions about where power lies and whose knowledge is valid. Additionally, the hidden power of research funders determines the kinds of knowledge researchers create. To increase resident hidden power, we recommend using participatory evaluation designs that privilege the participation of residents, as well as including low-income residents in research grant decision-making. Invisible power (VeneKlasen & Miller, 2002) prevents lower-power groups from recognizing their grievances, thus preventing overt conflict. In IH evaluations, this shows up as the spatial isolation of IH residents, which creates significant barriers to seeing their individual concerns as group concerns. We recommend increasing residents' invisible power by facilitating the creation of municipality-wide IH tenants' unions.

This study demonstrates that residents have little power in evaluating their housing. We hope that planners, in both municipalities and external researcher positions, implement strategies for power-sharing with IH beneficiaries and that, as a result, low-income residents successfully gain the power to shape the housing programs that profoundly impact their communities.

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Keywords: citizen participation, power, inclusionary housing, low-income housing, residents

PRE-DISASTER PUBLIC HOUSING RECOVERY PLANNING:'NEAR EXPERIENCE' COMMUNITIES

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Individual Paper Presentation

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Post-disaster housing challenges for public and subsidized housing tenants are severe, but cities with near experience of disasters may have limited knowledge about how to help them. A community with 'near experience' refers to one with a high hazard risk but has only experienced low-to-moderate type disasters or indirect damage caused by a nearby affected community. There is still a lack of knowledge about pre-disaster public housing planning, especially in communities with near experience communities. We lack studies examining how and when public housing residents, a highly vulnerable social group, recover after disasters. Considering the high dependency on government assistance for recovery in the aftermath of disasters, this gap is critical.

Salt Lake and Utah Counties, UT, are used as case studies to examine policies designed to provide post-disaster housing to public housing residents. Both counties are situated along the Wasatch Front, which increases their susceptibility to earthquakes due to their proximity to the Wasatch fault. The region experiences significant earthquakes, with magnitudes ranging from 6.5 to 7.5, approximately every 50 years. In March 2020, a moderate earthquake with a magnitude of 5.7 struck Magna, a city in Salt Lake County, causing damage to some structures. Despite the earthquake occurring during the early stages of the COVID-19 pandemic, resulting in minor damages and injuries, it raised concerns about the region's readiness for a major earthquake event.

Applying qualitative approaches, this study investigates the underlying factors and dynamics that contribute to disaster planning, or lack thereof, for rehousing public housing residents in near experience communities. Our study combines semi-structured, open-ended key informant interviews with 22 local emergency management, city planning, and housing officials of both counties and their constituent cities to examine how these plans are being implemented, what motivates them, what challenges they face, and how they coordinate with other entities. Thematic coding is used to examine connections and patterns in the qualitative data and to understand post-disaster rehousing for public housing residents in near experience communities.

Our findings suggest cities are not prepared to house public housing residents after a disaster. The absence of disaster assessments, poor coordination and information-sharing, insufficient funding, and poor leadership hinder their pre-disaster planning efforts. This study is intended to serve as a call to action for pre-disaster planning in relation to public housing recovery in near experience communities. Disaster planning for public housing recovery should be promoted by creating joint plans, engaging diverse communities in planning processes, committing funding for such activities, and reviewing existing protocols.

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Keywords: housing recovery planning, disaster recovery, public housing, near-experience communities, recovery governance

PUBLIC HOUSING'S RIPPLE EFFECT : MAKING PRIVATE RENT AFFORDABLE IN SEOUL

Abstract ID: 1108.0.0.496.2024
Individual Paper Presentation

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Public rental housing not only directly increases housing options for low-income individuals, but also helps stabilize prices in nearby housing markets by providing affordable living opportunities. However, existing research focuses primarily on the stigma effect of public rental housing on its neighborhood, as reflected through general housing sales prices. This often overlooks its effect on the monthly rental market. Given that households eligible for public rental housing or those with incomes below the median more frequently opt for monthly rentals and multiplex housing markets, it is crucial to examine its influence on these rental markets, rather than the apartment sales market. This study seeks to fill this research gap by analyzing the relationship between public rental housing supply and the monthly rental prices of multiplex (non-apartment) housing, specifically targeting the primary demand segment of low- to middle-income groups in the rental market in Seoul, South Korea. The study aims to understand whether certain types of public rental housing stocks stabilize non-apartment rental prices. The research questions are:

(1) Does the public rental housing stock significantly influence monthly rental prices of multiplex (non-apartment) housing units in nearby areas?

(2) Which type of public rental housing stock can stabilize multiplex (non-apartment) rental prices?

To answer these questions, this study employs a spatial panel model to account for spatial autocorrelation inherent in housing markets. The empirical analysis is based on the context of Seoul, where there is a high demand for public rental housing and a vibrant transaction market for non-apartment residential rentals. The study timeframe is set from 2018 to 2020, just before rent inflation began, using panel analysis. The research utilizes data from the smallest administrative district level, known as Dong. This includes the annual stock of public rental housing supplied by Seoul Housing and Communities Corporation (SH) and Korea Land & Housing Corporation (LH),

Additionally, it involves the annual average of monthly rental transaction prices of multiplex houses within Seoul's 426 administrative districts. In addition to these data, the study considers regional characteristic variables and macroeconomic variables that may affect housing price fluctuations in the model.

This research will provide insights for policymakers addressing housing affordability issues. Essentially, this paper will contribute to the discussion on how public housing can serve as a mechanism to achieve housing affordability and market stability, particularly for economically marginalized sectors, thereby promoting inclusive urban development.

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Keywords: public rental housing, private rental housing market, affordability

QUALITY OF LIVING, HOUSING DISPARITY AND SEGREGATION

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Individual Paper Presentation

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This study examines the quality of living (QoL) for disadvantaged population groups described as “equity-deserving”. We achieve this by investigating the causal pathways and feedback loops between sociodemographic characteristics and QoL, as well as uncover patterns of housing inequality and segregation within North American mega regions. Improving the living quality for all residents, especially those from the equity-deserving groups, is a significant concern for urban planners (Myers 1988; Pacione 2003; Brambilla et al. 2013; Mouratidis 2021). Disadvantaged communities often face various socio-economic challenges, including inadequate access to service and activities, substandard housing conditions, limited employment opportunities, and insufficient mobility options (Power 2012; Welch 2013; Hu et al. 2020). These disparities can significantly impact their overall well-being and quality of life.

Foremost, a comprehensive QoL index is developed to systematically measure the quality of housing, accessibility and services across the Greater Toronto and Hamilton Area (GTHA). This is empirically studied using micro-level longitudinal property transaction database and multiple geospatial databases for accessibility assessments. Neighbourhood with greatest need of improvements and areas experiencing living quality inequity are visualized. Next, a Structural Equation Model (SEM) is developed to test the hypothesized bi-directional influential paths: the

presence of disadvantaged groups contributes to the deterioration of the neighbourhoods, which, in turn, further disadvantages the residents.

The case study in the GTHA demonstrates the effectiveness of the model and reveals that areas characterized by a larger proportion of disadvantaged populations tend to exhibit lower QoL, reflecting the pervasive challenges faced by the equity-deserving groups. The results indicate that the disadvantaged communities spend larger portions of their income for shelter cost, leaving less time and money to improve their overall well-being. Targeted interventions and policies should be developed aiming at fostering inclusive and thriving urban environments for all residents, especially improving the quality of living for the equity-deserving groups.

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Keywords: Quality of life (QoL), Housing disparity, Disadvantaged residents, Structural equation model, Housing segregation

REASSESSING THE DIVERSITY OF ASIAN AMERICAN HOUSING OUTCOMES (2000-2020)

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Individual Paper Presentation

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This study addresses two questions: (1) How have disparities in homeownership and housing cost burdens among different Asian American ethnic groups changed over time? (2) Do economic endowment, immigration experiences, housing market conditions, and ethnic concentration explain those disparities, and if so, how have their influences changed over time? Despite being the fastest-growing minority group in the United States, Asian Americans' housing experiences remain heavily understudied. The lack of research, compounded by the stereotype that lumps the diverse pan-ethnic group into an imaginary "model minority" monolith, risks neglecting the unique housing needs and obstacles faced by Asian Americans. By focusing on ethnic differences within the group, this study aims to illuminate potential housing inequality among Asian Americans, explain how they are produced, and suggest potential interventions aimed at narrowing them.

Asian Americans are a diverse pan-ethnic group with significant class and ethnic diversity. With approximately two-thirds being first-generation immigrants, their socioeconomic and cultural ties to their countries of origin play a

crucial role in determining initial settlement patterns, neighborhood preferences, income, wealth, and access to housing market information. While previous studies have highlighted substantial differences in housing outcomes among various Asian ethnic groups (Burr and Mutchler, 2012; Painter et al., 2003; Reina and Aiken, 2021), these studies have not sufficiently explored what explains those differences or their changes over time. In particular, the influence of changing housing market conditions remains heavily understudied, despite the disproportionate concentration of Asian Americans in coastal housing markets characterized by increasingly high costs and supply constraints, as well as their increasing entry into non-traditional gateways. Additionally, recent changes in immigration patterns and labor market dynamics could have further exacerbated socioeconomic disparities within the group (Sakamoto et al., 2009; Vo et al., 2023). These oversights present a critical gap in our understanding of housing inequality among Asian Americans and the necessary interventions to mitigate these disparities.

To answer my questions, I analyze three waves of Public Use Microdata Sample (PUMS) data from the 2000 Decennial Census and the 2012-2018 and 2018-2022 American Community Survey (ACS) 5-year data, focusing on recent movers. The dataset is analyzed using a multilevel modeling approach, where households (level 1) are nested in Public Use Microdata Areas (PUMAs, level 2) and Metropolitan Statistical Areas (MSAs, level 3). My analysis focuses on the six largest Asian ethnic groups (Asian Indian, Chinese, Filipino, Korean, Japanese) and non-Hispanic whites.

Descriptive findings indicate a significant improvement in housing outcomes among Asian Americans from 2000 to 2020, albeit with variations across ethnic groups and persistent ethnic disparities. Furthermore, despite improvements, all Asian groups still exhibited lower homeownership rates compared to whites. Additionally, with the exception of Japanese and, more recently, Asian Indians, all Asian groups experienced higher housing cost burdens than whites. The sources of these disparities were further explored using multilevel models, which accounted for unobserved heterogeneity at the PUMA and MSA levels. Preliminary modeling results excluding the housing market variables suggest that in 2000, all Asian groups except Chinese had lower homeownership rates than whites. However, by 2020, the homeownership rates of most Asian groups had surpassed those of whites. Factors such as economic endowment and immigration characteristics linked to greater assimilation into U.S. society were associated with higher homeownership rates, although their effects generally diminished over time with the exception of educational attainment, citizenship status, and English fluency. Similar trends were observed for housing cost burden. These findings suggest that the persistent concentration of Asian Americans in high-cost, supply-constrained housing markets, along with factors related to their U.S. immigration and integration, play a significant role in their housing challenges.

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Keywords: Homeownership, Housing Burden, Asian Americans, Immigration

RENTAL HOUSING AS SITES OF 'OTHERING': MIGRANT WOMEN'S EXPERIENCES IN INDIA

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Individual Paper Presentation

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In the absence of public rental housing, the private rental market addresses a key housing need of migrant communities in urban India (Naik, 2019). However, for Indigenous migrant women from the Northeast Indian borderlands and Himalayan foothills who live in metropolitan Indian cities, their rental houses are spaces where they experience racial harassment, sexual violence, and intrusive surveillance by landlords. Marginalisation of Indigenous people in metropolitan Indian cities is primarily rooted in racism. Despite being Indian citizens, they are often dislocated from the 'Indian' identity due to their phenotypes. Indigenous women in particular have been racialised, hyper-sexualised, and stereotyped as 'loose' and 'sexually promiscuous' by mainland Indians. Moral anxieties pertaining to their bodies have subjected them to 'othering' in urban India (McDuie-Ra, 2012). While this often translates into racialised and sexualised violence in public spaces and their workplaces, this paper focuses on how marginalisation manifests inside their rental houses.

I have chosen as my study site the metropolitan city of Bengaluru, which is one of the top six destinations for Indigenous migrant women in India. The objective of this paper is to analyse how power dynamics shape rental housing experiences of Indigenous migrant women in Bengaluru, and how they navigate and resist their marginalisation in the private rental housing market. I situate this work within a feminist ethnographic methodological framework. Data collection was conducted through 73 semi-structured interviews in Bengaluru between August and December 2023. This includes 62 interviews with Indigenous migrant women who are studying and/or working in the city. Remaining interviews were conducted with participants' employers, and Indigenous community leaders who are based in Bengaluru. Interviews were analysed through transcription and qualitative coding.

I find that Indigenous migrant women commonly experience intrusion and harassment by landlords in their rental houses. Conditions of tenancy often include restrictions wherein visitors are not allowed, with landlords infringing on their privacy by monitoring activities that occur inside rental houses. Many participants have also experienced sexual harassment perpetuated by their landlords. Primarily, it is the power possessed by landlords through property ownership that allows them to invade the privacy of their tenants and control their living environments (Harris, 2004). Furthermore, landlords typically belong to dominant class and caste groups in Bengaluru. This provides them with additional power to interfere in the private spaces of migrant women without repercussions. Moreover, it is common practice in Bengaluru to take 10 months of rent as security deposit. This skews power dynamics as tenants are financially tied to their landlords.

Notably, there is currently no legislation that protects tenants in the city. In this absence, Indigenous migrant women navigate these circumstances in myriad ways. One participant revealed that she swapped her house with a group of men from her Indigenous community as a way to escape the sexual harassment she experienced from her landlord. Others stated that they took over leases from people from their own communities who were moving to other places. This allowed them to rent houses from landlords who have been established as trustworthy.

This paper makes a key contribution towards urban planning and housing scholarship by establishing how the 'othering' of subaltern migrant communities can infiltrate the privacy of their rental houses (Holston, 2007). I will thus advance the public-private debate in feminist urban studies literature through my intersectional analysis of power dynamics in the private sphere of rental housing between tenants, who are Indigenous migrant women, and their landlords (McDowell, 1983). More broadly, the findings of this paper will provide insights to formulate inclusive tenant protection and rental housing policies in a context where such policies are currently absent.

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Keywords: Rental housing, Indigenous, Migrant women, Power dynamics, Bengaluru

RESPONSE TO FORM-BASED CODE

Abstract ID: 1108.0.0.443.2024
Individual Paper Presentation

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This research investigates the impact a form-based code has on community members, stakeholders, developers, residents, and municipality officials, with a direct focus on the City Center area in Norman, Oklahoma. Form-based code is a complex attempt to reform zoning regulation in the United States by responding to the challenges and difficulties found with typical Euclidean Zoning (Evangelopous, 2016). Form-based codes (FBCs) are principles that affect the design of urban areas with written rules about the built environments and location of the urban area (Talen, 2009). FBCs are regulatory codes, not advisory (Talen, 2009). This type of building code and zoning offers an alternative to conventional zoning, allowing a large amount of non-typical functions to take place in areas of FBC zoning (Evangelopous, 2016). Through surveys, focus groups, archival research, and analysis of Strava Metro data, the study goal was draw conclusions on questions about form-based codes as well as to assess residents per residents' perceptions, economic activity, and urban development trends before and after FBC implementation. Using the existing literature and evaluation criteria used for form-based codes, this research explores the potential

benefits and drawbacks of FBCs. Initial findings suggest a mixed response among the literature, with improvements needed about informed aesthetics and the catering of the community. FBCs naturally increase the density of an era; these potential benefits of compact cities may also come alongside lower levels of residential satisfaction and stability (Bramely, 2009). This study contributes to the improved literature and understanding of the nuanced effect FBCs have on diverse urban area settings, providing critical insights for policymakers, planners, and academics interested in the field.

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Keywords: Form-Based Code, Urban from, residential satisfaction, aesthetics, reform zoning

REVEALING THE EXCLUSIONARY LANGUAGE OF SHARED RENTAL ADS THROUGH AI

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Individual Paper Presentation

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Fueled by digitalization, home sharing has grown in popularity and offers an affordable housing strategy to cope with rising unaffordability in cities around the world. Sharing means trading off space and privacy for discounted rents. Recent research suggests that listings for rooms in shared units are cheaper and available in more neighborhoods than traditional whole unit rentals. However, merely counting listings may mislead us about the full impact of shared rental housing on affordability. Home sharing requires matching on not only unit but also personal characteristics. Accordingly, shared rental listings' texts often describe ideal tenants as well as rules, restrictions, and hopes for the sharing arrangement. These language cues act as signals to attract or exclude certain renters. In turn, the "gatekeeping" language in these texts could reveal differential access among subpopulations to shared rentals.

This study leverages recent advances in artificial intelligence and natural language processing to ask: how do listings' texts state who is welcome or unwelcome as prospective tenants in shared housing units? To answer this, we draw on thousands of online rental listings for shared units in Los Angeles, California, one of the US' least affordable housing markets. We first hand-code a sample of listings to identify themes, then use it to train a deep learning BERT model to analyze the texts of both full unit and shared unit listings. We then repeat this process on

only the shared unit listings to identify specific themes regarding personal qualifiers in the proposed sharing arrangement.

Our results reveal that the listings' texts fundamentally differ between full units and shared units: full unit listings devote on average 55% of their text to describing the unit and location, while shared unit listings devote only 40%. The latter instead devote 18% of their text to personal qualities, relationships, and restrictions on the prospective tenant (compared to only 2% for full unit listings). However, sharing relationships vary and can have an either a) transactional orientation focused on costs (17% of shared unit listings), or b) social orientation focused on building a congenial sharing environment (45% of shared unit listings). Transactional listings emphasize qualifiers around income, work, and lifestyle choices such as drug use. In addition to work and lifestyle requirements, social listings emphasize friendliness, respect, and cleanliness as well as preferences for gender, age, sexuality, and hobbies.

Understanding these qualitative housing restrictions—beyond just location, size, and affordability—can help planners intervene in housing crises. Our study shows how advances in artificial intelligence and deep learning can unlock planning research previously constrained by tedious manual processing. In doing so, we contribute a new understanding of housing discrimination in an increasingly unaffordable—and digital—world. As the housing search moves online and constrained markets motivate nontraditional living arrangements, our findings reveal how language effectively excludes certain subpopulations from this submarket. This in turn creates new and reinforces existing housing vulnerabilities. The housing search is a social process and non-family home sharing in particular requires sharing living space with strangers. As existing tenants increasingly serve as gatekeepers in these nontraditional arrangements, the language they use to facilitate matches also allows us to re-theorize home sharing beyond the traditional nuclear family.

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Keywords: Shared Housing, Digital Housing Search, Rental Housing Exclusion, Natural Language Processing, Deep Learning

REVISITING EXOPOLIS: POST-SUBURBAN GOVERNANCE AND ITS EVOLUTION

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Individual Paper Presentation

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For decades, local barriers to low-income housing provision and the unequal distribution of housing growth in California have exacerbated residential segregation and unaffordability. Since 2017, the state legislature has therefore passed over 100 new laws to expand housing production and better distribute such development by codifying federal fair housing rules, among other aims. These laws have increased penalties for non-compliance (e.g., streamlined development processes) while setting the stage for heightened conflict between the state and cities resistant to housing development. This paper centers on the implementation of such reforms in Orange County's 34 cities, whose real estate 'innovations', including HOAs, gated communities and quasi-private governance have been replicated across the United States. The county thus represents both a parody and a paradigm of the amorphous postmodern urbanism that characterizes vast portions of diverse regions in the United States. Conservative politics and efforts to bleach the Los Angeles region non-Hispanic white gave way to the development of an expansive, fragmented and centerless metropolis. Yet, governance and development rationalities have continued to evolve. This paper thus offers an updated and lacking examination of a subregion characterized by endemic segregation and opportunity hoarding (Goetz, 2021; Williams, 2020).

Orange County is brought forward as both an empirically and theoretically significant case and an embodiment of the characteristic segregated diversity of contemporary metropolitan regions in the U.S. While shedding light on how (sub)urban political economies influence the working of regions and higher-level politics, this work underscores the emergent prospects for counterbalancing reactionary local policies and politics and their detrimental implications. Incipient organizing and policies to address housing hardships, for instance, are increasingly aiming to represent societal, rather than chiefly private, interests. While nearly every city has pushed back against housing mandates, strategies and responses vary notably by geography. Affluent coastal, canyon and southern cities have been notably resistant to state housing law. In contrast, lower-middle-income cities closer to Los Angeles County have leveraged some state laws to pass rent control and tenant protections in response to political pressure from residents and local activists. Local governments are facing increasing pressure to address the acute housing needs of increasingly diverse and mobilized constituents along the demands of homeowners who feel as though their suburban quality of life is under attack. This article thus offers lessons on the evolution of state-local relations at a period of reform, as well as on the challenges and prospects for promoting more integrated communities in historically exclusionary geographies.

This research draws from a content analysis and our main data sources are news articles and public meetings, but we triangulate these data with relevant government documents related to housing policy in Orange County (e.g., housing and general plans, local ordinances, press releases). We used California's Department of Housing and Community Development (HCD) web news service, which compiles and issues housing development, land use, homelessness and related news articles twice a week (from January 2020 through February 2024). Quantitatively, 201 news articles make up our predominant data source but we also attended and documented 61 public meetings held to update housing plans in OC cities, a process mandated by the state every eight years.

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Keywords: housing, governance, Southern California

RIGHTS TO PURCHASE AND AFFORDABLE HOUSING PRESERVATION

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Individual Paper Presentation

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Facing rising housing prices and a shortage of new affordable homes, affordable housing preservation strategies are a direct and potentially more immediate approach to maintaining an adequate supply of affordable rental housing (Chapple et al, 2023). In the Washington, DC, metropolitan area, several local governments have enacted unique preservation strategies that leverage laws that grant renters, nonprofits, or local governments the "right to purchase" (RTP) rental properties being offered for sale on the private market (Howell, 2016). DC's Tenant Opportunity to Purchase Act (TOPA), adopted in response to a wave of condominium and luxury apartment conversions during the late 1970s, grants existing tenants the right of first refusal to purchase rental buildings prior the initiation of an offer for sale (Huron, 2018). In Maryland, Montgomery County and Prince George's County grant the right of first refusal (ROFR) to government-sponsored housing organizations. These programs have drawn interest by communities around the nation for their unique combined emphasis on tenant empowerment and affordable housing preservation, but little is known about the effectiveness of right-to-purchase tools as affordable housing preservation tools.

This paper explores the challenges and opportunities presented by tenant right-to-purchase programs for affordable housing preservation. In the paper, we address several questions, including: (1) How many affordable rental units have been preserved through the exercise of rights to purchase? What features of RTP processes expediate affordable housing preservation? (2) In what ways have local governments in the DC region relied on RTP laws to secure affordable rental properties? (3) What barriers (lack of financing, opportunistic behavior by third parties, tenants' interests not aligned with preservation goals, etc.) impede the successful exercise of rights to purchase by tenants, nonprofits, and local governments? (4) What lessons does the DC RTP experience offer for other communities seeking to pass RTP laws?

To address these questions, we draw on insights gained through mixed-methods research conducted between June 2023 through March 2024. Utilizing a unique database of TOPA and ROFR preservation outcomes, building characteristics, historical sales data, and neighborhood change metrics, we examine the correlates of successful preservation outcomes that were initiated by the exercise of a RTP. We also draw upon 15 semi-structured interviews with key stakeholders involved in RTP processes – including local government officials, affordable housing developers, and tenant advocacy organizations – to highlight how rights to purchase have been utilized as a lever for affordable housing preservation. We examine the challenges that tenants, nonprofits, and local governments face while working with RTPs and the lessons learned that could be relevant for other jurisdictions considering the enactment of rights to purchase. Answers to these questions will provide unique insights into the effectiveness of a unique and under-examined affordable housing strategy.

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Keywords: affordable housing preservation, tenant rights, anti-displacement

SMART GROWTH IN SUBURBAN COMMUNITIES: A PARADOX OF RENTAL HOUSING GROWTH

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Individual Paper Presentation

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As a pleasing alternative to urban sprawl, smart growth has gained popularity. Smart growth strategies often associated with infill development involving dense and mixed-use development have been the symbols of sustainable development in inner cities (Kim et al., 2022). Furthermore, there has been also a growing interest in developing or reinventing suburbs to be more sustainable through systemic densification (Vall-Casas et al., 2016). The core strategy of the densification is to increase rental housing units such as apartments as an alternative to low-density single-family housing development (de la Ramirez, 2009).

Rental housing needs in suburban communities have increased as the suburbanization of low-income households and minority populations has occurred (Howell and Timberlake, 2014; Kim and Kim, 2023). The housing industry also acknowledges the potential of apartments for a middle market in suburban communities (Belsky et al., 2004). In the State of California, especially, many suburban municipalities began to pay attention to increasing apartments due to a housing shortage and the Regional Housing Needs Allocation (RHNA) Plan that mandates all local jurisdictions to develop a plan to accommodate the housing needs of residents regardless of income.

This paper explores rental housing development in the suburban areas of the Los Angeles-Long Beach-Anaheim Metro Area in California. Constructing a multilevel linear model, it examines the contributing factors to the rental housing development from 2010 to 2019. In the multilevel model, we included the built environment, housing, and socio-demographic characteristics of census tracts and the location and socio-demographic characteristics of cities at which the census tracts are located as level-1 and level-2 independent variables, respectively. The multilevel model estimates show that rental housing penetrated the suburban cities and neighborhoods where this housing type was not conventionally considered desirable. The model outputs also imply that socio-demographic characteristics rather than built environment are the dominant contributing factors to rental housing growth at both city and neighborhood levels. Unlike the common features of apartment developments in urban areas (e.g., mixed-use, transit-friendly, and so on), rental housing developments in suburbs tend to be segregated from local amenities like retail, job, and public transit. The findings of this paper will help suburban cities identify their sustainable land use decisions and smart growth strategies. The findings will also help planners take appropriate

actions and regulations that promote dense development in the areas where low-density single-family housing dominates.

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Keywords: rental housing, suburbs, smart growth, housing density

SPATIALIZING THE FISCAL EFFECTS OF CORPORATE RENTIERSHIP IN MEMPHIS, TN

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Individual Paper Presentation

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Urban and municipal governments are increasingly navigating a housing landscape defined by corporate rentiership. In Memphis, TN, eviction courts have seen a wave of filings at twice the rate of any local landlord after the private equity firm Cerberus Capital purchased a large portfolio of single-family homes (Frankel & Keating, 2018). Over the past decade economic geographers have documented the conversion of single-family rentals into an institutional asset class (Fields, 2018), as well as how that conversion has driven housing markets toward corporate rentiership (Christophers, 2020). Our research investigates the nexus between corporate rentiership and the local state, with an eye towards the tactics, strategies, and outcomes used by institutional investors to contest their largest yearly expenditure in property tax. Early research has estimated that institutional SFR investors successfully appeal $4.1 billion in U.S. property tax on an annual basis (Austin, 2022). To explore this process in Memphis, TN, we use tax assessment rolls in producing a typology of corporate investors (An et al., 2024) before using this classification to identify how and where investors file property tax appeals. We argue that corporate rentiership introduces new incentives into the spatial politics of property tax, as investors exert market power in ways that may change the logic of housing assetization, such as intentionally managing the decline of a property's value to lower tax burden, or using proprietary software to automate property tax appeals on large single-family portfolios. Ultimately, this research contributes to work on the corporate consolidation of housing by investigating the secondary effects of corporate rentiership on the local state, as the prevalence of corporate investors at the

scale at which they currently operate may disrupt long systems pertaining to tax, technology, and the valuation of residential rental housing.

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Keywords: Property tax, Appeals, Rentiership, Local government, Corporate landlords

SPATIALIZING THE PRIVILEGE: HISTORY OF ELITE INFORMAL SETTLEMENTS IN DELHI

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Individual Paper Presentation

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Analyzing Delhi master plans, land acquisition reforms, land governance policies, newspaper articles, parliamentary debates, and archival documents, my paper traces the history of the emergence of elite informal settlements in Delhi, labeled as "Affluent Unauthorized Colonies" in government records. It poses the following questions: how the centralized planning regime, the political economy of land acquisition and transfer, and the ambiguous nature of the elite-state relationship have led to the emergence of elite informal settlements primarily concentrated on a contiguous land in the southern part of Delhi? In this paper, I make three significant claims: First, since almost all these colonies were built on agricultural land previously acquired by the Delhi Development Authority (DDA), they resulted from the government being unable to build acquired land or compensate farmers on time. As a result, fearing low or no compensation, the farmers sold their land to middle-class and upper-middle-class people. There was an economic rationale for farmers who would lose their land regardless. Secondly, while the DDA started building acquired agricultural land in other parts of Delhi after the independence, the state-led development of the southern part started much later. It allowed for informal land transactions between the farmers and the elites. Also, the proximity of these colonies to the other formal elite settlements in Delhi, namely Greater Kailash, Jor Bagh, Saket, Hauz Khas, Lutyens's Delhi, and central Delhi, resulted in their concentration in the southern part of Delhi. Finally, since many administrative elites such as bureaucrats, ministers, judges, and attorneys lived in these colonies, these colonies only experienced episodic demolitions as opposed to the slums and squatter settlements that were evicted and demolished regularly. In other words, the state's role as a land administrator and individual state representatives as consumers participating in informal land transactions and development created these residential spaces for the rich and powerful.

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Keywords: Urban Informality, Government, Urban History, Property Rights, South Asia

SPATIOTEMPORAL ANALYSIS OF GENTRIFICATION AND DISPLACEMENT RISKS IN CHICAGO

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Individual Paper Presentation

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Amongst many forms of neighborhood change, gentrification continues to capture global attention. Recent research often attributes contemporary gentrification drivers to the distinct lifestyle and locational preference of young generations and transit-oriented development (TOD) around major public transit systems. Ironically, despite the broad focus on describing the gentrification phenomenon, its drivers, and its impacts, the research on spatial and temporal dimensions of gentrification and displacement risks remain relatively understudied.

In this study using the Chicago metropolitan region as our study area, we investigate how a gap between housing price and socioeconomic status of residents in a neighborhood predicts the risk of gentrification and displacement and identify how these risks develop over time. The primary data for this study comes from the 2000 Census and annual ACS surveys, and Data Axle Consumer Database. Data Axle is a unique proprietary dataset that records longitudinal geographical location and demographic information of 155 million households nationwide and we analyze about 50 million data points for the Chicago area from 2006 to 2019. Unlike the repeated cross-sectional data typically used in gentrification research, these are panel data which offer many advantages for studying the spatial and temporal patterns of relocations of households that are displaced from gentrifying neighborhoods.

We perform a series of data analyses. First, we identify neighborhoods (proxied by census tracts) at risk of gentrification where the percentile rank of median income rose significantly above housing price percentile by 2000, the base year of this study. While many recent studies develop indicators of gentrification risk using a mix of demographic, socioeconomic, and housing price variables presenting both current neighborhood conditions and changes (Chapple et al. 2017; Preis et al. 2021), Bunten et al. (2024) focused instead on the gap between housing price and income percentiles – an important signal which we adopt for this research. We try several thresholds of income/housing price gaps (i.e., 20, 25, 30 percentile gaps) to identify census tracts at risk among low-income

neighborhoods that are within bottom 40 percentiles in Neighborhood Change Index (NCI). We developed a census tract level NCI by running a principal component analysis (PCA) for each year from 2000 to 2019, based on percent Non-Hispanic White, percentage college educated, median household income, and percent households below the poverty line.

Second, we examine how well the income/housing price gaps predict census tract level gentrification in the next 17-year period. We define the bottom 40% tracts, as determined by the 2000 NCI, as potentially gentrifiable. Among the bottom four deciles, census tracts that experienced a substantial socio-economic upgrade—ascending by two deciles or more by 2017—were defined as gentrifying/gentrified. Then, we analyze what percent of the tracts identified as at-risk as of 2000 actually experienced gentrification in subsequent years. We also conduct a tract level survival analysis, using a Cox proportional hazards model, to estimate how many years it takes for the neighborhoods at risk to end up gentrified.

Finally, we investigate how displacement risks of low-income households develop over time since the onset of gentrification identified by the housing price to income percentile ratio. We employ a household level Cox proportional hazards model, using the data for low-income households' moves out of gentrifying neighborhoods that are extracted from Axle Consumer Database. Beyond tracking how displacement risks evolve over time, we can also examine if there are tipping points (thresholds) in neighborhood change (Galster, Quercia, and Cortes 2000). In addition, we can also investigate the role of affordable housing policies in lowering and delaying the risks of displacement.

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Keywords: gentrification, displacement, survival analysis, Chicago

SPECULATIVE INVESTMENT IN THE WAKE OF DISASTER

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Individual Paper Presentation

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This project looks at the relationship between social change, disaster exposure, and the financialization of the single-family housing market. It draws from three key areas of literature: climatology and environmental science, which demonstrate the increasing risk of severe flooding in the United States due to climate change and development; housing literature, which examines the growing role of investors in the residential housing market; and the recovery machine framework, which reveals that post-disaster investments can worsen existing inequalities.

In this analysis, we ask: what role does speculative investment play in neighborhood change following a disaster event? To explore this, we focus on the case of Hurricane Harvey's impact in Harris County, TX. In August 2017, Hurricane Harvey struck the Gulf Coast, causing significant damage to over 300,000 homes due to flooding. Reporting in the aftermath of the storm identified several real estate investment groups who used the hurricane as an investment opportunity analogous to the 2008 housing crash: per reporting, these groups bought thousands of homes at discounted prices, intending to make minor repairs and sell them quickly as the market recovered. These efforts were identified by Harris County officials managing housing buyout programs as being detrimental to their ongoing mitigation efforts.

To address this question, we compiled various publicly available data sources. This includes longitudinal housing data from the Harris County Appraisal District, which provides detailed information on each housing unit, and flood hindcast models to assess disaster exposure. Additionally, we used ACS 5-year data from 2012-2016 for a pre-disaster baseline. Our completed dataset includes more than one-million single-family homes with annual data from 2016-2022. Using the ownership information, we determined which homes changed ownership in the aftermath of Hurricane Harvey, which were sold to corporations, and the race and ethnicity of the sellers.

We are using a multi-level binary regression to understand who sold their properties in the aftermath of Hurricane Harvey, and, more specifically, who sold their properties to a real estate investor. Our preliminary results indicates that white residents living in Hispanic neighborhoods were more likely to sell their properties to companies compared to white residents in other neighborhoods or other residents within Hispanic neighborhoods. This finding aligns with work by Loughran and Elliott (2019), which studied migration patterns of housing buyout participants and found that white residents within Hispanic neighborhoods were more likely to leave their neighborhood and move to a whiter community.

A forthcoming analysis will additionally explore the relationship between commercial companies purchasing homes, and subsequent neighborhood turnover. This will be discussed in the context of the established relationship between disaster exposure and increasing conditions of inequality, and the ongoing affordable housing crises. It will also consider the implications for mitigation activities that are hindered by the activity of real estate investors. The paper will conclude with recommendations for potential policy solutions.

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Keywords: post-disaster recovery, neighborhood change, single-family housing, hurricanes, real estate investment

SUBSIDIZING THE MIDDLE: ADDRESSING MIDDLE-INCOME AFFORDABILITY CHALLENGES

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Individual Paper Presentation

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Housing affordability in the US has deteriorated significantly over the last several decades, accelerating rapidly since the start of the pandemic. Indeed, the number of cost burdened renters reached a record high 22.4 million in 2022, an increase of 2 million households since 2019 (JCHS 2024). While affordability has worsened up and down the income scale, cost burdens have increased most for middle-income renters. In response to these growing challenges, state and local governments have passed a growing number of “workforce” and middle-income housing programs and policies, including statewide programs in Michigan, Colorado, and Georgia.

Despite rising popularity, these programs have not gained acceptance from housing advocates. Affordability challenges remain especially acute among lower-income households (NLIHC 2024). Moreover, the concept of workforce housing is highly problematic. At its core, the term is inaccurate, implying that lower-income households do not work. Tying affordability programs to work also further evokes distinctions in US social welfare policy between the deserving and undeserving poor. For example, SNAP and TANF benefits are conditional on meeting minimum work requirements and proposals have been raised to expand work requirements to other programs (Hahn et al. 2017). Workforce housing policies also play off the racialized stigma of affordable housing programs (Tighe 2012).

Despite these criticisms, middle-income housing programs have become more prevalent. Given this reality, planners should consider what these programs are intended to do, what the potential benefits are, who they serve, and the policy tradeoffs that might occur if we prioritize addressing middle-income rental affordability. In this paper, we ask:

- What state and local middle-income housing programs exist to support the housing needs of middle-income renter households? What are the characteristics of these programs and who do they intend to serve?

- What are the affordability challenges of households typically eligible for middle-income housing programs? How do affordability challenges vary geographically?

• What are the characteristics of middle-income renters with cost burdens? How do they differ from lower-income households?

To address these questions, we examine 11 middle-income and workforce housing programs in the US. We find state and local middle-income housing programs have become increasingly prevalent since the pandemic and exist in geographically and politically diverse states. These programs focus on expanding the supply of middle-income housing, though the means, mechanisms, and requirements for developers and localities vary greatly. While most programs encourage private development and ownership of middle-income housing, especially in rural or difficult to develop areas, a few—notably in California and Colorado—expressly encourage or enable public ownership and operation of middle-income housing. Though the exact range varies, nearly every program requires middle-income rental housing to be kept affordable to households based on the area median income, rather than some occupation or employment requirement.

We also empirically analyze, using data from the American Community Survey, the affordability challenges and characteristics of middle-income renters. Operationalizing one common definition of middle income, we find that 32 percent of renters earning 60 to 120 percent of area median income had cost burdens, a rate substantially below their lower-income counterparts. Burdened middle-income households also have fewer economic vulnerabilities with higher levels of education, more potential income earners in the household, and a lower likelihood of being an older adult compared to lower-income renters. These households are also disproportionately white, which raises concerns about reinforcing racial inequities. Taken together, these results suggest that planners and policymakers should design middle-income programs in a way that does not stigmatize lower-income households or reduce spending on lower-income households with the greatest need.

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Keywords: Housing, Rental housing, Housing affordability, Housing policy

SUPPORTING AFFORDABLE HOUSING THROUGH PREDEVELOPMENT REVOLVING LOAN FUNDS

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Individual Paper Presentation

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Planning Issue

A typical housing development follows three stages: predevelopment, construction, and post-construction. Several public housing finance programs focus on the construction stage, for example, the federal and state tax credit and project-based housing choice voucher programs. The large majority of affordable housing finance literature also focuses on these programs (for example, see Ahrentzen et al., 2022). However, the developers typically have to self-fund predevelopment activities that include site identification, site control, legal fees, financial applications (such as tax credit applications), market feasibility analysis, and building design and permits.

While essential to the development process, predevelopment activities are difficult to finance due to the chance that the project will not come to fruition. The risk increases if the real estate product type is new to the market–for example, an affordable, mixed-use transit-oriented development–or the site needs in-depth due diligence (for example, a brownfield infill site).

Predevelopment revolving loan funds (PDRLFs)—pools of money from which the loans are made to fund predevelopment activities and to which loan repayments flow in—are critical for producing, preserving, and rehabilitating housing because they fill a niche—high-risk funding for predevelopment activities—that is often neglected by traditional lenders and banks (Benjamin, Rubin & Zielenbach, 2016; Jenkens, Carder & Maher, 2004). These funds are especially important for non-profit affordable housing developers who have little real estate experience and/or capital (Navarro & Goodwin, 2002). They are also attractive because they are self-renewing (Mikesell & Wallace, 1996).

While there is a need to support predevelopment activities (especially to fund affordable housing), and PDRLFs are one critical way to provide this support, very little research exists on housing-focused PDRLFs. This paper aims to begin filling this research gap by better understanding their structure, the challenges they face, and how they can be strengthened.

Methodology

This study answers two research questions through a review of extant literature, in-depth case studies of several housing and small-business-focused revolving loan funds, and interviews of real estate developers and housing finance experts. First, what are the key features of housing-focused PDRLFs? Second, what challenges do PDRLFs face, and how can they be strengthened?

Findings

Four main findings emerge. First, state and federal governments should play an important role in funding PDRLFs by providing seed capital and by recapitalizing PDRLFs. Second, often, small, minority, and community- and mission-based developers need predevelopment loans the most. However, they may be unaware of such loan programs and not have the institutional and technical capacity to apply for the loans. Therefore, PDRLFs need to be proactively marketed to such developers. Furthermore, the developers-applicants need to be supported throughout the application process. Third, lenders gain efficiency by making large loans as quickly as possible. However, predevelopment loans are likely not large, and the loan applications may not be able to meet rigid, standardized underwriting criteria. Hence PDRLFs need to be flexible to meet the needs of the target loan recipients. Finally, predevelopment needs to be viewed in the context of the entire housing finance process. Predevelopment is the first of the three stages of the affordable housing finance process, with the other two being construction financing and permanent financing. Hence all three housing finance stages need to work well together.

Relevance and implications for planning scholarship and practice

By examining the use of PDLRFs to fund housing, this paper contributes to the literature on this little-known housing finance tool and, more broadly, housing development and finance. Specifically, as stakeholders across all levels—local to federal—explore ways to fund housing, this research will help them make better-informed decisions.

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Keywords: Housing, Affordable Housing, Housing Finance, Housing Policy, Real Estate Development

TEMPORAL DELUSIONS IN NARRATIVES RELATED TO THE HOUSING CRISIS

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Individual Paper Presentation

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Portrayal of change over time is among the core elements of any public narrative about urban challenges, yet it may be the least understood component. Planners often overlook how the latent temporal structure of narratives diagnose urban problems and frame an implicit set of solutions. A "temporal delusion" is a narrative that conflates multiple dimensions of time onto one, forming a one-sided interpretation that distorts representations of the social phenomena it seeks to describe. This conflation can be either unintended or a deliberate tactic. Case studies of data-driven narratives about urban problems will demonstrate how planners can deconstruct temporal delusions and build alternate narratives that shed greater light.

Tools for temporal thinking can aid planners in engaging and recasting popular narratives about urban problems. The temporal assumptions of "facts" that fuel popular narratives should not be taken for granted. Each case of a temporal delusion also presents a practical technique for insightful temporal analysis. Planners need analytical and communicative tools to ground analyses of change in the underlying dynamics and better compete for public understanding.

Popular narratives about the "housing crisis" illustrate how temporal delusions contribute to the misdiagnosis of urban problems. One popular narrative concerns the role of high housing prices in the so-called "California Exodus." A second narrative pertains to the declining homeownership rate and the implied abandonment of homeownership. The third pertains to debates over the progress of Millennials in the housing market, which highlight biased claims about generational change.

Our first temporal framework is the time-honored model of stock and flows. Net change in a population group stems from inflows minus outflows. Projecting partial explanations onto figures of "net change" conceals inflow and outflow behaviors that drive change. Using the annual American Community Survey (ACS) from 2006 to 2022, we apply a stock and flows analysis to claims about the "California Exodus." Renters keep arriving at a steady rate, while outflows escalated of households becoming homeowners after leaving the state.

Each case also includes an historic time framing that is based on the economic cycle of housing. Peaks and troughs of the strongly volatile post-2000 economy are period effects that shape housing and population dynamics. Conventional planning analysis simply references decades that begin and end on a decennial census year. Selecting when a story begins and ends can frame a "trend" as unprecedented: Extending the time period back to 2006 shows that the exodus of California homeowners was even greater during the 2006 economic peak than in recent peak years, suggesting a regularity of out-migration during economic peaks with sharp rises in housing prices.

We then turn to the alarmist narrative surrounding the declining homeownership rates, a nationwide occurrence since 2005. Unrecognized is that the current homeownership rate represents accumulation over past years, so it is a structurally lagged indicator. Though the homebuying rate rose year-over-year after 2011, the homeownership rate kept falling, not reflecting rising preferences until 5 years after homebuying turned up. The lagged indicator anchored a pessimistic viral narrative that painted "abandonment of homeownership" as reflecting declining preferences and discouraged institutional response.

In sum, "California Exodus" spotlights steady inflows arriving as renters, while periodic price booms shed homeowners. The second case demonstrates how the homeownership rate functions as a structurally lagged indicator that obscures recent trends and misdirects policy. The final case to be addressed combines the aforementioned delusions with a cohort-based analysis to revisit impacts of the Millennial generation, highlighting how the entrance of much larger cohorts into the housing market are an invisible and powerful demographic force.

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Keywords: Change Over Time, Public Narrative, Housing Crisis, Homeownership

THE EFFECT OF SEGREGATION ON HOUSING PREMIUMS FROM 1990 TO 2020

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Individual Paper Presentation

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Urban areas often exhibit distinct residential geographic patterns within a given metropolitan area, reflecting specific racial, ethnic, and socio-economic characteristics. These patterns, largely shaped by past planning interventions and historical disparities, underscore the unique nature of each urban area (Grigoryeva & Ruef, 2015). The uneven distribution of population groups within these areas is often a defining feature, mirroring income disparities and the preferences of individuals or specific racial groups in select neighborhoods (Brasington, Hite, & Jauregui, 2015). This uneven distribution exacerbates socioeconomic disparities by concentrating impoverished residents, heightening racial barriers, and limiting opportunities for interracial integration. Consequently, this not only impedes individual well-being but also perpetuates political inequality (Massey & Denton, 2019). Despite extensive research on urban segregation, there has been a notable lack of scholarly attention in massively depopulating, or shrinking, cities within discussions on urban segregation (Freixas & Abbott, 2019). These cities, often grappling with demographic and economic decline, present unique challenges that require deeper exploration related to the subject.

To address this gap, this study examines the dynamic relationships between housing transactions and resident distribution within Cleveland, OH, a shrinking city. The focus is on exploring the influence of racial segregation on housing prices within this context. Property sale data spanning from 1986 to 2021 are collected from the Northeast Ohio Community and Neighborhood Data for Organizing (NEOCANDO). The data from 1986 to 1995 is categorized as 1990, while the period from 1996 to 2005 is identified as 2000. Similarly, the timeframe spanning 2006 to 2015 is denoted as 2010, and the data for the years 2016 to 2021 is specified as 2020.

Housing characteristics are extracted from the dataset and utilized as independent variables. The dataset also incorporates information on the proximity of various amenities and dis-amenities. Socioeconomic and neighborhood data at the block group level of 1990, 2000, 2010, and 2020 are also obtained from US census data. The study classifies income groups based on quartiles and employs local segregation indices based on ethnic groups. These indices include the spatial entropy-based diversity index for the Even-Cluster dimension and the local spatial isolation index for Isolation-Exposure assessment (Oka & Wong, 2014). Segregation indices are calculated by aggregating populations of contiguous block groups and combining them with the reference block group to assess local segregation patterns.

The results reveal that segregation significantly impacts housing transaction prices across different years and neighborhood income levels. Specifically, higher diversity is associated with decreased house transaction prices,

particularly notable when certain minority groups are more isolated. The impact of diversity on house prices fluctuates over time, while isolation shows an increasing trend, diversity reaches its lowest point in 2020. However, contrasting trends emerge among lower-income neighborhoods; in 2020, diversity loses significance, whereas in 2010, higher diversity correlates positively with elevated house prices. These findings offer valuable insights for urban regeneration plans and the identification of areas grappling with spatial inequalities and vacant land issues, contributing to a more comprehensive understanding of the intricate dynamics involved in addressing housing inequality and racial segregation in these specific contexts.

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Keywords: Racial diversity, Local Segregation, Housing price, Shrinking city, Socioeconomic dynamics

THE EFFECTS OF NEIGHBORHOOD REDEVELOPMENT ON HOUSING MARKETS AND BEYOND

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Individual Paper Presentation

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Many advocates considered place-based housing policy a remedy for urban decay (Katz & Nowak, 2017), while skeptics questioned the overall effectiveness of place-based interventions, pointing to significant heterogeneity in the long-term success across programs and locations (Neumark & Simpson, 2015). This paper presents the first national-level study investigating the housing market effect of Housing Opportunities for People Everywhere Programs (HOPE VI), the largest federal investment in public housing revitalization. I compiled a unique dataset on a national sample of HOPE VI Revitalization Programs, drawing from various administrative data and the decennial census. To identify the causal effect of the redevelopment, I proposed a stratified version of the synthetic difference-in-difference method introduced by Arkhangelsky et al. (2021). This novel approach constructs synthetic control units for each treated unit using control candidates from the same county. It relaxes the assumption of parallel trends in the classic event study framework and accounts for unobserved region-specific characteristics. The paper found that the housing values and rents in the redeveloped neighborhoods increased by 9 and 12 percent, respectively. There were significant spatial spillovers of the price effects to nearby neighborhoods. The effect on housing values and rents varied by program scales and initial neighborhood characteristics, as poorer, more racially diverse, and more centrally-located neighborhoods experienced more considerable benefits from the investments. Moreover, the price effect was driven by a 6.5 percent increase in median household income and

significantly higher shares of new and low-density units. The redeveloped neighborhoods also experienced lower poverty rates and higher racial diversity. A back-of-the-envelope analysis revealed that a substantial share of these effects could be explained by the programs' mechanically displacing public housing residents and replacing public housing with market-rate and affordable units.

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Keywords: neighborhood redevelopment, housing market, public housing, policy evaluation

THE HISPANIC HOMEOWNERSHIP GAP AMONG DIFFERENT HISPANIC ENCLAVES IN THE US

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Individual Paper Presentation

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Homeownership in the United States is and has been considered a pathway to wealth accumulation (NAHREP, 2020; Strochak, Young, and McCargo, 2019). Homeownership rates are often used as an economic indicator to represent upward economic mobility. These rates among different ethnoracial groups often reveal substantial homeownership rate disparities among races in the United States. The disparity of homeownership rates between two ethnoracial groups is commonly referred to as a homeownership gap. Homeownership gaps between race groups often indicate financial and demographic disparities between those respective groups (Haurin et al., 2007; Cortes et al., 2007).

Previously, the primary focus of this literature was the white and African-American homeownership gap (Sanchez-Moyano, 2020). Recently, literature regarding homeownership gaps has expanded to include the rising homeownership growth of Hispanics and Asians. Recent interest in the Hispanic homeownership gap can be partially attributed to the population and household growth of Hispanics in the United States. McCue and Herbert (2016), project Hispanic households will increase to approximately 20 million by 2025. Perhaps the most important recent phenomenon is the recent Hispanic migration to communities in the United States that have previously had low concentration of Hispanic households. Hispanic migration in the 1980s was primarily concentrated in gateway cities such as Los Angeles; Chicago; Miami; and New York (Frey, 2018). This trend has now shifted to states or

metropolitan areas such as Atlanta. The current areas reflecting significant Hispanic population growth include locations where prior Hispanic presence was not significant (Frey, 2018; Massey and Capoferro, 2008).

In this study, we will pay close attention to the Hispanic homeownership gap. Specifically, the difference between white and Hispanic homeownership rates. We will pay special attention on investigating how the Hispanic homeownership gap differs among different Hispanic enclaves in the United States. One surprising piece of data is that the Hispanic homeownership gap has been shrinking in California, even though housing prices are far higher in California than in the nation as a whole. Does this indicate that Hispanics are faring better in achieving homeownership in California in comparison to other Hispanics enclaves from other states in the United States?

This paper investigates the logic of using homeownership gap indicators; explores different variations of the Hispanic homeownership gap definition, specifically when analyzing the gap by Hispanic origin; and investigates trends following nonoverlapping 5-year files of the American Community Survey (ACS) between 2007 and 2022 (Myers and Flores Moctezuma, 2020). Specifically, by utilizing “Integrated Public Use Microdata Series” (IPUMS) data that allows a fine-grained comparison analysis of the Hispanic homeownership gap among different Hispanic enclaves in the United States and California. A close examination is needed regarding the achievement of Hispanic homeownership among different states. In recent years, there has been an influx of Hispanic cohorts to states not traditionally considered home to Hispanic populations. By drawing state comparisons, we find that recent trends can help explain not only differences among Hispanic homeowners but also how trends over the past 15 years can lead to the implementation of favorable policies that promote homeownership for all ethnoracial groups.

Accordingly, to draw proper interpretations of the Hispanic homeownership gap, we must examine the geographic similarity or exceptionality by comparing Hispanic enclaves in a specific place with the average status for a broader geographic reference area (e.g., comparison among states) (Myers and Flores Moctezuma, 2020). This finding leads to new consideration of the meaning of homeownership gaps as an indicator of inequality.

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Keywords: Hispanic Homeownership Gap, Hispanic Homeownership, Hispanic Enclaves, Hispanic origin, Housing trends

THE HOUSING COSTS OF ACTIVE TRANSPORT AND PUBLIC TRANSIT USERS

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Individual Paper Presentation

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Planning practice in the global north is increasingly promoting higher density urban development in part to facilitate more sustainable commuting modes such as public transit, cycling, and walking that rely on density of the built form. However, in a context of reduced government involvement in subsidized housing provision, higher density developments have become associated with expensive housing, and elements of gentrification (Moos et al., 2018).

The aim of this study is to document the housing cost of active transport and public transit users as compared to automobile drivers, using Canada's three largest metropolitan areas as a case study: Toronto, Montreal, and Vancouver. We use the most recent 2021 Statistics Canada census data. We ask 'what is actually paid for housing by people with different commute modes' and 'do these differences point to potential for exclusion by ability to pay'.

The literature already has documented the importance, variations and characteristics of density, active transport and public transit on sustainability outcomes (Rice et al., 2020). However, it is imperative for sustainability outcomes from an equity perspective that planning research specifically highlights who has proximate access to active and public transit via the structuring forces of the housing market. This paper contributes to this in a novel way through a statistical analysis of actual housing costs and housing affordability of active transport and transit users.

Our methods include a) direct measurement of the impact of transit infrastructure, bike lanes, or walkability on housing values or rents using multivariate statistical methods; b) documenting gentrification specifically linked to transit and other urban sustainability initiatives, now often referred to as eco-gentrification; and c) examining the changing demographic composition of transit-oriented and other high-density neighbourhoods.

We find that public transit users, cyclists and walkers pay higher housing costs than car commuters, but that these findings are highly variable depending on context. The potential for exclusion from locations suitable for alternative commute modes are associated with age, household structure, ethnicity/race, and social class, and their intersections.

Prior research is not conclusive to what extent active transport and public transit may be capitalized into housing values across all contexts, nor is it clear to what extent housing costs in accessible locations may be prohibitive to lower income households from an affordability perspective (Mathur, 2023; Chernobai & Ma, 2022; Hopkins, 2018). Our study thus fills an important research gap at the intersection of urban sustainability, housing affordability, and commuting research in that it directly estimates and critically analyses higher housing costs for several different commute modes using a consistent data set; and documents the characteristics of the population able to afford these types of costs and of those who are excluded by the workings of the housing market.

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Keywords: Housing, Affordability, Sustainability, Commuting, Equity

THE IMPACTS OF HOUSING TENURE MIX ON THE SOCIAL CAPITAL IN SEOUL

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Individual Paper Presentation

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Introduction: Over the past 30 years, various types of public rental housing have been provided to release housing shortage problems for low-income families and stabilize the housing market in South Korea. Despite the policy achievements in the supply of public rental housing, residents in low-income dwellings were exposed to social exclusion, mostly stemming from the stigma associated with negative stereotypes and the discrimination perpetuated by restricted access to neighborhoods. Such social challenges prompted the need for implementing mixed-tenure housing complexes which include public housing renters and private housing owners as a widely adopted form of social mix in residential development. However, previous findings about the effect of tenure mix housing on residents' social capital have shown to be inconsistent in part due to the limitation of true tenure mixing and the lack of longitudinal study design. We focus on the conflicts between private and public housing residents and examine the effects of tenure mix on social capital of public rental housing residents.

Methods: This study used panel survey data from the years 2017 and 2019, collected from in-home interviews of residents in public rental housing. The surveys started with 3,009 sample households by using two-stage stratified random sampling from the sample frame of 183,215 households located across the 25 administrative units called gu (comparable to borough in New York) in Seoul. After excluding invalid samples, we obtained the complete set of observations with the balanced panel samples of 2,249 for each of 2017 and 2019. Social capital was measured by aggregating six items across three domains: interaction, trust, and norm. Tenure mix was measured as the binary (1 for residing in mixed tenure housing and 0 for not) and the categorical variables, considering the presence of conflict with private housing residents (2 for residing in mixed tenure housing without conflict, 1 for residing in mixed tenure housing with conflict, and 0 for not). Covariates included individual and household characteristics (e.g. gender, marital status, occupational status, education level, and income), experiences of discrimination, and satisfaction with the residential environment. Several panel models (random-effect, fixed-effect, and difference-in-difference models) were used to estimate the effects of tenure mix and conflict with private housing residents on social capital of public rental housing residents.

Findings: Among the individual characteristics of residents, discrimination and residential environment satisfaction were found to be significant. The tenure mix was significant, but the presence of conflict showed a negative impact on social capital. The findings highlight the need for effective housing tenure mix policies to enhance residents' social capital.

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Keywords: social mix, housing tenure mix, social capital, public rental housing

THE ROLE OF HOMEOWNERS ASSOCIATIONS IN THE SINGLE-FAMILY RENTAL MARKET

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Individual Paper Presentation

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Single family homes are a significant share of the rental market. Various actors, including large institutional investors (Seymour, Shelton, Sherman, and Akers, 2023) as well as small 'mom and pop' landlords, own and rent out these single-family homes. There are a range of landlords involved in the single-family rental market (Harrison, Immergluck, and Walker, 2024). We begin this study by identifying the varied actors who rent out single-family homes in Franklin County, Ohio, with a particular focus on identifying corporate institutional investors. For this purpose, we examine Franklin County tax assessment data utilizing Open Refine (see An et al., 2024). We then consider the geographic location of single-family rentals (SFRs) and their ownership structure to determine if institutional investor activity in the single-family rental market is influenced by homeowner associations (HOA) and their regulations. Using a discontinuity regression model, we find that institutional investors avoid purchasing homes to rent if these homes are located inside homeowner association boundaries. In fact, according to our model results, SFRs owned by corporate landlords are much more likely to be in neighborhoods similar to those with HOAs but without this private governance structure. Thus far in the literature, there has been little research on the role of HOAs in patterns of SFR locations and those rentals owned by institutional investors.

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Keywords: Single Family Rentals, Homeowner Associations, Landlords, Institutional Investors, Rental Housing

TOC AFFORDABLE HOUSING INCENTIVE PROGRAM: A NEW "PARADIGM" FOR ETOD?

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Individual Paper Presentation

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Many municipalities across California are grappling with a housing shortage, particularly affordable housing, which has led to the state experiencing the highest rate of housing cost increases nationwide. California, on the other hand, is under pressure to meet ambitious greenhouse gas reduction objectives in the foreseeable future. Low-income households, the most transit-dependent population, have suffered disproportionally from housing affordability and climate change crises. Some researchers and policymakers have resorted to transit-oriented development (TOD)—higher-density and mixed-use development near mass transit choices such as rail and bus—as a means of addressing both challenges (Boarnet et al., 2017). The integration of affordable housing and transit investment has been considered a critical approach to facilitating equitable outcomes in TODs (Guthrie & Fan, 2016). Producing and preserving affordable housing may contribute to mitigating the unintended consequences of displacement and gentrification that are frequently associated with TODs. However, researchers have revealed a loss of affordable housing units in transit-served neighborhoods in Los Angeles over time (Chapple & Loukaitou-Sideris, 2019). Furthermore, others highlight the significance of policy evaluation in policymaking to further encourage innovative local policies (Mettler & Sorelle, 2018).

In light of these concerns and gaps, I focus on the Transit-Oriented Communities Affordable Housing Incentive Program (TOC Program) adopted by the City of Los Angeles. Adopted in 2017, the TOC Program allows for additional density in projects located near major transit stations if a developer agrees to incorporate a certain percentage of deed-restricted affordable housing as part of the project. It also provides options for developers to apply for a ministerial review and benefit from an expedited permitting process if they only utilize basic incentives, such as an increased allowable number of units and reduced parking requirements (City of Los Angeles, 2017). I examine the extent to which the TOC Program promotes affordable housing production and advances equitable outcomes near transit. To assess the efficacy of the TOC Program, I employ a mixed-method approach that integrates quantitative data analyses as well as qualitative interviews. Quantitatively, I analyze the spatial distribution of TOC projects and compare the characteristics of communities with and without TOC projects using Student's t-tests. Qualitatively, to reveal the major themes and attitudes towards the program, I conduct in-depth and semi-structured interviews with three types of stakeholders: 1) senior planners from the city who are responsible for administrating the program; 2) private developers who have applied for housing development

under the TOC Program; and 3) community organizations that are located near TOC projects and advocate for equitable development, such as the East LA Community Corporation.

The study indicates that Transit Oriented Communities (TOC) projects are concentrated in communities with a higher proportion of non-White residents, higher poverty rates, increased population density, and a lower proportion of single-family detached homes. This suggests that these projects have the potential to address the needs of transit-dependent residents effectively. Interviews conducted for the study reveal that the TOC program has become the most effective tool for delivering both market-rate and affordable housing in the City of Los Angeles, surpassing density bonuses and zone changes in effectiveness. However, the program faces several challenges that could limit its full potential. For instance, some developers opt to downgrade their qualified TOC tiers and only seek basic incentives to avoid discretionary review processes. Additionally, financial feasibility poses the most significant concern for large-scale affordable housing developers. These findings not only help evaluate the program's efficacy and identify challenges but also offer valuable insights into the integration of affordable housing and transit investment to promote equitable TODs.

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Keywords: Transit-Oriented Communities, Affordable Housing, Los Angeles

TOD AND MOBILE HOME RESIDENCE: A CASE STUDY IN FORT WORTH, TEXAS

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Individual Paper Presentation

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Transit-oriented development (TOD) has proliferated in the U.S. as a tool for pursuing sustainable growth (Cervero, 2004). However, scholars and activists have also criticized TOD as a potential driver of displacement of low-income residents, as increased investment leads to rising land values (Rayle, 2015). The empirical evidence on whether TOD actually leads to displacement is mixed (Padeiro et al., 2019). Yet regardless of the empirical associations of

TOD with housing changes, community perceptions of it remain critical for planners and policymakers to assess. Apart from the equity concerns related to displacement, community residents represent the actual market for riders on which agencies hope to draw. Further, the perspectives of unique populations toward TOD and displacement – for example, residents of mobile homes – have not been well explored. As one of the last types of affordable housing, mobile homes have attracted the interest of housing scholars, including as sites where residents are especially vulnerable for displacement (Sullivan, 2018). Few scholars have addressed the intersection of issues related to mobile home residence, TOD, and displacement.

To close this gap in the literature, this paper examines a single disadvantaged mobile home community located in the City of Fort Worth. The city's comprehensive plan has designated the neighborhood a priority development zone for transit-oriented development. In this project, we conduct interviews and focus groups to examine the attitudes of mobile home residents toward TOD and zoning changes in their neighborhoods. The targeted neighborhood, whose land has become increasingly valuable due to the potential for increased development, is home to residents with limited alternative housing options. Some of the benefits of TOD – for example, more transit service, increased walkability, and access to new businesses and more housing stock – may prove attractive to mobile residents. However, current models of TODs may fail to meet the needs of this unique population. Our qualitative data collection helps evaluate whether this is true.

This research contributes to an emerging area of scholarship on housing affordability, transit-oriented development, and community perceptions of transportation planning processes. Transportation agencies have been criticized for their top-down approach in which they make investments and service changes with limited input from the community (Taylor & Morris, 2015). Because transit riders tend to be lower income than the average travelers, agencies may fail to incorporate the needs of the very people they predominantly serve. Understanding how mobile home residents view TODs, development, and displacement can inform equitable practices to increase access amidst sustainable growth policies.

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Keywords: transit-oriented development, mobile homes, displacement, transportation equity, comprehensive planning

TWO BIRDS WITH ONE STONE? SUBURBAN OFFICE-TO-MULTIFAMILY CONVERSION TRENDS

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Individual Paper Presentation

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This paper investigates the emerging trend of office-to-residential conversions in the United States and evaluates their economic and regulatory viability, with a particular focus on suburban locations and zoning considerations. The motivation behind this research arose from the increasing number of vacant office units in both urban and suburban locales (CBRE Research, 2023) in the U.S., and recent discussions within the Biden-Harris Administration regarding the potential use of commercial-to-residential conversion to address housing affordability issues and mitigate commercial vacancy challenges (The White House, 2023). Nevertheless, the conversion process is commonly associated with multiple challenges, including securing zoning and regulatory approvals, adapting existing infrastructure, addressing community resistance, and assessing financial feasibility (Lester & Sage-Computing, 2023). These hurdles are known to persist despite the anticipated benefits, such as alleviating housing shortages, fostering sustainable development (as the conversion is seen as more environmentally sustainable than new construction), potentially reducing commute times and promoting walkability (in case of mixed-use conversions), and revitalizing declining area (Gorey, 2023).

While interest in this topic is evident across local governments, planning agencies, and the real estate sector, existing discourse primarily centers on urban cores in such as New York City, Washington D.C., Philadelphia, Pittsburgh, Cleveland, and San Francisco. This focus overlooks the substantial challenges and opportunities present in suburban locations, particularly suburban office parks, which have also experienced heightened vacancy rates exacerbated by the shift to remote work since the pandemic (LaSalvia, Chen, & Luettke, 2024). To bridge this gap, this study conducts an analysis of nationwide suburban office conversion project data, aiming to examine their physical characteristics, locations, local/regional market dynamics, demographics, and most importantly, affordability implications. The initial assessment indicated that the range of housing units converted caters to limited income brackets. Utilizing Geographic Information Systems (GIS) tools and descriptive statistics, this research seeks to offer valuable insights and practical lessons for suburban municipalities, real estate developers, and local business and civic society groups considering office-to-multifamily conversion as a potential strategy for future (re)development to achieve the goals of addressing housing shortage/affordability and office vacancy in suburban areas.

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Keywords: Office-to-Residential Conversion, Suburban Development, Zoning Regulations, Housing Affordability, Commercial Vacancy

UNDERSTANDING GENTRIFICATION THROUGH ML – A CASE STUDY OF SALT LAKE CITY

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Individual Paper Presentation

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This study uses an innovative technique of machine learning to both explore and predict changes in socioeconomic status at the neighborhood level in Salt Lake County, Utah. Instead of defining and measuring the elusive phenomenon of gentrification by using single indicators this study uses Principal Component Analysis to combine the four most used measures of gentrification into one cohesive measure or index that describes the socioeconomic status of a given area, and when used over time shows changes in such status. While using single measures often leads to contradictory results where different areas are defined as gentrifying depending on which measure is used (Galster and Peacock, 1986), using a PCA derived indicator allows to capture the combined effect of multiple measures.

Machine learning has been adopted in gentrification studies very recently. Reades et al.'s (2019) study is a pioneering example and is the first well documented and published work on predicting gentrification using ML methodology. A handful of studies have been conducted and published since with some treating the process of gentrification at large and others investigating various specific aspects of gentrification, e.g., race and gentrification, exploring commercial gentrification using Instagram data (Reades et al., 2019; Thackway et al., 2023, Yee & Dennett, 2022). The main advantage of using ML over other conventional statistical methods commonly used in social sciences is that ML algorithms can tackle both ‘long’ and ‘wide’ datasets and are not impacted by intercorrelation between variables. In addition, ML based methods are less focused on causality and more on utility of findings (Reades et al., 2019).

A predictive model of socioeconomic changes at the neighborhood (Census tract) level requires two sets of variables – the variables used to build the socioeconomic status score (an indicator of gentrification; a PCA score) and the variables used to predict the score or changes in the score (predictor variables). The scores are calculated for each year and each Census tract in the county using Principal Component Analysis and four variables: median household income, median gross rent, the proportion of Latino population, the proportion of population with higher education. The algorithm modeling changes in the socioeconomic status scores (built using a random forest (RF) method) across the county Census tracts is trained and tested with 2011 and 2015 data, and then used to predict the socioeconomic scores for the year 2019. I used 36 predictor variables to train and tune the model. All

data was sourced from the American Community Survey of the U.S. Census Bureau. The scores calculated for year 2019 with actual data were checked against model predicted values and the Pearson correlation coefficient (r) between the actual and predicted values is 0.8063312. The scores show a progressive polarization of the county with the Latino population being over time pushed into the upper left quadrant of the county while other parts of the county experience continuous increases in rent cost and income levels and growing shares of residents with higher education.

In contrast to qualitative methods and conventional quantitative methods that both describe either past or present gentrification processes, machine learning can be used to also predict plausible future trends. When combined with displacement data, machine learning can become a powerful and highly useful tool in predicting future trends at the neighborhood level. This in turn would enable advance planning of appropriate response actions in anticipation of the changes and perhaps would even allow to limit the negative effects of gentrification and to reduce displacement.

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Keywords: gentrification, ML and gentrification, measuring gentrification, predicting gentrification

UNDERWRITING THE URBAN: HOW LENDERS INFLUENCE ARCHITECTURE AND URBAN DESIGN

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Individual Paper Presentation

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In the face of spiraling housing affordability crises in cities across North America, scholars, policymakers, and advocates have all increasingly identified the urban development process as a key site animating the politics of housing production. The funders behind urban development, however, have largely been excluded from direct qualitative research. Harvey (1975) highlights the role of financial intermediaries as essential, writing that the "production of the built environment involves processes of fixed capital formation which are 'mediated' through a structure of governmental and financial institutions" and that these "mediations have both general and highly localized impacts upon the urbanization process" (Harvey, 1975, p. 119). To investigate these localized impacts and address this gap in planning research, I conducted 18 semi-structured interviews with bank lenders, non-bank lenders, brokers, and multifamily developers. Through an urban planning lens, my findings demonstrate how

investors and lenders affect the site planning and development outcomes of market-rate multifamily housing, helping uncover the obscured forces of finance capital.

This research adds detail to housing financialization theory that recognizes how housing is becoming an instrument for global investment. Scholars have demonstrated that the demands of the finance sector directly influence the production of housing (Stevens, 2016) and that financial interests are leaders, not followers, when it comes to real estate development (Weber, 2015). In contrast to the conventional wisdom that builders simply respond to consumer demand, the findings of this research align with the conclusions of other scholars demonstrating how financiers have particular penchants for the built form of the products for which they hold debt or equity positions.

Scholars have also explored how lenders impose constraints on developers (Todes & Robinson, 2020) and how these constraints encourage homogenization of urban architecture (Gaudreau et al., 2020). In more than 20 hours of interviews, lenders share their views on a variety of topics including how the current system of housing finance and production results in a “cookie cutter” aesthetic, in the words of one lender, and buildings with “very little character” in the words of another. Discussions also touched on the dissonance between parking requirements (or lack thereof) of jurisdictions and the virtually universal demand for parking by financiers. Despite the insistence of bankers that parking be included to meet perceived tenant demand, one lender admitted “I've never heard of a bank doing a parking study or anything like that.”

On the developer side, complaints about the control of banks over their projects arose—with one multifamily developer saying banks will “do whatever they can to get as far into your shorts as possible so that they're making decisions even during construction.” In addition to banks, one developer said even equity partners can be “borderline stupid” and might hold political views on topics such as car ownership and biking that influence their opinion of project details.

And while scholars have shown that lenders and investors have influenced housing production in the past, most lenders interviewed generally objected to the idea that they directly impact a developer’s vision. With this in mind, a key finding of this research is the role of “lender liability,” or the concept that if lenders exert substantial influence of a debtor’s business venture, they could be held liable and face legal damages. With this moderating influence, deeper nuance is added to the theoretical understanding of the multi-stakeholder housing production process and the role of financial intermediaries in constructing the built environment.

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Keywords: Housing production, Housing investment, Housing financialization, Housing finance, Urban design

WHO OWNS MASSACHUSETTS?: A NEW TOOL FOR IDENTIFYING INSTITUTIONAL OWNERSHIP

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Individual Paper Presentation

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Central Theme

Institutional ownership of residential properties is a matter of urgent public interest, but one that is obfuscated by the difficulty of identifying shared ownership given the common practice of creating a different LLC for each property. This presents multiple problems: 1)) an organizing and regulatory problem, in that tenants attempting to organize (and cities trying to regulate the housing market) are limited by what can be discerned from public records; 2) a housing stability problem, in that institutional owners frequently use automated means of tenant and asking rent management and file evictions at greater rates; and 4) a data science problem, in that identifying the scale of shared ownership requires complex entity resolution approaches that are dependent on access to large, reliable datasets.

We will present a new web tool, Who Owns Massachusetts, (to be launched in late May 2024) that attempts to make discovery and analysis of corporate and institutional ownership possible throughout the Commonwealth. We will introduce the tool's functionality (including the ability to search for landlord and properties as well better understand associated eviction filing practices), novel datasets we are making available in building the tool (including a reprocessed set of statewide property records), and future directions for development and research (including the potential for extending the tool to better understand non-corporate forms of ownership, including individual, family, and real estate trusts).

Approach and Methodology

The tool was the result of a long development process with the Healthy Neighborhood Study at MIT DUSP, and built on the lead author's prior work deduplicating ownership in the context of a prior web tool, TenantPower.org. The tool makes extensive use of natural language processing (NLP) and social network analysis (SNA) methods to process statewide property records in Massachusetts. We collate the Commonwealth's parcels and assessor's tables databases with two additional datasets: a database of over 50,000 eviction filings, collected from the Commonwealth's court website, and the OpenCorporates database. We use social network analysis (specifically, greedy modularity optimization) to resolve property-owning entities on the basis of listed addresses, names, and management structures, yielding a database describing the frequently extensive portfolios of institutional owners in the Commonwealth.

We are making the results of this data available through a public-facing web application, built using MapBox, the Django Python framework, and the Svelte Javascript framework. We will share notes on the design process and demonstrate how we thought through the process of interaction design based on the feedback of Healthy Neighborhood Study partners, including tenants, advocates, and policymakers.

New Findings

The tools and datasets we are making available are novel for several reasons: to our knowledge, this is the first statewide tool for identifying institutional and corporate ownership. It is also the first to make its underlying derived and enriched datasets available to the broader research community. Finally, we are making details ownership information available that exceeds that of existing, similar tools, including information on corporate and legal form (LLC, family trust, non-profit) and eviction outcomes (e.g., detailing arrears, case outcomes and duration, legal representation).

Relevance

As outlined above, the tool is responding to an urgent problem: cities around the world are being treated as investment vehicles, and housing is being treated as an asset class. While this isn't new, exactly, it is intensifying. Particularly since COVID, real estate investment, asking prices, and asking rents have skyrocketed in coastal cities. Addressing this problem will require publicly available tools and datasets that go far beyond opening assessors records to the public to present measures of the scale of institutional ownership and the pressure it places on rental markets throughout the United States.

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Keywords: institutional ownership, rental housing, interactive maps, spatial data science, landlords

ZONING AND EXCLUSION: THE MEDIATING EFFECT OF NEIGHBORHOOD MORPHOLOGY

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Individual Paper Presentation

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In recent years, local land use regulations have been targeted as a potential policy solution for the nation’s housing crisis. Central in these national, state, and local calls to revise land use regulations is a recognition of the fact zoning has a variety of impacts on the overall supply, variability, and affordability of the U.S. housing stock, which, in turn,

impacts racial and economic segregation in U.S. metropolitan areas (Lens and Monkkonen, 2016; Rothwell and Massey, 2009; Stacy et al., 2023). The growing body of scholarship on density zoning is largely focused on two things: 1) examining the effects of regulatory changes on housing production and associated prices or affordability and 2) examining the relationship between density zoning and the creation or maintenance of income and racial segregation. One major gap in the literature is that despite the fact that density zoning and residential segregation are spatial phenomena, analyses of the link between the two are largely a-spatial. To the extent that there is an empirical link between zoning and residential segregation, and to the extent that it functions through impacts on housing supply, these impacts should be observable in the spatial patterns of development and thus in variation in neighborhood morphology. Some research already points in this direction: Durst, Sullivan, and Jochem (2023) use building footprints in five major metropolitan areas to demonstrate that neighborhood morphology is closely associated with the demographic and socioeconomic characteristics of neighborhoods. In this study, we examine the intermediary links between density zoning and residential segregation by analyzing the association between density zoning and both neighborhood morphology and the income and racial composition of municipalities. Specifically, we answer the following questions: 1) How does density zoning shape the spatial characteristics of development, as measured by neighborhood morphology? 2) Are differences in neighborhood morphology associated with variation in the income and racial composition of municipalities? 3) Does neighborhood morphology mediate the relationship between density zoning and the income and racial composition of municipalities? To answer these questions, we use two-dimensional building footprints to examine the neighborhood morphology across the 50 largest metropolitan areas. Specifically, we measure the size, shape, and placement of building footprints within each census block and use these morphometrics and unsupervised classification to develop a typology of neighborhoods. After describing the physical, socioeconomic, and demographic characteristics of these neighborhoods, we use regression analysis to examine the association between density zoning and neighborhood morphology. We then use mediation analysis to examine whether neighborhood morphology mediates the relationship between density zoning and the income and racial composition of municipalities. Our findings point toward neighborhood morphology, and in particular cookie-cutter suburban-style residential neighborhoods, as a key link in zoning's chain of exclusion.

Citations:

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Keywords: Zoning, Segregation, Neighborhood morphology

A COMMUNITY-PARTNERED APPROACH FOR AI PREDICTION OF HOUSING INSTABILITY

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Research-in-Motion (RiM)

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Communities along the Purple Line light rail corridor, currently being built in suburban Maryland outside Washington, D.C., are struggling with housing instability, in part due to gentrification spurred by this new transportation infrastructure (Finio, 2023, Peng & Knaap, 2023; Peng et al., 2023). Through our work with the Purple Line Corridor Coalition (PLCC), a multi-sector coalition including state and local governments, organizers, funders, service providers, and affordable housing developers, we have developed a new project to predict housing instability along the corridor so it can be addressed more proactively. The project uses novel data and tools, eventually including AI models, to fill a gap in granular understanding of threats to stability for tenants of individual buildings and units. While data from established sources, such as the National Housing Preservation Database, can help identify certain aspects of instability—namely, affordability restrictions for subsidized properties—they tend not to account for unsubsidized stock or precursors to eviction, such as poor building conditions, environmental threats, and filings. Further, data on units and their owners are often siloed or privatized, resulting in information asymmetries that leave advocates and tenants unaware of displacement risks (Hatch et al., 2023).
To address these shortfalls, our project aims to develop an operational framework using principles of data justice/feminism to predict instability at the level of individual buildings and units. We investigate how new data sources and analytic tools may be used to predict the likelihood of a resident being forced from their home. Better prediction will give residents and community partners foresight to more effectively implement countermeasures that are already at their disposal, such as rental assistance or rights-of-first-refusal to buy properties with affordable units. The operational challenge of predicting instability, however, is underpinned by a conceptual challenge in understanding what constitutes instability beyond overt indicators like eviction. What systemic factors contribute to unstable outcomes over multi-year time horizons? What different forms does instability take? How can instability, or preliminary indicators of it, be observed both qualitatively and quantitatively? How can qualitative indicators be appropriately integrated into scalable tools?

The project is groundbreaking on both organizational and technical fronts. First, it is founded in collaboration with community partners so that the research process is born out of grounded needs. It contends with the role of activism in scholarship and how researchers can work alongside diverse stakeholders who have overlapping agendas that include the policy mandates of public agencies, mission statements of advocacy organizations, and deeply personal motivations of residents. Second, the project uses a mixed-methods approach to improve

quantitative understanding of the complexity of housing instability and inform development data-scientific approaches, including AI models, that may help predict instability on a broad scale.

Our work so far has focused on parallel development of conceptual and technical frameworks to understand and account for instability. In dialogue with community partners, we are building conceptual maps to unpack what housing instability looks like from the everyday perspectives of residents and the more formalized terms of public agencies, courts, and real estate markets. We are also investigating how to collect, build, and connect data from diverse sources to identify instability at a granular level, including individual buildings and units. At the outset, this looks like a web of loosely connected sources which become progressively tightened and solidified with new types of data and multiple ways to connect them. Eventually, we aim to develop an enterprise database and AI tools that can scale predictions of instability beyond our initial focus on the Purple Line corridor.

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Key Words: housing instability, affordability, displacement, community-partnered research, AI

BUYING WHILE BLACK: BARRIERS TO BLACK HOMEOWNERSHIP

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Research-in-Motion (RiM)

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Homeownership is the primary means for households to accumulate wealth within our society, yet it remains out of reach for many Black Canadians. Data from the 2016 census clearly indicates that Black households continue to have the lowest probability of home ownership amongst racialized groups and that this gap is growing.
Research examining racial differences or the barriers to home ownership Black households' face remains largely limited in the Canadian context. It has been more than 20 years since research was conducted on racial inequities in the housing market in Canada. Joe Darden and Sameh M. Kamel (2000) investigated these issues in Toronto and although their research concluded that racial discrimination was a factor in homeownership rates between Black and White households, it did not explore or explain why Black homeownership in Canada was low.
However, until 2020, there has been little discussion about the low rates of Black homeownership. When this issue is highlighted, there is limited research that examines the connections between race and home-ownership or little

research into how housing policies or programs influence access to homeownership among Black households.

While there were earlier studies, pointing to the low rates of Black homeownership, they did not explore the stories behind the numbers or engage Black homebuyers to understand their experiences. The Buying While Black research moves beyond the numbers and seeks to uncover these stories to better understand what barriers may result in Black households having the lowest homeownership rates.

By exploring the factors influencing the low home ownership rate among Black Canadians, this study seeks to provide insight into the experiences of Black individuals in the home buying process and, importantly, position us to better address these issues once we understand these challenges.

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Key Words: housing, policy, mixed-methods, Black urbanism, systemic barriers

COMPARING THE IMPACTS OF SPECIALIZED INDUSTRIES ON HOUSING PRICES IN KOREA

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Research-in-Motion (RiM)

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South Korea is facing rapid increases in housing prices and residential instability due to job and industry concentration in the Seoul metropolitan region. The sharp rise in housing prices is one of the major factors that impair residential stability and housing affordability. Many studies have highlighted the regional imbalance of jobs and industries as a key factor in the increase in housing prices in the metropolitan regions. It is therefore crucial to identify factors affecting housing prices including industry and job variables.
This study aims to uncover the factors influencing housing prices in the Seoul metropolitan region and the other metropolitan cities including Busan, Daegu, Gwangju, Daejeon and Ulsan in Korea, focusing on the impact of regional specialized industries. Specialized industries are defined as those within a major industry category with a location quotient exceeding 1.25, and the quotients of specialized industries are recalculated using the number of employees working for the specialized industries in the region(Lee and Lim, 2021). To understand the disparity in the industrial impact between the regions, this research compares differences in the influence of specialized

industries on housing prices between the Seoul metropolitan region and the other metropolitan cities. Additionally, to analyze whether there is a difference in impact based on the type of industry, the study further compares the effects of the location quotients by major industry categories. Based on these findings, the study is expected to demonstrate that the rapid increase in housing prices in the Seoul metropolitan region is largely due to the imbalance of jobs and industries.

In this study, panel data analysis is employed to compare the factors influencing housing prices by region. Housing sale prices are set as the dependent variable, with the location quotients of specialized industries, as well as various indicators related to households, housing, transportation, education, culture, and the regional economy, set as independent variables. The panel data consists of annual data from 2011 to 2023, with the boroughs within the Seoul metropolitan region and the other metropolitan cities. Separate panel data sets are prepared for the Seoul metropolitan region and the other metropolitan cities. A fixed effects model is estimated, and standardized coefficients of explanatory variables are calculated to compare differences between the regions.

The results indicate that in both the Seoul metropolitan region and the other metropolitan cities, housing prices significantly increase as the location quotients of specialized industries rise. Furthermore, the location quotients of specialized industries have a more positive effect in the Seoul metropolitan region than in the other metropolitan cities. When standardized coefficients are compared, the impacts of the location quotients of specialized industries are less significant than the net migration rate, the number of households, housing stock, and per capita regional income. However, they are higher than those of other variables related to transportation, education, culture, and the regional economy. Comparing the impacts of specialized industries in the Seoul metropolitan region, finance and insurance, professional, scientific and technical services, and construction are identified as having a strong positive effects on housing prices, while in the other metropolitan cities, manufacturing, construction, and professional, scientific and technical services are identified as significant. Therefore, housing policies in metropolitan regions should be implemented considering regional industrial strategies, including the development of regional specialized industries.

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Key Words: Housing Price, Industrial Location Quotient, Panel Fixed Effect Model, Seoul Metropolitan Region, Metropolitan City

DETERMINANTS OF DISPLACED HOUSEHOLDS' DESIRE TO RETURN TO PARADISE, CA

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Research-in-Motion (RiM)

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In 2018, the town of Paradise was largely destroyed by the deadliest and most destructive wildfire in California history. Five years later, less than a third of the former residents of the burned area have returned. This work shares results of a survey of past and present Paradise residents conducted in Spring 2023, with a focus on how former residents' perceptions of why the wildfire happened influence their decisions surrounding rebuilding/relocating, their risk appetite, and their overall quality of life since the wildfire. Our team used household-level credit bureau data to obtain current addresses for over 8,000 households formerly in the fire footprint area, and collected 680 surveys from these households. Stated attitudes about climate-driven hazard risk as well as which entities bore blame for the Camp Fire disaster were strongly predictive of households' stated intent to return to Paradise 'under ideal circumstances' using various logistic regression specifications. Households which blamed environmental policies or logging practices for the fire, as opposed to climate change or local land use decisions, were significantly more likely to consider moving back to Paradise. These survey results suggest that future climate-driven events may disproportionaly affect households that are not currently factoring climate change in to their decision-making regarding residential location choices, even after living through a large wildfire driven at least in part by climate change effects.

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Key Words: wildfire, displacement, WUI, California

DO PROJECT VISION AND PUBLIC POLICIES MATTER FOR COMMUNITY DIVERSITY?

Abstract ID: 1110.0.0.647.2024
Research-in-Motion (RiM)

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The history of suburbanization in America is co-terminus with discrimination and segregation in the housing market, where homeowners, real estate industry professionals, and local governments worked hand-in-hand to prevent low-income households and racial and ethnic minorities from moving into affluent suburbs (Glotzer, 2020; Troustine, 2018). While the Fair Housing Act of 1968 outlawed explicit discrimination in the housing market, access to the wealthy suburbs was neither guaranteed nor welcomed (Davidoff et al., 1970). The rising popularity of gated communities, exclusionary zoning, and NIMBY-ism in the 1970s was a testament to the strong desire to keep suburban communities exclusive and protected from the infiltration of low-income and minority households.

However, there have also been moments of hope in the history of suburban community development. Existing research documented how visionary developers and the federal government have strived to create integrated communities, albeit with limited success (Forsyth, 2005). More recently, Kim and Lee (2023) reported suggestive evidence that developers of large-scale planned communities have become more open to building demographically and culturally diverse communities after the 1990s. These cases suggest that suburban communities can potentially be developed with diversity and inclusion in mind, which may have implications for the diversity and inclusiveness of suburban communities.

In this Research-in-Motion presentation, we report findings from analyzing 395 large-scale planned communities approved in the state of Florida between 1975 and 2012. The state's land planning agency was the central land use approval agency during this period, reviewing and approving all large-scale projects expected to have a "regional impact." We have established a database of all developments of regional impact that had a significant residential component, arriving at a total of 395 projects scattered throughout the state. We then reviewed and documented key elements of the original project applications including project vision, design, and target demographics. We also identified and digitized the geographic boundaries of the communities, which has allowed us to identify census block groups that correspond with the community boundaries.

Joining the above database with census data, we examine whether the original project vision and public policies are associated with the demographic and socioeconomic diversities of the households living in suburban planned communities. We compare the present-day characteristics of the communities using 2022 ACS data and further divide the communities into subgroups by their development vintage and compare communities at similar stages of buildout. Elements of the original project vision explored in this study include (1) the character of the proposed community as described by the developer, (2) the land use mix, (3) diversity in housing structure and types, and (4) target demographics and income levels. Public policies examined are (1) the 1992 revision of the state land planning agency's policy to include affordable housing needs assessment, (2) the creation of the state housing trust fund, which also took place in 1992, and (3) local inclusionary housing ordinances. This research will shed light on the factors that can strengthen the demographic and socioeconomic diversity of suburban communities, contributing to the longstanding literature and effort on lowering the entry barriers to high-opportunity suburban neighborhoods.

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Key Words: planned communities, suburbanization, diversity, housing, real estate development

EQUITY IN THE IMPLEMENTATION OF MARKET-BASED PUBLIC HOUSING REFORMS

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Research-in-Motion (RiM)

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In 2012, Congress authorized the Department of Housing & Urban Development to demonstrate a new way of addressing the backlog of physical capital repairs within the nation's public housing inventory. The Rental Assistance Demonstration (RAD) releases properties from the restrictive covenants of the Section 9 Low-Rent program, transfers them to individual Public Housing Authorities or various forms of public-private partnerships, and turns to the private market to obtain renovation financing. This is facilitated by re-packaging public housing Operating and Capital Fund annual contracts into long-term project-based Section 8 agreements. There is significant debate as to whether this constitutes outright "privatization" or the latest evolution in ways that the state turns to the private sector as a partner in delivering affordable housing that started as early as the 1960s (Vale & Freemark, 2012). Multiple proposals and policies from both parties have laid the groundwork for integrating public housing into the traditional real estate market (Hanlon, 2017).

As of April 2024, HUD's Resource Desk indicates that 15% of the over one million potential properties identified in 2012 have completed the RAD Conversion process, with another 24% in various stages of the conversion process. Researchers have studied the extent to which a "budget-neutral" initiative has consumed nearly one-fifth of Low-Income Housing Tax Credits that would have presumably been used to create and preserve other housing units (Schwartz & McClure, 2021). Researchers have also identified the significant adoption of the program by smaller and medium-sized Public Housing Authorities, the regional patterns of adoption, and the impacts of successful renovations on residents (Hayes et al., 2021).

Existing research has, however, overlooked a crucial aspect of the RAD policy: the question of spatial equity in its application. This is a significant consideration given the voluntary nature of its roll-out. The current research project, utilizing publicly available administrative data sets and multivariate regression analysis, aims to fill this gap and provide a fresh analytical perspective on the program's design and implementation. Are properties with the most significant physical repair needs chosen for participation in the program? How strong is the connection between investment in closed properties and their degree of physical need? Furthermore, does the

implementation of RAD reinforce prior patterns of uneven development? The importance of these questions cannot be overstated.

Planners must grapple with these questions due to the evident disparities in the success of previous market-based reforms to housing redevelopment (Khare, 2018). If the process of commodifying public housing to preserve the underlying physical assets worsens inequities, this line of research must be further pursued. In discussions about expanding the program cap to include the entire national public housing portfolio, caution will also be required.

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Key Words: Public housing reform, Public-private partnerships, Financialization, Rental Assistance Demonstration, Affordable housing

EXAMINING SEATTLE'S DENSITY BONUS FOR FAITH-BASED AFFORDABLE HOUSING

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Research-in-Motion (RiM)

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Religious organizations have had to adapt and evolve as the religious landscape changes in North America. In many cities, dwindling congregation sizes, dilapidated houses of worship and underutilized and expansive religious owned property coupled with the rising cost of housing and property values in large urban areas have led faith organizations to partner with municipalities, developers and non-profit organizations to build affordable housing on faith-owned property (Chaves and Eagle, 2016; Hackworth and Gullickson, 2013; Mian 2008). Policymakers on all levels of government have been exploring different policies, programs and legislation to combat some of the difficulties religious organizations face when doing a development project. To encourage the production of affordable housing, states and municipalities have eased development regulations and adopted development incentive tools. In October 2023, the State of California adopted SB4 which permits religious organizations to by-pass local zoning regulations to build affordable housing on their property. In December 2019, the City of San Diego changed the Land Use Development Code to allow religious organizations to build affordable housing on their

property by removing or reducing parking minimums depending on the location of the house of worship to transit priority areas. Washington D.C., New York City, Atlanta, Seattle, San Francisco and San Antonio have engaged with intermediary housing entities such as Enterprise Community Partners and Local Initiatives Support Corporation (LISC) to offer technical assistance programs for faith organizations pursuing an affordable housing development. Washington State also turned to faith organizations to increase the supply of affordable housing. In 2019, Washington State legislation HB1377 mandated faith organizations receive a density bonus for building 100% affordable housing on their property. Each municipality interpreted the legislation to suit the needs of their community. In 2021, the City of Seattle adopted the legislation after several revisions as Ordinance 126445. The purpose of this paper is to explore the number of faith-based affordable housing developments that are in the process of being built or have been constructed since the ordinance was passed. Ordinances focused on faith-based affordable housing construction are fairly recent and currently no studies have been conducted examining the new regulations.

Studies examining density bonus agreements have concentrated on the number of units produced as part of inclusive housing programs. In some instances, developers contributed funding to an affordable housing fund as opposed to building more units (Mah 2022). Other studies have focused on the locational pattern of units constructed using the density bonus incentive. Ryan and Enderle's (2012) study of California's density bonus agreement found that the policy did not foster socio-economic integration as units were constructed largely Hispanic and Black neighborhoods. Krimmel and Wang's study (2023) examined upzoning in Seattle's Mandatory Housing Affordability (MHA) program through a difference-in-difference analysis that compared upzoned areas with those that were not upzoned and found developers building more units in areas that were not part of the MHA program. Scholars have also examined the role of land value capture in density bonus agreements (Biggar and Friendly, 2023). Through interviews, content analysis examining land use development applications, and archival research, as well as GIS mapping showing where faith-based developments are being built, this research seeks to understand the decision-making process behind choosing to utilize the density bonus tool for faith-based affordable housing developments in Seattle and asks "Is the current density bonus tool a useful one for encouraging the production of affordable housing on faith property?" By examining the reasoning behind utilizing or not utilizing the tool, the efficacy of the density bonus tool can be debated. Understanding the decision-making process behind utilizing the incentive tool can help planners and policymakers craft ordinances that are effective for faith-based organizations who want to build affordable housing.

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Key Words: Affordable housing, Zoning, Housing policy, Density bonus, Land use policy

EXPLORING THE IMPACTS OF DISPROPORTIONATE PROPERTY TAX BURDEN

Abstract ID: 1110.0.0.448.2024
Research-in-Motion (RiM)

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Local governments in the United States rely heavily on property tax as their primary source of revenue. However, property tax can be a significant annual expense for homeowners, especially for lower-income households. Studies have found that lower-income households spend a higher percentage of their income on property taxes than wealthier households. Property tax assessments can also be regressive, with low-priced properties often being assessed at a higher value than high-priced ones. As a result, homeowners with less valuable properties, particularly low-income households, are disproportionately burdened by the property tax (Berry, 2021). A recent study on Detroit's property tax assessments found that the City over-assessed the lowest-valued homes, disproportionately burdening lower-income homeowners and increasing foreclosure risks (Christine, 2020). Additionally, African American and Hispanic homeowners face higher property tax assessments, leading to a higher tax burden. (Avenancio-Leon & Howard, 2020). Research has also shown that real estate appraisers often undervalue homes owned by African Americans, lowering the price of a property on the market. Therefore, over-assessment of property tax and under-valuation of property owned by African Americans hinders their wealth buidling from home equity (Fields, Perry, & Donoghoe, 2023).

This pattern of property tax regressivity is evident at the neighborhood level. Studies provide empirical evidence on the over-taxation of communities with a high share of minority residents. Scholars argue that tax assessments are significantly higher for properties located in neighborhoods with lower median housing values, lower income and education, and higher proportions of African American residents (Avenancio-Leon & Howard, 2020). Further, property values rise faster during gentrification, leading to rising property taxes. Increased property taxes can burden long-term homeowners, primarily low-income households, and may worsen affordability and create displacement pressure in gentrifying neighborhoods (Institute for Housing Studies at DePaul University, 2023).

To explore these issues empirically, this research uses the newly released Federal Housing Finance Agency (FHFA) 's UAD Appraisal-Level PUF data based on a five percent nationally representative random sample of appraisals for single-family mortgages from 2013 through 2021 and the U.S. Census ACS data for neighborhood characteristics. Firstly, using FHFA's UAD Appraisal-Level PUF data, we investigate whether there is a disparity in property appraisals and, consequently, undervaluation based on the property owner's race. Specifically, after controlling for property characteristics, we examine whether there is a significant difference between the appraised value and sales price of properties based on the property owner's race. Secondly, we examine whether there is a disparity in appraisal based on the property's location. Lastly, we explore whether the disparity in tax burden (led by the disparity in property tax assessment) exacerbates housing affordability issues and potential displacement at the neighborhood level. Using the U.S. Census ACS data, we quantify the impact of the disparity in the tax burden on housing affordability and potential displacement measured by the mobility of residents at the neighborhood level.

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Key Words: Property Tax, Appraisals, Affordability, Displacement

EXPLORING THE RELATIONSHIP BETWEEN RENTERS AND GREEN SPACES IN NEW ORLEANS

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Research-in-Motion (RiM)

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This research primarily examines the location of Low-Income Housing Tax Credit (LIHTC) and Naturally Occurring Affordable Housing (NOAH) units and their tenants' access to green space in the New Orleans area. The study aims to assess the current relationship between green space and affordable housing units in neighborhoods within the context of a flood-prone city. Additionally, it seeks to offer several suggestions for how affordable housing in New Orleans should be addressed in relation to water-related disasters in response to sea level rise, given the city's nationwide reputation as prone to flooding.

Many housing units and communities in the New Orleans area are vulnerable to natural disasters such as hurricanes and recurrent flooding events. It is also recognized that numerous affordable housing units are not exceptions and are instead more susceptible to floods, according to local experience. While only a few low-income tenants who qualify for federally assisted housing assistance can take advantage of actual assistance, which includes the LIHTC program, little research has been conducted on the geographic distribution of LIHTC tenants relative to low-income households living in NOAH units with rents below the market rate. We have paid little attention to the relationship between such low-income housing units and green space, such as areas covered by tree canopy and permeable topography, which would help lower temperatures and provide better perviousness beneath the grounds. In this regard, a few overarching research questions answered in this study are: (1) How much do LIHTC tenants relative to NOAH tenants benefit from green space in the New Orleans area? (2) How do flood risks change in relation to multifamily rent levels in the New Orleans area?

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Key Words: Renters, LIHTC, Naturally Occurring Affordable Housing, Rent, Green Space

HOMELESSNESS AND INSECT-BORNE DISEASES: A STUDY OF RISKS TO THE UNSHELTERED

Abstract ID: 1110.0.0.233.2024
Research-in-Motion (RiM)

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This paper examines how people experiencing homelessness manage the risks posed by insect-borne diseases. Concerns over these risks have increased with realization that climate change is expanding the range of many insects responsible for such diseases. Reflecting these worries, many cities are taking steps to protect their residents. For example, the City of Cambridge, MA, has posted warning signs in parks calling for vigilance on the part of park users and outlining safety measures. Such measures involve not staying in parks at night and wearing appropriate clothing and insect repellent. Nonetheless, many of these parks are home to a large and growing population of unsheltered people who are particularly vulnerable to the risks posed by insect-borne diseases. This paper asks if unsheltered people are aware of insect-borne disease risks, whether they take steps to protect themselves from such illnesses and, if so, what those steps involve. Furthermore, the research seeks to understand how cities might better protect their unsheltered populations from the growing threat to health and well-being posed by insect-borne diseases.

Virtually all studies of diseases in the population of people experiencing homelessness have focused on people in shelters. Several studies have identified the diseases, infections and chronic conditions common within the sheltered homeless population, including, for example, tuberculosis and scabies (Badiaga et al., 2008). These studies have resulted in proposed and implemented interventions, such as shelter-based health screenings and systematic vaccination programs. Studies have also examined the incidence of bed bugs and body lice infestations in shelters (Leibler et al., 2016; Bugs that bite, 2005). The relative lack of attention to the risks posed by insect-borne diseases to the unsheltered homeless population is surprising and it is into this marked gap that this paper steps.

Importantly, climate change has a direct effect on those who spend time or live outdoors. First, warmer weather has the potential to lead to individuals staying outdoors longer throughout the year, increasing exposure to extant risks (Ramin and Svoboda, 2009). Second, insect-borne diseases are expanding in territorial scope, as the ranges of their insect vectors expand. As one example, it is believed that the introduction of West Nile Virus (WNV) to the United States, and its spread on the continent, was enabled by the increasingly warm, dry summers resulting from climate change (Ramin and Svoboda, 2009). The Centers for Disease Control report that, from 2004 to 2016, the incidence of diseases from mosquito, tick and flea bites tripled in the United States (CDC, 2018). Over this same period, 640,000 illnesses borne by these insects were officially documented, which is likely just a small fraction of all cases. Critically, insect-borne illnesses pose particular risk to those who spend time outdoors, putting unsheltered people at particular risk.

The paper's methods of data collection focus on interviews. Seventy-two unsheltered homeless residents of Cambridge, who sleep out-of-doors, were interviewed. Interviewees were identified through purposive and snowball sampling. An effort was made to sample the most representative sites where the unsheltered homeless spend time. The methods of data analysis will involve coding the answers to the questions posed during interviews. The answers will be coded by assigning answers to non-overlapping categories. Basic statistical tests will be used to find patterns and relationships in the interview data. Finally, the more detailed and exhaustive answers to the interview questions will be used to contextualize these statistical findings and present a nuanced picture of how the unsheltered homeless population in Cambridge experiences and manages insect-borne disease risks. The research in currently in the data analysis stage and initial results will be ready by the time of the ACSP conference.

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Key Words: Homelessness, Insect, Health, Shelter, Climate Change

IMPACTS OF PANDEMIC-DRIVEN SHORT-TERM RENTAL GROWTH ON RURAL HOUSING MARKET

Abstract ID: 1110.0.0.177.2024
Research-in-Motion (RiM)

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The outbreak of the COVID-19 pandemic brought about an unprecedented disruption to the global tourism landscape, severely impacting hotels and short-term rentals (STRs), such as Airbnb. Initially, this disruption manifested as a pronounced downturn, with travel restrictions and health concerns leading to a steep decline in tourism activity worldwide. However, as the pandemic persisted, a remarkable shift in traveler preferences emerged. There was a move away from densely populated urban centers towards destinations that offered a blend of natural beauty, cultural richness, and opportunities for outdoor recreation (Seraphin and Dosquet, 2020; Vaishar and Šťastná, 2023). This shift led to an unexpected resurgence for rural STRs, which found themselves at an advantage due to their location in less populated areas and their ability to offer experiences closely aligned with emerging preferences (Choi and Won, 2023; Demir et al., 2024).
The trend towards rural retreats underscored the adaptability of the STR market, reflecting its capacity to quickly pivot and cater to the evolving demands of tourists in a post-pandemic world. This adaptability facilitated the

economic rejuvenation of rural areas, which traditionally relied on agriculture and small-scale industries, and positioned STRs as a vital component in the broader narrative of rural development and tourism (Airbnb, 2022). However, the rapid growth of STRs in rural areas, while beneficial from a tourism and economic perspective, brought significant challenges related to housing affordability and availability to the forefront. As more properties were converted into STRs to capitalize on the burgeoning demand, concerns arose about the diminishing availability of housing for long-term residents, particularly those employed in essential sectors within these communities (Amore et al., 2022; Lee, 2016; Simcock, 2023).

The transformation of residential properties into STRs presents a multifaceted challenge. On the one hand, converting underutilized or vacant properties, including secondary homes initially intended for recreational use, into STRs could potentially drive local economic growth without adversely impacting the housing market. Such conversions might breathe new life into dormant properties, contributing to the vibrancy and economic vitality of rural communities. On the other hand, repurposing rental housing stock intended for local residents into STRs in pursuit of higher revenues introduces a significant dilemma. This practice could exacerbate housing shortages, driving up rental prices and making it increasingly difficult for local workers.

Given the complexities surrounding the rural STR market and its implications for local housing markets, this study aims to identify the potential impacts of STRs on rural housing markets by categorizing rural STR properties based on their neighborhoods' socio-spatial characteristics, including spatial accessibility to amenities, land use patterns, which will be measured through geospatial analyses. Employing a comprehensive dataset from AirDNA from 2018 to 2022 for rural Virginia, complemented by various additional datasets, this study seeks to discern patterns that might indicate the prior role of STR properties within the housing market. Furthermore, this research delves into the occupancy rates and revenue streams of STRs during the pandemic, aiming to understand the impacts of these trends.

The implications of this research offer critical insights for a broad spectrum of stakeholders, including policymakers, community planners, and industry participants. By examining the trajectory of STR growth and its ramifications for rural housing markets, the study highlights the pressing need for regulatory frameworks. Such frameworks must balance the economic potential inherent in the STR market with the imperative to preserve and protect housing options for local residents. Moreover, findings from this study can be applied to many other rural neighborhoods beyond Virginia that experience the same housing issues pertaining to STR.

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Key Words: Short-Term Rentals, Rural Housing Market, COVID-19 Pandemic, Economic Growth, Geospatial analysis

JUST HOUSING? RACIAL CAPITALISM, FINANCIALIZATION, AND DISPLACEMENT

Abstract ID: 1110.0.0.1102.2024
Research-in-Motion (RiM)

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My research focuses on the question how financialization and racial capitalism undermine housing justice and lead to widespread displacement across communities. To explore these complex dynamics, I conduct a comparative analysis situated in both Switzerland and the United States of America. Despite marked distinctions in ownership structures, rental markets, historical backgrounds, and housing inventories, I focus on the cities of Basel, Switzerland, and Trenton, New Jersey, as pivotal case studies. These cities exemplify the mounting affordability crisis in housing and the escalating risks of displacement, particularly among low- and middle-income households Fields and Raymond underscore the significance of racialized housing geographies, which are exacerbated by the growing presence of financialized entities such as Real Estate Investment Trusts (REITs), insurance companies, pension funds, and other institutional investors. These actors are often disconnected from communities and disregard local specificities and function as drivers of displacement. The effects are felt the hardest by low-income residents, racialized minorities and foreign citizens. The "..relationship between racial differentiation and capital accumulation has been incompletely theorized throughout the voluminous literature concerned with financialization" (Raymond and Fields 2021:1627). In my presentation I provide two case studies to illustrate how real estate speculation driven by financialized logics in racialized contexts exerts devastating effects on communities threatened by displacement and how communities push back.

Methodologically, critical mapping approaches are at the core of this endeavor and are complemented with multimedia storytelling. As co-founder of the right to the city network in Basel, I have been involved in the poster project "Betongold". This public facing research produces posters which display detailed maps about property regimes and categorize the structures of ownership and actors on the local real estate market. Historicizing these findings through archival research and the database of our association, we have successfully pushed the debate about "who owns the city" in Basel.

In Trenton, I am currently starting a new research project with local community partners and as engaged community scholar from Princeton University. In my current research we are collecting oral histories by community members and leaders, who are willing to share the intricacies of their memories in a majority African American city. Next, we are going to develop a mapping project similar to Basel, where transformations of property structures are visualized and brought into public debate.

By contrasting these two cases, the presentation sheds light on the abstract notion of financialization of housing and shows how it is being intertwined with the locally specific forms of racism, exclusion, and displacement. Through an engaged research approach that fosters grassroots research networks, the study will demonstrate how collective community organizing and mapping serve as pivotal tools for generating critical knowledge. The goal is to provide counter-hegemonic discourses to the quantification and selling-out of homes that financialized and racialized urban development proposes. The distant, quantified view of housing as asset for investment is met with stories from communities, capable of conceptualizing value as more than the shareholder values.

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Key Words: Housing, Displacement, Financialization, Racial Capitalism, Community Organizing

LANDLORD FEMICIDE AND STATE RENTAL REGULATIONS

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Research-in-Motion (RiM)

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Scholarship on the current affordable rental housing crisis focuses not only about overpaying for housing, but also aspects of the tenant/landlord relationship that increase precarity (Desmond, 2016). In lower income housing, tenants are often policed (by landlords, private security, the municipal police) in order to extract additional fees or force moves (Garboden & Rosen, 2019; Graziani et al., 2024). The literature on the policing of low-income tenants is robust. However, at least within planning and related disciplines, the literature on how landlords are policed is relatively less voluminous, resting mostly in legal studies and law. Abuses and crimes include code violations, illegal evictions, and most important to this research, gender-based violence.

This “research in motion” investigates the relationship between state-level tenant protections and incidences of gender-based violence. In this project, we lean on a national, multiyear database of femicides (i.e., murders of women by people they know) created by an independent researcher at Women Count USA. This is the only data on femicide collected in the Untied States by any organization, public or private. Data contains the date and location of the femicide, along with information about the perpetrator’s relationship to the victim. In this case, “landlord” is a specific category of perpetrator identified by the database’s custodians.

This two-part, mixed-methods research will begin with a discourse analysis of the cases, using materials and background provided about each case by Women Count USA. This includes information gleaned from news stories on the murder, such as history of abuse from landlord, victim’s race/ethnicity, and (when available) lease terms. Codes will be developed iteratively during data analysis in Summer 2023. The second part of the research will entail a statistical model (likely zero-inflated negative binomial model) with data at the state level, to identify factors associated with higher numbers of landlord femicides in that state. Of crucial importance will be binary independent variables gleaned from Hatch’s (2017) classification of state tenant/landlord laws as pro-business, contradictory, or protectionist. This intersectional approach will uncover the associations between state-level tenant protections and gender-based violence.

Findings have direct implications for planning practice and scholarship. First, this research adds to a small body of research bringing critical legal studies framework to the study of affordable housing, attempting to establish an intersectional link between the nature of local tenant/landlord laws and the interests of criminal law, namely murder and femicide. The broader issue is highlighting the importance to planners of addressing local tenant/landlord laws to improve housing outcomes. Like how planners over 100 years ago campaigned to change

land-use laws to support comprehensive zoning, taking land-use regulation away from the realm of nuisance law and into administrative law, planners can imagine a situation where the tenant/landlord relationship, rather than being mitigated through contracts and contract law, is situated within more regulated sectors of the public administration.

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Key Words: housing, femicide, gender-based violence, tenant protections

LIVING UNDERGROUND IN VANCOUVER: STUDYING BASEMENT SUITES VIA ONLINE ADS

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Research-in-Motion (RiM)

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A popular strategy to cope with the worsening affordability crisis in Vancouver has been to turn basements into apartments for rent. These basement suites pull double duty in terms of affordability: for homeowners, the additional rental income makes homeownership attainable – earning them the nickname “mortgage helpers;” For renters, basement suits offer lower rents and/ or access to otherwise exclusively expensive neighborhoods. Recognizing their importance, regulatory changes in 2004 legalized many of these basement suites although some remain without permits and unpermitted conversions continue. Popular media coverage suggests that it is often urban newcomers, in particular recent immigrants and students, who rent basements. Despite their ostensible prevalence and diversity of functions, however, little is known to date about the spatial distribution, rent levels, and target renter demographics of basement suites in Vancouver.

This study addresses the gap. Drawing on thousands of online rental advertisements scraped from a popular online platform between September 2022 and 2023, we investigate where basement suites are located, at what prices they are offered for rent, and what renter demographics are targeted. In particular, we ask: How do basement suites fare in comparison to above-the-ground alternatives? What is the discount for living underground? Do basements create access to otherwise unaffordable locations? To address these questions, we extract rent price, unit characteristics, and locational information from online advertisements and employ descriptive statistics, spatial analysis, and hedonic price modeling. Furthermore, we are interested in the likely tenants of basement units. To address this question, we leverage artificial intelligence and natural language processing techniques and analyze the listings’ text bodies. In particular, we utilize a BERT model to extract and process language cues about tenant demographics. Preliminary results suggest substantial rental discounts and widespread use of socio-demographic signifiers in advertisements that list basements as shared rentals; Whole unit basement rentals offer a

more complex picture.
This study contributes to the literature in several ways. First, this study adds to the discourse on housing affordability and informality. The regulatory changes from the early 2000s were intended as an effort to legalize (and preserve) an important source of affordable housing in a highly unaffordable market. The literature has documented in a variety of contexts how informality itself is often keeping prices low; Bringing informal housing strategies into the legal realm means taking away affordability. With basement suites, however, substantial concessions on quality (light, ventilation, view) remain, especially since legalizing not always equates to compliance. This suggests that rental discounts may prevail – albeit not as truly affordable options but rather as lower quality, and therefore more affordable alternatives. The fact that basement suites create housing opportunities for both owners and renters is another important feature with larger implications for policy and planning. In addition, this study sheds light on the changing dynamics of contemporary housing vulnerability. Existing evidence suggests that basement suites house predominantly vulnerable populations. The descriptive advertisement texts offer some insight into who they are. Additionally, the study documents how these renters exercise agency by trading off quality, price, size, and location. As basement units are also frequently shared, we can also investigate where and when vulnerability factors compound. Finally, this study adds to our understanding of neighborhood change amidst deep unaffordability and widening inequality. By contrasting basement suits against their above-ground alternatives, we document a vertical social stratification of sorts. Basement suits can "open up" neighborhoods dominated by single-family housing. Due to being underground, they may change neighborhood social composition without changing physical "neighborhood character." This has implications for inclusive urbanism agendas, which are often struggling with heavy opposition to non-market solutions in such neighborhoods.

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Key Words: affordable rental housing, basement suites, artificial intelligence, housing exclusion, informality

SCREENING AND SCREENED: SURVEY ANALYSIS FROM LANDLORDS AND TENANTS

Abstract ID: 1110.0.0.898.2024

Research-in-Motion (RiM)

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Tenant screening services utilize credit score databases, eviction records, and criminal records obtained from third-party data brokers to generate reports that landlords use in making rental decisions. The history of tenant screening services goes back 40 years, as the first such services began operation in the 1970s (Kleysteuber, 2007). Since then, the scope of data and scale has expanded to include eviction and criminal records nationwide and accordingly, tenant screening services have also developed their own scoring models to help determine tenancy decisions (Rosen et al., 2021). Several legal cases highlight discriminatory practices and challenges within tenant screening services and their impact on housing opportunities. In a lawsuit settled between DC and property management firms (D.C. v. Daro Realty LLC et. Al, 2022), allegations were made against companies for unfairly charging extra fees to Housing Choice Voucher recipients and running discriminatory housing advertisements. Another lawsuit accuses SafeRent Solutions of developing a discriminatory tenant screening algorithm that overlooks important factors like non-tenancy debt and housing voucher status, leading to racial disparities in scoring (Louis, et al. V. SafeRent Solutions, et al., 2022). Housing scholars have shown that eviction records are often misinterpreted by landlords and third-party data brokers, impacting tenant screening outcomes (Garboden & Rosen, 2019; So, 2022).

This research aims to provide a comprehensive understanding of how landlords utilize information from tenant screening reports and the resulting conditions faced by tenant applicants. The study utilizes two novel datasets. Firstly, surveys on tenant screening practices were conducted with both landlords and tenants. Landlords were asked about the type of information they received from tenant screening services, how they interpreted this information, and how they made decisions based on it. Tenants were surveyed on their knowledge of the screening process (i.e., information symmetry) and their demographic information, to assess the impact of tenant screening on them. These surveys are complemented by another dataset consisting of tenant screening criteria documents typically created by property management companies. Through this analysis, the research aims to demonstrate how racial discrimination in tenant screening operates within the context of systemic racism. Tenant records are generated by landlords, housing courts, and credit bureaus, reflecting tenants' distressed conditions such as low credit scores, eviction histories, and criminal backgrounds. While these criteria may appear neutral, they are highly racialized due to a long history of discriminatory policies and practices (Rugh, Albright, and Massey 2015; Benjamin 2019). The paper ultimately argues that the seemingly race-neutral mechanisms involved in the criteria-building process by landlords could have discriminatory impacts on vulnerable and racially marginalized renters.

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Key Words: Tenant Screening, Fair Housing, Racism, Algorithmic Justice

SOCIAL INTERACTION IN A MIXED-INCOME PUBLIC HOUSING REDEVELOPMENT COMMUNITY

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Research-in-Motion (RiM)

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Mixed-income housing is one income integration strategy that combines households with different incomes within one community to address traditional public housing issues such as concentration of poverty (Schwartz, 2021). Empirical research investigating social interactions in mixed-income communities often tends to focus on social interaction between subsidized housing and market-rate residents, particularly in the context of public housing redevelopments (Chaskin & Joseph 2011; Kleit 2006).

In theory, three propositions indicate the social relations between low and high-income residents in mixed-income communities, including 'social capital, social behavior, and social control' (Chaskin & Joseph, 2011). From a social capital perspective, low-income residents might benefit from access to the resources provided by high-income residents. The social behaviors perspective suggests that high-income residents may play roles as promising future exemplars to influence low-income residents' behavior and aspirations. The social control standpoint highlights the pressure that high-income groups might bring to the low-income ones to establish the order. However, in practice, empirical studies suggested that residents with similar social backgrounds were more likely to engage in social interactions related to resource sharing and neighborly interactions, as opposed to those with different social backgrounds, and that social interaction across socioeconomic classes is mainly at a superficial level (Chaskin & Joseph, 2011; Kleit 2006). Yet, low-income residents' social life before and after the introduction of market-rate residents on the same site is a question that has not been well-explored. How might the experiences of the residents of subsidized units change when market-rate units are introduced?

This research aims to investigate the difference in residents' social experiences in mixed-income communities before and after market rate units were introduced. To address the research question, I use a single case study research design. The primary case (Columbia Gardens at South City in Tallahassee, FL) was chosen as the setting of this research due to its development phasing that accommodates low-income residents before introducing market rates residents. Columbia Gardens is a public housing redevelopment project led by the Tallahassee Housing Authority. The community includes three phases: the first phase provides 130 affordable units exclusively catering to lower-income residents (household income below 60% of the area median income), the second phase provides 160 units with 80% units for lower-income residents and 20% units for market rates residents, and the planned third phase provides 100 units for seniors with 90% for lower-income residents and 10% for market rates residents. This research traces the residents who reside in the first phase to investigate their social experience before and after market-rate units were introduced to the community in phase II. Purposive sampling and snowball sampling will be used as strategies to recruit participants residing in the first phase of the redevelopment. Semi-structured interviews will be conducted to understand the essence of residents' social and living experiences. Thematic coding will be used to analyze the transcriptions of the interviews. The findings of this paper will contribute to understanding the social interaction between low and high-income residents in mixed-income public housing redevelopment. It will also assist planners in creating mixed-income housing that benefits public housing residents in practice.

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Key Words: Social Interaction, Mixed-Income Community, Public Housing, HOPE VI

THE PREVALENCE AND CHARACTERISTICS OF RACIALLY INTEGRATED NEIGHBORHOODS

Abstract ID: 1110.0.0.953.2024
Research-in-Motion (RiM)

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Five decades after the passage of the Fair Housing Act (1968) most American metropolitan areas remain highly segregated by race, ethnicity and income. Scholars from a variety of disciplines have emphasized the importance of neighborhoods in determining access to resources that shape economic mobility, wealth building, and health outcomes (Galster, 2011; Sharkey, 2013). Additionally, critical planning scholars have pointed out that public policies such as redlining, urban renewal, and zoning were tools that not only exacerbated segregation, but result in what Goetz, Williams and Damiano (2020) argue amounts to "resource hoarding" that disproportionately benefits white Americans. While these findings bear out in aggregate, not all neighborhoods are segregated, nor are all integrated neighborhoods experiencing a Chicago-school like process of rapid change; either by race (e.g. white flight) or income (e.g. gentrification).

The literature on neighborhood racial change is deep, with most studies focusing on the process of transition from one dominant ethnic group or another, the root causes of transition or statistical tipping points (Farley & Frey, 1994; Galster, 2011, 2018; Massey & Denton, 1989). In this view, integrated neighborhoods are simply on their way to becoming segregated. Research specifically on stable racially integrated neighborhoods often focuses on specific cases (Henry & Hankins, 2012), or regions (Hipp & Kim, 2023). In this paper we take a national perspective and document the prevalence of stable racially integrated neighborhoods and describe their characteristics at the tract-level. Unlike most studies which use tract-level census data to measure integration, we instead use data from the Home Mortgage Disclosure Act (HMDA) Loan Application Register (LAR) files which accounts for the racial/ethnic identify of anyone applying for a mortgage as well as the location of the home. We assembled a consistent tract-level database of loan originations for all US tracts from 1990 to 2021. We argue that lending data for a home purchase is a measure of intention.

We consider a tract to display an "integrated" lending pattern if between 30 and 60 percent of loan originations were made to white borrowers in a given year between 1990 and 2021. We define a census tract as being "stable-integrated" it if had an integrated lending pattern for more than 15 out of the 32 years in this period. We find that stable-integrated tracts are rare, but not uncommon in the US. Currently there are 7,197 tracts that met the stable-integrated definition and still exhibited an integrated pattern in 2021 (9.9% of all US tracts). Stable

integrated tracts are disproportionately located inside central cities (37% versus 24.5% for non-integrated tracts), but the majority are suburban (55.1%). An analysis of recent ACS data from 2019 (which includes all residents, not just those who applied for a mortgage) indicated that the overall residential population in integrated neighborhoods was more diverse by race and ethnicity. Those living in stable-integrated tracts also tend to be younger (36.7 vs 40.1 median age), and slightly more educated (31.2 vs. 30.6 percent with a BA or higher), and higher-income ($68.3k vs $67.0k median household income). Housing and physical differences were more pronounced. Stable integrated neighborhoods are 63 percent more dense and had higher shares of multifamily homes and renters. Home values within stable-integrated tracts were significantly higher ($333k vs. $266k). This could reflect the relative scarcity of diverse neighborhoods in the overall metropolitan housing market. Lastly, we find that voter in stable integrated neighborhoods preferred Biden over Trump by a large and statistically significant margin.

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Key Words: Stable Racial Integration, Neighborhoods, Home Lending, HMDA

TRENDS IN ASYLUM-SEEKERS' USE OF HENNEPIN COUNTY'S EMERGENCY SHELTER SYSTEM

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Research-in-Motion (RiM)

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Cities are grappling with a recent influx of migrants while also facing pre-existing, unmet housing needs. In the U.S., the number of migrants claiming asylum and released from custody on their own recognizance pending a determination on their asylum claim increased more than five-fold in just six months, from 36,500 in June 2023 to 191,000 in December 2023. While they wait years for their cases to be heard, asylum-seeking migrants typically remain in the U.S. outside of detention but unable to legally work for the first 150 days. As a result, many need short-term housing, but cannot pay for it and turn to emergency shelter systems. These challenges occur within the national context of worsening housing affordability and increasing housing instability and homelessness (Colburn et al., 2024; Colburn & Aldern, 2022).

Prior work suggests that migrants face many barriers to obtaining stable, secure housing in European cities (Manting et al., 2024; Ribera-Almandoz et al., 2022). While U.S. media attention has focused on large cities, such as New York City, Chicago, and Denver, that have received particularly large numbers of asylum-seeking migrants, little research has examined conditions in smaller cities and differences in experience by migrant status.

This project explores the following research question: What factors are associated with entering and exiting emergency shelter systems for asylum-seeking migrants and non-migrants? We focus on Hennepin County, Minnesota, where the family shelter system was estimated at 400 percent capacity as of December 2023 and over half of the families in the shelter were believed to be asylum-seeking migrants. Using data from administrative records and interviews with families in emergency shelter, this mixed-methods research project assesses barriers to housing experienced by families, factors precipitating their entrance to the emergency shelter system, the circumstances associated with leaving emergency shelter, and how asylum-seeking migrants and non-migrants compare in each of these areas. First, we will use Hennepin County administrative data from the emergency shelter system to conduct a time-to-event (survival) analysis that assesses factors associated with whether and how quickly families exit the shelter system. Second, we will conduct interviews with adults living in the emergency shelter system, including asylum-seeking migrants and non-migrants. Interview questions will seek to understand the circumstances of a family's arrival in Hennepin County, how a family initially obtained shelter, circumstances leading to housing precarity and entrance into emergency shelter, the set of circumstances that allow the family to exit the emergency shelter system, how staying in emergency shelter affected physical and mental health outcomes, access to social services, and economic stability.

Research results will provide a clearer theoretical perspective on differences in how immigrants and non-immigrants experience and resolve housing precarity. The research also has practical implications. Accommodating asylum-seeking migrants in emergency shelter has created substantial fiscal stress for local governments, prompting some to change long-standing shelter upon request policies and enforcing time limits on the use of emergency shelters (Jordan, 2024). Research results will also help to guide municipal planners as the arrival of large numbers of asylum-seeking migrants in the U.S. continues, placing pressure on emergency housing systems and requiring planners to seek new methods to support unhoused residents.

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Key Words: Emergency shelter, Homelessness, Asylum, Immigration

UNEVEN RECOVERY FROM THE U.S. HOUSING CRISIS—GEOGRAPHIC VARIATIONS

Abstract ID: 1110.0.0.799.2024
Research-in-Motion (RiM)

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The subprime housing crisis in the late 2000s was one of the most severe recessions in the United States. Nelson and Cromartie (2014) reported the rise and collapse of subprime lending from 2004 to 2008 by analyzing the Home Mortgage Disclosure Act (HMDA) Loan Application Record (LAR) data. Millions of foreclosures were filed throughout the recession. The impacts were not only on the housing market but also on the overall economy. Studies reported higher concentrations of subprime loans to Blacks and Latinos (Faber, 2013; Wyln & Ponder, 2011). The disparities were more prevalent in rural areas than in cities (Nelson & Cromartie, 2014; Singleton et al., 2006). The uneven concentration pattern between nonmetro and metro and between the U.S. regions was unrelenting even after the decline in subprime lending in 2008 (Nelson & Cromartie, 2014). The federal government recovery effort significantly diminished since 2017, signaling that the housing crisis has ended. However, the literature suggests the problem is still here—varying in scale and geographically. While much effort and attention were made in highly affected metropolitan areas to bounce back from the subprime housing crisis (Harrison & Immergluck, 2023), the rural areas had been continuously neglected (Wodka, 2009).

The research hypothesis is that there has been uneven recovery geographically in the U.S. The questions include (1) Were the housing recoveries of the rural counties in the U.S. uneven from the housing recoveries of its counterparts? (2) Were the housing recoveries different regionally throughout the U.S.? and (3) What factors were associated with the housing recovery differences?

Our study uses the monthly Zillow Home Value Index (ZHVI) data to calculate the percent change of each county's annual average home values from the previous year. Significant housing value drops have been observed between 2005 and 2009, and the reverse trends—increases in housing values—have been detected since 2009. We exclude the data after 2020 due to the atypical undertakings in the housing market because of the pandemic. We set the longitudinal timespan between 2009 and 2020 based on the observation. The unit of analysis is county. The longitudinal home value percent changes are the dependent variable. The independent variables include two categorical variables (region and class), demographic characteristics (total population and percent Black), household characteristics (median household income and poverty rate), and housing characteristics (occupancy rate and homeownership rate). Region refers to the U.S. regional groupings according to their geographic positions on the continent, followed by Alig, Kline, & Lichtenstein (2004). Class is determined based on the classification of urban-rural typology adapted by Isserman (2005). The data is generated using various secondary data sources and GIS analysis. Applying the spatial panel data models with a spatial lag as the analytical tool, we account for differences among counties regarding their housing dynamics.

The findings will demonstrate the uneven geographical recovery that remains more than a decade after the housing crisis. This research will contribute to the literature by adding important perspectives on housing recovery, with comprehensive perspectives including all geographic units instead of limiting its scope to metropolitan areas.

Citations:

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Key Words: Uneven recovery, housing crisis, housing, regional variances

Track 7 – International Development Planning

Track 7 Pre-Organized Session Summaries and Abstracts for the Sessions

HOUSING AND LAND REGULATION IN THE POLITICAL ECONOMY OF URBAN LATIN AMERICA
Abstract ID: 1112.0.0.603.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.849.2024, 1108.0.0.705.2024, 1108.0.0.639.2024, 1108.0.0.607.2024, 1108.0.0.872.2024

Irene Farah [UC Berkeley] irenef@berkeley.edu, organizer

Housing and land regulations play a crucial role in shaping urban development, governance, and the socio-economic landscape of cities. In this session, panelists will delve into various aspects of regulation implementation, exploring the constellation of urban stakeholders, examining the challenges faced by them, the role of government agencies, the influence of economic factors, and the impact that regulations have on governance as a whole. Through the analysis of how those dynamics play out in the context of Brazil, Chile, Colombia, and Mexico, the panel aims to provide a grounded understanding of how housing and land regulations are implemented and their implications for the political economy of Latin American cities.

This session is specifically interested in papers that put forward conceptual, analytical, or methodological approaches to the study of regulations in cities. Among other topics, this session addresses the following themes: Policy implementation, state capacity, regulatory compliance, political intermediation, infrastructure provision, tensions between local governments and private investors, bureaucracies, and corruption.

Learning Objective(s):

- Discuss and compare land and housing policies and regulations impacting the political economy of different Latin American cities.

DISENTANGLING THE STATE'S ROLE IN THE CORPORATE LANDLORD'S RISE.
Abstract ID: 1108.0.0.849.2024
Pre-Organized Paper Presentation

Andrea Urbina Julio [Cornell University] aru8@cornell.edu, presenter

The growing connection between housing and finance has altered how housing is perceived and defined. Indeed, housing financialization processes are taking place globally, with international actors playing a role in shaping the financial aspects of the housing market (Aalbers, 2016). The incorporation of new actors into the Latin American

housing market, particularly "corporate landlords," is creating significant shifts in the expansion and structure of housing patterns. This trend is establishing new practices and financial instruments. Institutional investors, such as investment funds, insurance companies, family firms, and listed real estate companies, can be described as financial actors who own and manage residential buildings, offering thousands of units for rent. Corporate landlords use specific real estate instruments to invest in the residential rental market, such as equity funds, hedge funds, or REITS (Real Estate investment trusts).

Currently, four countries in Latin America have the presence of corporate landlords: Chile, Colombia, Mexico, and Brazil; while this is still a new trend, escalation of this model projects that it will increase fast. In Latin America, the model's appearance is related to new multifamily high-rise buildings expanding in downtown areas of metropolitan cities. For example, in Santiago, Chile, by 2023, more than 130 buildings will be under operation with more than 30.000 units. On the other hand, in Bogotá, where 45% of the population lives in a rental housing solution, this new real estate business has also arrived through the hands of local and international corporations.

Through the housing financialization process, the State has been key to the development and proliferation of corporate landlords worldwide, creating the mechanism, regulation, and instruments to allow this process. For example, in Spain, State intervention played a crucial role in strengthening the participation of private investors (Beswick et., 2016). Similarly, the active role of the State in the promotion of a subsidy system was similar to the promotion of the homeownership and mortgage debt system in Latin America (Reyes, 2020); countries such as Chile and Mexico are examples of the economic and financial transformation of the housing market. However, little has been study on the connections between state policies and the arrival of corporate landlords, the role of local governments and specific local mechanisms and regulations that have allowed the possibility of a new rental market trend.

This paper looks to untangle the State's role in the emergence of corporate landlords in Latin America. Thus, to understand and identify the legal and financial regulations and strategies that allow the development of Corporate Landlords. Specifically, this paper analyzed the legal framework and institutional capacities by looking at the Chilean and Colombian cases, using Santiago and Bogotá as the study cases. Through in-depth interviews with public officials and staff members and document analysis of legal and financial regulation, this paper provides an understanding of how housing deregulation has permitted the expansion of corporate landlords in the region.

I argue that by analyzing the Chilean and Colombian cases, this research will contribute to the understanding of the impacts of corporate landlords in the region and examine the relationship between the State and landlords, looking at the implications of the political economy of Latin American cities and the consequences to the local housing affordability crisis.

Citations:

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Keywords: Housing Financialization, Corporate Landlords, Rental Regulation, Latin America

FROM STREETS TO HOMES: ASSESSING CITIZEN PERSPECTIVES OF PROPERTY TAXES

Abstract ID: 1108.0.0.705.2024
Pre-Organized Paper Presentation

Aurora Echavarria [University of California Los Angeles] aechavarria@ucla.edu, presenter

The provision of adequate infrastructure and services to urban populations is one of the most pressing challenges for local governments in Latin America. In 2017, 50% of residents in large Latin American countries asserted having a negative perception of the services that their municipality provides (LAPOP 2017). Yet limited local funds present a significant obstacle to overcoming this issue. Property taxes, which are the main source of own revenue for local governments, are crucial for local governments to address this insufficiency and improve the lives of their residents. However, property taxes remain widely unpopular in the region due to their high visibility and direct application. My research asks: Are all property tax increases equally opposed by residential property owners? Or can the local government design property tax policy in a way that increases property owners´ willingness to pay? I research these questions in the context of Mexico, a country with one of the lowest rates of property tax collection in the region and the second lowest among OECD countries (2021). I undertake an experimental conjoint survey administered to over 2,000 property owners in 34 Mexican urban municipalities to study how their preferences vary along seven dimensions of property tax policy, including how funds are calculated, administered, and spent. Findings from the research demonstrate that residential property owners have a higher willingness to pay property taxes when funds are spent in a more visible way and in a way that more directly benefits them. Additionally, they demonstrate a higher willingness to pay when cadaster values more closely reflect reality. I also study heterogeneous effects in order to identify sub-group differences among individuals in municipalities of different sizes, individuals of different income levels, and different perceptions of corruption in government.

Citations:

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Keywords: urban politics, property tax governance, local public finance

UNSTEADY FOUNDATIONS:ASSESSING HOUSING STABILITY IN MCMV PROJECTS IN BRAZIL

Abstract ID: 1108.0.0.639.2024
Pre-Organized Paper Presentation

Flavia Leite [UC Berkeley] flavia_leite@berkeley.edu, presenter

One of the main housing formalization strategies adopted by Latin American governments has been the large-scale development of privately produced owner-occupied housing for lower-income households (Murray & Clapham, 2015). These housing initiatives have spurred extensive academic investigation into their effects on low-income populations. Despite this growing body of work on the topic, research on the impacts of housing formalization on tenure security for low-income families remains scarce (Kowaltowski et al., 2019). This oversight hinders accurate evaluation of how programs benefit low-income families. Housing is the single largest expense in a household's budget, and with formalization, housing-related costs tend to increase without a corresponding rise in income (Gilbert, 2014), intensifying financial vulnerability and consequently diminishing housing stability for poor families. In this context, looking specifically at the case of the Minha Casa Minha Vida (MCMV) program in São Paulo, this research asks: How stable is housing for low-income households living in MCMV projects? Through the descriptive analysis of data scraped from the Superior Court of São Paulo website and in-depth investigation of court documents, this research finds evidence of households in MCMV projects failing to timely pay their condominium-related bills and explores the repercussions of these failures. It reveals that non-payment is widespread, especially among single mothers, and leads to the imposition of penalty fees, bank account freezes, asset seizures, lawsuits, and, in some cases, eviction of low-income families. While many studies implicitly take tenure security for granted and equate formalization with housing stability, this study takes a more comprehensive view of housing stability. Drawing on recent literature (Desmond, 2016; Garboden and Rosen, 2019), it examines not only the instances of eviction themselves but also the ongoing threats of eviction that households face and its broader consequences. By understanding the prevalence of delinquency and punitive collection practices, this research provides a more complete picture of housing stability for low-income families and shows how design flaws in the MCMV program threaten the sustainability of this policy and the livelihoods of vulnerable families.

Citations:

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Keywords: Latin America, Housing, Tenure Security, Informality

THE POLITICS OF STREET VENDING BUREAUCRATS AND PUBLIC SPACE IN MEXICO CITY
Abstract ID: 1108.0.0.607.2024
Pre-Organized Paper Presentation

Irene Farah [UC Berkeley] irenef@berkeley.edu, presenter

Political intermediation (brokerage) has been widely studied within the literature on clientelism. Yet, a full description of how clientelistic brokerage networks impact the negotiation over urban land is still missing. In this article, I analyze how political and bureaucratic structures impact street vendors' use of public space, such as parks, sidewalks, and public squares, in Mexico City. By bridging literature on clientelism, street-level bureaucrats, and public space, I argue that partisan political alignment between boroughs (local governments) and the citywide government mediates the levels of competition bureaucrats and street vending associations, and the local governments' ability to control public space. Through a comparative case study, I examine these mechanisms in three boroughs (local governments) in Mexico City which differ in terms of their political alignment with the city government. By direct observation, examining city documents, and in-depth interviews with politicians, state employees, leaders of street vending associations, and street vendors, I analyze street vending associations and street-level bureaucrats acting as brokers and articulate the administrative, economic, political, and spatial consequences of these relationships across different local governments in Mexico City. I find that aligned governments rely more on street vending associations, while non-aligned governments rely more on loyal street-level bureaucrats-brokers for the control of public space and the extraction of economic and political favors.

Citations:

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Keywords: Informal politics, Land Use, Governance, Street Vending, Mexico City

POTENTIAL AND PERIL: BUILD TO RENT PROCESSES IN SÃO PAULO
Abstract ID: 1108.0.0.872.2024
Pre-Organized Paper Presentation

Kristine Stiphany [University at Buffalo - State University of New York] stiphany@buffalo.edu, presenter

Across Latin American cities, the rise of rental housing is adapting and transforming built environments, but there is little known about the processes underlying these urban redevelopments. Drawing on recent ethnographic and survey-based research conducted in popular settlements in São Paulo, Brazil, this paper aims to explore the processes, logics, and motivations through which rental markets have been grafted onto existing housing stock,

forming a new pattern of consolidation. The results of interviews with real estate developers, landlords, builders, and renters are used to illustrate how and for whom these patterns have created sites of economic potential and social mobility on one hand, and conditions of peril and displacement on the other. In this context, the paper develops a typology of transitions to (1) illustrate the impact of rental markets on the finance, construction, and occupation of housing in Brazilian informal settlements and (2) explore where different institutional, civil, and activist actors have primed the rise of rental housing and where they have acted to regulate it. The article ends with an evaluation of policy and planning channels for responding to the challenge of rising rental markets in Brazil, with potential insights for cities where the trend of rising rental markets is also observed.

Citations:

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Keywords: Brazil, Housing informality, rental markets, built environments, microeconomics

PLANNING IN AFRICA I: HOUSING POLICIES, SOCIAL NETWORKS, AND LIVELIHOODS

Abstract ID: 1112.0.0.128.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.226.2024, 1108.0.0.986.2024, 1108.0.0.137.2024, 1108.0.0.277.2024, 1108.0.0.387.2024

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Nathan Teklemariam [Clemson University] ntklem@clemson.edu
Elsie Harper-Anderson [Virginia Commonwealth University] elharperande@vcu.edu
Janet Husunukpe [University of Illinois at Urbana-Champaign] janetah2@illinois.edu

This session is in conversation with two other pre-organized sessions discussing the challenges and opportunities to urban development in Africa. Sub-Saharan African cities face increasing pressure to provide access to adequate housing while dealing with international housing markets, rapid urban growth and scarce resources to expand infrastructure systems. In parallel, non-state actors engage in regulated and unregulated practices that affect these cities' housing supply, demand, and quality. However, it remains unclear whether current housing policies

effectively improve access to adequate housing in these cities. The papers in this panel analyze current housing policies and practices in Sub-Saharan Africa and assess their impact on the housing supply and residents' well-being. The panel will provide lessons for urban planners working on housing issues in sub-Saharan Africa and similar regions through a comparative analysis of current housing practices in the region.

Learning Objective(s):

- Enable comparison among places to facilitate mutual learning opportunities among planners involved in African practices.
- Examine the tensions between existing housing policies and their implementation in African cities.
- Expand understanding of urban conditions, realities, and changes in the Global South.

NAVIGATING URBAN TRANSITIONS: TOURISM-DRIVEN HOUSING INVESTMENT IN GHANA
Abstract ID: 1108.0.0.226.2024
Pre-Organized Paper Presentation

Janet Husunukpe [University of Illinois at Urbana-Champaign] janetah2@illinois.edu, presenter

This paper delves into the intricate dynamics surrounding tourism-induced housing investment and the pivotal role of the state and private institutions in attracting foreign investments within the framework of the 'Year of Return' and 'Beyond the Return' initiatives in Accra, Ghana. Spanning from the initiative's inception in 2019 to the present day, this research scrutinizes the influx of African diasporas (transnational migrants) and the surge in private investment and partnerships in real estate during this period. Specifically, it examines how the State, developers, financiers, and their accompanying political and material complexity tailor to the interest of these transnational markets and its consequences for marginalized groups. Firstly, it argues that the transnational market significantly shapes urban development, particularly residential real estate, as evidenced by the surge in investment activity spurred by the 'Year of Return' and 'Beyond the Return' initiatives. Secondly, the paper highlights the concerted efforts of stakeholders such as the State, developers, and financiers in catering to the interests of elite transnational migrants. However, this tailored approach risks exacerbating existing disparities and further marginalizing local groups within the urban landscape. Finally, the study underscores the role of tourism-induced housing investment as an accumulation strategy, shedding light on how it intertwines with broader urban development agendas. This perspective emphasizes the multifaceted nature of urbanization and underscores the intricate relationship between state policies, private sector interests, and transnational market dynamics. Utilizing a diverse array of methodologies including interviews, observations, mapping, and policy analyses, this research contributes to ongoing scholarly conversations mostly focused on Southern Europe by bringing to the conversation the dynamics in the global south. Drawing on insights from scholars such as [1], [2], and [3], it offers a nuanced understanding of the transnational real estate market's emergence as a significant player in the global south. By examining the influence of neoliberalism on the real estate market in Africa, particularly in Ghana, the paper provides a comprehensive framework for comprehending the interplay between state interventions, private sector initiatives, and transnational investment dynamics in shaping urban landscapes.

Citations:

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Keywords: Tourism-induced housing investment, transnational market, urban development

MICRO-DEVELOPMENT & AFFORDABLE HOUSING CAPACITY IN EMERGING MARKETS

Abstract ID: 1108.0.0.986.2024
Pre-Organized Paper Presentation

Nour-Lyna Boulgamh [Harvard University] nour_lyna@gsd.harvard.edu, presenter

This monograph recognizes the public sector's failing efforts to address the affordable housing crisis in developing countries and places an alternative response that asks what we, as scholars, practitioners, and planners, can learn from informal affordable housing development mechanisms and the potential talent embedded in informality through two central micro-development case studies in Cape Town and Johannesburg, South Africa. The study addresses how to leverage micro-developers as enablers of affordable housing beyond the public sector and explains that by examining the burgeoning market of micro-developers in Africa and unpacking their development strategies and financing mechanisms, valuable insights can be gained. The objective is to identify potentially transferable lessons and best practices that facilitate affordable housing capacity and bridge the discernible 'policy-outcome' gap in publicly provided affordable housing initiatives. Findings provide informed inputs for shaping affordable housing policies in developing contexts while simultaneously drawing parallels that extend to and from the developed world.

Citations:

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Keywords: Affordable Housing, Informality, Micro-Development, Africa, Emerging Markets

INFORMALITY: OVERLAPPING RELATIONS OF STRUCTURES, NETWORKS, & LIVELIHOODS

Abstract ID: 1108.0.0.137.2024
Pre-Organized Paper Presentation

Nana-Yaw Andoh [University of Michigan] nandoh@umich.edu, presenter

African cities become home to 40,000 people every day. Many of these migrants without the financial means to access formal affordable housing usually find themselves living in informal settlements. This scenario presents two problems. (1) If housing provision remains the same, it will not be enough to accommodate the population increase in cities across sub-Saharan Africa, and (2) Decision-makers presented with solving this problem tend to view this issue through the lens of housing. Policies often ignore the fact that while informal settlements begin as a consequence of a lack of affordable housing options for the urban poor, the result of their spatial organization is often driven by a set of overlapping relationships between their social networks, livelihood activities, and the physical structures that combine to create a holistic built environment.

This research aims to answer two questions regarding the built environment of informal settlements: (1) What is the influence of social networks and livelihood activities on the built environment of informal settlements? (2) How does relocating informal settlement residents to a newly built environment impact social networks and livelihood activities? This research uses mixed methods to examine four case studies in Johannesburg, South Africa, and Nairobi, Kenya. The two cities provide examples of long-standing informal settlements representing control groups and newly developed formal housing projects where some informal settlement residents have been recently relocated, representing a treatment group. Data collection consisted of an in-person survey, a focus group conducted with informal settlement residents, and interviews with planning officials within the cities where the research sites are located.

My findings illustrate how residents of informal settlements, composed of myriad cultures, come together to create a holistic built environment, often overlooked in upgrading and other housing policies. I outline the essential ways that social networks shape the livelihoods of residents and the built environment of informal settlements, suggesting more effective urban policies that can ease the transition of informal settlement residents into new or improved housing. I argue that acknowledging and including more culturally and place-sensitive strategies and other planning and housing policies will mitigate the proliferation of informal settlements in sub-Saharan Africa.

Citations:

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Keywords: Informal settlements, Social networks, Affordable housing, Built environment, Planning policy

QUASI-EXPERIMENTAL EVALUATION OF A SLUM UPGRADING INTERVENTION IN NAIROBI

Abstract ID: 1108.0.0.277.2024
Pre-Organized Paper Presentation

Carlos Lopez-Ortiz [Cornell University] cal382@cornell.edu, presenter

Tenants are among the most vulnerable groups in informal settlements worldwide. They pay a housing rent premium for low-quality housing and services, and are more vulnerable to eviction, water insecurity, and food insecurity than non-renters (Gulyani & Talukdar, 2008; Joshi et al., 2023; Talukdar, 2018). Scholars argue that the power imbalance shaping the tenant-landlord relationship in unregulated rental markets is a key factor explaining the vulnerability experienced by tenants in informal settlements. However, visions that privilege homeownership over rental tenure have dominated debates on slum upgrading and other strategies to improve living conditions in informal settlements, leaving aside those whose only option to access housing is renting. Recognizing and understanding the reality of tenants in informal settlements is urgent, especially in places like Nairobi, where almost 95% of households living in informal settlements are tenants (Amis, 1984; Huchzermeyer, 2007). Programs oriented to offer rental housing might offer an alternative to reduce the quantitative and qualitative housing deficit in cities in low-income countries while setting aside contentious debates about land tenure or finance. Aiming to contribute to the discussion of rental-based approaches as an alternative housing policy in informal settlements, this paper asks: What is the effect of a slum upgrading program providing access to improved housing through subsidized rents on the standard of living of beneficiaries in a context dominated by informal rental markets? How do such effects vary among beneficiaries from different socioeconomic backgrounds?

This project analyzes the effects of the Relocation Action Plan (RAP) in Nairobi on the beneficiaries' standard of living. RAP is a slum upgrading and relocation project that provided rental housing to 4,700 households occupying the railway reserve in Kibera and Mukuru, two of Nairobi's largest slums. In contrast with more traditional relocation programs that have displaced slum residents from central to peripheral areas, RAP relocated the beneficiaries within the same neighborhoods. Additionally, RAP housing units are heavily subsidized, with beneficiaries paying a monthly rent equivalent to less than 5% of the average rent for a small shack in Nairobi. The project's construction started in 2015 and the government randomly allocated houses to beneficiaries as the construction of a section of the project concluded. However, the government stopped the project in 2018, creating a 'waiting list' with the households who did not receive a housing unit by 2018.

Using Atuesta and Soares' (2018) methodology as a reference, I leverage the delay in the project's completion to compare the current conditions between households who received upgraded housing units and those waiting to receive one. I will collect data through a household survey to estimate differences in monetary and non-monetary measures of standards of living between beneficiaries and non-beneficiaries of RAP. Given that slum populations and their needs are highly heterogeneous, I also analyze how such impacts differ among beneficiaries from different sociodemographic backgrounds.

This paper will contribute to increasing our understanding of how the conditions of the built environment in Global South cities and, more specifically, access to affordable, safe, and decent housing relate to the well-being and livelihood strategies of the urban poor. Additionally, I will provide empirical evidence about the long-term impacts of slum upgrading interventions on people's lives, contributing to the literature discussing the intended and unintended consequences of slum upgrading. The paper contributes to the discussions about approaches to improving the living conditions in informal settlements by evaluating the results of a slum upgrading program focused on subsidized rental housing. Lastly, my project will assist in informing the work of planners and

policymakers by identifying factors associated with slum upgrading interventions that improve or deteriorate residents' standards of living.

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Keywords: Slum upgrading, Housing, Sub-Saharan Africa, Informal settlements

IMPACT OF HOUSING AT THE URBAN PERIPHERY ON SOCIAL CAPITAL

Abstract ID: 1108.0.0.387.2024
Pre-Organized Paper Presentation

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Geographic location of housing has a significant effect on social capital, which fosters formal and informal socio-economic support within communities for sustainable development. This study focuses on the government-led Integrated Housing Development Program (IHDP) in Addis Ababa, Ethiopia. Through a lottery system, IHDP has constructed and delivered over 250,000 condominiums to city residents, significantly increasing home ownership in the city. However, most condominiums have been built at the urban periphery where city meets farmland.. Utilizing a survey of 1,018 households, the study examines the mediating role of residents' perception of access to social capital on the relationship between location and overall satisfaction living at IHDP condominium comparatively between urban and urban periphery sites. The study finds that those living at urban sites perceive better access to social capital compared to their urban periphery counterparts, and that this perception mediates their higher level of overall satisfaction residing at their condominium. These findings suggest that geographic location of IHDP has a significant impact on social capital outcomes for its residents living at the urban periphery undermining sustainable community development.

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Keywords: Housing, Social Capital, Rapid-urbanization, Ethiopia, Addis Ababa

PLANNING IN AFRICA II: URBANIZATION, INFRASTRUCTURE, AND ENVIRONMENT

Abstract ID: 1112.0.0.77.2024

Pre-Organized Session Summary

Session Includes: 1108.0.0.91.2024, 1108.0.0.193.2024, 1108.0.0.223.2024, 1108.0.0.95.2024

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This session is in direct conversation with two other pre-organized sessions that discuss challenges and opportunities to urban development in Africa. The papers discuss large-scale phenomena, like climate change and international aid's impact on African cities. The diverse drivers and scenarios that the panelists unveiled manifest the complexity of African urbanization in progression. The papers in this session invite participants to reflect on questions like:

• What has occurred in the studied cities that have led to notable regional changes, such as emerging climate impact and foreign players?
• What rationales have facilitated changes led by different actors?
• What are the underlying threats and opportunities given these shifting phenomena?

Learning Objective(s):

- Expand understanding of urban conditions, realities, and changes in the Global South.
- Configure the tensions beneath the implemented planning policies and practices for better urban management in African cities.
- Enable comparison among places to facilitate mutual learning opportunities among planners involved in African practices.

CHINESE INFRASTRUCTURE SPECULATION IN ADDIS ABABA, ETHIOPIA

Abstract ID: 1108.0.0.91.2024

Pre-Organized Paper Presentation

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Within the broader narrative of the infrastructure fix—where infrastructure projects are embraced as key solutions to developmental challenges—this paper explores how urban infrastructure initiatives are deeply embedded in speculative urban visions and developmentalist ambitions, particularly within the context of China-Africa cooperation. Drawing upon the notion of speculative urbanism, the paper employs the frame of infrastructure speculation to unpack the interactions among states, investors, workers, and residents amid the transnational movement of capital, resources, and expertise. The goal is to illuminate the unique characteristics of speculation within the context of China-Africa engagement and to consider their wider implications for urban development, international planning, and cross-regional development cooperation. The empirical analysis draws upon three public urban infrastructure projects in Addis Ababa, Ethiopia, each illustrating different forms of Chinese involvement. The discussion of infrastructure speculation in these cases is organized into three dimensions – envisioning infrastructure, delivering infrastructure, and experiencing infrastructure. Collectively, they unveil how Chinese capital's outward expansion fuels Ethiopia's national development aspirations, creating a complex infrastructure governance landscape and charting out diverse pathways for ordinary citizens from both sides to enter various forms of speculation through infrastructure projects. The construction and development of urban infrastructure is thus not only a physical undertaking but also a political and economic gesture that reflects and influences the broader socio-economic dynamics under transnational encounters.

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Keywords: infrastructure, urban speculation, international planning, Africa, China

SPATIAL HETEROGENEITY IN RESIDENTIAL ENERGY CULTURES: THE CASE OF ACCRA

Abstract ID: 1108.0.0.193.2024
Pre-Organized Paper Presentation

Hassan Yakubu [Cornell University] hy597@cornell.edu, presenter

A growing number of African countries are grappling with energy shortages as demand continues to outstrip supply. This is further exacerbated due to urbanisation, climate change effects and changing lifestyles. In tackling this, governments have implemented supply-side and demand-side energy management strategies aimed at increasing generation capacity and promoting energy efficiency respectively. Despite these efforts, growing concern demands more effective and contextually attuned strategies. However, the effectiveness of demand-side management energy management strategies, it has been argued involves a deeper understanding of residential energy demand behaviours which have not been sufficiently explored in developing cities. This research therefore seeks to fill this gap using the case of Accra, Ghana. Drawing on an exploratory mixed-methods research design conducted through a survey and key-informant interviews, we adopt the energy cultures framework to explore the emerging socio-materiality of its energy system. We highlight the interactions between norms, practices and material cultures in order to highlight and understand the diversity of energy cultures as well as their spatial heterogeneity. Through these findings we situate the research within the wider discourse on built environment-energy relationships and the implications for energy efficient demand-side management.

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Keywords: Residential energy consumption, Energy cultures, Energy practices, Accra

LAND USE PLANNING AND FLOOD RISK REDUCTION IN RWANDA

Abstract ID: 1108.0.0.223.2024
Pre-Organized Paper Presentation

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Land use Support for land use planning as a tool for safeguarding human settlements from hazards and future climate risk is growing globally. Because flooding remains the most prevalent natural hazard worldwide, there is a pressing need for effective flood risk management strategies within land use planning around the world. The identified association between development issues and disaster risk (Blaikie et al., 2004; Pelling et al., 2015) indicates that weather-related climate change impacts, such as severe flooding are projected to disproportionately affect sub-Saharan Africa, where developmental challenges such as rapid population growth and food insecurity undermine capacities to withstand shocks (IPCC, 2022).

The landlocked East African nation of Rwanda faces severe land constraints due to its high population density, dependence on agricultural land for subsistence, and challenging topography that restricts land area for human settlements. With the highest population density on mainland Africa, nearly three-quarters of Rwanda's workforce relies on agriculture for their livelihoods, either through employment or subsistence farming. The country's rugged terrain, aptly nicknamed the "land of a thousand hills," limits the availability of land suitable for safe development. Rwanda has observed a general trend of rising average temperatures and increased variability in rainfall patterns, leading to more frequent floods. For example, in May of 2023, torrential rainfall caused flash flooding and landslides, killing 131 people and destroying over 5,000 homes (Reliefweb, 2023). The convergence of these issues – a rapidly growing population, heavy dependence on land for food production and livelihoods, and a landscape highly susceptible to floods and landslides, exacerbated by the looming threat of climate change – underscores the profound significance of spatial organization and governance of land in Rwanda.

The Rwandan National Land Use and Development Master Plan 2020-2050 reveals concern for sustainability in the face of high population growth projections – not simply in the loosely used term related to the environment but ensuring there is enough space for human settlements and food production to feed future populations. The ambitious plan focuses on land use efficiency and finding best and most productive and sustainable uses for its lands to support population growth, food production, and prevent losses due to natural and human-caused hazards. There is an increasing recognition that disaster and climate risk management should shift from the sole concern of emergency management to a shared responsibility across sectors of government, including land use planning, environmental regulation, and agricultural practices. A holistic approach to disaster risk management is key for Rwanda's economic development visions and could set a positive example for governments around the globe.

This research seeks to investigate research questions of a) how flood and landslide risk reduction is incorporated into national land use planning and governance in Rwanda, and b) the social and development implications of planning based on the optimal spatial organization of land uses. Through content analysis of land regulation, the proposed research evaluates the cumulative impacts of land use planning documents. Content analysis of planning documents and land regulations will be employed to understand Rwanda's approach to flood risk management. To better understand the potential social impacts of those policies on risk reduction for vulnerable populations, documents will be further analyzed for potential land use planning inequities often associated with land use interventions, (Anguelovski et al., 2016; Pelling et al., 2015). Interviews with local experts, ministry staff and supporting organizations provide further context to the impacts of policies. The complexity of this case will help draw lessons that may assist policymakers around the world with addressing some of the challenges of flood risk management through comprehensive land use planning and regulation in development contexts.

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Keywords: disasters, land use, floods, Africa, international development

TURN-UP URBAN DEVELOPMENT IN THE GLOBAL SOUTH: URBANIZATION IMAGES IN ACCRA

Abstract ID: 1108.0.0.95.2024
Pre-Organized Paper Presentation

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Over the years, growing interest in sustainable urban development in the Global South has been strongly connected to mega projects driven by international organizations, like the United Nations Development Programme (UNDP) and the World Bank. The wavering mindset of many countries in the Global South concerns that relying on the state, conventional governance, and typical public administration approach could not help them endure emergencies or change development trajectories toward positive imaginations. The underlying message here suggests that external support would be crucial to help places fasten their development pace toward the directions appointed. A case of such is the establishment of Sustainable Development Goals (SDGs), of which numerous indicators have been developed to monitor countries' progress along the race. With the scope of success narrowly defined, many countries have subscribed to the ideological model of international development, often with mega projects initiated and invested to keep them on track toward successful urban development. Arguably, adopting mega projects seems to be the dominant driver in deciding what urban development could occur and if countries might align themselves with the standardized sustainable development objectives.

Under such a background emerges the question of whether these grand, foreign-aided, and selective urban development projects would be the universal panacea that must be pursued in conjunction with the ignorance of enhancing the efficiency of daily intervention, management, and governance that the states themselves might uphold. Certain reflective efforts are needed to reposition the mega projects, partly by reevaluating contemporary urban development practices regarding the (un)expected results. This paper responds to such a request through an ethnographic approach, specifically by utilizing stories of representative urban development projects in Accra, Ghana, to reflect on noticeable impacts and shortfalls. The results help articulate propositions that mature intervention measures and adjust the objectives of mega projects. While relying on mega projects results in notable concerns (e.g., financial instability has led to a greater burden toward long-term prosperity), opportunities have also emerged when local actors attempt to curve the planning context, better utilizing the external resources and chances to benefit the country. Nevertheless, many concerns await to be resolved.

Against the current trend conceiving that having mega projects is the most critical urban transformation driver among cities in the Global South, the authors argue that sustainable urban development should emphasize further the participatory exercises of the local actors, starting by recognizing the local partners whom interventions should serve. The state should weigh on the construction/constitution of general funds under regular/ordinary governance

to facilitate urban changes. Alternatives of development leaning on local determination and ordinary governance should be encouraged to turn up adaptive development modes among places in the Global South.

Citations:

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Keywords: Mega Projects, Africa, Global South, Ethnography, International Development

PLANNING IN AFRICA III: INTERSECTIONS & TENSIONS OF BOTTOM-UP GOVERNANCE

Abstract ID: 1112.0.0.71.2024

Pre-Organized Session Summary

Session Includes: 1108.0.0.104.2024, 1108.0.0.94.2024, 1108.0.0.352.2024, 1108.0.0.153.2024

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Stefan Chavez-Norgaard [Columbia University] spn2121@columbia.edu
Meryem Belkadi [UBC - SCARP] merybelkadi@gmail.com

This session is in direct conversation with two more pre-organized sessions that explore the challenges and opportunities to urban development in Africa with a view to creating just and equitable cities. In particular, it addresses lives at the intersection of community and governance. This panel underscores the significance of community engagement in state interventions, particularly when planning for marginalized communities in cities across the global south. Papers in this session focus on grassroots responses to professional planning, the impact of state intervention on marginalized communities, and the complexities of forced displacement. The discussion will explore themes such as community resilience, the role of gender in urban planning, and the limitations of conventional planning approaches in addressing the needs of marginalized populations. Overall, the audience will be encouraged to debate how the government engages with marginalized communities at the grassroots to include citizens at all socio-economic strata in plans for African cities.

Learning Objective(s):

- Understand strategies for addressing on-ground challenges related to informality and poverty by collaboratively engaging with communities to develop and implement tailored solutions within planning processes.
- Understand the unique planning challenges associated with engaging diverse communities within African cities, including cultural, socioeconomic, and infrastructural considerations.
- Contrast planning practices and frameworks between the Global South and the Global North.

HOUSING TRANSITION POST-DISPLACEMENT – CASE STUDY OF TANGIER IN MOROCCO

Abstract ID: 1108.0.0.104.2024

Pre-Organized Paper Presentation

Meryem Belkadi [UBC - SCARP] merybelkadi@gmail.com, presenter

Forced state-led displacement in urban areas of Morocco is a complex phenomenon that unfolds over a multitude of scales, spaces, and systems. Yet, the phenomenon's complexity has not been fully captured by urban planning scholarship and policymaking, which treat movements of displacement as linear and artificially bounded processes, beginning and ending with the destruction of informal housing units. This research considers deconstructing this pre-conceived linearity and boundedness of displacement and seeks to better understand the different phases that precede and follow the actual destruction of housing units. The research places an emphasis on the post-displacement transition phase and analyzes the trajectories and experiences of displaced individuals

and households, as well as the key factors shaping these trajectories. The study examines these issues through a case study of Tangier, Morocco, and adopts a gender-informed perspective in its analysis.

For this purpose, this research asks the following questions: 1) What are the different phases of displacement? 2) What are the different factors that impact these different phases, including the post-displacement transition phase? By answering these research questions, this paper aims at shedding light on the spatio-temporality of movements of displacement, namely the transition phase pos-displacement.

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Keywords: Housing displacement, International development, Informal settlements, Uncertainty, Morocco

INTERSECTIONS AND TENSIONS OF RESIDENT-INITIATED REPURPOSING

Abstract ID: 1108.0.0.94.2024

Pre-Organized Paper Presentation

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Planning issue: Across Sub-Saharan Africa, ordinary residents are participating in the production of space, shaping built environments and urban governance such that cities work to serve marginalized populations' interests and basic needs. These resident efforts are culturally and contextually grounded, responding iteratively to past (and ongoing) planning injustices. In post-apartheid South Africa, such resident-initiated planning necessarily re-appropriates spaces from the erstwhile, undemocratic, apartheid era (Robinson, 2006; Pieterse, 2008: 108–110). In this presentation, I assess and evaluate broader dissertation research that has employed the conceptual label of repurposing to explain residents' grassroots popular-democratic responses to professional planning over time in one city, Mahikeng. I ask: what are the consequences of bottom-up repurposing as an alternative urban-development paradigm?

Approach and methodology: My evaluative approach is grounded in phronesis, or practical wisdom, as applied to planning analysis (Flyvbjerg, 2001). Flyvbjerg (2002) considers power's role in planning practice, studying Aalborg, Denmark. To explore repurposing, I draw on work by South African urban theorists including Cirolia et al. (2021), who engage the concept directly, and Scheba and Millington (2023), Ngwenya (2023), Miraftab (2012: 283), and Simone (2004: 415, 421), who use related language to analyze residents' interventions in planning processes. I attempt to understand residents' efforts systematically, as an alternative, programmatic vision of urban life occurring in situ, or what Urson et al. (2022) call an "alternative urban imaginary."

Methods include historical and archival analysis at seven research archives across South Africa; semi-structured interviews and personal communications with over 200 research colleagues, including academics, activists, residents, planners, planning consultants, and public officials; and in situ analyses of ~80 buildings, around 60 of have been repurposed, in Mahikeng. I focused my analysis on four diverse case-study neighborhoods of Mahikeng in greater depth. The study's interpretative framework is driven by institutional analysis, and I coded data using a thematic and select coding process in ATLAS.ti. Fieldwork in Mahikeng took place in three phases between March 2022 and May 2023.

Findings: There are myriad consequences—practical and normative—of resident-initiated alternatives to urban governance in Mahikeng. On the one hand, I find in repurposing's roots longstanding contestation to apartheid racial modernism and top-down planning developed without locals' participation. Yet many residents repurpose not out of contestation but for practical survival, or use their Basic Income Grants to repurpose, with spatial alterations largely compatible with status-quo conditions. Do such resident-produced spaces actually enable the state to shirk public responsibility through a self-help style entrepreneurialization, what Gago and Mason-Deese (2017) call "neoliberalism from below?" Or, is the practice of repurposing so inherently differentiated and particular that it is impossible to generalize the practice's consequences? Because repurposing often occurs at the level of a single parcel, and for a great variety of stated motivations, all three frames hold true. With repurposing, binaries between late-liberal profit versus counter-hegemonic social welfare, and between restitution versus developer-interested private property effectively collapse within fluid, mutually implicated chains of relationships. Repurposing reveals much about the contemporary failures of professional planning, as it gestures toward intersections and tensions inherent to negotiated, bottom-up governance at the level of the local state.

Implications: Alternative circuits and logics of city-building, led by ordinary residents, occur well beyond Mahikeng. Indeed, repurposing is merely one tactic of spatial production shaping urban development in Sub-Saharan Africa. The practice creates both opportunities and tensions for urban governance, and underscores a relational approach to planning driven by accommodation, negotiation, and vernacular form, yet constrained by land, law, and property

regimes, as well as world-economic systems and afterlives of white-minority rule. Repurposing offers planners an opportunity to understand residents' interests, crystalized in built environments.

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Keywords: Repurposing, Production of space, South Africa, Planning imaginaies, Democracy

INCOME BARRIERS FOR HOSTS AND DISPLACED IN JUBA, SOUTH SUDAN

Abstract ID: 1108.0.0.352.2024
Pre-Organized Paper Presentation

Timothy Berke [University of Michigan, Ann Arbor] tberke@umich.edu, presenter

The UNHCR reports that approximately 114 million individuals—about 1.5% of the world's population—live as displaced persons. This figure continues to increase due to ongoing political conflicts and climate change's ramifications. Seventy-six percent of forcibly displaced persons are in low-income countries, where host countries have often off-loaded state responsibilities such as economic regulation and social welfare provision to social networks and civil society (Meagher, 2005). This overburden has led urban residents to depend on social networks and civil society rather than the state. However, the arrival of displaced persons also offers development opportunities for under-resourced cities and governments through external inputs from various United Nations agencies, bilateral donors, and international NGOs. Though more than half of displaced people opt to settle in urban areas (Barratt and Ross, 2021), most relief organizations still focus their services on traditional rural camp settings, such as refugee or internally displaced camps.

Little research has examined how displaced and host residents interact in urban areas. Some evidence suggests that host residents dislike the arrival of displaced people because they compete for resources and opportunities. However, more information about the interpersonal dynamics between displaced individuals and established urban residents is needed. Self-sufficiency and stability are goals for both host residents and displaced people. Therefore, examining these dynamics as they relate to the acquisition of income-generating activities would provide useful insights. Do host residents and displaced persons living within the same urban residential areas experience similar or different barriers or challenges around economic self-sufficiency? How do social networks impact these barriers?

While research has examined how displaced persons meet their needs in traditional encampments, more must be conducted on lived experiences in urban areas.

To address this lack of information, I conducted a household survey (n=180), ten interviews, and two focus group discussions in three residential areas that housed internally displaced persons (IDPs) and host residents in Juba, South Sudan, in 2022. The research produced three key findings. First, host and IDP residents perceived access to financial capital as the most significant barrier to income generation. Second, for both host and IDPs, the need for more adequate skills was rated as one of the lowest barriers compared to eleven other variables, such as information about the job market, loans, and access to the market. Third, more robust social networks decreased the perceptions of access to financial capital as a barrier.

When designing and implementing income-generating policies for forcibly displaced persons (e.g., accessing loans, accessing market spaces, lacking family and political connections) in urban settings, it is vital to tailor these policies to their specific needs. For example, most income-generating support offered by UN agencies and NGOs for displaced persons focuses on skills building, contrary to my finding that lack of adequate skills was perceived as one of the lowest barriers to seeking income generation. Additionally, this research indicated that robust social networks improve "access to capital." Thus, interventions for income generation should incorporate building these networks.

If current trends continue, the world will witness increasing displaced people due to climate change and conflict. Cities will receive the majority of displaced persons, so we must proactively consider how urban strategies, including income-generating interventions, can best meet the needs of established residents and new arrivals.

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Keywords: Displaced Persons, Income-generation, South Sudan, Social Networks, Integration

STRUCTURAL VIOLENCE IN INFORMALITY'S LANDSCAPE: COMPARING GA-MASHI & KOCHI

Abstract ID: 1108.0.0.153.2024
Pre-Organized Paper Presentation

Kimberly Noronha [University of Pennsylvania] knoronha@upenn.edu, presenter

Tasked with creating liveable cities that accommodate future growth, planners seek to order space according to function. Planners are driven by the need to define and maintain a hegemony of a desired shape of the city, what I call a planned normal. This demands that plans, zoning regulations, legislation, and policy create a structure of boundaries that control how space will be used. In the global south, the planned normal is largely an aberration; the dominant hegemony is organic and informal. At one end of this vision are residents who constantly test these

boundaries through everyday negotiations, and compromises with the state. In my dissertation undertake a comparison of women in fisher communities in two informal settlements – Ga-Mashie (Accra, Ghana) and Fort Kochi (Kerala, India). I did this using remove photovoice, following which I conducted walking and in-depth interviews with the participants.

In this paper, I demonstrate how the imposition of boundaries and control aimed at creating the planned normal results in these women experiencing violence. The evidence I present demonstrates how, in each field site and in different ways, this violence is tied to the ways in which the state establishes control; in short, the violence is structural. The paper illustrates how gendered norms intersect with economic activities, exposing women to various forms of abuse and exploitation, often rationalized based on moral judgements of women's place on the street. This normalization of violence stems from entrenched patriarchal attitudes, where women's bodies are exploited for economic gain. The paper elucidates how women navigate this hostile environment, resorting to strategies like appeasement and self-policing to protect their livelihoods. Despite facing constant threats, they endure harassment and assault to sustain their businesses and support their families. This underscores the structural inequalities embedded within urban spaces, where states fail to uphold the rights and safety of these women.

I demonstrate how, in Accra, women experience sexual violence, verbal abuse, and physical violence in public spaces in the course of their daily attempts to earn a living in public spaces as street violence. In India, I demonstrate how the state's attempts to ensure women's access to livelihoods and the preservation of the community results in women experiencing horrendous interpersonal partner violence. In both cases, violence is the payment the women make in the public and private spheres to continue their informal livelihoods.

Scholars have challenged the view of violence against the poor and women as resulting from individual actions. They advocate for going beyond the acts and their repercussions to ask how the state, both advertently and inadvertently, creates a structure that allows such violence to perpetuate. In doing so, they move beyond cause-effect relationships of the immediate violence.

Acknowledging the state's and planners' legitimate role and need to set boundaries and reasonable control for the use of space, this paper asks how that role can be successfully balanced with residents' (particularly women's) legitimate right to earn a livelihood without the expectation of violence. In short, is there a way to change the way we, as planners, view the planned normal as one without structural violence?

The paper concludes by calling for inclusive urban planning, recognising the agency and contribution of women from marginalised communities. It calls for a shift in policy frameworks to prioritize gender-sensitive approaches and equitable access to public space. By amplifying the voices of these women, this paper advocates for meaningful engagement with grassroots communities in shaping urban development agendas. Ultimately, it underscores the imperative to create more just and inclusive cities in Africa and Asia.

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Keywords: urban informality and poverty, structural violence, just cities, African urbanism, Asian urbanism

PLANNING IN BRAZIL: GOVERNANCE CONFLICTS AND SOCIO-SPATIAL INEQUALITIES

Abstract ID: 1112.0.0.424.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.979.2024, 1108.0.0.719.2024, 1108.0.0.796.2024, 1108.0.0.1106.2024

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Planning is intimately tied to pursuing social justice, yet it grapples with the complexities of addressing deep-seated inequalities. In Brazil, urban planning has historically been marked by degrees and intersections of informality, with citizens gradually and continuously reshaping their living spaces, often operating outside formal regulatory frameworks. Efforts to uphold the extensive social rights guaranteed by the Brazilian Constitution have long revealed profound contradictions. These include exclusionary spatial production, inadequate housing accessibility, and the conflicting demands of high environmental standards applied to communities with persistent socio-economic challenges. We propose discussing how Brazilian cities grapple with social justice amidst governance conflicts related to protected rights. This session will analyze the intricacies of integrating informal spaces into the broader urban fabric through governance imbalance in an unequal society such as Brazil.

Learning Objective(s):

- Understand the complex challenges of urban planning in Brazil, encompassing informality, spatial inequality, and the intersectionality of social rights guaranteed by the Brazilian Constitution.
- Analyze how governance conflicts, particularly regarding protected rights, impact social justice efforts in Brazilian cities and explore strategies for enhancing social equity in the built environment.

HIGHER COURT RULING ON HOUSING AND ENVIRONMENTAL CONFLICTS IN SÃO PAULO

Abstract ID: 1108.0.0.979.2024
Pre-Organized Paper Presentation

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Judicial Courts in Latin America have increasingly assumed a proactive role in shaping social rights and environmental policy (Ríos-Figueroa & Taylor, 2006; Sieder et al., 2016). This judicial influence extends to urban planning and environmental policy, with courts often intervening to address gaps or failures in legislative and executive action. While policy judicialization offers opportunities for addressing societal grievances, concerns persist regarding potential power imbalances between elected and non-elected branches of the State and democratic accountability (Kramarz et al., 2017). However, prior analysis of legal cases under the São Paulo State Court of Appeals jurisdiction involving land and environmental disputes on informal territories found no basis for the allegation that courts effectively assume prescriptive roles in shaping policy outcomes and instead mainly restrain their rule to enforcement of existing regulations and rights (Walker et al., 2024). As a place of study, São Paulo is notable for its intricate and massive urban landscape and its prominent role as South America's 'global city' (Sassen, 2009). Strong social movements and advocacy groups push the agenda forward for more inclusive planning, with the impacts of their efforts for social rights extending well beyond São Paulo's immediate boundaries. This paper expands on a previous study that analyzed 36 court cases within the São Paulo State Court of Appeals from 2013 to 2016 regarding informal settlements in environmentally protected areas. Two of these cases were awaiting a decision at the third tier, national level courts (Pimentel Walker et al., 2024). The research asks: How do third-tier, national-level Courts in Brazil decide disputes between constitutional rights to 'housing' and a 'healthy environment' in cases involving informal settlements in environmentally protected areas? What are the implications of their rulings on urban development? To what extent do rulings in São Paulo cases comply with existing national jurisprudence compared to other states at the Superior Court of Justice and the Supreme Court?

To understand how Higher Courts in Brazil decide these disputes, we investigate shifts in judicial approaches within Higher Courts and their impact on urban development. Specifically, we examine how the Brazilian Supreme Federal Court and the Superior Court of Justice adjudicated disputes between constitutional rights to 'housing' and a 'healthy environment' when challenged to do so in this pool of 36 pre-selected cases.

Using a retrospective longitudinal approach, we scrutinize legal arguments from involved parties and State Court Justices, focusing on fundamental rights such as 'housing,' 'property,' 'health,' and 'healthy environment,' and the higher courts' final rulings. São Paulo-based cases serve as a control variable to assess compliance with national jurisprudence compared to cases from other states (dependent variable).

When deciding disputes between constitutional rights to 'housing' and a 'healthy environment,' our findings indicate that Higher Courts' rulings do not differ significantly from São Paulo State Appeal Courts in upholding the principles of separation of powers and the Reserva do possível doctrine, which limits social rights implementation based on available public resources. However, compensatory measures addressing social issues are notably more pronounced, suggesting that Higher Courts prioritize costly but small-scale mitigating solutions while respecting the fundamentals of the separation of powers and the prominence of municipal authorities in planning matters. The implications of this research for urban planning highlight the judiciary's role in shaping urban development policies and strategies, particularly in balancing the competing interests of housing rights and environmental protection. By examining how courts navigate these issues, urban planners, housing advocates, and environmentalists can act earlier to support housing or environmental protection needs, anticipating legal constraints and opportunities inherent in their work and pushing for policy reform.

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Keywords: Informal Settlements, São Paulo, Brazil, Urban Environmental Protection, Competing Social rights, Policy Judicialization

BETWEEN CITY AND STREAM: URBAN GROWTH AND ENVIRONMENTAL DYNAMICS IN BRAZIL

Abstract ID: 1108.0.0.719.2024
Pre-Organized Paper Presentation

Luciana Barretto Lemos [University of Texas, Austin] lucianalemos@utexas.edu, presenter

The migration of Indigenous communities to urban areas, especially in settler colonial nations like Australia, New Zealand, and Canada, is on the rise (Dorries et al., 2021). This trend is also observed in Latin American countries such as Brazil, where the most recent census showed a substantial increase in the Indigenous population, with over 40% residing in urban areas, particularly in Manaus, the capital of Amazonas (IBGE, 2022). Despite this migration, persistent disparities in accessing essential services like housing, healthcare, and clean water persist among Indigenous populations compared to the general population (Romanel & De Melo, 2019). Neighborhoods with the highest concentration of Indigenous peoples generally lack proper water and sanitation, leading this population to rely on potentially contaminated water sources like rivers, lakes, springs, and wells (Romanel & De Melo, 2019).

The Tarumã-Açu Basin in Manaus is an example of this critical situation. Considered the last green area in the city and home to numerous Indigenous communities from throughout the region, the Basin has been dramatically affected by pollution due to urban expansion - primarily from the release of untreated sewage into the river - resource extraction, the use of pesticides in plantations located near Indigenous communities and illegal mining activities (Romanel & De Melo, 2019).

To reverse this situation and establish a sustainable management water resources model, state officials in Brazil have been creating watershed management committees to preserve water sources and contribute to access to quality water (Romanel & De Melo, 2019). In this sense, the Tarumã-Açu Basin Committee was established in the Amazon Hydrographic Region to contain environmental impacts and ensure local sustainability (Costa, 2020). In its statute, the Committee claims to adopt the participatory management model, which would imply decentralization of decision-making and indicates the existence of several discussions among the government, civil society, and users of the hydrographic Basin, who would no longer be mere spectators but would become collaborators, presenting their problems, suggesting actions and participating in the planning process (Costa, 2020).

However, residents of Indigenous communities in the Tarumã-Açu Basin region claim that despite being primarily impacted by water source degradation, they are not invited to participate in decision-making regarding the Basin

management. Additionally, they fear their demands will not be included in the Tarumã-Açu Water Management Plan currently under development by the Committee and city officious.

Drawing from the Environmental Justice Framework, which emphasizes the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, in the development, implementation, and enforcement of environmental laws, regulations, and policies (Bullard, 2001), this study aims to investigate the representation mechanisms of the Tarumã-Açu Basin Committee. Through archival research and semi-structured interviews with the Committee's members and Indigenous leaders, the research seeks to understand the extent to which the Indigenous populations living along the watershed feel represented by the Committee. Furthermore, this research contributes to understanding how inclusive and equitable environmental planning can be achieved in practice by assessing city officials' vision and Indigenous communities' values and needs concerning water.

The study's findings can inform policymakers and practitioners about the gaps in current practices and offer recommendations for more inclusive and democratic approaches to environmental planning and water resource management.

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Keywords: Water Resources Planning, Environmental Justice, Urban Growth, Indigenous Peoples, Brazil

UNPACKING URBAN INFORMALITY: A POLITICAL ECONOMY OF FAVELA REMOVALS

Abstract ID: 1108.0.0.796.2024
Pre-Organized Paper Presentation

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Urban scholars have long grappled with the complexities of urban informality, yet recent theoretical developments have expanded our understanding beyond traditional frameworks. More recent scholarship has moved beyond dualist or legalist accounts to understand urban informality as an organizing logic of urban transformation (Roy, 2005) and as a site of critical analysis (Banks et al., 2020), opening new perspectives to grasp such processes. In addition, conceptualizations such as Simone's (2004) 'fluidity', Yiftachel's grey spaces (2009), and Caldeira's (2017)

peripheral urbanization have challenged hierarchical and fixed conceptions of urban informality to transcend exclusive focuses on specific communities and locations.

This paper builds upon these advancements by undertaking a historical political economy analysis of urban informality in São Paulo, South America's largest city. Drawing on archival research and employing a multi-scalar approach, this study delves into the intricate web of actors, relationships, and socio-political processes that have shaped São Paulo's urban landscape. Specifically, it examines the removal processes of favelas during the 1970s and 1980s, shedding light on the enduring consequences of such actions and their role in processes of capital accumulation through dispossession and the making of the city. Here I am interested in the relational movements of people and capital, of wealth, affluence and dispossession, and poverty across the urban realm. I thus ask the question of how capital and capital accumulation shape the making of urban informality as a mode of governance in the city of São Paulo.

Processes of removal were in fact transfers of people elsewhere to less desirable land. Oftentimes, these transfers had the purpose of freeing land for the construction of urban infrastructure. In turn, infrastructure building was also a land valuation process, developing newly desirable land for investment and development. The findings from this article demonstrate how land commodification and capital accumulation rely on informality as a mode of governance to maximize gains and address its limits while opening new avenues of accumulation through dispossession. By unpacking the interconnectedness of these processes, this research offers critical insights into the political economy of urban informality as a mode of governance, not only in São Paulo but also in broader urban contexts. The findings contribute to ongoing debates within urban studies, urban planning, and urban geography, and provide valuable perspectives for scholars, policymakers, and practitioners grappling with urban development challenges worldwide.

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Keywords: Urban informality, urbanization, governance, accumulation by dispossession, Brazil

REVISITING PARTICIPATION IN SLUM UPGRADING PROJECTS, RIO DE JANEIRO, BRAZIL

Abstract ID: 1108.0.0.1106.2024
Pre-Organized Paper Presentation

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Participation in urban planning has been discussed in the U.S. planning literature since the seminal work of Arstein in 1969 lays the basis for a critique of participatory planning. In the 1970s new models of participatory planning

appeared, such as transactive planning, advocacy planning and radical planning. Nevertheless, the instrumental character o participation spaces received criticism, as well as its binary readings, which restricted the voices of subaltern individuals, leading to new theoretical contributions based on the practices of peripheral territories (Comelli, 2021).

Brazil's tradition on participatory planning is very recent, mainly the participation of vulnerable groups. Likewise, slum upgrading programs were an exception, while removal and eviction policies were the norm. The neo-liberal policies implemented since the 1980s reduced the role of the State in terms of welfare provision and had a significant impact on low-income groups, especially those living in precarious urban areas. In Brazil, since the 1988 Federal Constitution (1988 FC), citizens' participation is contemplated by legal-normative frameworks. However, consultation is the ultimate practice carried by most governments.

It was only after 2003 that real advances in participatory planning processes in Brazil gained impetus in the first term of President Lula da Silva´s progressive government. Similarly, it was after 2003, that new policies and program were devised for upgrading favelas. The realization of a series of Conferences of the Cities and the institutionalization of the Sectoral Councils aimed at creating spaces of citizen participation and at establishing a democratic management of public policies and public services, as well as propitiating a continuing follow up of the execution of public policies and services. Those were structured in the federal, state and municipal levels. Between 2003 and 2006 there were 29 national conferences about different themes, such as city planning, health, human rights, women's rights, environment, and race.

In the city of Rio de Janeiro there was almost no participation in planning issues up to the 1960s, with some very sparse attempts afterwards. Although there were many important urban plans and designs for the city during the 20th century, none of those had much participation. There were many episodes of resistance or complaints against different plans, but most of the time it was the will of the mayor with the pressure of some stakeholders that made a plan possible. Architects or engineers from the municipality created plans in their cabinets, sometimes with an external consultancy. The final draft of a plan reflected the negotiations between planning professionals, stakeholders such as real estate promoters and the mayor.

Based on decolonial, feminist and anti-racist approaches to planning (Freire, 1996; hooks, 2019; Lefebvre, 2004; Yiftachel, 1998), this paper intends to revisit participation in slum upgrading project in Rio de Janeiro, Brazil. I argue that an emancipatory participatory planning in peripheral and vulnerable territories in Brazil is possible, only if co-creative spaces that allow both dialogue and conflict, are produced in the peripheral territories. Also, anti-sexist and anti-racist practices have to be incorporated in the right to a just and egalitarian city.

I use digital ethnography and illustrative cases of bottom-up planning practices, as well as a militant research method from my own participation in a grassroots group in Favela Rocinha.

The paper contributes to instruct planning theory and public policies in issues concerned with participatory planning in vulnerable settlements. It supports the argument that vulnerable local groups and dwellers of favelas are socio-spatial groups, that produce knowledge and are capable of solidarity action in the face of adversity. It also reinforces the importance of incorporation anti-sexist and anti-racist practices in planning.

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Keywords: participatory planning, decolonial planning, feminism, anti-racist practices, Rio de Janeiro

RETHINKING URBAN RIGHTS FROM THE SOUTH

Abstract ID: 1112.0.0.34.2024

Pre-Organized Session Summary

Session Includes: 1108.0.0.229.2024, 1108.0.0.1118.2024, 1108.0.0.46.2024, 1108.0.0.134.2024, 1108.0.0.854.2024

Ranjani Srinivasan [Columbia University] rs4111@columbia.edu, organizer

In recent decades, planners, policy-makers, and urban activists have struggled to expand urban rights in the context of growing economic precarity, uneven development, restructured governance, and climate change. Coined in 1968, Lefebvre's initial demand for the 'right to the city' came at a time of increased metrocentricity. Cities were seen as both economic engines of growth and opportunity, as well as a space constantly subject to the workings of capital. While the ability to shape urban space has been recognised as a fundamental component of citizenship claims, there now remains a dire need to rethink urban rights in the context of contemporary challenges and emergent patterns of urbanisation. In this session, we bring together diverse perspectives on how planning and urban rights can be reimagined across a variety of global contexts in East Asia, South Asia, North Africa, and Latin America.

Learning Objective(s):

- Examine contemporary challenges that are eroding urban rights across different geographies.
- Highlight how urban rights can be rearticulated through engagement with new patterns of urbanisation.

URBAN RIGHTS IN THE ANTHROPOCENE: RETHINKING TERRITORIALITY

Abstract ID: 1108.0.0.229.2024

Pre-Organized Paper Presentation

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This paper takes as its point of departure the contemporary climate crisis and asks whether planners will need to rethink the territoriality of efforts to guarantee citizens' "rights to the city," precisely because of looming ecological challenges whose origins and dynamics operate at a scale that is larger than the city or its neighborhoods. It starts

from the assumption that in the present era, a range of ecological factors that impact urban life and livelihood -- such as water scarcities and intolerable heat – operate and are impacted by dynamics that transcend the formal political boundaries of the city even as they are governed through infrastructural and policy interventions made at much larger regional, national, and global scales. This reality not only poses a challenge to urban planners who seek to address questions of sustainability through engagement with residents at the neighborhood or city scale; it also raises questions about what could or should be considered `urban rights' and who should be responsible for guaranteeing the equitable and just production of the urban built environment in the Anthropocene. Using examples such as the declining supply of water and accelerating temperatures in several cities of the global south, this paper assesses existent mobilizations and policies being formulated to guarantee what I term `ecological justice,' with an eye to proposing new territorialities of planning action that transcend cities, operate through regions, and network citizens across a more extended terrain of action and accountability.

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Keywords: right to the city, climate crisis, territoriality, global south, water

DAMS, ROADS, AND A FOREST: CONTESTATION BEYOND THE ZONE IN SOUTHEAST ASIA

Abstract ID: 1108.0.0.1118.2024
Pre-Organized Paper Presentation

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Dedicated industrial zones were conceived of to jumpstart national economies through concentrated and incentivized export-oriented industrialization in so-called under-developed nations. Despite the many terms used to describes such spaces—special economic zones, free-trade zones, export-processing zones, industrial estates, or science parks—they share common characteristics of clearly demarcated boundaries, regulatory exemptions from its immediate context, and dedicated infrastructural provisions. Scholarship on zones emphasize its spatial extents as bounded zones of exception with variegated layers of market regulations, citizenship and sovereignty (Ong 2006). Others focus on zones as prototypical spaces produced by global flows of capital, labor, and expertise (Easterling 2014). However, this risks conceptualizing zones as abstract spatial enclaves detached from its landscape physically and temporally. In this paper, I shift the analytical gaze to the extended "infrastructural regions" of industrial zones—the area of active interactions between the zone and its surroundings through infrastructure (Larkin 2013; Forman 2008). Infrastructures of the zone are indicative of the operations on both sides of its boundaries. I define the "infrastructural region" by the functional territory that supports the zone, including biophysical processes, infrastructural systems, policy environments, and social networks. This shift away from conceiving of the SEZ as an enclave allows the analyst to move fluidly between scales—from the spaces of the zone itself to the supra-national scale.

This paper analyzes industrial zones in Thailand and Myanmar by mapping their infrastructural regions and spatial politics. Under the guidance of JICA since the 1970s, Thailand embarked on nation-wide industrial and infrastructure planning project culminating in the Eastern Seaboard Development Plan—an automobile manufacturing and petrochemical industrial region connected by infrastructure and industrial zones south of Bangkok. However, in 2008, a landmark lawsuit brought by local civil society organizations halted progress on numerous petrochemical plants, while in 2012 a deadly chemical explosion resulted in protests by environmental groups and prompted stricter environmental regulations. Thailand no longer seemed to be a viable site for industrial investments. In response, the Thai government announced a collaboration with Myanmar to develop a new industrial zone along the Andaman Sea.

The proposed Dawei project is a 270-km2 industrial zone supported by a transnational road link, and associated power and water supply infrastructure. Over the years, plans for the Dawei Road and Industrial Zone have weathered multiple political regimes in Myanmar and Thailand and impacted the daily lives of local communities. Thirteen villages were relocated from within the zone and even more beyond the zone due to land grabbing by opportunistic investors and military cronies. Concerns over the environmental impacts of the zone and road have mobilized an unusual transnational coalition of local civil society groups, village communities, and international NGOs. Organized protests were located at sites for critical infrastructure beyond the zone boundaries—an International Rivers Day celebration at the proposed site of a reservoir dam, the documentation by local villagers of key freshwater species in an impacted watershed of the project, and concerted efforts to protest the construction of a transborder highway across the ecologically significant forests in the Tenasserim Range.

By moving beyond the zone and into its infrastructural region, it grounds the grand narratives of development and global capital in the material and spatial realities of the landscape to understand uneven development and contestations that often occur beyond its legal boundaries.

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Keywords: Zones, Infrastructure, Industry, Environment

THE RIGHT TO A CITY: RETHINKING WELFARE CAPITALISM THROUGH URBAN RIGHTS

Abstract ID: 1108.0.0.46.2024
Pre-Organized Paper Presentation

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This paper examines how institutional restructuring of State-owned Enterprises (SOEs) for purposes of managerial efficiency and market discipline has been complicated by symbolic continuities in state-labour relations. Public firms have remained an important component in Indian development policy despite enduring decades of critique and neglect. In terms of public land holdings, urban infrastructure, and capital, these firms continue to wield considerable influence over the local political economy. From being hallmarks of state influence on the economy, scholars like Chatterjee (2017) note that currently most robust SOEs have been retrofitted as 'state-market hybrids' to fit within the contemporary paradigms of neoliberal economic policy. But in other cases, the push for disinvestment and lack of serious interest from private investors has led to loss-making SOEs being rendered defunct. How, then, I ask, have labour unions and public sector employees—both powerful electoral constituencies—responded to these changes?

Using ethnographic and archival analysis, I examine an industrial district in Karnataka state, hosting the two SOEs—the successful Bharat Earth Movers Limited (BEML) and the defunct Bharat Gold Mining Limited (BGML). Industry closure and the encroaching threat of privatization have caused worker unions to take the state to court, where they have experienced moderate legal success articulating public sector employment and housing as constitutional rights while reaffirming SOEs as statist benefactors. Further, outside the legal sphere, workers and residents use arguments centred around urban rights and subaltern emplacement to make a case for state employment.

This I argue, is because SOEs are still symbolically seen as extensions of the welfare state, especially in monocultural regional economies. This stems, among other factors, from the historically inverted urban policies of the public sector, where SOEs were allocated to underdeveloped regions, in direct contrast to the metro-centricity of private firms. Public enterprises were tasked with proletarianization, governance, and place development, transforming their rural surroundings into modern, planned, company towns. This immutability in the locational, governmental, and material aspects of public enterprises continues to interfere with its current reformist trajectory.

This paper makes several important contributions to planning scholarship: it closely reviews state employment and public enterprises from an urbanization perspective; second, it ties regional planning policy to local planning practice. And lastly, it focuses on subaltern emplacement and regional development, which have not been widely studied together.

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Keywords: South Asia, Urban rights, Regional Development Policy, Caste, State-Owned Enterprises

THE AFFECT MACHINE: COLLECTIVE TRAUMA AND PLANNING'S REBIRTH IN 1980S CHINA

Abstract ID: 1108.0.0.134.2024
Pre-Organized Paper Presentation

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What caused China's rapid urbanization during the post-1978 reform era? Conventional narratives emphasize the role of economic liberalization, agglomeration, and land markets. By extension, reform-era planning is often understood as a regulatory response to marketization. This story of market-led urbanization and planning is often told through the metonymic example of Shenzhen, which pioneered China's first experiments in land commodification and simultaneously experienced a dramatic rise in population, from a few hundred thousand to more than ten million in just a few years. But recent research calls into question some of the core assumptions of this narrative. For instance, historical investigations of the 1960s and 1970s have found that market mechanisms and cross-border trade already existed in Shenzhen before 1978, and policy research has shown that China's land markets are very rarely price-setting.

Based on more than 300 archival documents and more than 100 oral histories, this paper revisits the origins of China's reform-era urbanization and planning through an investigation of the Shekou Industrial Zone from 1978 to 1992. Now part of Shenzhen, Shekou preceded the larger Special Economic Zone by more than a year and was the site of some of China's earliest and most ambitious experiments in urban development and planning during the 1980s. Shekou's experience challenges the commonsense assumption that China's rapid urbanization resulted from economic liberalization and marketization. By contrast, I argue that urbanization arose from a change in affect, understood as the intersubjective circulation of emotional intensity. Responding to the collective trauma of the Cultural Revolution (1966–1976), people in Shekou shared a desire to leave the past behind and build a society based on new principles, including productivity, accountability, and community.

One of the ways Shekou people sought to nurture and sustain this society was through the creation of new spaces. For instance, infrastructural networks connected to Hong Kong were designed to make Shekou independent of larger power structures in China; commodified housing was designed to free people from dependence on the government; and expansive greenery was designed to inculcate a sense of pride in and responsibility for community well-being. These efforts represented some of the earliest innovations in Chinese urban planning after the profession was suspended during the Cultural Revolution. Drawing on the concept of the "growth machine," I describe this rebirth of Chinese planning as an "affect machine," in that planning and space were deployed as a means of sustaining a shared affective desire to build a new society.

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Keywords: China, affect, trauma, community development, planning history

URBANIZATION, AGRO-ECOLOGY, AND CLAIM-MAKING IN EGYPT'S SUGARTOWNS

Abstract ID: 1108.0.0.854.2024
Pre-Organized Paper Presentation

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Anti-colonial Afterlives: Urbanization, Agro-ecology, and Claim-making in Egypt's SugarTowns

This paper examines how agro-industrial regions in the global south offer new avenues to rethink urban rights amidst accelerated precarity and ecological degradation. Focusing on the de-industrializing sugarcane belt in the south of the Egyptian Nile Valley, this paper argues for a need to expand and rethink the methodological and conceptual tools for the study of urbanization and urban governance. More specifically, this paper shows how emerging modes of claim-making and "crises of care" in regions rendered "excess' to capitalist accumulation" (Ossome and Naidu, 2021) build on legacies of anti-colonial struggle and post-colonial ‘world-making’ (Getachew, 2019).

Developed as colonial plantations during the last decades of the 19th century, the sugarcane belt in the south of Egypt has a long history of capitalist dispossession, ecological degeneration, and anti-colonial struggle. By the early 1950s, the sugar geographies of Egypt witnessed rapid economic, ecological, and social transformations as the postcolonial state sought to turn the region into several nuclei for industrial development focused on sugarcane and its derivative industries, such as alcohol, HDF wood, paper, etc. The Aswan high dam would tremendously transform the region, turning it into perennial agriculture and adding large swathes of desert lands in the south of Egypt to the Nile Valley’s arable land. Concurrently, these sugar geographies witnessed rapid social transformations as the organization of production and land ownership would witness rapid transformations during the 1950s and 1960s.

Against this background of the region’s decolonial history, this paper traces the transformations that occurred at the advent of the open-door policy and a nation-wide shift away from heavy industries and towards land speculation and the flexibilization of labor that attempted to ‘un-do’ many of the gains of the unfinished projects of decolonization. By the 1980s, the Egyptian sugarcane belt went through a rapid process of deterioration as the state shifted to neoliberal policies and away from industrialization. Since then, the sugar towns slowly turned into a specific form of post-industrial cities in which the memory and promises of anticolonial developmentalism still loomed. With the flexibilization of how industrial and rural labor are organized in the sugar towns and their rural hinterlands, new geographies of sugarcane emerged in which the unpaid and cheapened work of landless workers, rural women laborers, child laborers, displaced Nubians, and migratory workers intersected. Despite the precarity and brutal dispossessions that the rural Egyptian Nile Valley went through since the 1980s, the sugarcane regions have persisted as the only state-protected cash-cropping region in Egypt. This has been a result of long battles over the last four decades as sugarcane growers and laborers have fought against the liberalization and abandonment of cane sugar production. Through deploying the term “anti-colonial hinterlands” *, this paper asks why do the

sugarcane regions in Egypt still exist under tremendous state protection despite the region being rendered as 'unproductive'? By engaging with writings by feminist agrarian political economists on social reproduction and surplus populations, this paper argues for a critical engagement with peripheral urbanization that centers the questions of gendered labor, surplus populations, and agrarian surplus populations.

* I build on Feminist Egyptian sociologist Sara Salem's work on "Anti-colonial Afterlives" to conceptualize "anti-colonial hinterlands" as a way to spatialize the 'world-making' projects of decolonization (Getachew, 2019; Salem, 2020).

Citations:

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Keywords: Agro-ecology, Gendered labor, decolonization, the hinterlands, urban rights

WORKING TOWARD JUST TRANSITIONS IN THE GLOBAL SOUTH

Abstract ID: 1112.0.0.132.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.338.2024, 1108.0.0.293.2024, 1108.0.0.772.2024

Gregory F Randolph [Georgia Institute of Technology] gregory.randolph@design.gatech.edu, organizer
Nidhi Subramanyam [University of Toronto] nidhi.subramanyam@utoronto.ca

As planning and policymaking agendas aim to enhance climate resilience and reduce the carbon footprint of local economies and built environments, pressing equity concerns have emerged—leading to calls for a "just transition." Without transformative planning that centers marginalized groups, economic and infrastructural change risks reinforcing or recasting existing inequalities. Yet the frameworks guiding "just transition" plans remain underdeveloped, particularly in the Global South. This session will advance ideas and frames on planning just transitions by asking: How do climate impacts and policy intersect with local and regional planning, and with what implications for economic security and well-being in the most vulnerable communities? In addressing this question, the session aims to illuminate gaps between global and national policy narratives around the "just transition" and the ground realities that confront planners in their attempts to realize just, low-carbon futures.

Learning Objective(s):

- To generate insights into how climate impacts and climate policy intersect with local and regional planning in the Global South.
- To illuminate gaps between how the "just transition" is envisioned in global and national policy narratives and how transitions unfold in practice on the ground, especially in the Global South.

LUANDA IN TRANSITION: PLANNING FOR CLIMATE JUSTICE AFTER AN OIL BOOM

Abstract ID: 1108.0.0.338.2024
Pre-Organized Paper Presentation

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Conventional planning approaches to addressing the global climate crisis often prove overly simplistic. They tend to reduce the city to a system capable of being designed and engineered to cut down carbon emissions, and they are also too narrowly focused on the city itself (Angelo and Wachsmuth 2020; Lejano and Kan 2022). The problem with reductionist approaches is at least twofold. On the one hand, they neglect situated options for urban climate action (Robin and Vanesa Castán Broto 2021); on the other hand, they overlook how the concentration of mitigation efforts in particular urban districts often exacerbates forms of exclusion elsewhere in the city (Long and Rice 2019). With this in view, critics argue, planning for climate adaptation and the energy transition calls for a lot more than the technical implementation of purportedly sustainable solutions—it must also grapple with the entrenched multi-scalar effects of climate action and the challenges of urban inequality, which requires both broadening the socio-spatial scope of its endeavors and placing equity and social justice at the core what it does. Written from Luanda, a city vulnerable to both the environmental impacts of climate change and the economic drawbacks of the impending energy transition, this paper builds on these critiques.

At the core of Luanda's contemporary mode of urbanization is its notable exposure to the global energy sector. The many transformations the city has gone through since the turn of the century, encompassing plentiful manifestations of surge and decline alike, are a testament to that. In the aftermath of the Angolan civil war, through times of boom and bust, Luanda has served as both the focal point for the spectacle of reconstruction and the backdrop for the collapse of modernist aspirations. It has also been a place, like others in oil-producing regions throughout the globe, where the lives of so many have been strongly tied to the ups and downs of the petro-economy. It is, therefore, reasonable to assert that, much like marginalized communities in cities worldwide are often negatively affected by urban climate interventions in nearby districts, many Luandans are bound to bear the impact of urban climate actions in faraway places. Analyzing urban change in a city deeply enmeshed in the global energy landscape, this paper contributes to adding new scales and relationalities to frameworks guiding "just transition" plans.

The resolve to create a just city in the era of climate change cannot stop at the urban edge. If the current priorities of mainstream urban climate action are intensifying urban inequalities, as proponents of urban climate justice denote, it is also true that concentrated efforts to transition out of fossil fuels in one part of the world can exacerbate environmental and economic vulnerabilities in entirely different areas of the planet. It is not just that there are multiple and contested developmental pathways to low-carbon urban development but that some of those have serious repercussions elsewhere around the globe, especially in historically peripheralized countries with strong ties to the prevailing energy production systems. In that sense, while broadening the scope of urban

climate action is crucial to the goal of creating a just city in the era of climate change, moving towards modes of theorizing, mobilizing, and planning for climate justice also requires a more expansive urban imagination—one that is both unrestricted by the confines of the city and unfettered from the geographical and jurisdictional limitations of social equity.

Citations:

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- Joshua Long and Jennifer L Rice, 'From Sustainable Urbanism to Climate Urbanism', Urban Studies 56, 5 (2019), 992–1008.

Keywords: Energy Transition, Climate Justice, Oil Cities, Africa

CO-PRODUCING AGROECOLOGICAL KNOWLEDGE FOR JUST TRANSITION IN URBAN WETLANDS

Abstract ID: 1108.0.0.293.2024
Pre-Organized Paper Presentation

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Cities worldwide are well-recognized as key players in climate action and governance (Tozer & Klenk, 2019). Urban climate action plans commit to the justice and equity priorities set out at the global level (such as Sustainable Development Goals) and within their respective national scales. Just urban transition, whereby climate action and justice priorities are coupled at city scale, has emerged as a promising framework for building pathways towards just and equitable low carbon cities (Hughes & Hoffmann, 2020). There is a dearth of research on just urban transition cases outside the Global North, particularly in Global South cities where ecological priorities often clash with the housing and work needs of the urban poor. In this paper, we reflect on an ongoing project of just urban transition in the city of Dhaka (Bangladesh). Here, a three year multiscalar project is underway to reinvigorate the Gulshan-Baridhara Lake, an urban wetland, that faces biodiversity decline from pollution, wetland fragmentation, over-extraction, and informal urbanization (Rahman & Hossain, 2019). The adjacent informal settlement, Bangladesh's largest, brings into sharp focus the necessity for a just transition so that climate actions do not lead to unjust evictions. Drawing from the consortium's activities such as knowledge workshops and community meetings to develop an informal settlement dwellers-led wetland stewardship programme, the paper shows how co-producing agroecological knowledge creates the groundwork for just transition in urban wetlands. More specifically, the paper highlights the co-creative processes leading to the restoration tools that bring together scientific wetland expertise, indigenous knowledge, and agricultural practices. The restoration tools support agroecological livelihoods, nature-based water remediation, and low-tech waste management, all of which together renews the wetland as a crucial climate-adaptive infrastructure against waterlogging and urban heat stress at the city scale. The case offers a scalable model of socially just ecological restoration based on the local actions of climate impacted urban poor dwellers and migrants. The findings of the research offers insights for

design principles, governance practices, and engagement approaches to advance just urban transitions for other cities.

Citations:

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Keywords: Just Transition, Global South, Informal Settlements, Urban Wetlands, Justice

OVERLAPPING ENERGY, LABOR & URBAN TRANSITIONS: THE CASE OF BIOGAS IN INDIA

Abstract ID: 1108.0.0.772.2024
Pre-Organized Paper Presentation

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Biogas—a renewable energy produced through anaerobic digestion of biodegradable municipal, industrial, and agricultural waste—is becoming an increasingly important part of India's decarbonization strategy. Even beyond its immediate value as a clean source of electricity and fuel, biogas is viewed as a sustainability solution with numerous other social and environmental benefits—notably, the prevention of air, soil, and water pollution caused by other waste disposal methods. Government policies introduced in the 2024 budget seek to promote a "biogas big leap" to realize these benefits while reducing India's reliance on energy imports (Anand, 2024).

This paper asks the following question: How do India's biogas policies reflect its overlapping energy, labor, and urban transitions, and with what implications for its goal of facilitating a "just transition" (McCauley & Heffron, 2018; Wang & Lo, 2021)? I begin by tracing the evolution of biogas policy in the country, where efforts to turn biomass waste into a sustainable energy source long predate major multilateral agreements to curb greenhouse gas emissions. India began subsidizing off-grid biogas plants for rural households in the 1980s in order to promote energy security and tackle energy poverty (Bagdi et al., 2022), though these efforts saw mixed results, partly because the plants demanded a significant contribution of unpaid household labor to maintain and operate (Mittal et al., 2018). Today, as the Indian government seeks to realize ambitious climate goals, it is redoubling its support for biogas, but new policies depart from older programs in significant ways. First, rather than supporting household-level solutions among the rural poor, new policies hope to create a biogas market by jumpstarting corporate investment in compressed biogas plants. Second, policy emphasis has moved away from small-scale, off-grid plants powered by livestock waste (primarily cow dung) to urban production in major waste-to-energy facilities that source inputs from large-scale producers of waste, such as municipalities, industries, and big farms. Third, biogas is no longer viewed as a potential major contributor to electricity generation—as the cost of other renewable energies like wind and solar has fallen precipitously—but rather as an alternative to natural gas, an important energy source for the transportation, cement, and steel sectors that are expanding amid urbanization.

The paper analyzes these changes and their implications through a combination of literature review, content analysis of policies from 1981 to 2024, and qualitative interviews with planners and policymakers in municipal, state, and central government. I argue that, by prioritizing utility-scale biogas production by energy corporations rather than community-based strategies, new biogas policies fall short of their social potential and may even reinforce spatial and social inequalities. However, local planners and policymakers still have an opportunity to drive inclusive local and regional development in the design and implementation of biogas energy projects—by intentionally involving historically marginalized waste and biomass workers and facilitating the growth of inclusive biomass supply chains that link energy plants to income generation in peri-urban and rural communities. Taken together, these insights point to the ways in which planners must engage critically with decarbonization policies and play active roles in bending them toward just and inclusive outcomes.

Citations:

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Keywords: Energy, Labor, Just transition, India

Track 7 Roundtables

RECENT INDIA-FOCUSED PLANNING RESEARCH: INSIGHTS FOR THE GLOBAL SOUTH

Abstract ID: 1109.0.0.376.2024

Roundtable Submission

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Taking Stock: Recent India-focused research on contemporary planning and development issues and insights for the larger Global South.

Bish Sanyal (MIT), facilitator
Jerry Anthony (University of Iowa), participant
Manish Chalana (UW Seattle), participant
Shishir Mathur (SJSU), participant
Sanjeev Vidyarthi (UIC), participant

Gaining insights from the panelists' recent research on India's contemporary planning and development, this roundtable seeks to engage our ACSP colleagues with a rapidly growing stream of robust India-focused research and, in that process, identify broader implications for planning and development across the Global South.

India is a suitable study area because it is a large and diverse country with approximately one-fifth of the world's population. It is also a democratic country with a local-state-national governance structure similar to that in several developing countries, most of which are also democracies. India's urban population is increasing rapidly, which is also the case with many Global South countries. Furthermore, as India has started to open its hitherto socialist economy over the last three decades, it has welcomed neoliberal market-based planning and urban development tools advocated by multilateral agencies such as the United Nations (for example, the UN's New Urban Agenda) and the International Monetary Fund and the World bank. These agencies are advocating the adoption of these tools across the Global South.

Furthermore, the panelists' research examines India's contemporary planning and development from various disciplinary lenses and across several spatial scales. For example, Shishir Mathur's work on infrastructure financing not only seeks to understand the contemporary municipal infrastructure finance and delivery landscape and its interconnectedness with the nation's urbanization but also employs a comparative lens to situate it within the larger global context (see Mathur, 2024; Vidyarthi, Mathur and Agrawal, 2017). Sanjeev Vidyarthi's work has focused on the changing nature and scope of spatial planning in contemporary India, including the roles of reinvigorated and emergent actors engaged in making plans at local and regional scales. Manish Chalana has examined the politics and form of transformation of "worlding" Indian cities and their impact on the working poor. Specifically, he has focused on urban villages, low-income districts, and informal settlements or slums (see Chalana and Hou, 2016). Jerry Anthony's recent research has focused on quality-of-life issues in India, such as the challenges of supplanting woodburning cookstoves, and advances in urban solid waste and sewage management enabled by innovations in urban governance (Khandelwal et al., 2017). Also, for over a decade, he has introduced US planning students to diverse local-level sustainable development efforts in India through a study abroad course set in Kerala, India.

Citations:

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Key Words: India, Infrastructure financing, Spatial planning, "Worlding" Indian cities, Infrastructure management

SUSTAINABLE URBAN INFRASTRUCTURE FINANCE IN THE GLOBAL SOUTH

Abstract ID: 1109.0.0.631.2024
Roundtable Submission

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Urban finance is one of the most neglected aspects of urban planning. Major investments in public infrastructure are required in the Global South to increase economic growth, to promote inclusive development and to address the global climate crisis, among others. Needs are expected to surge as (mostly urban) population continues to grow, inequalities worsen, and climate change demands accelerate in many countries.

Urban governments play or could play a major role in providing more public infrastructure in many middle- and low-income countries. Unfortunately, deficiencies in local and intergovernmental governance/accountability, planning and financing mechanisms result in underperformance on this front. Yet there is ample reason (and evidence) to justify increasing subnational governments, particularly metropolitan and city governments, contributions to sustainable development through public investments, public revenue generation, and managing public functions that contribute to both local and national goals.

Innovations in funding are essential to alleviate infrastructure gaps. Much urban infrastructure in the Global South is financed by intergovernmental fiscal transfers and special mechanisms that provide concessional finance (often from international financial institutions such as the World Bank) that require national government guarantees, creating reluctance among finance ministries to assume the risk. Grants and subsidized lending for local infrastructure remain essential in many countries, but if inappropriately used they can discourage creditworthy cities from commercial borrowing and deprive disadvantaged local governments of much needed grants and subsidized loans. Special green investment funds and facilities to guarantee subnational debt, among others, could increase available financing and relieve national governments from the burden of subnational investment and

subnational debt guarantees.

More appropriately structured and targeted investment finance along, however, is insufficient. Sustainable urban investments require provisions to cover recurrent costs. Once infrastructure is built, it must be operated and maintained, and any debt used to build it must be paid off. Thus, in many countries, broader governance and fiscal reforms are needed. Recurrent revenue mobilisation is needed from both traditional (e.g., property taxation and user fees) and innovative (e.g., land value capture) sources. Implementation of even the best development plans depends on these funds.

A range of efforts are underway globally to help solve the sustainable infrastructure finance crisis. One such effort is the Sustainable Development Solutions Network (SDSN) Global Commission for Urban SDG Finance. This panel will report on research and efforts by this Commission and a range of other actors to meet the investment finance challenges faced by cities in the Global South and highly relevant for urban planning.

Building on sessions at past ACSP conferences, the roundtable will consider these questions:

- How can new means to finance urban investment in the Global South reduce challenges with existing mechanisms, increase available resources, and target finance appropriately? What can cities do independently and what support/collaboration is needed from higher levels of government, neighboring local government jurisdictions, and external organizations?
- How can cities use existing and develop new recurrent revenue sources for more effective and equitable operation and maintenance of infrastructure and to service any debt incurred to build it?
- How can planning academics and practitioners conduct better research and devise productive actions needed to improve urban finance for sustainable development planning?

This panel includes ACSP planning academics and practitioners from international development organizations working on these issues to share their ideas, findings and experiences. The panelists will offer comments and generate discussion among the roundtable participants.

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Key Words: urban infrastructure, urban finance, sustainable urban development, climate resilient development, global climate finance

A LONGITUDINAL STUDY OF GLOBAL BRAND CITY NETWORK CHANGE

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Individual Paper Presentation

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Research on world city networks constructs and analyzes global urban networks, which are mediated by the presence and interaction of multinational entities within cities, utilizing centrality metrics to discern the hierarchy and characteristics of world cities. The transient nature of these multinational actors engenders shifts within the network, resulting in a dynamic cartography of world cities over time. Understanding these temporal shifts is crucial for grasping historical trends and forecasting future urban transformations. Therefore, analyzing the evolution of world city networks is essential for a comprehensive assessment of global urbanization.

Our research develops a world city network model centered around global brands, examining the network's evolution through a time-series analysis. Annual brand valuation fluctuations lead to changes in the composition of global brands, mirroring the fluidity observed in other world city networks. Our study tracks these variations, reflecting global economic patterns and shifts within the cities. By constructing a world city network using data from Interbrand's selection of the top 100 global brands since 2007, analyzed biennially, we apply various centrality metrics to differentiate between global and local brand cities at successive intervals. Through clustering based on these metrics, we categorize cities within the network by their relative hierarchical positions and intrinsic qualities, distinguishing between global brand cities with high outward, betweenness, and weighted outward centrality—indicative of their roles as hubs of innovation and strategy—and local brand cities

Time-series analysis has uncovered changes in the status and attributes of cities within the network, analogous to findings from other world city network models. The realignment of global headquarters cities, notably during the 2008 financial crisis and the subsequent European debt crisis, has been particularly pronounced. The late 2000s and 2010s saw consumer brand cities like Boston and Atlanta, and financial centers such as Zurich and Rotterdam, included in the network. Cities such as Helsinki and Austin were acknowledged for their high-tech industry specialization. However, as the decade unfolded, these cities experienced a decline in centrality within the network, transitioning away from global brand city status and contributing to a polarization toward a select group of high-tech and internationally recognized cities. By 2021, the list of global brand headquarters cities had contracted from 15 to 9, with centrality metrics increasingly skewed toward major urban hubs. Post-crisis, the ascendance of high-tech industries, particularly in cities like San Jose and Seattle, indicated significant structural shifts in producer services and the augmented role of high-tech sectors in urban economies.

Not all technologically advanced cities ascended to global brand headquarters prominence. Even those with established high-tech sectors, like Helsinki and Austin, witnessed a downscaling in urban hierarchy, signifying

gravitation toward high-tech industry agglomerations in San Jose and Seattle, which embody the global trend toward industry concentration and the polarizing impacts of globalization. The consolidation of Big Tech during the COVID-19 pandemic has exacerbated this trend, suggesting a further intensification in the 2020s.

Our study's longitudinal perspective of global brand cities not only documents the industrial and economic history from the late 2000s to the early 2020s but also confirms the ongoing polarization within the network, reflecting the immutable forces of globalization on world cities. The responsiveness of global brands to market and industry dynamics is notably more pronounced than that of producer service firms. This research offers a novel lens for world city inquiry, utilizing the framework of global brand cities to unveil a detailed urban mosaic, advancing beyond the conventional focus on producer service firms.

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Keywords: Global City, World City Network, Creative Class, World City, Global Brand

ANALYZING URBAN RESILIENCE POLICY DIFFUSION: INFLUENCERS, LEARNERS & BEST PRACTICES

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Individual Paper Presentation

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As cities increasingly face climate change-related shocks and stresses, resilience has become a critical urban policy goal for the 21st century. Transnational municipal networks (TMNs) play a pivotal role in facilitating resilience policy learning. Knowledge flow dynamics, however, have been relatively less explored, despite their potential to influence urban policy and outcomes (Davidson et al., 2019). Through our study, we employ network analysis to explore how resilience policy knowledge transmission – i.e., influencing and learning – happens across member cities of the 100 Resilient Cities (100RC) initiative. We ask two key questions: 1) Who are the role model cities and learner cities in the network, overall, and for different policy dimensions? and 2) What city attributes are associated with higher network centrality of cities in terms of influencing and learning, overall, and for different policy

dimensions? Our research contributes to understanding the international flow of urban resilience knowledge, revealing a group of highly influential cities and their resilience policies that are shaping urban planning practice.

We conceptualize TMNs as information-seeking spaces for policy learning (Lee & van de Meene, 2012). 100RC cities have published resilience strategy documents that include mentions of policies of other 100RC cities that have inspired them. Using these publicly available documents, we code directed learning ties (links), and the policy dimensions associated with each tie. We followed 100RC's City Resilience Framework for the categorization of policy dimensions, namely 'health and wellbeing,' 'economy and society,' 'urban systems and services,' and 'leadership and strategy.' In addition, given the importance of equity for resilience and the limited attention given to it in practice (Loh & Kim, 2021), we explore the equity-related policy influencing-learning network. Equity-related policies are those that promote equity, either procedural, distributional or recognitional (Meerow et al., 2019).

We employ a range of network analysis approaches such as degree centrality, harmonic centrality, and PageRank centrality for weighted and unweighted ties as well as individual policy subgraphs to identify the key influencers and learners in the 100RC initiative. Melbourne, New Orleans, and Rotterdam are the most inspirational cities in the network. Rotterdam is especially influential since it is also connected to other influential cities. Salvador is learning the most from the network. We are also able to identify influential policies such as Melbourne's Urban Forest Strategy and Porto Alegre's participatory budgeting. High centrality is significantly associated with an early 100RC membership, higher country democracy ranking, and leadership in environmental action.

Exploring individual policy dimensions, our results show that New York is the role model for 'health and wellbeing' and 'leadership and strategy', Medellin is the role model for 'economy and society', and Santiago is the role model for 'urban systems and services'. In the equity-related policies network, Boston is the overall role model and Salvador is learning the most. Porto Alegre is also influential in this network because it is well-connected to other influential cities in the equity network.

Our study extends research on the flows of knowledge, policies, and development priorities across cities. We identify the key influencers and learners in the resilience knowledge networks, offering insights into how resilience planning is evolving globally. We distinguish the equity-related resilience policies network, contributing to the equitable resilience literature. In general, we find that cities from low-income and lower-middle-income countries have lower centrality, indicating that such cities are neither role models nor learners, a finding warranting further study. Our study supports previous case-based studies which have identified the importance of Rotterdam as a role model for urban resilience (Goh, 2021), but also reveals a wider group of influential cities, and shows that influence varies along different dimensions of resilience.

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Keywords: city networks, urban resilience, policy learning, diffusion

ARTS PLANNING AND CUTURAL POLICY INNOVATION IN BEIJING

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Individual Paper Presentation

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This article analyzes three cultural entities in Beijing, China: National Centre for the Performing Arts, 798 Arts District, and Today Art Museum using two lenses: Kingdon's Multiple Streams Framework (MS) and concepts of arts entrepreneurship, in order to examine these entities' development and current condition. The performing arts center has become a source of national pride, the arts district now is one of the world's largest, and the museum paved the way for a new kind of 'private' institution in China.

Concepts including policy streams, policy windows, and policy entrepreneurs ground the analysis. In order to enrich the perspective, we explore theories in the growing field of arts entrepreneurship and their applicability to the changing economic environment of China. We point to the realities of policy formation as well as the innovative economic growth fostered through arts entrepreneurship in China, grounding the analysis in a positivist perspective due to the opacity of the process in that country.

While Multiple Streams Framework is a powerful tool with which to understand and interpret policy formation, change, and adaptation, it is the arts entrepreneurship principles that provide important ways to look at creative commerce, both from the perspective of the individual and the organization. We find that, while each arts entity was formed under very different circumstances, they all now incorporate facets of arts entrepreneurship including brand building, market development, and audience growth.

Frameworks and theories must be flexible and resilient in order to be adapted to more diverse contexts. By reframing cultural policy and arts entrepreneurship theory to incorporate culturally relevant data, they each can provide valuable tools for scholars, policymakers, and

municipal leaders. This allows the understanding of key theoretical components to expand, reflecting political and social realities while ensuring the relevance and viability of these analytical tools in multi-cultural contexts.

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Keywords: cultural districts, performing arts centers, museums, creative economy, culural policy

COASTAL LAND RECLAMATION AND URBAN INFORMALITY IN MARITIME SOUTHEAST ASIA

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Individual Paper Presentation

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Coastal land reclamation is historically associated with negative social and environmental impacts such as climate risk, biodiversity loss, and land subsidence. Yet, cities in Maritime Southeast Asia are actively engaged in coastal land-making. Between 2000 and 2020, major coastal cities in the region added approximately 36,000 hectares of artificial urban land. Singapore, a city-state smaller than Rhode Island, is the world's largest importer of sand, with 75% of its reclaimed land made of sand from neighboring states. As of 2018, Indonesia alone had 41 ongoing or planned reclamation projects totaling nearly 80,000 hectares. Popular journalism even documents cases of informal settlements reclaiming land using household waste. Indeed, despite the negative impacts, changing water into land is a way of life in this maritime region.

Synthesizing current research, I ask: what is the extent of and what are the processes and drivers of urban coastal land reclamation in Maritime Southeast Asia, especially from the perspective of urban informality? I conduct a systematic review, analyzing hundreds of peer-reviewed research papers published in English-language journals. I use an archeological definition of Maritime Southeast Asia to bound my search to a single maritime region of shared history and culture. This region includes coastlines within the modern states of Brunei, Cambodia, China (Fujian Province, Guangdong Province, Hainan Province, Hong Kong, Macau, and Taiwan), Indonesia, Malaysia, the Philippines, Singapore, Thailand, Timor-Leste, and Vietnam. Drawing from the literature on urban informality, I consider both formal and informal modes of coastal land-making. I further organize the studies using four criteria: who, or the actors reclaiming land; why, or the land-use of the reclaimed land; what, or the spatial morphology of the new land; and how, or the engineering technology used for reclamation.

The review shows three knowledge gaps in mode, scale, and geography. First, current research makes no distinction between formal and informal modes of land reclamation. Rather, studies assume that land reclamation involves large-scale, state-sanctioned projects using advanced hydraulic engineering such as sand mining. This lack of nuance is problematic given that informal processes and drivers of land reclamation may be distinct—though inextricable—from the formal. Second, research is limited to major cities with populations over 1 million, notably Jakarta, Singapore, and Chinese cities. This focus on major cities suggests a mismatch between current research and urbanization trends, where future urban growth is expected to occur in small- and medium-sized cities with less than 1 million people. Lastly, at a country level, research overwhelmingly focuses on China and Singapore. Given the region's centrality in the global sand trade, the limited geographic coverage of research suggests a need for more studies of coastal land reclamation in Maritime Southeast Asia, especially in developing countries like Indonesia and Vietnam.

The analysis shows that we still have much to learn about the extent, processes, and drivers of global coastal land reclamation. Importantly, informal land reclamation is a distinct yet overlooked mode of urbanization. Taken together, this systematic review reveals a need for more research on coastal land reclamation in Maritime

Southeast Asia, particularly of small- and medium-sized cities in developing countries. This is especially important given the policy and planning implications of ongoing seaward urban expansion.

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Keywords: coastal land reclamation, urban informality, Maritime Southeast Asia, urbanization, seaward urban expansion

COUPLING EFFECT OF CO2 AND PM2.5 EMISSIONS: YANGTZE RIVER DELTA, CHINA

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Individual Paper Presentation

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Climate change is primarily fueled by increasing greenhouse gas emissions, especially carbon dioxide (CO2). This surge in CO2 and particulate matter (PM2.5) emissions is a major concern for nations combating climate change and air pollution. Developing countries, like Brazil, India, and China, are major contributors due to rapid industrialization and reliance on traditional energy sources. The Intergovernmental Panel on Climate Change has unequivocally underscored the "homogenous" nature of CO2 emissions and PM2.5 pollution. Nevertheless, lacunae persist in research concerning the mechanistic impact of CO2 and PM2.5 emissions on their coupling effect, notably at the urban scale and in elucidating the interplay between these emissions. Given the shared origins of CO2 and PM2.5 emissions, this study endeavored to scrutinize the coupling effect between these emissions while controlling for CO2 and PM2.5 emissions through a case study conducted in the Yangtze River Delta (YRD) region. This research aims to furnish low-carbon planning recommendations applicable to regions analogous to the YRD region.

The research employed a multi-dimensional approach to analyze CO2 and PM2.5 emissions data spanning from 2008 to 2020, incorporating spatial, temporal, and spatiotemporal perspectives. This was achieved through the utilization of a coupled coordination model, an Ordinary Least Squares regression (OLS) model, and a Geographical Weighted Regression (GWR) model. The coupled coordination model facilitated an assessment of the synchronized

changes in emissions and facilitated the computation of year-by-year coupling coordination degrees for both CO2 and PM2.5 emissions across the four provinces comprising Shanghai, Jiangsu, Zhejiang, Anhui, and the broader YRD region. Moreover, the study investigated four subsystems—namely power, industry, civil, and transportation—within this analytical framework. The OLS and GWR models were employed to analyze the driving factors the built environment within the region associated with the coupling coordination degrees. Additionally, these models aimed to discern the spatial disparities in driving factors across each province within the study area.

The study revealed the evolving trend of coupling coordination between CO2 and PM2.5 emissions within the YRD region. Findings across the YRD region indicated a peak in 2013, followed by a decline in 2016, succeeded by a resurgence in 2017, mirroring shifts in national pollutant-related policies. In 2017, the management of PM2.5 pollution emerged as a pivotal influencing factor. Assessment of the CO2 and PM2.5 coupling coordination degree in 2020 revealed that among 41 cities within the YRD region, only 10 cities had achieved a state of coordinated development. This suggested that approximately 24% of cities attained a certain degree of coordination, leaving the majority, comprising 76% of cities, yet to attain such status. Cities like Nanjing, Wuxi, Xuzhou, and Changzhou exhibited relatively minor fluctuations in coupling coordination across different years, largely falling within the categories of primary or marginally adequate coordination, indicating the need for further developmental balance.

In GWR model, the study revealed spatial heterogeneity in specific variables, notably Transportation and land, as well as Area. Regarding Transportation and land, distinct spatial patterns emerged within the YRD region, with positive correlations observed in southeastern areas, including cities like Ningbo, Shaoxing, Wenzhou, and Taizhou, while negative correlations were apparent in northern areas. Following the diverse economic and geographical conditions across regions, it is imperative to propose targeted emission reduction and pollution control measures to regulate air quality.

Based on the above analysis, this study proposed planning suggestions to the coupling effect of emissions in the YRD region, which could also serve as references for similar regions in developing countries. These included introducing low-carbon industry development, intensifying and scaling commercial land use, scaling industrial land use, and emphasizing the importance of spatial planning strategies that accounted for the coupling effect.

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Keywords: CO2, PM2.5, Coupling effect, Yangtze River Delta, Carbon mitigation

DECODING POLITICS OF CLIMATE POLICY: WHOSE VOICES SHAPE A COUNTRY'S FUTURE?

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Individual Paper Presentation

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Over the past few decades, international organizations, including The World Bank, the World Wide Fund for Nature, The Nature Conservancy, and the International Union for Conservation of Nature, have increasingly advocated for the adoption of Nature-based Solutions (NbS) in policy and funding strategies to combat the impacts of climate change. While NbS can help tackle climate change impacts, existing narratives and practices of NbS have raised concerns about how the current framing of those solutions constrains our understanding of human-society relationships and reproduces power dynamics in intellectual space. Despite the growing concerns, many countries have incorporated the idea of NbS into their Nationally Determined Contributions and adopted different narratives of NbS approaches to national climate and development policies (Seddon et al., 2019). Such incorporation of NbS into national policies might overshadow diverse knowledge and narratives, prioritizing dominant voices and those in positions of power, thereby heightening the risk of marginalizing underrepresented groups and, hence, epistemic injustice.

This paper, therefore, aims to explore the narratives surrounding climate solutions within Bangladesh's national policies by using the country as a case study. It proposes to investigate the involvement of various actors and critically assess the extent to which communities affected by climate change participate in the policymaking process. The research plans to answer the following questions. (1) What is the mix of actors and institutions engaged in national climate policymaking? (2) How do actors and institutions define climate change problems and perceive nature-based solutions in policy formulation? (3) How and why do actors and institutions engage in and maintain their relationship with the policymaking process?

Bangladesh has been designated as the epicenter of climate change problems and a place for experimenting with diverse climate solutions initiatives (Dewan, 2022). To address the climate change impacts, the government of Bangladesh has adopted different strategies framed as NbS in national climate and development policies. The country has also started receiving funding and advocacy support from international communities and different expert groups to implement NbS approaches in development activities. However, such presence of 'elite' actors in the policymaking process often renders a tendency to sustain the continued centralized colonial economic growth and, consequently, monopolizes the appropriateness of certain types of expertise or knowledge and marginalizes the voice of the most vulnerable (Wilkens & Datchoua-Tirvaudey, 2022). This monopolization also leads to hegemonic thoughts dominating climate solution strategies that may produce social and environmental injustice in society. This apolitical framing of climate solutions raises a serious question about who are considered as epistemic communities in the decision-making process of climate change policies in Bangladesh.

To investigate the policymaking process in Bangladesh, the research intends to employ policy network analysis and discourse coalition framework coupled with qualitative content analysis of the key climate policy documents and key informant interviews. Policy network analysis aims to exhibit and analyze the relationship among different actors, institutions, and structures associated with the policymaking process (Bulkeley, 2000). Discourse coalition

framework – made up of collections of narratives, the individuals who subscribe to and articulate those narratives, and activities or practices that align with those narratives – helps to examine how coalition forms and how different actors and institutions interact within a policy network to influence the policy (Hajer, 1993).

This study responds to a pressing need for academic research on how and by whom knowledge of climate problems and solutions is discussed in policy forums. The research unpacks the political dynamics behind national climate policy formulation, unveiling the extent and manner in which certain narratives construct and reconstruct society, thereby influencing the future of underrepresented communities most affected by the socio-ecological crises exacerbated by climate change.

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Keywords: Nature-based Solutions, Climate Change Knowledge Politics, Policy Network Analysis, Climate Change Narratives, Epistemic Justice

DETERMINANTS FOR THE ADOPTION OF HOUSEHOLD WATER CONSERVATION STRATEGIES

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Individual Paper Presentation

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Strategies to reduce the demand for water are becoming increasingly important in rapidly growing urban areas as opportunities for developing water resources to increase supply dwindle. Low capital investments and inadequate budgets to maintain and upgrade water infrastructure also contribute to the shortfall in supply. While this is a concern in the Global North and the Global South, the complexity of the relationships between informal and formal institutions, the diversity of socio-economic conditions, and the low baseline for service quality in low- and middle-income countries raises questions about the effectiveness of conventional economic and non-economic demand-side management strategies. These strategies may use regulations, economic incentives or signals, or behavioral nudges to stabilize or reduce long-term water demand. They may also be adopted to manage episodic or prolonged drought conditions. The success of these strategies relies on the willingness of households to adopt water conservation measures. Numerous studies have determined the magnitude of the impacts of demand-side

management strategies on aggregate water usage within a service area or average household water usage. However, few have examined the characteristics of households that increase the likelihood of adopting water conservation measures. This paper contributes to the literature on water demand management strategies by addressing the question: what are the determinants for the adoption of household water conservation measures?

The study will be based on a survey of 728 households that was conducted in Delhi in July and August of 2023. About 70% of the sample indicated that they were undertaking at least one water conservation measure. Maximum likelihood techniques will be used to determine the probabilities of adoption of conservation measures based on the respondent's characteristics, the socio-economic conditions of their households, water service conditions, coping strategies adopted in response to poor service quality, and knowledge about the water tariff and billing. These results could also be disaggregated based on types of water conservation measures adopted by the households, such as tracking of water meters, water reuse, use of low water use fixtures, and behavioral changes.

Delhi follows an increasing block tariff (IBT) to charge for water; households falling into higher water usage blocks pay higher fixed and volumetric charges. Water usage in the first block, up to 20,000 liters of water per month, is provided for free. However, if water usage exceeds that amount, the entire water use is charged, including the first 20,000 liters. The high marginal cost at the threshold is aimed at incentivizing water conservation. This study will also examine the factors affecting households' responses to high marginal costs. Estimates of monthly household water usage under the current water tariff will be derived using self-reported daily water usage that has a high correlation (0.82) with water usage from water bills for a subset of 100 households. Similar estimates of water usage could be calculated for self-reported prospective water usage under alternative subsidy policies in which the amount of the subsidy is reduced. The derived monthly water usage figures will be considered in the models.

Water-use restrictions may have differential impacts across households, and economic instruments for increasing conservation may be directed toward households but rely on individuals to respond to the economic incentives and signals. The strength of the impacts of these instruments may diminish for renter households, households with shared connections, households with large families, and other demographic factors. Understanding the various factors influencing the adoption of water conservation measures by households could assist in the development of a bundle of complementary, directed water conservation policy instruments that would be more effective in urban areas of the Global South.

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Keywords: Water, Conservation, Demand-management, Policy-instruments, Global South

DIVIDED WE DROWN: SEGREGATION AND CLIMATE RESILIENCE IN METRO MANILA

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Individual Paper Presentation

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Challenges regarding urban development and management in rapidly urbanizing cities of Southeast Asia are being complicated by the advent of climate change. The impending yet unpredictable future of intensified flood risk and sea level rise presents unprecedented political, infrastructural, and governance challenges in urban planning. In the case of Metro Manila, the proliferation of gated communities and informal settlements renders the city full of parallel worlds of socio-economic extremes (Garrido, 2019). Intense socio-economic and spatial disparities magnify the differences in how climate change and its risks are experienced by residents and their communities (Porio, 2014). Such confluence of extremities begs the question: How does Metro Manila’s urban segregation impact the city’s capacity to respond to the intensifying risk of climate-related disaster?

In this paper, I conducted urban form analysis with qualitative methods to understand how the pattern of social segregation in close proximity interplays with perspectives of segregated residents and government officials during flood events in Metro Manila. I examined two barangays (smallest political jurisdictions) with urban forms that are segregated and exposed to high risk of flooding: Damayang Lagi of Quezon City and Malanday of Marikina City. Findings were derived from fieldwork conducted in the month of January 2023. I used aerial data, topographic data, and site visits to document and analyzed the physical qualities of the barangays’ segregation, flood risk, and vulnerability. Eleven semi-structured interviews were conducted with government officials and residents, with questions directed toward accounts of the flood extent, sources of assistance, and identifying difficulties arising from segregation.

In both barangays, segregation was found to serve as a significant deterrent to climate resilience through direct and indirect means. Direct impacts on resilience include physical obstructions that hinder evacuation. Walls and fences barring entry to outsiders were identified as lethal obstructions during calamitous flood events. Indirect impacts include lack of communal support and communication across segregated boundaries, exemplified in the absence of assistance from residents of higher social standing. Though segregation’s impacts on resilience were evident and abounding, neither the barangay officials nor segregated residents problematized segregation as the cause for danger. But findings also suggest that vulnerable residents retain robust social networks that can be further leveraged to ensure safe evacuation and post-disaster recovery, including those with local government officials, religious institutions, and non-governmental relief organizations.

The findings of this paper imply that devising solutions toward enhancing residents’ resilience in segregated contexts requires site specific comprehension of their precarity, including evacuation routes and settlement proximity to flood prone water bodies. A challenge that any policy or plan will have to work around is the

widespread acceptance of the urban condition that normalizes little to no interaction between segregated communities. Enlisting the cooperation of local churches and relief NGOs has the potential to create enabling conditions for cross-boundary communication and cooperation. Meanwhile, research can contribute to these efforts by further identifying, problematizing, and foregrounding the impact of segregation on climate resilience for vulnerable populations.

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Keywords: segregation, climate resilience, flood, Metro Manila

EXCEPTIONS AND THE PRACTICES OF INFORMALITY IN MANAGUA, NICARAGUA

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Individual Paper Presentation

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Much of the research to date on informal housing in Latin America examines informal use and incremental practices by self-builders. These self-builders are variably depicted both positively (e.g., as “heroic entrepreneurs”, de Soto, 2000) and as the distinctive “other” to formal actors (Portes et al., 1989; Portes & Sassen-Koob, 1987). Much of this research, in turn, portrays informal housing production as a user-driven phenomenon exclusive to the poor, and relatively limited research has examined informal housing practices among the wealthy or informal housing development practices by private developers (some exceptional cases are Vieda Martínez & Chiodelli, 2021; Vicuña & Moraga, 2021).

In this study, we examine informality beyond poverty by documenting informal development practices in Managua, capital city of Nicaragua. By analyzing 342 projects – totaling more than an estimated 35,000 housing units – we focus on identifying the spatial and regulatory urban features of housing developments between 1995 and 2018. Despite these housing projects appearing to be correct, proper, or orderly, we argue these developments embody the concept of informal development and are enabled by the granting of “exemptions” to individual projects, a practice which has become the norm. We find that this pattern is enabled by a regulatory logic of urban development that rationalizes the granting of exemptions through the dissonance between planning and actual practices of development, a rationality of “actually existing conditions” and of growth as development and progress.

Thus, we argue that rather than comprising a distinct sector of the housing market, informal housing practices are embedded within the broader housing market and across its various segments. Moreover, instead of resulting from a failure of the planning and policy apparatus to wield influence over development in selected market segments (i.e., unplanned or unplannable areas), informality arises from a negotiated and discretionary process by which exemptions to the written norms and rules of development are commonplace. A process resulting in the facilitation of market segmentation and exclusion and the unequal gains of urban development.

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Keywords: Housing Informality, Latin America

EXPLORING OCCUPATIONS, SOCIAL MOVEMENTS, AND INFRASTRUCTURE IN SÃO PAULO

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Individual Paper Presentation

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Under the tutelage of Mayor Ricardo Nunes, the city of São Paulo's approach to affordable housing has shifted dramatically in recent years. Once a bastion of progressive urban policy, the city government has turned toward a more conservative order and control perspective to address the challenges of meeting the housing needs of the urban poor. Within this sphere sit self-made housing solutions, including the occupation of abandoned buildings in the city's center. Much public attention shifted to these buildings in 2018, when one occupation collapsed in a fire, killing those residing inside. In the wake of this disaster, Nunes's administration moved from the city's former upgrading focus to one centered on "risk mitigation" via removal—e.g. evictions. Yet within this volatile context, occupations remain and grow, albeit with significant variation in how well they can secure basic services, even in central neighborhoods with otherwise universal water, energy, and gas connectivity. What explains how and why some occupations survive, and in particular how they secure access to coveted connections from energy and water

suppliers, even while other similarly situated occupations struggle with irregular, if any, opportunities for infrastructure-based services?

Scholars have long studied the role of social movements in advocacy for the right to the city in Brazil, where social movements are typically recognized as critical agents of change. However, in this paper, we expose an interesting conundrum. We find that across occupied buildings in which the same social movement organization is present, there are different levels of success and failure in terms of organized efforts to secure access to basic services. Thus, we argue that while the presence of social movements may be critical to organizing political campaigns and strategies, as previous scholarship suggests, it does not explain why or when water and/or energy utilities in São Paulo agree to provide services. Instead, our work points to the specific physical and historical peculiarities of occupied buildings that gained formal access to water, sanitation, and/or energy, in addition to the policy moments that defined utilities' perspectives on expanding access to services.

Our study analyzes 53 city center buildings with occupations in São Paulo, employing an exploratory mixed-method approach. We combine a spatial, quantitative effort to define case study potentials and identify three specific occupations for a deeper explanatory study that relates how residents were able to secure some infrastructure-based services in energy, water, and sanitation. This latter qualitative research (in partnership with residents active in the social movement organizations occupying buildings) is triangulated with interview data from key stakeholders in São Paulo's city government from before and since Nunes' administration, as well as managers within São Paulo's major water and energy utilities.

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Keywords: São Paulo, occupations, infrastructure, social movements, utilities

GLOBAL INSIGHTS INTO CITIES' SUSTAINABLE DEVELOPMENT GOAL REVIEWS

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Individual Paper Presentation

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Introduced in 2015, the 17 Sustainable Development Goals (SDGs) with their 169 specific targets, provide a comprehensive roadmap for nations to address urgent global challenges, from eradicating poverty and hunger to fostering sustainable communities and combating climate change. Since 2016, Voluntary National Reviews (VNRs) have provided a mechanism for countries to track and assess their progress towards the SDGs, culminating in their formal presentation at the High-Level Political Forum (HLPF). However, local governments are officially excluded from showcasing their progress and actions on the SDGs. In response, a bottom-up movement to mirror VNRs at the local level emerged in the form of Voluntary Local Reviews (VLRs) in 2018. The VLR process offers a valuable tool for implementing the 2030 Agenda, as over 60% of the targets of the SDGs are affected by local performance. Similar to VNRs, VLRs present both quantitative and qualitative assessments of SDG-relevant conditions and actions. However, VLRs face distinct challenges, including the national orientation of the SDGs, limited local data availability, and insufficient local institutional capacity.

Major international organizations—such as UN-Habitat and UNESCAP—have initiated a global campaign to mobilize and support local and regional governments in implementing VLRs, evidenced in their creations of VLR guidelines and their active involvement in numerous VLR initiatives. However, these guidelines often draw from theoretical principles and case studies to formulate suggestions, encountering challenges regarding practicality, generalizability, and contextuality. A fuller understanding of the intricacies of VLR implementation requires comprehensive research on current VLR practices, which unfortunately is very limited.

This paper presents the first study encompassing nearly all VLR reports—151 in total—issued by municipalities from 2018 to 2022. Each report undergoes content analysis, coding for two review approaches: quantitative reviews of local conditions and qualitative assessments of local actions. The coding facilitates the creation of SDG review scores, which indicate the depth of individual SDG assessments and the overall scope of SDGs covered in a report. Statistical analysis, using the coding and review scores, unveils global patterns of SDG reviews and interactions at the city level, while also examining the varying influence of different factors on SDG assessments.

The findings underscore cities' responsiveness to the global agenda set by the HLPF and to concerns arising from crises like the COVID-19 pandemic and climate change. Our analysis shows a growing alignment of reviews with local needs and perspectives. Strong correlations between several pairs of SDGs suggest similar SDG interactions observed at the national level, implying synergies in addressing compatible SDGs locally. Disparities in SDG selection are evident, with SDG 14 (Life Below Water) and SDG 10 (Reduced Inequalities) often overlooked, while SDG 11 (Sustainable Cities and Communities) receiving the most attention. Geographic disparity exists with cities from Europe and Asia exhibiting a more comprehensive scope. Examining the factors influencing SDG reviews suggests that cities with prior VLR experience show a greater ability to employ quantitative review. While resource-rich cities demonstrate broader review scope and more attention to SDG 10 and SDG 14, the resource factor’s effects appear mediated by the support from international organizations, which helps resource-constrained cities to expand their review scope.

This study advances the literature by providing the first comprehensive analysis of VLR reports. Our analysis highlights the challenges of monitoring and implementing certain SDGs at the local level, underscoring the necessity of reevaluating the SDGs to better address the diverse realities of local governments—the ultimate implementers of this agenda.

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Keywords: Sustainable Development Goals, Voluntary Local Reviews, Sustainable Cities and Communities, The 2030 Agenda

GOOGLE REVIEWS REVEAL THE USERS' PERCEPTION ON BRI URBAN INFRASTRUCTURES

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Individual Paper Presentation

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The Belt and Road Initiative (BRI) has been implemented for ten years since it was formally raised in 2013. As a significant global infrastructure investment project, it is increasingly affecting significant transformations in the political and material fabric of cities and regions across the world(Goodfellow and Huang, 2022; Wei Zheng et al., 2023) . The public perception of BRI has attracted huge attention and the result is controversial. Predominant research have largely focused on media representations and the viewpoints of specific demographic cohorts, leaving a gap in understanding the perspectives of actual users of these infrastructures, as well as thematic discourse surrounding their experiences (Garcia-Herrero and Xu, 2018). We hypothesized that these perceptions and discussions can be modulated by factors such as the host country's level of urbanization and resident income.

To answer the question and verify the hypothesis, this study used the rich textual data on Google map review to quantify how actual users perceive BRI projects (Park et al., 2022) . Specifically, we collected 144210 Google reviews from 2012 to 2023 of 384 BRI infrastructure projects ranging from ports, industrial parks, and transportation projects to stadiums. Based on them, Multi-grained Latent Dirichlet Allocation (Mg-LDA) and VADER sentiment analysis were used to analyze the topics and the sentiment of actual users. Then, we used the fixed effect to identify the association between the urbanization index at the country level and local level with users' sentiments and topics (Park et al., 2021).

Despite the average urban population proportion of BRI host countries being lower than the global mean (61.13%), these nations are characterized by a rapid urban population growth rate (2.7% per annum). Our result shows that sentiment and topics are impacted by the development level of host countries. Firstly, this study found that the

reviews of users are mainly positive, with an average sentiment of 0.34 (range from -1 to 1), especially the projects in upper middle income countries. We also found that the topics discussed by the users can be generally summarized into four topics: professional function, service industry, benefit(or disbenefit), and development. The professional function is the most popular topic with an average topic weight of 44% while development is the least discussed with an average topic weight of 13%. Notably, projects in higher-income brackets are associated with a greater emphasis on service industry themes, whereas lower-income counterparts tend to focus more on developmental issues. Finally, infrastructure projects located in counties with higher urbanization population rates and urbanization increase rates have higher sentiment. However, the projects of more substantial investment could have more polarized sentiments.

By building the linkage between urbanization, users' sentiment, and thematic topics, this study provides a new perspective on BRI projects. It provides actionable insights to the investors, planners, and grassroots local government. We highlight the importance of taking urbanization dynamics into account when planning the strategic deployment and societal integration of BRI infrastructures. Local planners must address the unique challenges and opportunities that arise in developing and transitional contexts. Furthermore, the study emphasizes the importance of comprehensive planning and performance assessment in transportation and infrastructure systems, arguing for approaches that are both context-sensitive and adaptable to the changing needs of urban populations.

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Keywords: Belt and road, Urban infrastructure, Topic modelling, Big data, Public perception

GRASSROOTS ORGANIZATION AND INFORMAL ECONOMY

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Individual Paper Presentation

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The informal economy, comprising a wide range of unregulated economic activities, provides jobs for almost two billion of the world's workers today. In developing nations, such as India, this share is around 90%. As the informal economy dominates the world's employment and the nature of urbanization, it also creates challenges, especially in developing countries, to comprehend and control informality. Informal employment does not strictly adhere to national legislation, income taxation, social security, or employment benefits and, therefore, is prone to injustice, human rights, and labor moralities. In India, almost two-thirds of the workers are in the informal sector; around 89% of such workers reside below the poverty level, and about 80% live in cities. Vending and hawking in urban streets are India's most popular forms of informal self-employment and are a crucial source of income for many in the dearth of organized sector jobs.

Government initiatives to address the needs of such informal vendors are inadequate, and hence, in India and other Global South countries, Grassroots Organizations (GROs) play a crucial role in institutionalizing such informality. The GRO, Hawker Sangram Committee (HSC) in Kolkata, India, united hawkers' unions across the city, state, and country, formed the National Hawker Federation, and passed the 2014 Street Vendors Act, legalizing street hawking and vending in the country. This study aims to understand how GROs like HSC work and their roles in the context of informal street vendors and hawkers when formal means of legitimization are unavailable. The study employs a comprehensive multi-method approach, including an archival study of old newspaper articles and working documents of HSC; interviews with HSC board members, selected union leaders, and their member hawkers; and, observation and photo documentation of their daily operations, protests and rallies, and their hawking and vending practices.

The study finds that HSC contributes to legalizing informal street vendors and hawkers at two levels. At the macro-level, HSC's state and national initiatives have solved grassroots issues more permanently and universally. At this level, HSC acts as a mediator between the government, the public, and the hawkers; an advocate for hawkers' welfare and rights; a facilitator of structured protest for the legalization of hawkers; a resource builder to gather intellectual help for grassroots activism; and a trust builder between the marginalized and the government. At the micro-level, HSC addresses the needs of the unions and the hawkers, which do not have or require government intervention. Here, HSC performs as an arbitrator solving the issues of hawkers and unions locally; a social entrepreneur innovating new ways of vending and hawking to keep up with the changing society; a local problem solver mitigating local issues without government interventions; a housekeeper regulating in-house hawkers and maintaining their goodwill in the society; and a bookkeeper documenting hawkers' registrations, licensing, events, protests, policies, and workings. HSC's efforts to legitimize informal street hawkers in India have been unique, unprecedented, and revolutionary. Although the actual implementation of the Act is still underway, HSC's journey since its inception tells the story of how GROs operate to address grassroots social issues, in this case, to legitimize the hawkers. As the informal sector is expected to grow with global urbanization, recognizing GROs' roles in supporting marginalized individuals can provide useful policy insights to governments, practitioners, and scholars across nations.

Citations:

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Keywords: Grassroots Organization, Informal Economy, Street Vendors and Hawkers, Global South, Kolkata

IS BELT AND ROAD INITIATIVE AN AFFORDABLE INFRASTRUCTURE FINANCE MODEL?

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Individual Paper Presentation

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China’s Belt and Road Initiative (BRI), an international infrastructure architecture, has been surrounded by controversy since its launch in 2013. In literature, the highly concerned arguments concentrate on its financial sustainability (Russel & Berger, 2019), China’s pursuit on geopolitical hegemony (Beeson, 2018) and the Sino-centric global production and trade networks through rolling out “spatial Keynesianism” (Schindler & Kanai, 2021). Statistics show that by 2023 this unprecedented program has signed more than 200 infrastructure contracts with over 150 developing countries and international organizations, with an average investment scale of US$100 billion per year. Apparently, that the core of the critical arguments stems from an intellectual irreconciliation between BRI’s investment scale, duration, and the unprofitable nature of these infrastructure projects in the third world ranging from electricity, roads, ports etc. However, little empirical inquiry has been done to reveal the non-separability of BRI’s infrastructure choice and its financial rationale that shaped by its motivation in the post (2008) crisis world. This paper serves to fill this gap by looking into the deeper linkages to align BRI’s transnational spatial planning on infrastructure development with its financial model to fix the fundamental structure of BRI analysis which would unravel.

The research unpacks BRI’s finance model by comparing the differences in the cost of capital between BRI financing system and the Western-backed development finance institutions (such as IMF, OECD) as which are driven entirely by differences in the expected return on China’s state-owned enterprises (SOEs) versus private-investor equity (or big institutional investors). Adopting capital asset pricing model, the results of risk premiums show that BRI finance model is less sensitive to assets return than the Western-backed finance model. Put differently, China’s SOEs are willing to accept much lower returns on their residual claims and thus offer risk-bearing for BRI projects with high tolerance on a longer loan term and lower interest rate. This seemingly incredible finding speaks to the imbalanced structure configurated by excessive savings dominated by SOEs (which implies strong cumulation on fix assets investment) and underconsumption from households in China’s domestic market, which highly functioned China’s export-oriented growth before the 2008 economic crisis. To stabilize SOEs’ dominance in core industries (especially heavy industries), increasing government expenditure to create demand for SOEs capacity and making market are reaction strategies to cope with the demand drop from developed countries because of the crisis. The former ends up with land financialization which greatly stimulates China’s urbanization and urban amenity effect (Wu, 2022), while the latter is to scale out for outward emerging markets, which is carried out by BRI. This research contributes to the planning scholarship by offering a revelatory justification on BRI’s finance rationale. The paper also implies

that BRI policy makers need to access BRI's economic regional outcome in response to its implicit financial "affordability".

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Keywords: Bel and Road Initiative (BRI), Infrastructure finance, Affordable loans, Spatial planning, Emerging markets

LAND POOLING MECHANISM–INNOVATIVE ASSEMBLAGE IN PLANNING AMRAVATI, INDIA

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Individual Paper Presentation

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This paper focuses into the planning and development of Amaravati, the capital city of Andhra Pradesh, India using land pooling strategy (LPS). The LPS is a land-based financing mechanism as used in many countries to assemble land and reconfigure land parcels after pooling contiguous lands and servicing areas with urban infrastructure to achieve a well-coordinated, planned development (Mittal and Berson 2022; Mittal and Kashyap 2015). However, notably, there are variants of the LPS worldwide, including with in India (Amravati, Delhi, and Gujarat for example). This voluntary tool of LPS was used in Amaravati and is notable for assembling unprecedented size of fragmented lands, and systematically planning of the city with variety of public and private land uses while engaging the owners in the development. While the tool is useful, its execution may present areas of concerns that this paper will also focus on.

The paper specifically focuses on how the new city was planned and developed using the LPS and the role that planning and stakeholders played. LPS in Amravati has successfully appropriated over 33,000 acres of land from participating landowners, and property values have increased several folds of the initial amount. The participating landowners returned up to 30 percent of their original land parcel, which the government of Andhra Pradesh had significantly improved using a specialized lottery system (Ramachandraiah 2016; Upadhya 2021).

In this paper, scholarly literature on land pooling, land readjustment, and official policy documents and plans are reviewed from the Amravati planning office as part of the methodology. The paper first presents review of the land pooling policy as used in Amravati, examines its implementation mechanism and its impacts on the plan, and the contributing landowners. The paper then highlights the positive social and economic benefits of the LPS (such as access to amenities and services, land value preservation, and property value gains, limited displacement of, limited to no use of eminent domain), which helps building the initial public support when compared with coercive land acquisition that displaces landowners. The paper also highlights the lottery based land allocation system as

followed in Amravati while criticizing the corruption involved in the LPS process, and notes issues with coercion, illegal land grabbing, speculation, and caste influence that undermined the voluntary participation goal of the LPS. For example, while the LPS was initially intended to be democratic and equitable, expected to benefit all citizens, in this paper we argue that it has primarily benefited wealthy landowners with ties to specific group, called, the Kamma Caste.

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Keywords: Land Pooling and readjustment, Land Assemblage, Planning New City, Greenfield City, Land based financing

PARADIGMATIC BARRIERS TO WATER ACCESS IN MUMBAI, INDIA

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Individual Paper Presentation

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The Covid pandemic and other urban disasters have demonstrated that the resilience of a city is determined by the resilience of its large number of marginalized and vulnerable citizens. This is critically important especially for the large and mega cities like Mumbai in the Global South, as these cities house such citizens in significantly large and ever-increasing number of informal settlements. The pandemic also underscored the need for universal water access from the public health perspective, while water has been seen as a survival need. Further, climate change provides another rationale for universal water access in view of the searing summer temperatures that adversely affect the residents living in densely packed dwellings in these informal settlements. Thus, universal water access is at the heart of urban climate resilience.

In this background, the paper this paper argues that the prevailing planning, policy, and technological paradigms guiding water governance in Mumbai act as barriers to universal water access and climate resilience of the city. It uses the analysis of the new municipal policy formally titled "Water for All' Policy as the starting point of the evidence to support the argument. The policy begins by citing multiple national and international policy instruments and agencies upholding the universal right to water. It removes the legal hurdles raised in previous plans and policies that excluded the large number of residents living in informal housing who came to city in the last two decades. However, a detailed analysis of the provisions in the new policy demonstrate that, following the

previous policies, the new policy continues to raise legal, technical, and financial hurdles which would effectively deny water access to a large number of the population.

The paper traces the roots of this continuation of policy hurdles to two main paradigmatic barriers in planning. The first is the legal paradigm towards right to water underlying prevailing plans and policies, which allows the state to restrict its role to 'not-disabling' the access. Thus, the paradigm poses as the barriers as it allows the state to escape the responsibility of fulfilling its "positive obligation" not just to 'enable' the access but to take pro-active measures to ensure the access.

The second paradigmatic barriers is posed by the prevailing technological paradigm that places sole reliance on large, centralized, and integrated water supply system for water provisioning in the city. The technical limitations of such systems and especially the technical, financial, and legal requirements placed by such systems on citizens seeking water access effectively act as hurdles to water access for residents of informal housing. Moreover, the sole reliance of this paradigm on centralized systems pre-empts use of other decentralized or hybrid modes of water supply that have been used successfully in other cities.

In addition to the analysis of official plans and documents, this paper draws from the analysis of the data collected through multi-round semi-structured interviews of sixty-four respondents of four categories. The qualitative data was analysed using thematic analysis technique and NVivo software. The main contribution of this paper is to introduce paradigmatic dimension in the debate linking water access and urban resilience.

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Keywords: water access, human rights, centralized systems, urban resilience

PEOPLE-CENTRIC POLICY LEVERS FOR MANAGING URBAN RESOURCES: MUMBAI'S MITHI

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Individual Paper Presentation

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The Mithi River holds a crucial role in shaping urban resilience and the quality of life in Mumbai, especially in light of climate change and the projected sea-level rise that will significantly impact the city. The catastrophic 2005 floods, once considered a rare event, now suggest a trend toward more frequent and severe weather events. Despite 18 years of efforts, interventions have made minimal impact on the river's ecosystem or the community's relationship with it. This empirical study explores policy interventions for the Mithi River, focusing on the perspectives of its decision-making community to integrate people-centered policies rather than a narrow technocratic perspective in reevaluating pollution factors and water management practices.

This research engaged 30 decision-makers, including affected residents, business owners, public agency staff, experts, academics, and activists, to assess 18 pollution factors identified from secondary research. These factors were divided into categories such as Domestic Life, Infrastructure, Urban Uses, Industrial, and Governance, to assess their pollution impact and potential to influence human behavior at individual, community, and policy levels. Analysis reveals three key findings:

1. Community of Decision-Makers: Identifying entities and situating participants within the river's complex governance network.

2. Pollution Factors Analysis: Survey results highlight river pollution contributors.

3. People-Centric Interventions: The survey's second phase identifies interventions at individual, collective, and policy levels, pinpointing policy levers.

"Fractured governance" emerged as the primary pollution contributor, followed by "Domestic sewage discharge" and inadequate "Solid waste disposal services." The research underscores the complexity of governing the river's 17.84 km stretch, often compromised by pro-development biases. The urgent need for a perception shift among governing bodies presents a vital opportunity for fundamental change.

Significant gaps in domestic-level services, such as sanitation and solid waste collection, prominently contribute to pollution, stressing the necessity of policy-level intervention. A closer examination of past efforts, including river widening, informal settlement resettlement, and beautification, indicates that majority of these interventions are centered on addressing the physical aspects of the river itself, akin to treating a symptom.

Urban floodplains in the Global South, exemplified by the Mithi, face unique challenges due to the pervasive infrastructural deficit, local waterways house the urban poor to meet their water, sanitation, and employment needs, exposing them to flooding and eviction threats (Vollmer & Grêt-Regamey, 2013). Urban regimes often tolerate these settlements until system breakdowns put their existence at risk, creating layers of governance that threaten their survival and fail to integrate them into practice (Roy, 2009; Roy & AlSayyad, 2004).

The study advocates for a fundamental governance shift towards an ecosystem-driven approach, with policies reflecting the decision-making community's insights. Despite leading numerous projects and initiatives, the governing agencies continue to face public dissatisfaction and demands for accountability. Yet, they are also identified as pivotal change agents for the river's future. This study expands the definition of change agents to include communities and entities within the Mithi's watershed. It underscores several key policy levers identified by participants, such as establishing an "urban water association" or a "working group." This group, embodying the river basin's decision-making community and convened by governing agencies, would operate independently from the political cycles that currently impact the river's prioritization. This autonomous entity could be bolstered by initiatives like "CSR for Mithi" or "Crowdfunding for Mithi," integrating various ESG initiatives from businesses

within the river basin (Heller et al., 2019). Additionally, the development, redevelopment, and housing of informal settlements would gain from “co-benefits” that are in closer alignment with the river's ecological and community-centric goals, thereby enhancing local employment, managing pollutant discharge, and improving service delivery.

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Keywords: Policy, Governance, People-Centric Decision-Making, Mumbai, Mithi River Pollution

PLACE ATTACHMENT AND PERCEPTIONS OF URBANIZATION IN MOSHI, TANZANIA

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Individual Paper Presentation

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In rural areas on the peri-urban fringe of rapidly expanding African cities, urbanization can be interpreted and conceived as an unwelcome change threatening traditional ways of life and personal and community cultural identity of rural areas with customary land tenure arrangements and generally ethnically homogenous populations. Place attachment, a social psychological phenomenon that describes (often positive) emotional connections and meanings that are held by an individual or group associated with specific locations, is a novel and useful conceptual framework to examine this dynamic.

In this paper, we examine the relationship between place attachment and residents’ perceptions of various aspects of urban life, using Moshi, Tanzania, located in a region long identified with the Chagga people, as a case study. Given the lack of previous studies within the African context, and to better operationalize abstract concepts such as ‘place attachment’ and generate appropriate survey questions, we first conducted focus group discussions in eight locations in the city and surrounding areas. We then surveyed approximately 700 respondents, stratified by location, and controlling for several demographic factors. Based on the survey results, we utilized principle component analysis to operationalize and validate variables for place attachment, perceptions of cities, and risk

associated with urbanization. We then utilized hypothesis testing to determine whether age, ethnicity, location, or native-born differ in terms of the degree of place attachment and perceptions of cities.

To analyze the influence of perceptions of cities, and perceived urban risks on place attachment while controlling for personal and other characteristics, a hierarchical multiple regression analysis was conducted. Negative perceptions of the city were consistently significant (and positive) for all models, so the more the city was perceived or associated with negative characteristics, the higher the level of place attachment. Notably, the positive perceptions of the city were not significant, implying that negative urban associations tend to drive place attachment. Place attachment can therefore be conceived more as a reaction against negative perceptions of the city. The personal controls were consistently significant and positive across all models, and greatly improved the goodness of fit of the model. Place attachment is positively associated with age while being Chagga, owning land, and being native to the area were associated with greater levels of place attachment.

Similar to other studies in different geographies, we have found that with increasing levels of urbanization, the level of place attachment decreases (Buchecker and Frick, 2020; von Wirth, 2016); there was a significant decrease in levels of place attachment between rural, per-urban, and urban locations. Unlike some studies, age was a factor, with younger people expressing less place attachment compared with older generations. This could be because of stark generational and geographic differences between rural and urban areas, and the unique economic opportunities afforded by cities for younger people in Africa. The role of ethnicity was also unmistakable, as being Chagga was consistently significant in all our statistical analyses. The association of place attachment with negative sentiments towards cities suggests that urban areas and urbanization more broadly are potentially seen as a threat to the Chagga way of life, even when controlling for other factors such as concerns over risks posed by urbanization. These findings comport with other studies that have found that when a place is threatened by change, residents become more attached to the place, particularly if the place impacts their individual or community identity (Bonaiuto et al., 2002)

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Keywords: Sub-Saharan Africa,, place attachment, urbanization

PLANNING INCLUSIVE DIGITAL GOVERNANCE FOR INDIA'S INTERSTATE MIGRANTS

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Individual Paper Presentation

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This study investigates how urban planning and digital governance intersect and impact the lives of India's interstate migrants. Millions of migrant workers in India's cities move between rural villages and the urban periphery where city planning and governance decisions impact their livelihoods and well-being (Naik, 2019). The reliance on rural-centric documentation, such as voter IDs and ration cards, poses barriers to urban citizenship or a digital "right to the city" (Shaw and Graham, 2017) by restricting access to public services such as food rations and other subsidies. Focusing on post-pandemic Delhi and its periphery, the research examines the effects of digitization on traditional documentation systems. The paper is informed by ethnographic observations and interviews conducted between 2020 and 2023 with members of migrant households, NGO workers, and government officials.

The transformation of urban governance through digitization and digitalization has critical implications for planning practice, particularly in addressing the needs of mobile and marginalized populations who perform essential labor yet live at the socioeconomic and infrastructural margins of the city. Migrants not only live on the periphery of the city, but within what Datta (2023) refers to as the "informational periphery". Some claim that the shift from paper-based systems, a legacy of colonial and postcolonial administrations (Hull, 2012), to digital formats holds potential for more inclusive urban planning (Datta 2023). Grassroots NGOs advocating for digital solutions to streamline migrant access to the Public Distribution System (PDS), whose importance was highlighted during the Covid-19 lockdowns in March 2020, have recognized this potential (Goldstein, 2022).

This paper shows that the digitalization of urban governance meant to aid planning processes can, however, perpetuate the inefficiencies of the analog system. By introducing complex layers of verification and authentication, new digital platforms are inadvertently erecting new barriers to urban citizenship. This poses a question for urban planners: how can digital governance be harnessed effectively to support migrant populations? The findings offer insights for urban planners and policymakers increasingly tasked with concerns over the digitalization of urban governance and underscores the necessity of planners adopting inclusive and responsive digital strategies in the Global South.

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Keywords: India, Migration, Digital Governance, Urban Citizenship, Public Services

PROGRESSING PLANNING PEDAGOGY: LEARNING FROM AND WITH THE GLOBAL SOUTH

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Individual Paper Presentation

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This paper investigates how academic departments in the global North and global South can create opportunities for collaborative instruction and learning to provide experiences that underscore the value of critical planning pedagogy. To that end, the need to strengthen planning education in North America by infusing it with perspectives from the global South is now increasingly being valued (Andrews et al., 2020; Carolini, 2020). Moves in recent years by the ACSP and the Planning Accreditation Board (PAB) make this evident. The need for American planning education to develop a more global sensibility, especially by engaging more with the global South is necessitated by multiple trends, for instance: rising enrollment and unique needs of students from these regions (Fan et al., 2022; Lee et al., 2023); increased global connectedness of local communities (Miraftab, 2016); the South to North travel of planning ideas; and the growing involvement of global planning consulting and development firms in cities of the South (Chakravarty et al., 2023).

Inexorable urbanization and climate change impacts are compounding the challenges of resilience, equity, and justice for cities in the global South. Therefore, the urgent need there is to expand the capacity of planning education and transform it (Das, 2019) — from tending to be deterministic, technocratic, and exclusionary, steeped in colonial legacies, to promoting exploratory and participatory ways of learning by engaging deeper with local places and people (Das et al., 2024). Collaboration among planning schools in the global South (Odendaal and Watson, 2018) and the global North (Butt et al., 2013) can yield mutually constructive results for improving planning pedagogy by fostering a holistic appreciation of the determinants of inclusivity and equity across locales. However, even for northern planning schools with limited experience or resources, initiating such collaborative ventures can be demanding.

This paper discusses and analyzes how since 2022 a mid-sized planning department in the United States conducted four collaborative field-based courses with a partner institution each in Bangladesh and Indonesia. Attempted as pedagogical experiments, they were intended to foster a deeper appreciation of the issues, institutions, and interventions that influence progressive planning outcomes in those locales. The courses' formats, durations, and resources were distinct, and realizing them involved creative approaches. This paper relies on multiple qualitative methods — literature review, field observations, participant surveys, and interviews with students and instructors. Using a comparative framework, we reflexively analyze the learnings that emerge in regard to strengthening planning pedagogy, and globalizing planning education in the North through collaborations with institutions in the South. We found that even short but structured and intensive on-site engagement with communities encourages: 1) rapid but signficant understanding of complex concepts; 2) critical thinking and bold ideation; and 3) enhanced realization of other pedagogical ends and values through teamwork and cross-cultural learning. It also identifies directions for future research and potential innovations.

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Keywords: Globalizing planning education, critical planning pedagogy, North-South collaboration, Bangladesh, Indonesia

ROOT CAUSE ANALYSIS OF RURAL TOURISM CHALLENGES IN CHINA AND THE US

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Individual Paper Presentation

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Despite the vast differences in cultural, historical, political, and economic backgrounds between China and the United States, the world's two largest economies, our comprehensive literature review has revealed that both face similar key challenges in rural tourism planning——environmental sustainability issues, innovation deficits in tourism offerings, the presence of service system lag, and insufficient intrinsic motivation.

This study seeks to unearth the root cause of these challenges, questioning what leads such diverse nations to encounter shared challenges in rural tourism planning. It also aims to propose solutions addressing this root cause, moving beyond the fixes targeted only at surface-level challenges prevalent in existing literature.

Our hypothesis suggests that these challenges stem from the conflict between tourism industrialization of rural tourism and the essence of rural places. Tourism industrialization, characterized by the transformation of tourism into a systemic industry that emphasizes efficiency and economic progress, involves standardizing tourism products and services for mass markets and developing infrastructure aiming for operational efficiencies. This industrialization contributes to the identified challenges as follows: (1) Environmental Sustainability Issues: Both countries' move towards tourism industrialization has led to modern facility construction at the expense of the natural environment. (2) Innovation Deficits in Tourism Offerings: Our analysis reveals that the drive towards tourism industrialization in rural areas of China has resulted in a proliferation of uniform tourism projects, often imitating economically successful models, neglecting the fact that the unique essence of rural areas is their main allure. Likewise, in the US, the pursuit of economic gains has led to a diminished focus on crafting distinctive tourism experiences. (3) Service System Lag: The push for tourism industrialization in China's rural areas draws in tourists and economic advantages, yet it places a heavy load on the existing housing, dining, and sanitation infrastructure, exposing service system inadequacies. In the US, tourism industrialization in rural tourism has led to a scarcity of permanent residents and inflated housing costs, driven by the vacation home market, thereby straining local finances and contributing to the lag in service system development due to an unstable tax base. (4)

Insufficient Intrinsic Motivation: Both nations have approached rural tourism more as an industry to be utilized than as a field to be planned. This approach has led to inadequate engagement with local communities, crucial for nurturing sustainable tourism that truly highlights the essence of said rural areas while addressing local needs. The shortfall in empowering local communities diminishes the natural drive and motivation within these communities to actively participate in and benefit from rural tourism planning.

To validate and refine our deductions, we will conduct field research and in-depth interviews with those directly involved in rural tourism planning in Anhui Province, China, and Michigan, USA, both of which were selected as primary research sites due to their rich rural tourism resources.

Understanding the root cause behind the shared challenges in rural tourism planning between China and the United States is paramount for several reasons. First, it allows for the creation of strategies that are not merely reactive but proactive, targeting the underlying issue rather than their superficial symptoms. By addressing the root cause, we can anticipate a more sustainable, long-term improvement in rural tourism planning that benefits local communities. Second, insights gained from identifying the root cause are essential for planners dedicated to cultivating resilient and sustainable rural tourism initiatives that bolster local economic development while safeguarding the essence and environmental integrity of rural locales. Third, recognizing the root cause facilitates a deeper cross-cultural understanding and exchange of best practices that could be adapted and implemented across different socio-economic contexts.

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Keywords: Rural Tourism, Rural Tourism Planning, Sustainable Development, China, United States

SPATIO-TEMPORAL COUNTY-LEVEL EMPLOYMENT DISTRIBUTION IN CHINA

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Individual Paper Presentation

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Enhancing urban-rural linkages towards a sustainable future has been proposed by UN-Habitat and shown in the framework of 'Sustainable Development Goals (SDGs)', emphasizing the importance of the equal and balance development of both urban and rural areas. Besides historical factors, such as differences of urban and rural land use policies, the household registration policies, and industrial development policies, existed gaps of socio-economic development and spatial construction between urban and rural areas may cause the urban-rural dual development in the rapid urbanization process in China. With insufficient job opportunities, inadequate infrastructure, public services and amenities, counties had less attractiveness to people comparing to cities, led to the loss of population in less-developed urban and rural areas and caused the vicious circle of the above imbalanced development. Aiming to address such an issue, the Urban-rural Integration (URI) policy has been proposed in 2019 in China. Among the strategies in URI, encouraging the local to work within the county level is mentioned as one of the priorities, aiming to improve the socio-economic development and spatial construction in the county level.

This research aims to reveal the urban-rural interactions through the spatio-temporal characteristics of employment distribution in the county level, and provide suggestions for the urban-rural integration in China towards the sustainable development. To demonstrate the overall and seasonal spatio-temporal characteristics of county-level employment distribution, it studied Linqu County in Shandong Province in China with massive Location Based Service (LBS) data in 2019. By linking the LBS data and the improved temporal-accumulation algorithm, the research identified the working place and residence of people in Linqu County in every month of the year, analyzed the spatial structure of the county-level working-residence interactions in both urban and rural areas with methods of spatial autocorrelation. Based on that, the research analyzed the spatio-temporal characteristics of the employment distribution in Linqu County and further discussed the URI policies and rural revitalization policies in the county level. The result showed the agriculture industrial activities in rural areas offered seasonal job opportunities and had a significant influence on the urban-rural working-residence interactions monthly. This phenomenon influenced the spatio-temporal employment distribution seasonally in the urban center, where still served as the main working place in Linqu County in 2019 due to its development of secondary and tertiary industries. Strategies to alleviate the current imbalanced spatial structure presented by the characteristics of employment distribution between urban and rural areas were discussed in this research. It provides valuable practical knowledge and policy debates relating to URI and SDGs in the county-level urbanization process in current China.

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Keywords: urban-rural integration, Sustainable Development Goals, employment distribution, rural revitalization, spatio-temporal characteristics

SPATIOTEMPORAL LAND USE CHANGES IN REMOTE RURAL REGIONS OF INDIA

Abstract ID: 1108.0.0.36.2024
Individual Paper Presentation

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High population density is a key indicator of urbanity (Castells, 1977; Harvey, 1985; Qadeer, 2000, 2004; Rex & Moore, 1967; Wirth, 1938), which has been on the rise globally over the last two decades due to population growth (World Bank, 2023). High density and population pressure could transform a region's spatial organisation, land market, and housing and community needs of a rural area, among others, introducing major urban characteristics.

This study tracks the spatiotemporal changes in high-population growth and high-density rural regions of India, also called 'ururaI' (Agrawal et al, 2021). The ururaI areas are remote, high-density rural areas far from zones of urban influence. Deriving the land use and land cover changes from the Global Land Cover and Land Use Change dataset and analysing them in the most populated and dense districts, the study confirms Agrawal et al (2021)'s hypothesis that land uses are continuously changing and have accelerated in high population growth and density in rural districts in India. This study is arguably the only study conducted at the national level to examine the nexus of population density and land use patterns in rural India over the last two decades. The findings demonstrate significant changes in land use patterns in the last two decades, that is, 2000–2020, particularly in the last decade. Almost all physical changes, such as an increase in built-up areas, a reduction in agricultural lands, and depletion in vegetative cover and water bodies, were significant. This means that high population density, combined with population pressure in remote rural regions, is a leading contributing factor to considerable land use transformations, essentially turning them into areas with urban characteristics, that is, making them ururaI.

Such ururaI areas are the new frontier in rural and regional planning in India. Barring some progress in educational facilities and improvements in road connectivity, other forms of physical and social infrastructure and services are not commensurate with the urban characteristics of these villages—especially their population, density and land use changes (Vidyarthi et al., 2017). The spatial and socio-economic characteristics of these areas are close to those described in Ginsburg et al.'s (1991) extended metropolis or even McGee's (1991) desakota concept, especially concerning these features: The rural nature of these landscapes, which also reveal shifting land uses; the non-agricultural economy; the improving connectivity; and the dense, but also migratory, population. However, as noted earlier, ururaI areas are remote and far from any metropolitan zone of influence. The findings of this study further suggest that ururaI areas need several urban amenities (such as water, drainage, sanitation and healthcare) because they face unprecedented population density and economic pressures that are often going unnoticed from a policy perspective. Increased disputes and public encroachments might result from population density pressures on land and a lack of public resources. The formal governance system in India needs to urgently recognise the reality of these zones of intense rural-urban interaction and direct investment in these underserved areas.

This study could help the Government of India's rural programs such as the National Rurban Mission, which has two specific goals: To stimulate local economic development and to enhance basic urban services in rurban clusters. Interestingly, land use changes are not a factor that was invoked to identify rurban clusters. Therefore, the research methods used here could be applied to the hundred or so identified clusters, along with other factors, to prioritise those in dire straits and, thus, most in need of urgent attention. In addition, the study can help stimulate discussion on categorising urban, rural, rurban and the presented 'urural' regions and formulate appropriate land use policies based on the local issues in each category.

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Keywords: high-density rural, urural, land use, spatio-temporal changes, India

SUDANESE TEA LADIES: COMMUNITY ENGAGEMENT THROUGH FOOD

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Individual Paper Presentation

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This paper explores the evolution of the tea ladies in Khartoum, contextualizing their emergence within a web of political, economic, and social dimensions. Through their informal tea spaces, these women have subtly, yet profoundly, woven social networks that advocate for social and economic sustainability. The research includes selected case studies designed to illuminate how the core values embedded in Khartoum's tea spaces—specifically, food-sharing as a catalyst for social networking and community organizing—resonate with and are adapted within the American Midwest. This investigation places the phenomenon of Khartoum's tea spaces in the broader context of global food-sharing and community engagement practices. This study emphasizes the significance of reversing the conventional flow of knowledge – typically from the global north to the global south – by foregrounding the richness of south-to- north knowledge sharing. By drawing parallels between the tea practices of Khartoum and those globally, particularly in settings like pop-up cafés and makeshift gallery spaces in Des Moines, we anchor our observations within a scholarly framework encompassing relational theory, global knowledge dynamics, Asset-Based Community Development (ABCD), Appreciative Inquiry (AI), conversational theory, and art-based community engagement. The goal of this paper is to highlight the importance of carving inclusive third places, per Oldenberg's third place theory, for community organizing, contextual-based co-creation of knowledge, and fostering trust and

empathy among community members and officials. This paper serves as a gentle reminder of the potential of learning from the global south, advocating for a more diverse, sustainable, and interconnected approach to community development.

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Keywords: Food Based Community Engagement, Third Place Theory, Decolonial International Planning, Art-Based Community Based Research, Community and Economic Development

THE FALSIFIED NATION-BUILDING OF ISLAMABAD THROUGH THE BUILT ENVIRONMENT

Abstract ID: 1108.0.0.664.2024
Individual Paper Presentation

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Regimes of nation-states formulate an ideal national identity to create an imagined community of heterogeneous groups. Various populations are forced to form such national associations through a unified language, history, and education, creating an official nationalism that caters to one ideal communal identity, whether based on ethnicity, gender, religion, or class etc. (Anderson, 1991). In capital cities, the emergence of this ideal imagined national identity is explicitly constructed through the built environment, providing a unique setting for urban form and identity to jointly build a national narrative. Thus, capital city urbanisms are elaborate versions of national museums that monumentalize the past and the nation's value systems to direct citizens to a national ambition (Gordon, 2006; Vale, 2014).

In Islamabad, specific design choices, symbolism, and language have done the same for Pakistanis(Vale, 2014). These structures usually point to specific ideologies such as pride for the founding father of Pakistan, Muhammad Ali Jinnah, endearingly known as Quaid-e-Azam; as well as allegiance to Islamic and modernist principles, particularly representing the Sunni sect. Both of these messages are in tune with Pakistan's efforts to create a nation that has moved on from its colonial past and association with India. This rigid hegemonic design discourse marginalizes all those who do not fall into the ideal citizen umbrella such as women, religious minorities, informal settlement residents, and those engaging in informal economic practices.

The assumption is that the design and development of such structures is well defined, planned and recorded, serving a unified national agenda. However, the reality is a little different. Most monumental projects in Islamabad have been created through ad hoc methods of beautifying empty spaces. Usually, a business or other commercial entity will take on the commission of beautifying an empty lot by hiring an urban designer or architect to create a sculpture or monument that symbolizes a message that speaks to Paksistan's sentiments, while using the space to advertise their business or product. Any company interested can contact the Capital Development Authority (CDA, the planning office of Islamabad) to take on the project and design the space, without much structured record keeping or community input (Hull, 2012; Moatasim, 2023). There is no set record of the empty spaces available, who it'll be commissioned to, and what design principles to adhere. Most of these structures are personal design projects that the CDA approves as long as the blank space is being converted into something pretty and patriotic. No effort is put into researching the history/community/value system being represented, nor is proper recognition provided to the designers. It's usually an impromptu project.

In this paper, I unpack the design and development of some of these structures in Islamabad, including the Pakistan Monument, Faisal Mosque, the Faith Unity Discipline monument, and several other spaces constructed as a beautification scheme for the city. I am conducting interviews with CDA officials, as well as designers who were commissioned to create some of the projects. I argue that while the CDA uses several tactics to maintain an image of order, cleanliness, Islam, symmetry, nationalism, pride, modernism etc., the actual process of this narrative building is itself quite unplanned and random, much like most of the planning processes in Islamabad and Pakistan. Thus, such staunch imagery is just a facade that is imposed on marginalized populations to force them to adhere to policies that the CDA itself refuses follow. Informal, ad hoc processes when practiced by low-income religious minorities are punished, while the (un)planning of such large-scale architectural projects are lauded and promoted. This paper, thus challenges CDA's false claim to a planned, modern Islamabad, and Pakistani citizen.

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Keywords: Capital Cities, Monuments, Design, Citizenship, Islamabad

THE PAST IN THE FUTURE: THE EVOLUTION OF THREE VILLAGES IN CHINA

Abstract ID: 1108.0.0.1006.2024
Individual Paper Presentation

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Rural heritage, recognized internationally as a pivotal resource for local development, has been effectively integrated into various global practices (Silberman 2013). These initiatives underscore rural heritage's role in driving economic revitalization. Nonetheless, traditional value systems and established conservation methods, which emphasize physical integrity or intrinsic values, often challenge these modern perceptions and applications. Particularly during economic recessions, when preservation funding dwindles, tourism development tends to pivot towards economic imperatives like poverty reduction. Consequently, the local community's collective valuation of their heritage becomes increasingly susceptible to the pressures and paradigms of contemporary development. Therefore, exploration of the rural heritage within the context of balancing the preservation of its intrinsic values with the advancement of community development is imperative.

This study conducts a comparative analysis of three secluded traditional ethnic minority villages located in a less-developed region of southwest China. They were incorporated into the community-based segment of the 'World Bank Loan Guizhou Province Natural and Cultural Heritage Protection and Development Project' (WB Guizhou project, 2010-2017). Recognized as China's traditional villages, they also feature on the tentative list of China's World Heritage sites. Despite their proximity, these villages exhibit distinct states of conservation. Their developmental trajectories have markedly diverged: Village A, by preserving its architectural integrity has witnessed a boom in tourism; Village B has seen minor stylistic changes with lukewarm tourist interest; whereas Village C has experienced a radical overhaul, with over 90% of its traditional wooden structures giving way to modern brick-concrete buildings, leading to a near-total cessation of tourism activities.

This study finds that the villagers' decisions regarding heritage management are influenced by their anticipated benefits from the heritage, leading to varied conservation results. Upon reevaluating the conservation and development status of the three villages through the lens of living heritage value, the study also finds that the primary distinctions are evident in the renovations of villagers' homes, while other village elements, such as spatial layouts and traditional public structures, have remained mostly intact. Regardless of their decisions, the villagers never fully forsake their history; instead, they integrate their past into their future.

The study showcases three neighboring, markedly different instances of rural heritage conservation and community development. Through a comparative analysis, it sheds light on the fundamental reasons behind the diverse results seen in the application of rural heritage conservation. The study contends that rural heritage conservation underscores the continuity of heritage, diverging from the traditional conservation ethos of authenticity and integrity. This continuity is predominantly observed in the heritage's intangible cultural importance and the community's collective identity, rather than its tangible form. Hence, the intrinsic value of rural heritage cannot be solely evaluated based on the architectural characteristics of villagers' residences; instead, the strategic adaptation and utilization of heritage assets are considered more vital than their preservation in an unchanged state.

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Keywords: Rural Heritage, Community Development, Heritage Conservation, Traditional Villages, China

URBAN PLANNING KNOWLEDGE PRODUCTION IN THE ARAB WORLD

Abstract ID: 1108.0.0.819.2024
Individual Paper Presentation

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Interest in the spatiality of scientific knowledge is evident across diverse disciplines. Over the years, researchers have highlighted the centralized nature of the geography of urban planning knowledge production (Haghani et al., 2023). Studies have found that authors from the United States and Northern Europe comprise the majority of scholars publishing within the field, while planning scholars from the Global South are systematically underrepresented (Haghani et al., 2023; Ruszczyk et al., 2019). Such patterns are echoed in post-colonial urbanism that seeks to challenge the current dynamics of planning knowledge systems and networks and to acknowledge the importance of 'theorizing from the Global South' for the advancement of the field (Chakrabarti, 2023)

Recent efforts have attempted to promote and highlight planning research from the Global South, such as the Routledge Companion to Planning in the Global South (Bhan et al., 2019), and Overlooked Cities: Power, politics and Knowledge Beyond the Urban South (Ruszczyk et al., 2019). Yet, current literature fails to capture the landscape of planning research in/on the Arab world. Indeed, Malkawi (2008) suggests that the prevailing research agendas on the Arab metropolis have primarily focused on global and well-studied cities, such as Cairo, Damascus, and Baghdad.

Using a spatial scientometric approach, this paper presents empirical insights into the places (i.e., the localities of scientific investigation) and spaces (i.e., the immaterial spaces of scientific collaborative networks) where planning scientific knowledge in/on the Arab world is generated. Three methods of extracting Arab planning scientific production were used. First, scientometric data was retrieved from the Scopus database; second, data was manually extracted from local and regional Arab urban planning scientific journals; and third, data was compiled from academic websites, Google Scholar, or ResearchGate profiles of academics and researchers in Arab universities and urban think tanks or institutions. Research written in English, Arabic, and French was included in the study. Approximately 8,000 studies examining diverse planning issues in/on the Arab world were identified. A multiscale approach was used to assess author affiliation data at the organization, city, and country scale. Meanwhile, spatial data regarding the research context was manually extracted from the articles' abstracts or introductions.

Based on the findings, this research introduces three key arguments to guide future discourse on planning knowledge production in the Arab World. First, the analysis indicates the continuous prevalence of several cities, such as Cairo, Abu Dhabi, Baghdad, Riyadh, Damascus, Beirut, and Rabat, as key sites of scientific planning investigation. As such, Arab planning knowledge risks over-representing the lived realities of larger metropolitan areas and ignoring valuable planning lessons and theories from smaller and increasingly vulnerable Arab localities. Second, Egypt and Iraq emerged as significant contributors to Arab planning research. This can be mainly attributed

to the historical role of those two countries in scientific development in the region, as well as their extensive planning history and its impact on the development of planning theory in the region. Third, despite shared post-colonial histories and language, political ties, and common sustainable development priorities, scientific collaboration within the Arab urban planning field mainly occurs within national boundaries. Promoting regional scientific collaboration between diverse Arab states is thus crucial to support the production of planning knowledge and theory by and from the Arab world.

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Keywords: Knowledge production, Spatial scientometrics, Arab planning research, Research localities, Arab region

Track 7 Research in Motion (RiM)

DISPARITY BETWEEN PUBLIC INTERESTS IN THE DEVELOPMENT PROJECT OF RAMNA PARK

Abstract ID: 1110.0.0.1215.2024
Research-in-Motion (RiM)

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The 70-year-old Ramna, also known as the lungs of Dhaka city, has recently gone through a two-year dedicated infrastructure development and beautification project by the Public Works Department of Bangladesh. The park holds historical significance for the 1971 liberation war of Bangladesh and cultural importance for the celebration of Bengali New Year under the Ramna Batamul banyan tree each year. Despite the successful completion of the project, local social organizations have raised concerns about issues that citizens face daily when visiting the park, including limited access times, inadequate child-friendly infrastructure design, environmental degradation, and illegal activities by floating girls occurring at night. Government officials from the Public Works Department (PWD)

have been unresponsive to these concerns, leading to stark contrast questions about whose interest is prioritized within the public interest promoted by the nation. So, the central research question guiding this study is: How do national and local public interests differ in the infrastructure development and beautification project in Ramna Park, Dhaka? The research frames the conflict between the national and local social organizations as differences in how the public interest is conceived and investigates the mechanisms through which the local organizations assert their understanding of the public interest in the national decision-making process.
This research uses a case study approach, incorporating data from semi-structured interviews with the key national stakeholders, including elected officials, engineers, botanists affiliated with the Public Works Department, and planners from the Institute of Planning and Development, Bangladesh, who were directly involved with the development project of the Ramna Park. The local social organization, Ujjibon Bangladesh, will also be consulted as it has raised public concerns about the remodeling of the park. This research seeks to gain insight into how planning policy can be developed to serve the diverse needs and interests of the public. By prioritizing these interests, national stakeholders can prove transparency and inclusivity in development planning. As local social organizations play an important role in advocating inclusive and equitable urban areas, the research will help promote and empower the groups to actively participate in promoting the public's best interests in national decisions. The historical and cultural significance of Ramna Park highlights the interrelation of physical space and cultural identity, and directs the complexities of public interest and decision-making processes in Dhaka city.

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Key Words: Public interest, Infrustructure development project, Local social organizations, National decision making, Park users

ENVIRONMENTAL RESTORATIVE JUSTICE AND CULTURAL NUANCES IN LATIN AMERICA

Abstract ID: 1110.0.0.870.2024
Research-in-Motion (RiM)

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Environmental conflicts in the Latin American region have been a persistent issue for decades, exacerbating the injustices that are deeply rooted in colonialism and social inequality. By promoting resource exploitation and reinforcing economic disparities, these conflicts worsen existing social exclusions and deepen political instability. Forsyth et al. (2021) argue that navigating intricate dynamics requires a nuanced understanding of cultural contexts, communication strategies, and power differentials. Cultural perspectives play a crucial role in comprehending the multifaceted nature of this challenge. Similarly, Escobar (2010) advocates for transformative movements centered on plurinationality, interculturality, and cultural autonomy. These can be alternative paths to address social injustices and environmental conflicts. Scholars like Minguet (2021) and Bolívar et al. (2022) have identified environmental restorative justice as a promising framework for addressing these conflicts, with cultural survival as a central concern. By examining case studies in countries such as Chile and Ecuador, they argue that restorative justice principles can foster accountability and repair harm to ecosystems and communities amidst the complex interplay of environmental degradation, colonial legacies, and cultural identities. However, the impact of cross-cultural perspectives on environmental restorative justice in Latin America is still underexplored.

Thus, this article investigates how geographically specific cultural nuances influence the implementation and effectiveness of environmental restorative justice in the region. To achieve this, we relied on a systematic literature review at the intersection of environmental restorative justice, coloniality, and planning practice in Latin America. As per Xiao and Watson (2019), we conducted a systematic literature review and employed a thematic synthesis approach. The review protocol's selection criteria included keywords specific to environmental restorative justice, coloniality, and planning practice in the Latin American region. Searches were conducted in Google Scholar and online databases such as Web of Science, with a timeframe limited to articles published within the last 20 years. Additionally, manual searches of relevant journals and reference lists of identified articles were performed to ensure comprehensive coverage. After performing a quality assessment and screening procedures, a total of 48 papers were chosen as key publications. Subsequently, four main themes were identified: challenges and dilemmas of environmental restorative justice, restorative justice regulations and policies, ethical considerations, and environmental justice movements. These themes were later synthesized to generate insights for analysis and discussion.

Our findings suggest that past environmental exploitation, colonial experiences and cultural identiy significantly shape contemporary perspectives and reception of restorative initiatives across diverse settings in Latin America. Additionally, they reveal stark disparities in power dynamics among cultural groups, particularly concerning access to resources, decision-making processes, and promoting justice in environmental conflict scenarios. These insights underscore the need for cross-cultural sensitivity and inclusivity in environmental governance and justice efforts, acknowledging the diverse perspectives and historical legacies present in the region.

This work sets the grounds for further exploration for others interested in the fields explored. Finally, this paper illuminates the transformative potential of environmental restorative justice in addressing entrenched historical injustices and fostering cultural sensitivity across Latin America. Hence, addressing the aforementioned gap is crucial to addressing environmental conflicts and promoting equity and inclusivity across Latin America.

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Key Words: Latin American Urban Studies, Environmental Restorative Justice, Coloniality, Cross-Cultural Perspectives

EVALUATION OF A FEW HEAT ACTION PLANS OF INDIAN CITIES

Abstract ID: 1110.0.0.213.2024
Research-in-Motion (RiM)

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Planners are increasingly concerned with the public health impacts of extreme heat. Many Indian cities and states are implementing Heat Actions Plans (HAP). Ahmedabad city in Gujarat state in western India is one of the hottest cities with a daily maximum temperature of 113oF from March-May. Following an intensely hot May in 2010 that resulted in the excess deaths of 1344 people, the city adopted a HAP in 2013, making it the first South Asian city to comprehensively address heat health threats, effectively manage heat stress, and reduce heat related mortality. Following Ahmedabad's successes, at least a dozen Indian cities and several states have adopted HAP or are in the process of doing so. This study analyzes the first few Heat Actions Plans of Indian cities that are publicly available. The initial plan evaluation criteria are based on the National Guidelines for Preparation of Heat Action Plans – Prevention and Management of Heatwaves, as recommended by the National Disaster Management Authority of India (NDMA). The nine plans evaluated in this study include the cities of Ahmedabad, Rajkot, Bhavnagar, Vadodara, and Surat (all five are from Gujarat state), Chepauk in Chennai, Bhuvaneshwar, Hazaribagh, and Gorakhpur.

Preliminary analysis indicates that the HAPs are action oriented, focusing on preparedness at the local level for dealing with heat-related health eventualities. They emphasize reducing the negative health impact of extreme heat by health care system capacity building. This includes training local health professionals to enable them to recognize and treat heat related illnesses (heat cramps, heat exhaustion, heat/sun stroke, heat rash, etc.). Plans focus on establishing early warning and alerts systems and emphasize public awareness and community outreach programs with multi-pronged communications campaigns for communicating the health risks of heat waves (hoardings/billboards, print advertisements, pamphlets, text messages, etc.). Only a few plans identify cool roofs as a cooling strategy and their widespread adoption in HAPs is lacking. India's NDMA identifies cool roofs as a cost-effective mitigation strategy to reduce heat stress and provides guidance on their implementation.

Plans range from 19 pages (Chepauk & Hazaribagh) to 115 pages (Bhuvaneshwar). Most plans do not include information on climate change related heat impacts or the effects of urban heat island on human health and well-being. Many plans do not include community assessment or identify vulnerable and higher risk populations population groups such as low-income and slum communities, elderly and children, laborers, and informal sector

workers. In general, plans do not address social and spatial inequities. Public health departments are at the forefront of heat action planning efforts. Some plans include an inter-agency response plan and coordination in field, but opportunities exist for improving collaboration between municipal public health and planning departments, and to better connect planners and mainstream planning processes (development/master plans, neighborhood plans) to HAPs. Wider collaboration could include public institutions, private entities, NGOs, and civil society. Most plans do not include urban planning or built environment strategies, indicating opportunities for municipal planners to meaningfully incorporate low-cost strategies for urban cooling through vegetation, green infrastructure, land use, development regulations, cool roofs, and building codes. Cities lack feedback systems for assessing impact or reviewing and updating plans on a regular basis. Plan implementation also needs to be monitored to better understand their overall impact.

In the next stage, this study will be expanded to include additional Indian cities such as Nagpur and Vishakhapatnam and state level HAPs. Semi-structured interviews will be conducted with policy makers, public health and planning professionals, and local experts involved in preparation of HAPs to better understand planning processes, local capacity and constraints, and inter-agency collaborative efforts.

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Key Words: Heat Action Plan, Plan evaluation, Indian cities

NON-STATE PRIVATE ACTORS AS PLANNERS IN BEIRUT'S RECONSTRUCTION

Abstract ID: 1110.0.0.744.2024
Research-in-Motion (RiM)

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Against a backdrop of rich diversity and cosmopolitanism, Beirut faces a history of conflict and urban violence (Freitag et al, 2015). Acts of aggression during the Lebanese Civil War (1975-90), the 2006 aerial bombings by Israel, and the port explosion in 2020 have all contributed to shaping Beirut's urban geopolitical landscape. However, there is a gap in the literature on how reconstruction occurs in the post-conflict period in cities like

Beirut, where urban governance involves a mix of actors (Fregonese 2009). In a scenario where the Lebanese State's institutions, such as the Council for Development and Reconstruction, responsible for state planning, and the Directorate General of Urban Planning, which should provide government oversight prove ineffective, urban space development in Beirut, is delegated to non-state private actors (Krijnen & Fawaz 2010).
By examining three instances of planning in Beirut: the reconstruction of Downtown Beirut in 1990, the reconstruction of Beirut's suburb Haret Hreik in 2006, and the reconstruction of port blast-affected areas in 2020, I demonstrate how planning via private actors produces mixed results and alters the urban landscape. This paper compares and contrasts the incentives, coordination efforts, and accountability measures of these private actors in the three reconstructions, advancing the literature on how planning procedures occur in cities marked by conflict and governed by a multitude of private actors. I employ a comprehensive review and analysis of secondary data sources, and government reports to analyze the private planning ventures of Solidere (a private real-estate company delegated to reconstruct downtown Beirut) and Jihad-Al-Binaa (a private planning agency established by Hezbollah to reconstruct Haret Hreik). Based on field research (in depth semi-structured interviews, document reviews, and walking surveys) I conducted in Beirut following the blast explosion in 2020, I investigate the role of non-state actors in Beirut's post-blast recovery and reconstruction.
My findings showcase how Solidere's effort to rebuild downtown Beirut symbolizes a continuation of the militarized urban development seen during the Civil War. I conclude that the redevelopment process served as a channel for reallocating public assets to a private entity, allowing Solidere to become a key player in perpetuating the country's urban planning trajectories and its socio-political and economic strife. My analysis of Jihad-Al-Binaa's reconstruction of Haret Hreik reveals how Hezbollah gained control and pushed aside not only the city officials and public figures but also professionals, scholars, and the public. This top-down and exclusionary approach shows how Hezbollah, as a religious, political, and private planner, transformed a part of south Beirut into a religious and social congregating space according to their vision. Finally, my analysis on the post-blast reconstruction in 2020 showcases how the outsized role of non-state actors impacts the ability to rebuild local government capacity and grants these private actors ultimate authority to plan the city.
These three reconstruction efforts reflect a post-political situation characterized by private non-state actors bypassing state entities. Therefore, in Beirut, the actions of non-state actors in asserting control are evident in planning the city's physical landscape. Thus, by revealing the mixed nature of control in Lebanon, we can understand the real, sometimes harmful, impact this mode of governance has on the country. Just as with other strategies in urban planning, privatizing the processes of reconstruction plays a critical role in defining, reinforcing, or changing the living and governance rights of various societal groups.

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Key Words: Non-state Actors, Post-conflict Reconstruction, Urban Governance, Contested Cties, Middle East

RIGHT TO THE WATERSCAPE: (RE)PRODUCTION OF URBAN SOCIONATURE IN CHATTOGRAM

Abstract ID: 1110.0.0.649.2024
Research-in-Motion (RiM)

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The waterscapes of coastal mega-cities in the Global South are critical for urban resilience in the face of climate change. However, urban waterscape planning in Bangladesh continues to reproduce colonial legacies while furthering neoliberal priorities. Residents in long-established waterfront communities are marginalized and excluded from planning processes, while rights to shape waterscapes are constrained by complex power dynamics defined by class, gender, religion, and caste. In the context of South Asian postcolonial countries like Bangladesh, where informality is a way of life, this research explores how such communities navigate the dominant waterscape planning paradigm to claim their right to the waterscape in Chattogram.

I use the term 'waterscape' to refer to the deeply intertwined character of water and society. The concept of waterscape provides a prism through which to investigate 'who controls, who acts, and who has the power to produce what kind of socionature' (Swyngedouw, 1999). In the case of Chattogram, a coastal city in south-eastern Bangladesh, the waterscape has been subjected to various infrastructure initiatives, including the construction of embankments, sluice gates, waterfront promenades, etc. These waterscape planning strategies come at a great cost to marginalized waterfront communities including fisher communities, depriving them of access to the waterscape while increasing elite power by accommodating "organized and bold encroachment of the powerful" (Hackenbroch & Hossain, 2012; Moatasim, 2019). The urban Hindu fisher communities in Chattogram have thrived along varied water edges almost five generations, pursuing situated forms of placemaking built on intimate relationships between land, water, and people. Constituting an urban minority in terms of class, religion, and caste, community members identify themselves as "jaladas" (slaves to water) and still largely depend on fishing or fishing-related activities for their livelihoods. However, because of their time-honored relationships with water, these communities persist, quietly claiming their rights to the city while offering critical—but overlooked—lessons for more equitable and sustainable waterscape planning based on co-productive, sociocultural approaches to planning in the face of climate change.

I situate my research within urban engaged ethnography inspired by feminist epistemology. Drawing specifically from intersectionality theory, I seek to investigate the intersectional histories, perspectives, and lived experiences of waterside communities to uncover their relationships with the waterscape while documenting their everyday placemaking efforts. I examine the politics of waterscape planning from the perspective of urban political ecology, decolonizing insights on urban planning, and environmental ethnographies from southeast Asia that illuminate the fluidity and permeability of coastal regions. I intend to decolonize planning rationalities in the region by centering the contested nature of knowledge production and conceptualizing placemaking as mobilization of geographical imaginaries, where relationships with nature and built environment are produced and reproduced by socialized, ecologized, spatialized, and embodied subjectivities (Subramanian, 2009; Sultana, 2009, 2011). Based on several months of preliminary research in Chattogram, I hypothesize that, when confronted with hegemonic planning initiatives, marginalized waterside communities deploy different forms of agency to negotiate and reshape the materiality of urban waterscape through their everyday placemaking practices.

This study addresses the dearth of research in southeastern Bangladesh, a coastal area that is undergoing rapid urbanization with important lessons for urban resilience in the face of climate change. At the same time, the study will reframe the rationales for waterscape planning by decolonizing the perception of waterscapes as well as urban socionature in planning discourses in Bangladesh and the Global South. Examining the politics of placemaking in the context of informal urbanism will also further our understanding of how modern, elitist waterscape planning visions feed into existing systems of inequality and oppression.

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Key Words: Waterscape, Urban Socionature, Placemaking, Decolonizing planning, Bangladesh

URBAN CLIMATE ADAPTATION: LAND AND ENVIRONMENTAL INEQUALITY IN ACCRA

Abstract ID: 1110.0.0.944.2024
Research-in-Motion (RiM)

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This paper examines urban climate adaptation and environmental inequality through the lens of land in Accra. The confluence of climate change and informal urbanization have fostered uneven risk and vulnerability for urban residents in many Global South cities. In Ghana's capital city, climate change has altered rainfall patterns, contributing to reoccurring and more powerful flooding. Inadequate water infrastructure and uneven waste management further exacerbate climate variability in urban communities, including low-income and informal settlements, that are chronically underserved. The Odaw River Basin, one of the four main catchment areas in Greater Accra Region, passes through the most urbanized areas and is prone to the highest flood risks. The communities alongside the river are also home to over 58% of Accra's population, with most of the cities' informal settlements situated in this precarious setting. The vulnerability of these communities is further compounded by their status vis-à-vis urban land regimes, governance, and their categorization as legal or illegal. While the need for adaptation in response to the effects of climate change impacts in cities is widely acknowledged, more attention should be paid to the pre-existing conditions and socio-spatial inequities that underly these interventions. This research addresses the following questions: How do urban climate initiatives reproduce urban inequality? What role does land governance play in the implementation of these interventions?

The research examines the Greater Accra Resilient and Integrated Development Project (GARID) that seeks to improve flood risk and solid waste management in the Odaw River Basin, with particular consideration for low-income communities. Given the variability in land regimes and tenure for low-income communities and informal settlements, the research will demonstrate how urban climate adaptation initiatives address or reproduce existing urban inequality. Theoretically, urban political ecology frames how urban environments are produced by cultural, economic, political, and social determinants, which shape Ghana's complex land governance. These socially embedded land regimes present challenges to the frameworks and strategies of urban climate adaptation initiatives. Methodologically, this research adopts a mixed-methods approach employing spatial and qualitative analysis to reveal the similarities and differences of flood vulnerability and the responding strategic interventions envisioned in the GARID project. Research to date has demonstrated limitations of the GARID project to engage in communities whose land tenure status is insecure or illegal. This research draws attention to the need for contextually specific climate adaptation initiatives, as well as highlighting the significance of urban land regimes to facilitate more inclusive adaptation and limit the reproduction of urban environmental inequality.

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Key Words: urban climate adaptation, informal settlements, land governance, land regimes, urban inequality

Track 8 – Land Use Policy and Governance

Track 8 Pre-Organized Session Summaries and Abstracts for the Sessions

ADVANCED URBAN ANALYTICS: TEXT MODELING FOR PLAN CREATION AND EVALUATION
Abstract ID: 1112.0.0.48.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.49.2024, 1108.0.0.67.2024, 1108.0.0.575.2024, 1108.0.0.75.2024, 1108.0.0.188.2024

Catherine Brinkley [University of California, Davis] ckbrinkley@ucdavis.edu, organizer
Albert Han [KAIST] albert.han@kaist.ac.kr

As digital data proliferates, the creation and sharing of plans faces unprecedented new opportunities. For example, advanced Natural Language Processing (NLP) and Large Language Models (LLMs) like ChatGPT offer new capabilities to create plans and evaluate plans for implementation. These emerging technologies are still in their nascent stages, with unclear applications and notable limitations. This special session brings together scholarship and practice to understand the current state-of-the-art urban analytics methods and their potential to 1.) transform existing planning practices and 2.) advance understanding of urban theories and processes. These considerations necessarily center ethics as the field of planning considers how to effectively harness novel techniques at the forefront of modern planning and governance.

Learning Objective(s):

- Learn large batch text processing techniques for plan evaluation and drafting
- Preview cutting edge data and tools in planning for data democracy and plan crafting
- Think through ethical considerations of using AI in urban planning

MAKING PLANNING FAIR: TRANSPARENCY, ACCESS, AND RAPID COMPARATIVE ANALYSIS
Abstract ID: 1108.0.0.49.2024
Pre-Organized Paper Presentation

Catherine Brinkley [University of California, Davis] ckbrinkley@ucdavis.edu, presenter

Local land-use plans help guide future development, but the data in plans are often difficult to find, understand, and compare-- making regional coordination and plan engagement challenging for the public, students, and practitioners. As public data increasing uses FAIR standards (Findable, Accessible, Interoperable, and Reusable), this research comprehensive plan data infrastructure guidance and compliance with a California use-case. We find that

there are no state-level uniform standards for plan formatting. Plans must be located on balkanized local jurisdictional websites and public libraries where no digitized. More than a quarter of plans are out of date.

Despite these setbacks, we demonstrate that the creation of digital platforms for archiving and searching across plans is feasible and enables large-scale quantitative analysis. To center practitioner relevance and equity in creating such a platform, the research team revised the tool based on feedback from state agency representatives and non-profit members of the California Environmental Justice Alliance (CEJA). All partners are leading real-time technical equity planning efforts. For example, CEJA helped motivate the state legislature to pass SB 1000 (Leyva) in 2016 (Cal. Gov. Code, § 65302(h)), which requires local plans to address Environmental Justice (EJ) in updates. EJ is defined in California law as "the fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (Cal. Gov. Code, § 65040.12, subd. (e)). The resulting search engine allows CEJA and partners to see where plans address EJ--and which jurisdictions have yet to come into compliance (eg. Brinkley and Wagner, 2021).

Our results pilot an open access search engine platform to enable users to access plans, and search for terms and phrases across over 600 comprehensive land-use plans. The platform is designed using Python packages optimized for quickly extracting information directly from PDF documents and indexing with ElasticSearch (See Technical Appendix) to allow multi-word and phrase search queries. Code is open access and available on GitHub (Banginwar et al., 2023).

Our resulting platform provides a proof in concept that can be deployed elsewhere. There is currently little such assessment. In their meta-analysis of plan evaluation, Berke and Godschalk (2009) note only 16 plan evaluation studies over a twenty-year period from 1997-2007. In addition, most studies compare tens of plans (33 plans in Berke and Conroy, 2000: 34 plans in Conroy and Berke, 2004: 47 plans in Mui et al., 2021). Further, though public documents, like plans, are often physically accessible, immense labor is involved in assembling plans for comparison, particularly where plans must be translated. In the most ambitious plan evaluation to date, a team of thirty authors qualitatively coded climate action plans from 885 European cities (Reckien et al. 2018). Such large-scale plan comparisons allowed scholars to show that if the planned actions within European cities are nationally representative, the 11 countries investigated would achieve only a 37% reduction in GHG emissions by 2050 (Reckien et al., 2014), falling well short of the 80% reduction recommended. With data infrastructure for plans, some of these barriers to plan evaluation could be overcome, allowing repeat evaluations at lower costs.

Such considerations are important not only as planning seeks to address Environmental Justice and "anti-racist" futures, but also as local jurisdictions grapple with climate crises. For example, we find that only 94 cities (of 482) and 19 (of 58) counties mention the term "environmental justice" in their general plan. Comparatively, 367 out of 482 California cities address planning for 'golf' courses. We hope that the broad adoption of plan data infrastructure will enable greater search-and-learn practices and knowledge-sharing.

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Keywords: data infrastructure, machine learning, environmental justice, plan evaluation, internet of things

TEXT MINING PUBLIC FEEDBACK ON A PLAN CHANGE IN HAMILTON, NZ

Abstract ID: 1108.0.0.67.2024
Pre-Organized Paper Presentation

Xinyu Fu [University of Waikato] xinyu.fu@waikato.ac.nz, presenter

Cities worldwide are commonly aspiring to transition from inefficient urban sprawl patterns to more compact and sustainable urban forms. However, urban densification efforts often face significant public resistance or skepticism, hindering at-scale implementation. There is a scarcity of empirical studies identifying the rationale and mechanisms underpinning public opposition to urban density. This study aims to bridge this gap by leveraging novel natural language processing techniques (NLP), combined with mixed-methods analysis of a unique, highly detailed public dataset on urban intensification in Hamilton. This research stands out by proposing a transferable model for rapidly generating insights from large public feedback datasets, and also unveils the polarized and complex, self-interest-driven mechanisms, including NIMBYism (Not In My Back Yard), behind public support or opposition to urban densification. NLP techniques, such as sentiment analysis, topic modeling, and ChatGPT, can be used to offer rapid insights into a large, unstructured public feedback dataset. When combined with submitters' individual interest representation and identifies, these AI generated summaries can offer important insights into the hidden rationales behind public opinions, and, more importantly, be used to design tailored public engagement activities to obtain community buy-in.

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Keywords: Natural Language Processing, Text Mining, Public Consultation, Urban Densification, NIMBY

LEVERAGING AI FOR ASSESSING HEAT ACTION PLANS

Abstract ID: 1108.0.0.575.2024
Pre-Organized Paper Presentation

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In the face of escalating global temperatures, urban areas worldwide are increasingly vulnerable to the adverse effects of extreme heat events. These phenomena pose significant risks to public health, infrastructure, and overall urban livability, necessitating effective heat action plans (HAPs) for mitigation. While cities globally have started to devise and implement local HAPs, systematic assessments of these HAPs are still rare. This paper presents a framework for assessing local HAPs designed to combat extreme heat by utilizing the knowledge graph, a promising sub-field of artificial intelligence (AI). By leveraging the power of linked texture data and semantic technologies, we constructed comprehensive knowledge graphs that captures diverse policy strategies aimed at mitigating and adapting to heat extremes. We further identified main local policy strategies in each HAPs and revealed the existing landscape of local policy actions in HAPs.

The results reveal significant disparities in local heat mitigation/adaptation policies in our sample of 98 HAPs across the world. Notably, there is a pronounced divide in the diversity of policy actions between cities in the Global North and the Global South. HAPs in cities of the Global South primarily focus on heat management strategies, such as preparation and response to extreme heat events. In contrast, cities in the Global North exhibit a broader spectrum of policy actions, including heat risk management, public health orientated polices, and spatial planning/design interventions to mitigate and adapt to heat extremes. Finally, we argue that the knowledge graph approach offers a powerful tool for aiding urban planners in the effective and efficient evaluation of complex and emerging planning documents on a large scale. Planners can further apply this approach to review and update local plans.

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Keywords: Climate change adaptation, Extreme heat events, Urban resilience, Knowledge graph, AI

ETHICAL FRONTIERS IN AI-DRIVEN LAND USE PLANNING

Abstract ID: 1108.0.0.75.2024

Pre-Organized Paper Presentation

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The integration of Artificial Intelligence (AI) into land use planning presents opportunities for enhancing decision-making processes, forecasting development impacts, and fostering sustainable urban growth. However, adopting AI technologies in planning also introduces many ethical and practical challenges that need careful consideration. This paper discusses the complex landscape of utilizing AI in creating local land use plans, highlighting key ethical concerns such as data privacy, algorithmic bias, transparency, and the potential displacement of human expertise. It explores the practical hurdles associated with implementing AI solutions, including the need for significant data infrastructures, the importance of interdisciplinary collaboration, and the challenges of ensuring AI algorithms align with community values and sustainability goals. By examining emerging practices, this paper proposes a framework for ethically integrating AI into land use planning, emphasizing participatory approaches, ethical AI guidelines, and continuous monitoring and evaluation mechanisms. The goal is to ensure that AI not only enhances the efficiency and effectiveness of land use planning but also promotes equity, environmental stewardship, and the well-being of communities. This paper contributes to the ongoing discourse on ethical AI by providing insights and recommendations tailored to the unique context of land use planning, paving the way for more informed, just, and sustainable urban development practices.

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Keywords: AI, ethics, planning, sustainability, transparency

WHAT A DIFFERENCE A PLAN MAKES & NATURAL LANGUAGE PROCESSING

Abstract ID: 1108.0.0.188.2024

Pre-Organized Paper Presentation

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The song “What a difference a day makes?” became famous among jazz/blues singers, including Dinah Washington and Billie Holiday. They sang, “You brought the sun and the flowers. Where there used to be rain.” Just like “a day” can make a difference, planners are inspired by the idea that plans can help achieve the goals and aspirations of diverse constituencies. At the heart of urban planning is that a community can influence its destiny by creating a plan.

However, a major challenge to the efficacy of planning is documenting and verifying the difference a plan makes. “Our understanding of plan implementation is unjustifiably weak,” exclaimed planning scholar Emily Talen in the 1996 Journal of Planning Education and Research. Planners often put tremendous effort into crafting a thoughtful plan that reflects the views of diverse stakeholders, but then they struggle with implementation. Talen observed that “much work remains to be done in methodological development and empirical demonstration” (1996, p. 79). Nearly three decades later, planning research and practice has not met Talen’s challenge. For example, Liao et al. pointedly noted, “The planning literature is replete with studies that examine…how sustainability fits into plan-making, but there is limited research on how these sustainability planning efforts translate into actual practice (2020, p. 60).

If planners still struggle to implement a plan, imagine how difficult it is to consider the difference multiple plans make. Thanks to advocacy for community engagement, there has been a proliferation of plans that affect land use and development, each with its constituency within and outside government (Hopkins & Knaap, 2018). Different departments within local governments and non-governmental organizations each develop a plan, from land use and transportation plans to housing and neighborhood plans. More inclusive planning is critical to more equitable outcomes but may produce adverse, unintended outcomes if poorly coordinated. A climate adaptation plan proposes to avoid new construction in areas exposed to rising sea levels, but a city may face pressure to create a land use plan that supports commercial development in the same areas (Berke et al., 2021). If planners want to improve coordination between plans and outcomes, they must understand how communities coordinate plans and track their implementation. To do so, planners and interest groups must review many plans and identify the range of potential outcomes.

Since plans and many implementation actions are now digitized and readily available online, new techniques make collecting and analyzing texts offer a promising new approach to exploring community planning practices. Brinkley and Stahmer observe that “Machine Learning researchers began to develop methods to comprehensively ‘read’ and compare the content of many large text documents using Natural Language Processing (NLP)” (2021, online quote). A comparative exploration is necessary to make diverse plans and implementation actions more accessible and less resource-intensive for planners and stakeholders.

In this paper, we develop a conceptual framework and methods that apply NLP to examine a) the coordination of individual plans within a community and b) the implementation actions generated by such plans. Our approach aims to identify critical gaps in the linkage between plan policy coordination and actions. We demonstrate the framework and methodology using an exploratory case study. We focus on a rapidly emerging concern in resilience planning to reduce physical and social vulnerability to hazards amplified by climate change (flooding and sea level rise). In these ways, we aim to open new opportunities for understanding what a difference a plan makes.

Citations:

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Keywords: technology, NPL, plans, implementation, resilience

GOVERNANCE FOR COASTAL CLIMATE ADAPTATION: FINDINGS FROM THE UNITED STATES

Abstract ID: 1112.0.0.418.2024
Pre-Organized Session Summary
Session Includes: 1112.0.0.418.2024, 1112.0.0.418.2024, 1112.0.0.418.2024, 1112.0.0.418.2024

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Addressing questions about the political economy of climate adaptation requires inquiry into the structure and functions of government. The impacts of climate change are creating new fiscal and governance challenges, compelling countries to rethink the reciprocal rights, obligations, and responsibilities between governing bodies and citizens. Coastal adaptation presents a significant governance and public funding challenge due to high upfront costs, long term benefits, and the necessary involvement of multiple levels of government. This session brings together scholars studying the governance of coastal climate adaptation using diverse methodologies, including case studies, surveys, interviews, econometrics, and simulations. Topics include the governance, fiscal, and political factors driving the performance of coastal adaptation strategies such as managed retreat, creation of special districts, and new local government fiscal structures.

Learning Objective(s):

- Compare diverse multi-level governance arrangements for managing coastal climate hazards, including the political, environmental, social, and fiscal contexts of case studies.
- Learn about emerging tools to understand the structure of public finance, intergovernmental flows, and the fiscal impacts of coastal hazards and adaptation strategies.
- Debate the social implications of coastal adaptation interventions, including whose values guide decision-making, and potential negative effects like displacement and gentrification.

CLIMATE GENTRIFICATION AND DISPLACEMENT PRESSURES IN MIAMI

Abstract ID: 1108.0.0.446.2024
Pre-Organized Paper Presentation

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The idea of climate gentrification arose among community activists in greater Miami, Florida in the mid-2010's and has become a focus of research on climate equity since (Butler et al., 2021). Residents in higher ground inland neighborhoods were noticing that development pressure and real estate speculation was building disproportionately in their communities. Some began making the connection that coastal residents were starting to seek safer places to settle with increased flooding and storm intensities associated with sea level rise and climate change. Since then, scholars have begun to explore various drivers and signals associated with climate gentrification to determine if climate change impacts are shaping real estate development trends (Keenan et al, 2018; Taylor and Aalbers, 2022; Li and Grant, 2022; Hao and Wang, 2024). There is debate among these quantitative studies about what measures work best to understand migration trends and to identify whether climate change factors are indeed primary drivers of gentrification pressures and increasing displacement risks in inland communities. Moreover, there is increasing interest in strategies that coastal communities might take to identify approaches to minimize risk and slow climate migration away from coastal zones that are at risk of long-term sea level rise and intensification of coastal storms (Butler et al., 2021).

While there is no consensus on the drivers of gentrification pressures in greater Miami, neighborhood residents and community leaders are experiencing signals such as rapidly increasing land values and rents, new investments in contiguous properties by outside development companies, and the departure of friends, neighbors, and local businesses who no longer can afford to stay (Butler et al., 2021). While some aspects of climate gentrification have been studied using quantitative data (mostly real estate valuation) and qualitative data (mostly interviews with community leaders), significant gaps remain in modeling the drivers of climate gentrification, mapping areas that are at risk and/or signaling gentrification processes underway, and measuring the impacts in neighborhoods experiencing these pressures, including displacement of existing residents and loss of affordable housing and neighborhood identity. This research seeks to delve more deeply into the lived experience of gentrification and displacement pressures from the perspectives of advocates, residents, and business owners in Miami-Dade County with a focus on Little Haiti, Lemon City, Brownsville, Little River and other nearby neighborhoods that are historically Black, African American, and more recent immigrant enclaves.

While community advocates in these communities identified and named the phenomenon climate gentrification in the mid-2010s, government and non-profit approaches to address displacement pressures have been unable to keep up with the growing development and speculative investment activities that are surrounding and encroaching on these areas. Some of the marketing materials of new developments include highlighting higher ground, safer, and more resilient locations. While developers have publicly insisted that their approaches are not intentionally displacing people, their desire to cash in and upgrade development on lower cost property has been undertaken by some shell companies with names such as "Higher Ground, LLC". Our research seeks to understand the tensions arising in these neighborhoods through the experiences, stories and insights of residents, business owners, community leaders, advocates, and service providers. As the pressures of climate gentrification build in Miami, FL,

other cities and towns throughout the US, especially along the Gulf and Atlantic coasts, will face similar kinds of pressures for coastal migration from sea level rise and storm intensification in the coming decades. Our research develops an in depth understanding of the pressures, stresses, and concerns of these residents as well as the strategies and tactics of resistance that have emerged in the context of gentrification and displacement pressures driven by coastal in-migration.

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Keywords: climate change, gentrification

COMPARATIVE ANALYSIS OF GOVERNANCE REGIMES FOR COASTAL ADAPTATION

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Pre-Organized Paper Presentation

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As climate impacts intensify across the nation, governments are being forced to creatively reconfigure themselves in order to balance the competing interests of multiple, and often conflicting, publics (Dewey, 1927). The dynamism of the coastal zone highlights its unique geographical framing with which to compare the methods varying governance regimes are utilizing and an analysis of whose interests are being served by public interventions (Sovacool et al., 2015). Local governments are at the forefront of inventing responses to climate impacts: they are the locus of policy experimentation (Castán Broto, 2017). At the same time, in federalist systems like the U.S., responding to climate impacts typically involves multiple levels of government. These multi-level arrangements are responsible for fiscal redistributions, adjusting the benefits and burdens of adaptation distribution costs (Bisaro et al., 2020). This comparative analysis critically examines the governance regimes surrounding two distinct coastal adaptation pathways: 1) efforts to stay in place through building up or hardening shorelines, and 2) implementing soft interventions such as green infrastructure and managed retreat. Through a series of coastal case studies, we examine the political and socio-economic context that characterizes the implementation of these two pathways in

distinct contexts. The analysis includes the governance and fiscal arrangements for adaptation interventions, how and for whom success is measured, and the potential for maladaptation (Barnett and O'Neill, 2010; p. 211).

Findings indicate that socio-economically advantaged communities are prone to armoring and anchoring in place due to a high-risk tolerance because of their ability to marshall varying governmental forces, shifting their protection costs towards other groups and future generations. Real estate development, investor, and second homeowner interests are capable of policy capture across local governance structures, leading to the diversion of federal and state funding to support private interests. In contrast, disadvantaged communities are often left to their own devices or prioritized for retreat. A correlated effect is the amplification and entrenchment of historic inequalities through displacement and second-order climate gentrification. We identified substantial political and institutional barriers to advancing alternative soft interventions like managed retreat and green infrastructure and examples of success stories. Results suggest the need for new governance arrangements and experiments that can elevate underheard voices to more equitably distribute the benefits and burdens of adaptation.

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Keywords: Disasters, Hazards, Adaptation, Governance, Managed Retreat

MULTI-LEVEL CLIMATE POLICY COHERENCE: NJ, NY, AND THE FEDERAL GOVERNMENT

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Pre-Organized Paper Presentation

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The limited number of climate-induced planned relocation programs that have occurred in the U.S. have largely been tackled through government-funded buyout and acquisition strategies (Siders & Gerber-Chavez, 2021). However, evidence consistently shows that buyout programs have suffered from long wait times, complex and uncoordinated multi-level governance processes, inadequate federal funding, lack of transparency and attention to equity impacts, and insufficient monitoring and evaluation, among other concerns (CRS, 2022; Siders & Gerber-Chavez, 2021; Weber & Moore, 2019).

Of particular importance to relocation programs is ensuring more distributive, procedural, and other forms of environmental justice – especially given that current data suggest poor existing outcomes on these fronts. For example, in a review paper, Mach et al. (2019) find that wealthier and denser counties are more likely to implement buyout programs – but within those counties, households in lower-income and more racially diverse areas are more likely to actually receive a buyout. Curran-Groome et al. (2021) also note that existing inefficiencies within federal application processes place an undue burden on – and therefore limit access for – lower-income and less staffed local governments. In a 2022 report, the Congressional Research Service's list of recommended improvements includes: dedicated funding for buyouts, pre-approval of buyouts before disasters, and ensuring affordable housing. Siders & Gerber-Chavez (2021) also recommend state-run programs that maximize stable, local funding (as opposed to funding via one-off federal disaster appropriations) and that offer high levels of technical support to municipalities.

In response to these recommendations, in this paper I draw on detailed archival and interview data analysis regarding flood housing mobility, buyout, and acquisition programs in New Jersey and New York across time. New Jersey has maintained a long-standing program, Blue Acres, since 1995 – although the program has experienced meaningful structural changes over the course of its history. In contrast, several programs have come and gone in both New York State and New York City since Hurricane Sandy in 2012 (i.e., NYC Build It Back, NYS Rising, Rainproof NYC, and NYS Blue Buffers). In the first part of the paper, I use process tracing methodology from the qualitative social sciences to examine which features ("processes") led New Jersey to a more stable-but-rigid approach but New York to a more precarious-but-flexible approach. The hypothesis is that while New Jersey and New York share many similar features – e.g., parallels with regard to coastal hazard exposure and damage, demands from local communities, and piecemeal bipartisan support for buyouts – the two states crucially differ in the coherence of their governance systems across scales – particularly with regard to permanent programmatic financing.

In the second part of the paper, I assess which state is better able (if either) to respond to increasing community advocacy and federal mandates for environmental justice and equity-based targets within flood mobility programs. I use the case of the current U.S. Army Corps of Engineers' New York-New Jersey Harbor & Tributaries Feasibility Study (NYNJHATS) to analyze the stance that each state is taking in this contemporary (and contentious), multi-level climate adaptation policy negotiation. I uncover the level of attempted coherence between the states' interactions with: the Army Corps on NYNJHATS flood resilience planning, the White House's Justice40 initiative, and the states' own equity goals for their flood housing mobility programs. The hypothesis is that while buyout/acquisition programs in the two states are converging toward increasingly similar goals and structures, both continue to lack policy coherence between these programs (i.e., managed retreat) on the one hand and "hard" flood risk mitigation infrastructure (i.e., protection) on the other. Furthermore, much more work is needed to unify federal, state, and municipal-level climate adaptation and environmental justice strategies.

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Keywords: Relocation, Flood, Buyout, Equity, Justice40

A NATIONAL FISCAL IMPACT TOOL FOR LOCAL DECISIONS ON MANAGED RETREAT

Abstract ID: 1108.0.0.1065.2024
Pre-Organized Paper Presentation

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Climate change, with rising sea levels and heavier rainfall, has significantly increased flood risks for coastal and riverine communities. More municipalities now face the threat of severe flooding. This unprecedented situation compels local governments to adopt adaptation strategies, such as managed retreat, elevating houses, or building sea walls, to protect their residents from future threats. Each approach comes with explicit and implicit costs. Aside from the upfront expenses of property acquisition or construction, there are also long-term financial implications for local governments due to changes in tax revenues and expenditures. Specifically, managed retreat, where flood-prone homes are purchased and removed, can reduce the local property tax base. Municipalities with many houses in flood zones may be hesitant to pursue buyouts for this reason, concerned with losing local vitality. The challenge of timely but accurately predicting the future fiscal impact on their tax base adds to their reluctance.

This paper uses a well-established fiscal impact analysis framework to assess the impact of buyouts on U.S. municipalities, unlike its typical use to measure the impact of proposed development projects. The framework employs per capita and per pupil approaches to measure marginal changes in property-tax-supported local costs associated with a unit of households with different household sizes and their school-age children. It, however, has been barely used to gauge the fiscal impact of buyouts on localities, although it briefly derives results from a few data inputs and can be readily adapted for this new purpose. To address this gap, this paper proposes new ways to leverage national datasets like the American Community Survey, Census of Governments, and Education Demographic and Geographic Estimates. This approach allows for a broader analysis beyond case studies for specific municipalities and states using local data. The model involves data manipulation and statistical models to integrate these datasets and calibrate model weights using national-level proxy variables.

This web-based online model empowers coastal municipalities to make data-driven decisions about managed retreat. It provides the net fiscal balance of proposed buyouts that will be estimated based on a municipality and associated school districts' property tax revenues, their estimated property tax rates, and other local fiscal characteristics. The model uses the factoring process to allocate municipal costs for residential and nonresidential uses. It also uses demographic multipliers derived from Census microdata to estimate the fiscal impact varied by household types and sizes. The model results illustrate how the local fiscal balance is likely to change after proposed buyouts and what the net fiscal impact would be on the locality. Users can compare the trade-offs of proposed climatic adaptation scenarios. They have the capacity to briefly test multiple scenarios with varying numbers and types of households, associated school districts, local tax rates, and other customizable parameters, ensuring a realistic assessment.

To validate the model, this paper compares its results to case studies that use local data from flood-prone municipalities in New Jersey. This process assesses how well the national model replicates the outcomes achievable

with local data sets through the fiscal impact analysis framework. Future efforts will involve national user engagement and the incorporation of local data from other states for model calibration and validation, ultimately improving the model's performance.

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Keywords: climate change, flooding, public finance, fiscal impact, simulation model

JUSTICE IMPACTS OF LAND USE REGULATIONS

Abstract ID: 1112.0.0.474.2024

Pre-Organized Session Summary

Session Includes: 1108.0.0.663.2024, 1108.0.0.717.2024, 1108.0.0.1128.2024, 1108.0.0.630.2024

Elizabeth Mueller [University of Texas at Austin] ejmueller@austin.utexas.edu, organizer

This session discusses mechanisms used to regulate land development and ways they impact environmental, economic, and social conditions. Regulatory mechanisms discussed include public and private zoning, and processes for assessing residents' views of proposed changes and for granting exceptions to zoning. Papers consider how these practices shape land use patterns, exposure to environmental hazards, the definition of possible solutions and ways to resolve resulting injustices.

Learning Objective(s):

- Participants will learn about impacts that different types of land use regulations and processes have had on environmental, economic, and social inequities
- Discuss strategies for mitigating harms arising from inequitable land use regulation

IN HARM'S WAY: RESIDENTIAL ZONING CLASSIFICATIONS AND AMBIENT AIR QUALITY

Abstract ID: 1108.0.0.663.2024

Pre-Organized Paper Presentation

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One of the primary purposes of zoning law from its conception was to protect residential spaces from potentially hazardous exposure to poor quality air arising from higher intensity land uses. Even though ambient air quality has improved significantly since the early 20th century, it is still a significant environmental concern, particularly regarding the exposure of communities to harmful airborne substances. The structure of those same zoning ordinances that seek to protect residential spaces from environmental harm differentiates various housing types through distinct zoning districts, then specifying the legally permissible areas for each category. Today, there is broad discussion on the exclusionary nature stemming from the division between multi-family and single-family residences through zoning. This paper contributes to that discussion by measuring whether the divide between housing types correlates with exposure to differing quality ambient air. This study analyzed city zoning ordinances, spatial distribution of zoning districts, and compared these planning tools with both ground level micro-data combined with larger data sets using remote sensing and EPA modelling data to quantify the spatial colocation relationship between air quality metrics and residential zoning district types. Findings suggest that it is often the case where those living in higher density residential zoning districts are more likely to be in harm's way when considering the ambient air quality.

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Keywords: Zoning, Air Quality, Health, Housing, Environmental Justice

RESOLVING RISK: LAND USE & ENVIRONMENTAL JUSTICE IN THE TEXAS GULF COAST

Abstract ID: 1108.0.0.717.2024
Pre-Organized Paper Presentation

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Environmental justice communities, including the Beaumont-Port Arthur area of the U.S. Gulf Coast, experience environmental risks compounded by climate change. Proximity of petrochemical infrastructure results in this area to be among the top 10% of polluted U.S. communities (Jephcote et al. 2020; Ge et al., 2021), and hazards such as flooding make Southeast Texas one of most climate vulnerable places in the country (Maymandi et al. 2021; Environmental Defense Fund 2023). In addition, many residents experience marginalization (e.g., racism, poverty) that amplifies environmental and climate risks (Klinsky and Mavrogianni 2020). While many policy, planning, and economic shifts are needed, adaptation planning that integrates "local needs and aspirations" offers one pathway to increased justice (Marino & Ribot 2012:323)

Researchers contend that knowledge held by residents and local professionals, when used alongside other data, can contribute to improved justice and effectiveness of climate adaptation-related planning (e.g., Berke & Stevens 2016; Meyer et al. 2018). However, there exists a gap in knowledge about the specific interactions between local knowledge and scientific data used for adaptation-related planning (Lieberknecht et al. 2024). Given this context, we ask:

- When considering air quality and flooding, how do community leaders and local environmental professionals define these challenges, and how do they prioritize locations and strategies to address these challenges?

- How does this local knowledge compare to information and prioritization data shared by physical and social science researchers focused on air quality, flooding, and equity?

Our team used interviews, a survey, and focus groups to understand how community leaders and local environmental (i.e., air quality, flooding) professionals: a) consider and define environmental injustices in their communities and b) identify sites where strategies are needed to address these challenges. Initial findings describe a set of tensions focused on the duality of: refineries that provide both jobs and pollution; the need for gray but also green infrastructure to address air quality and flooding challenges; the desire for residents to stay in the community, competing with concerns about health, housing quality, and flooding; and nature perceived as a refuge but also as a source of risk. Using these dualities for context, participants then identified 18 initial places in need of strategies related to flooding and air quality. Participants later selected a priority list of sites for development of land use strategies to address environmental injustices.

We compared these findings to data and prioritization information provided by a team of physical and social science researchers focused on air quality, flooding, and social equity. We then analyzed priorities based on local knowledge to those based on researcher priorities. Initial findings indicate that while researchers gave greater weight to broader geographies (e.g., watershed vs. site scale), stakeholders defined environmental justice challenges related to the sites more broadly (e.g., including issues such as the needs for improved communication pathways, decarbonization, and development of political coalitions, alongside concerns about flooding and air quality).

While these findings may indicate a spatial and problem definition mismatch between information shared by stakeholders versus that by researchers, these findings also suggest that transdisciplinary approaches for adaptation-related strategies may expand understandings of challenges and considerations of priorities. Our findings are relevant for planners and researchers working in communities impacted by environmental and climate injustices, those considering how to incorporate local knowledge into adaptation-related planning, and local leaders seeking to incorporate downscaled environmental and social equity data into this planning.

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Keywords: environmental and climate justice, land use planning, local knowledge, air quality, flooding

PATHWAYS FOR POLLUTERS: ZONING CO-LOCATES RESIDENTS AND HAZARDS IN AUSTIN

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Pre-Organized Paper Presentation

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Public health researchers are increasingly interested in understanding what lies behind the disparities in lung diseases such as asthma that are exacerbated by environmental hazards that affect air quality. The connections they have documented between neighborhood scale air quality and asthma (Chambliss et al. 2024) raise questions about how land uses that produce hazardous air come to be located disproportionately near residential neighborhoods primarily occupied by low-income residents or communities of color. What role does zoning or other forms of land use planning/control play in these sitings? While the protection offered by the most restrictive forms of single-family residential zoning is well established, arguably, it is harder to predict the presence of environmental hazards based on other, less restrictive or more changeable forms of zoning. Fischler (1998) presented a compelling historical description for the shift in rationales for zoning to favor district scale, economic development goals over health and safety concerns for residents. Yet, to further complicate the issue, entities wishing to cite large-scale hazardous uses are often found at the edges of cities, allowing them to negotiate the terms of their annexation or to remain outside of city regulation entirely. This paper will explore these issues using the case of Travis County, Texas, which contains the City of Austin. The State's list of Top Ten Emitters in the County includes sites that are within city limits, have been removed from city limits, or that are only regulated by County and State regulations. (In Texas, Counties lack land use and zoning authority, and the limited powers cities have in their "extra territorial jurisdictions" and ability to annex outlying areas are being rolled back). We are reviewing

public documents, meeting minutes, media accounts, and community accounts of public decision-making processes (including zoning, annexation, and emission permitting) for each case. We hypothesize that emitters perceived to produce economic development benefits were more often located within or annexed into cities and zoned or rezoned to accommodate their uses regardless of proximity to residential areas. In contrast, uses historically perceived as "locally unwanted land uses" were more often cited outside the city limits or even removed from the city's boundaries. Many of these sites were initially far from residential areas but due to their location outside of the City's full purpose jurisdiction, residential development has since increased within distances that health research finds to be dangerous to residents. In regions like the Austin metro area, where growth pressures are contributing to an outward shift in population, the potential for residential development to place more people at risk of exposure to dangerous air will continue absent concerted efforts to prevent building adjacent to these hazards.

Citations:

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Keywords: zoning, environmental hazards, air quality, environmental justice, economic development

STILL EXCLUSIVE: HOW ZONING ALIGNS WITH PRIVATE DEED RESTRICTIONS

Abstract ID: 1108.0.0.630.2024
Pre-Organized Paper Presentation

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Private restrictive covenants were used to limit development and create elite, highly protected neighborhoods in the early 20th Century. However, less known is whether deed restricted properties maintained such protections as development pressures grew. To better understand this, we analyzed the zoning of deed restricted properties in Austin, TX with the city's first zoning code in 1931, its first update in 1967, and today. We find overwhelmingly that deed restricted properties were granted single-family only zoning in 1931 and maintain it today. Our findings suggest that cities continue to be impacted by the deed restrictions, despite the expiration of their provisions.

Citations:

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Keywords: Zoning, Environmental Justice, Restrictive Covenants

PUBLIC BENEFITS BUT NOT EQUITY? PUBLIC-PRIVATE BOUNDARY IN LAND DEVELOPMENT

Abstract ID: 1112.0.0.275.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.329.2024, 1108.0.0.553.2024, 1108.0.0.707.2024, 1108.0.0.780.2024, 1108.0.0.1225.2024

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Capturing value increments from land development is a widespread practice used by the central and local governments globally for financing public benefits. Promoting public goods has been a key normative goal and justification for various land-based financing tools. Despite endeavors to ensure these tools enhance equitable development, two interrelated issues are under-resolved: (1) contested demarcation of public from private benefits, and (2) translating public benefits into equity outcomes. This session will explore global cases of land development promising extraction of public benefits and examine their socioeconomic, spatial, and racial implications on equitable development. By foregrounding the question of equity in land development, the papers seek to contribute to repurposing land development tools for fair distributional and procedural land use, challenging the notion that marginal increases in public benefits is unavoidable amidst fiscal austerity and economic restructuring.

Learning Objective(s):

- To learn about global land use practices and tools as well as emerging debates about public benefits of land development.

THE POLITICS OF PRIVATELY FUNDED PUBLIC BENEFITS AND AIR RIGHTS TOOLS

Abstract ID: 1108.0.0.329.2024
Pre-Organized Paper Presentation

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One of the most consequential outcomes of the global turn to municipal entrepreneurialism is local governments' ever greater reliance on land development as a resource for urban growth. Urban planners have increasingly blended regulatory mechanisms with calculative techniques to create market-making tools to facilitate private investments in land development. Examples abound, ranging from TIF (Tax Increment Financing) in the US, planning contributions in the UK, exaction schemes of community amenities in Canada, land readjustment in peri-urban India, to tradable air rights (i.e., Transfer of Development Rights) and other density bonusing measures in much of the world. The increasing use of these tools is often propelled by the hopes that private investments in land development will pay for public benefits. However, in cities' headlong leap into urban growth, the question of whether these market-based land tools in fact produce socially desirable outcomes often remains unexamined and unanswered (Savransky and Lundy, 2022). In other words, market-oriented land development becomes both a means and an end in itself.

Since the mid-1990s, government planners in Taiwan in general and in New Taipei City in particular have extensively used the techniques of tradable air rights and density bonusing to enable urban land development. New Taipei City has aggressively targeted older neighborhoods, existing manufacturing lands, and productive urban farms in an attempt to transform them into new urban centers, luxury residential apartments, and high-rises while churning up land and housing prices along the way. In this article, we foreground the workings of air rights tools and how they embed public benefits in private profits through land development. In particular, we investigate the highly uneven power dynamic between the public and private sectors through which the very definition of what constitutes a public benefit is determined. Existing scholarship has pointed out that the workings of market-based tools reflect the political economy and market rationality of land development (Sagalyn, 1997; Sclar, 2020; Shih and Chiang, 2023; Weber, 2021). Drawing from our ethnographic insights into planning practices, this article pays particular attention to planners' epistemic values in shaping public-private deals, contributing to the existing literature by furthering the discussion beyond the conventional focus on financial calculus.

This article uses a mixed-methods approach that includes fieldwork, interviews, and spatial data and regression analysis. By combining and geocoding two datasets that include real estate development projects between 2004 and 2022, a sample of 430 cases allows us to examine planners' use of air rights tools, their outcomes in privately funded public benefits, and their impacts on housing prices. The findings show that public benefits are determined by developmental-oriented logics dominated by planners and developers with little meaningful engagement with community participation and democratic deliberation. The regression analysis suggests an increasingly unaffordable housing market boosted by air rights tools.

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Keywords: Public benefits, Air rights, Development tools, Land development, Housing affordability

NEGOTIATING PUBLIC BENEFITS OUT OF THIN AIR

Abstract ID: 1108.0.0.553.2024
Pre-Organized Paper Presentation

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When entrepreneurial local governments sponsor land development projects in partnership with private interests in a context of global competition for investment, they increasingly negotiate taking on project risk in exchange for public benefit. To better understand how the public private negotiations shape public outcomes, we explored the East Midtown rezoning in New York City. Through an analysis of planning documents, the project's financial instruments and projections of future revenues, and a set of strategic interviews, we center how the public private relationship was negotiated. Of particular interest is the negotiation between the public provision of land use rights through rezoning and air rights along with public capital expenditure, tax breaks, and risk shifting to produce anticipated public benefits. These public benefits can take a variety of forms including increased property tax revenue, private investments in public infrastructure, overall economic growth, affordable housing. We describe these negotiations and consider land development as a strategic tool to produce public benefits. We conclude the paper with a consideration of equity. As public benefits are negotiated through the process of public/private land development, a critical concern for planners and society is who gets to decide what public benefits emerge as well as management of resulting negative externalities.

Citations:

- Fisher, Bridget, Leite, Flavia, Weber, Rachel. 2023. "Value creation, capture, and destruction: Hudson yards and the false promise of mega projects." Journal of the American Planning Association. 89 1:134-145.
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Keywords: Land development, Equity, Zoning, Air Rights, Public Benefits

PAYING FOR TRANSIT ORIENTED COMMUNITIES THROUGH LAND VALUE CAPTURE

Abstract ID: 1108.0.0.707.2024
Pre-Organized Paper Presentation

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This paper examines the track record to date and further potential to use land value capture in Canada to fund major transit infrastructure investments. Across Canada, as in other countries around the world, governments are increasingly turning to strategies to capture value from land value and development to fund the upfront capital costs and related infrastructure essential to the success of transit-oriented communities (Mathur, 2019; Sharma and Newman, 2020; Medda, 2012). Land value capture, which describes a variety of techniques including dedicated property tax levies, density bonuses, direct benefit fees, joint development arrangements, and tax increment financing, may have particular relevance for Canadian cities seeking to leverage and expand the benefits of major transit investment. Canadian cities are in the midst of the most significant transit infrastructure building boom in a generation, with the expectation that transit investments will catalyze dense, mixed use, well-designed hubs surrounding the station areas. Yet governments are also increasingly cash strapped and are seeking new revenue streams to fund major infrastructure investments.

Against this backdrop, we first draw on national land value data to estimate the revenue generating potential of various land value capture techniques in Canadian cities. Second we present national case studies that highlight the trade-offs, risks, and equity implications of using LVC to fund public infrastructure. Results show that land value capture can raise significant amounts of funding for transit infrastructure depending on the technique used and value of adjacent land, but that the overall amount of money raised is likely to be relatively small compared to the multi-billion dollar cost of major transit mega-projects. And land value capture as a tool for infrastructure funding can introduce the risk of project delays as a result of shifting property market conditions, requires coordination between transit agencies and local governments that control land use policy, and may exacerbate uneven development if investment priorities are tied to revenue generating opportunities. The paper concludes by reflecting on the role that governments, agencies and the private sector could play in advancing land value capture as a tool to fund the transit infrastructure that supports equitable, complete communities.

Citations:

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Keywords: Land Value Capture, Transit Infrastructure, Transit Oriented Communities, Canada

MAKING GREENBELT LAND DEVELOPMENT 'PUBLIC' IN SEOUL METROPOLITAN AREA

Abstract ID: 1108.0.0.780.2024
Pre-Organized Paper Presentation

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This paper examines how the greenbelt land development in the Seoul Metropolitan Area (SMA) is constructed as a publicly beneficial project within a key planning regulation in South Korea. Urban land that has been protected from development, such as greenbelts, has been treated as a critical asset for land use planning in order to pursue collective goods amid multifaceted urban challenges. In this context, re-approaching the greenbelt land use has been subject to prolonged political debates in many places globally. The development of the greenbelt land, officially named as Development Restriction Zones (gaebal jehan guyeog) in South Korea, exemplifies the contestations around collective benefits that the land development serves. The state and local urban development agencies, often positioned as 'public developers', have been operators of greenbelt development projects in the SMA, transforming the land into residential areas with new infrastructure, known as public housing districts (gonggong jutaek jigu). The government has appealed to public characteristics of these projects, emphasizing the public sector's institutional capacity to leverage the greenbelt land that is deemed to have low environmental value to provide publicly-funded housing at lower than market rates. Despite the title 'public housing districts' , however, the legacy of state-led urban development - often resulting in speculative gains of property owners, the private sector as well as the central and local government at the expense of landless community members in South Korea (Shin & Kim, 2016) - raises questions about (a) what constitutes collective benefits in greenbelt development and (b) how such benefits are made 'public', especially compared to the conventional goal of the greenbelt policy to protect green space.

The existing literature on the publicness of infrastructure development has paid greater analytical attention to what constitutes the publics in infrastructure (Otsuki, 2019), pointing out that the increased dynamism around state-led infrastructure development has long transcended the public and private division (Collier et al., 2016). Lee and Shin (2012) highlight the "peculiar 'publicness' of the South Korean public sector" (p. 1334) where the public characteristics of urban development projects in South Korea are approached as the active involvement of the public sector, including the government and public developers, collaborating with private developers to accomplish projects. Nonetheless, the discursive and regulative practices put in place to construct and legitimize the collective benefits of the greenbelt development have been under-explored.

Therefore, this paper examines how the greenbelt land development has been made and legitimized as important public goals in one of the key planning regulations in greenbelt land management in South Korea - the Enforcement Degree on the Act on Special Measures for Designation and Management of Development Restriction Zones. This research conducts a longitudinal content analysis of the Enforcement Decree since its inception in 2000 and examines (1) how the public purposes of the greenbelt land are defined in the regulation and change over time, (2) what kinds of development activities are considered to be in alignment with the public purposes, and (3) how the development of public housing districts is depicted as projects that serve the public purposes specified in the regulation. The analysis demonstrates an increasing emphasis on the rational management of the greenbelt land itself as the public purpose and how the development of the public housing district is considered the fitting project

over other development activities. In conclusion, the paper discusses the rationality and political work behind calling publics into being (Marres, 2005, as cited in Collier et al., 2016) in land development projects.

Citations:

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Keywords: Greenbelt, Land Development, Regulatory Tool, Publicness

SPECULATIVE FICTION: MANUFACTURING VALUE IN CHICAGO'S LINCOLN YARDS

Abstract ID: 1108.0.0.1225.2024
Pre-Organized Paper Presentation

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Lincoln Yards is a $6 billion "megaproject" planned on the site of a former successful manufacturing district in an area of advanced gentrification on Chicago's north side. Lead developer Sterling Bay secured a commitment of over $1 billion in public investment from the City's largest-ever TIF district, for its promise to fund the upfront costs of large-scale public infrastructure improvements to accompany its ambitious mixed-use redevelopment plans. The identity of Lincoln Yards has transformed over time; the site was initially pitched to Amazon for their second headquarters, then reimagined as a sports and entertainment destination anchored by a soccer stadium and music venue, followed by a pivot to a scientific innovation district catering to the biotech industry. Now, five years later, one new but empty office building stands on a 55-acre empty lot as Sterling Bay searches for investors after losing its main financial backers.

Despite Lincoln Yards' new public image as a potentially "failed" development, real estate values have soared on the site and adjacent areas. We trace the recent history of this project, drawing on interviews, media coverage, and autoethnography to understand how developers, real estate investors, and marketing coexisted with a simultaneous lack of plan-making to build anticipation of future value, creating opportunities for developer profits when no new commodity has actually been built. Despite stalled development at Lincoln Yards, properties just

outside its boundaries are being bought and sold. We map the real estate activity of Sterling Bay and other developers looking to capitalize on the discourse of Lincoln Yards. Using property value data beginning in 2012, well before the full industrial displacement of the area, but during the time when Sterling Bay was quietly assembling property before the plan went public, we analyze the geographic scope, spatial, and temporal patterns of property values over time. We find that the failure to build and maintain investment has succeeded as a lucrative strategy for property speculators; Lincoln Yards appears to be a “speculative fiction” that illustrates how value is created and destroyed in the assumption of inevitable growth.

Citations:

- Fisher, Bridget, Flávia Leite, and Rachel Weber. "Value creation, capture, and destruction: Hudson yards and the false promise of self-financing mega-projects." Journal of the American Planning Association 89.1 (2023): 134-145.
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Keywords: tax increment financing, economic development, GIS, gentrification, property speculation

Track 8 Roundtables

PLANNING AND PLACE ADAPTATION: CRITICAL PERSPECTIVES ON 'URBAN RETROFIT'

Abstract ID: 1109.0.0.147.2024
Roundtable Submission

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There is an urgent need to adapt the built environment to reduce energy consumption and carbon emissions, protect the environment and support more sustainable lifestyles. Retrofitting the built environment means undertaking place-based adaptations to existing morphologies while ensuring that adaptations are delivered

equitably and support a ‘just’ transition. Many solutions lie in how places are planned and developed, encompassing city-region infrastructure, such as sustainable urban drainage, local planning interventions, like restricting greenfield development, and community projects such as low traffic neighbourhoods and community asset transfers. The diversity and complexity of urban retrofitting means “city-level” planning-led action (Eames et al., 2013, p. 499) is required to achieve an equitable ‘scaling up’ of policy attention (Carley & Smith, 2013). This must extend beyond a prevailing focus on affluent areas, where land values are high and private investment is already facilitating retrofit, to peripheral locations, where socio-economic conditions are poorer, land is less valuable, and market-led solutions are less profitable and likely to generate significant displacement of existing residents (Goh et al., 2022).

This roundtable marks the launch of major new international funded research project. It invites a group of transatlantic planning scholars to reflect on the emerging ways in which planning and development systems can deliver ‘urban retrofit’ and achieve sustainable and resilient place adaptation. Existing scholarship has tended to focus on discrete urban sustainability interventions and has been less concerned with joining up initiatives across planning and development systems. Theory promulgates various design principles analogous with urban retrofitting and sets out what planning should be doing, such as using land efficiently, prioritising mixed-use, creating walkable streets and achieving symbiosis with nature, etc., but pays less attention to how retrofitting can be delivered equitably through planning and development systems or how the relative power and capacity of planning, property and community actors shapes outcomes. It is this persistently stubborn implementation gap that most urgently needs to be addressed.

Addressing the gap requires multi-scalar solutions that challenge the pro-growth and market-orientated agendas often embedded in neoliberal planning systems (Durrant et al., 2023; Inch, 2021). Roundtable participants will be invited to share emerging theoretical and conceptual ideas on the readiness of North American and European planning and development systems to rise to this challenge. The discussion will aim to capture new perspectives on the complex and political interrelations between planning authorities, property developers and communities. Participants will be asked to reflect on where the levers lie to challenge institutional fragmentation, market constraints and power-imbalances and will be invited to consider the ways in which just and transformational approaches to place adaptation and urban retrofitting might flourish.

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Key Words: Place adaptation, Retrofit, Plan implementation, Planning systems, Climate emergency

PLANNING FOR OREGON IN 2050: PANEL WITH BOOK AUTHORS ON THE LAND USE SYSTEM

Abstract ID: 1109.0.0.43.2024
Roundtable Submission

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This session will feature several authors of chapters in the book Oregon 2050: Planning a Better Future, forthcoming in fall 2024 by Oregon State University Press. The session will be a panel interview style, with roundtable participants introduced and interviewed by a facilitator, to identify key shared themes and differences, and contributions to both planning practice and scholarship. The audience will then be invited to interact with participants through a Q&A session. The session will take an interdisciplinary approach, as the book does, in addressing a range of planning topics, including arts and culture, climate adaptation, housing, land use, and mental health care. Join us in reflecting on the past and future of planning in Oregon!

The book addresses the question: How do we plan for a better Oregon in 2050? The authors reflect on Oregon's policy innovation and planning legacy, broaden the concept of planning to go beyond physical space to analyze other social determinants of the quality of life, and envision how Oregon could become more livable, equitable, and sustainable by 2050. The book's publication comes as Oregon's famous and unique statewide land use planning program reaches 50 years in existence, and thus it serves in some ways as a reflection. However, our intent is on strategic foresight rather than solely on assessment of past practice. The editors and authors collectively urge that land use planning in Oregon move beyond the current foci of preserving working landscapes and promoting dense development, to include deeper integrated attention to environmental stewardship and the social foundations of a healthy society. We push for an integration of attention to the natural, built and social environment, as well as democratic and fiscally sound governance.

The book as a whole envisions the various possible futures of Oregon in 2050. Some of those futures, with worsening effects of climate change, environmental harms, and social inequities, are not bright for many Oregonians. We also imagine other futures, such as those with enhanced resiliency to forest fires and flooding, more Oregonians in high-paying jobs and in secure housing, and more children walking and biking to school.

The chapter authors identify some big, bold goals and ideas, such as getting to 100% renewable energy, making sure all Oregonians of all income levels have clean air and drinking water, decarbonizing our transportation system and expanding access to a mode of transportation options including local and regional transit, intercity rail, and biking and walking, ensuring community benefits of resource lands, various land reforms, ending homelessness (or at least dramatically reducing it), lowering poverty, ensuring access to culturally relevant mental health and substance abuse services, and expanding access to arts and culture to everyone.

But achieving those goals will take resources, commitment, and a change in practices. Many of the chapters argue for a more proactive role for state government, both within and outside of the land use planning system. Recognizing that it will take new streams of funding to advance some of the big ideas, one common theme in this book is that Oregon can rethink its taxing policies, to tax more for environmental stewardship and social equity rather than for the wealth accumulation of a minority of residents, business owners, and corporate interests. Many

of the authors offered creative and more equitable revenue generating ideas (e.g. a land value tax, carbon tax and higher taxes on corporations, polluters, wealthy residents).

But those positive futures are not guaranteed, and getting there won't be easy. The authors identify the most critical barriers, one of which is that many of the commonly used tools and practices in planning, development, management, and public administration are outdated and too narrow.

Citations:

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Key Words: land use, growth management, social justice, statewide, strategic foresight

Track 8 Individual Paper Presentations

ASSESSING NEW NEIGHBORHOOD DIVERSITY IN RALEIGH VIA COMPUTER VISION

Abstract ID: 1108.0.0.1135.2024
Individual Paper Presentation

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Urban development is often the litmus test of a city's commitment to diversity and inclusion. However, minority communities continue to be disadvantaged in terms of housing choices due to various historical reasons (Roscigno et al., 2009). The City of Raleigh wishes to combat the historical disadvantage in its 2030 comprehensive plan. The plan envisions a city that reflects the racial, age, and income diversity of Raleigh's population and provides a variety of housing options to meet all preferences and demographic smart growth principles. As the target year of the plan draws near, assessing whether new developments in Raleigh are equitably benefiting all neighborhoods becomes crucial for informing future initiatives.

This study aims to find the typical neighborhood characteristics of the new developments within the Raleigh-Durham metropolitan between 2010 and 2020 by utilizing building footprints we detected from historical orthoimagery. Three research questions drive the study: Firstly, it investigates the geographical distribution of new developments over the past decade. Secondly, it examines whether these developments align with the city's smart growth objectives. Lastly, it explores the existence of spatial disparities in new neighborhoods characterized by varying demographic profiles.

This research developed a computer vision model leveraging the advanced Yolov8 framework to identify new developments and redevelopments (Jocher et al., 2023; Yang et al., Ongoing). Subsequently, the study utilized an unsupervised machine-learning technique to cluster the detected new developments into natural neighborhoods (Jiang, 2019). The combined machine learning methods would allow us to measure neighborhood changes across years in fine detail, contrasting to previous studies that lack spatial and temporal resolution (Reba & Seto, 2020).

Following this, we quantitatively assessed the design characteristics of each new neighborhood, including indicators such as the number of buildings, building density, average building size, and diversity of building sizes. To evaluate the effectiveness of smart growth policies, we performed a t-test comparing the mean density and diversity in building sizes of these new neighborhoods against those pre-existing. Furthermore, we conducted a regression analysis, correlating the design indicators of the new neighborhoods with the demographic of census tracts to investigate potential disparities in housing supply across communities of different ethnic backgrounds.

Our findings indicate a notable increase in the number of neighborhoods within the study area, identifying 782 new neighborhoods in a decade. Most new neighborhoods are in suburban locales adjacent to the highway loop. Notably, the new neighborhoods exhibit a significantly greater average density than pre-existing neighborhoods ($p<0.001$), hinting at the potential impact of smart growth measures. Additionally, a correlation exists between the number of neighborhoods and the average density of buildings within these neighborhoods with the total and density of the population, respectively ($p<0.001$), while showing no significant correlation with age, race, and income. We uncovered a substantial link between the diversity index of building sizes and racial demographics. Specifically, census tracts with a higher proportion of African American residents ($p=0.030$) or a lower proportion of Hispanic and Latino residents ($p=0.014$) tend to see new developments with greater diversity in building sizes.

Our study provides a crucial insight into the dynamics of urban development and its relationship with demographics with innovative machine-learning methods. While the findings reveal progress towards denser, potentially more sustainable urban forms, they also highlight ongoing challenges in achieving racial inclusivity in housing development. The disparity in building diversity across different demographics warrants additional exploration to understand the underlying causes. These findings monitor the results of implementing inclusive planning policies at the micro-spatial level to ensure that development efforts are truly representative of and responsive to all.

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Keywords: Development Diversity, Land Use Planning, Computer Vision, Machine Learning, Equity

ASSESSMENT OF PRO-COMPACT DEVELOPMENT ORDINANCES IN A FAST-GROWING COUNTY

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Individual Paper Presentation

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Compact development, characterized by high densities, diverse land uses, interconnected streets, accessible destinations, and nearby transit, is touted as a more sustainable way of developing our built environment compared to automobile-dependent, low density patterns. While compact development has been endorsed by the majority of planning academics, the American Planning Association, and many other organizations promoting smart growth and sustainability for the past three decades, compact development patterns have remained sparse in most places in the United States (Ewing et al. 2022; Wheeler 2015). Prior studies have demonstrated a number of barriers to compact development. Among these barriers are existing local land use (LU) regulations, such as zoning and subdivision ordinances, that largely restrict compact development patterns in most planned areas (Talen 2012). Jepson and Haines (2014) similarly showed that zoning ordinances that promote densification, LU mix, street connectivity, and pedestrian accessibility were scarce by the early 2010s.

Even though there is a consensus in the planning literature that local LU regulations play a key role in creating more sustainable urban forms, relevant assessments are now outdated and have focused on select municipalities with nationally recognized innovative zoning ordinances or commitment to sustainability (e.g. Garde & Kim 2017 and Jepson & Haines 2014). There is a gap in the literature on how communities in rapidly growing regions where existing LU regulations dictate large numbers of development proposals have integrated compact development principles into their LU regulations. LU regulatory reforms among all planning jurisdictions in these locations are especially urgent in the effort to create a more sustainable urban future.

To address the aforementioned literature gap, in this study, we investigate LU regulations in neighboring planning jurisdictions in one of the fastest-growing counties in the nation, Wake County, North Carolina, which houses Raleigh, one of the fastest-growing municipalities in the nation. We seek to answer the extent to which communities in a fast-growing region incorporate compact development principles in their land use regulations. We conduct a content analysis of LU ordinances, both current and archived versions, for each municipal jurisdiction in Wake County. We particularly assess regulatory items related to densification, LU mix, street connectivity, and destination accessibility.

Our preliminary review of LU regulations in a limited number of jurisdictions shows that communities in Wake County have adopted different ordinances to promote compact development, and they have amended their ordinances in recent years to allow for more densification, LU mix, street connectivity, and destination accessibility.

The adopted relevant regulatory items vary among the neighboring planning jurisdictions. Some ordinances, such as allowing accessory dwelling units in residential lots and permitting residential uses in commercial zones, are common across jurisdictions. However, other ordinances, such as minimum building density, maximum block length, and minimum street connectivity requirements, differ from one jurisdiction to another. Interestingly, suburban or exurban planning jurisdictions do not necessarily have fewer or weaker LU ordinances promoting compact development than the core city, Raleigh.

This study offers valuable insights into the spatially fragmented nature of regulatory reform to promote sustainable urban form within a sprawling region. The municipal LU regulation comparison reveals what and where pro-compact development LU regulatory items are especially lacking.

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Keywords: Sustainable urban form, Compact development, Land use regulations, Regulatory reform

BUILT ENVIRONMENT AND TRAVEL: INSIGHTS FROM LOCATION-BASED SERVICES DATA

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Individual Paper Presentation

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Reducing vehicle miles travelled (VMT) is crucial to reducing transportation emissions, improving public health and safety, and promoting sustainability in urban areas. The Southern California Association of Governments (SCAG) has adopted plans and programs aimed at reducing VMT through more efficient land use and improved regional transit. Such policies are in part informed by the transportation and planning literature, which extensively discusses the “D" variables including density, land use diversity, design, and destination accessibility (Ewing and Cervero 2010; Zhang and Zhang 2020) . Despite extensive research, the debate regarding the connection between the built environment and VMT remains unresolved. Moreover, the urban dynamics have undergone significant changes following the pandemic, potentially altering the traditional relationships between the built environment and travel

patterns. Existing VMT data, which primarily rely on modeling estimates, may overemphasize correlations between VMT and built environment factors. Researchers have increasingly used passively collected location-based services (LBS) and global positioning system (GPS) data to study fast-evolving changes in travel (Speroni et al. 2024). Such data reflect observed travel behavior, offering a promising alternative for evaluating the relationship between the built environment and VMT.

This study utilizes data from Streetlight Insight on vehicle trips originations during two time periods before and after the onset of the pandemic, specifically from March 2019 to February 2020 (referred to as “2019”) and from March 2021 to February 2022 (referred to as "2021”). StreetLight captures data through LBS, GPS trip information, and vehicle counts from stationary traffic recorders, utilizing machine learning algorithms to estimate trip generation. Data from StreetLight encompasses trips across various modes and allows for spatial and temporal disaggregation across different strata.

We extracted census tract-level data from Streetlight for the six-county SCAG region and organized trips into two samples: (1) an all-tract sample that includes all vehicle trip originating from tracts within the SCAG region, and (2) a residential-based sample comprising vehicle trips originating from tracts with at least 50% of land used for residential purposes. We analyze multiple travel indicators, including travel indicators including VMT and trip length. We examine the extent to which demographic and built environment characteristics influence trips generated in a neighborhood. Specifically, drawing on tract-level VMT data, we identify demographic and built environment factors driving neighborhood VMT and examine the shifts in these relationships pre- and post-pandemic. Additionally, we explore how demographic and built environment characteristics influence the prevalence of short-distance trips (up to 2 miles) and long-distance trips (50 miles or more) originating from a neighborhood. We leverage multiple data sources and novel approaches to derive variables of neighborhood build environment, including a lived-experience density measure (i.e., the number of people living within 1-mile radius), the proportion of low-speed streets, employment-weighted counts of consumer-facing establishments in selected categories, and the accessibility of jobs.

Several key findings have emerged from this research. First, several built environment measures are robustly associated with VMT levels both before and after the pandemic. Notably, neighborhoods with higher density and an extensive network of low-speed streets tend to have lower VMT. Additionally, these factors are significantly linked to a higher prevalence of short trips. Second, the share of the population under 18 was negatively associated with VMT in 2019; however, in 2021, this relationship diminished considerably in 2021 and was not observed in the residential-based sample. This change aligns with recent studies indicating that post-pandemic, schools continue to be significant generators of trips, in contrast to the trend of some workers moving towards working from home or adopting hybrid work arrangements (Zhu and Mason 2014). These findings support regional planning strategies that promote the development of compact, walkable neighborhoods and enhance access to local schools and amentia to encourage shorter trips and reduce reliance on driving.

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Keywords: Location-based service data, Vehicle miles traveled, COVID-19, Travel behavior, Built environment

CREATING A COMPACT CITY: PLANNING INTENSIFICATION IN TORONTO, 2001-2021

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Individual Paper Presentation

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This paper addresses the geography and form of residential intensification in the City of Toronto between 2001 and 2021. It evaluates where intensification took place, the building types produced, and whether the resulting development met planning goals such as creating transit-oriented neighborhoods. The paper addresses important ways that institutions and planning policies shape development outcomes.

The Toronto metropolitan area is one of the fastest growing in North America, adding 1.5 million people between 2001 and 2021 for a total population of over 6.2 million. In this period, the City of Toronto added 270,000 housing units and 300,000 people, reaching a population of 2.8 million. Unlike suburban areas, however, this growth occurred entirely through infill and intensification.

This period of growth also occurred under a distinct planning regime, often characterized as neoliberal (Filion, 2020; Lehrer et al. 2010), with new institutional relationships and planning policies in the late 1990s and early 2000s. The Province of Ontario abolished Metropolitan Toronto and amalgamated its six low-tier municipalities into a new single-tier “megacity” of Toronto in 1998. The Province also established a 2,000,000 acre greenbelt limiting land subdivision, and a regional growth plan setting urban intensification requirements and minimum development densities for different areas.

At the municipal level, the new City of Toronto established an Official Plan that defined areas for intensification in the downtown, in more outlying growth centres, and along designated arterial streets. Additionally, the city began actively using land value capture tools such as development charges and increased its use of density bonusing, exchanging increased building densities for developer contributions to community benefits. Intensification was intended to contribute to Official Plan goals of reducing greenfield land development and auto dependence and increasing walking, cycling, and transit use.

A new provincial government introduced a series of reforms that substantially transformed this planning regime by the early 2020s. This included replacing the density bonusing system with a much more limited “community benefits charge,” and increasing the power of the Province to unilaterally overrule local planning decisions and authorities (Sorensen, 2023). It is early to evaluate the impacts of these changes, but the planning system operating in the 2000s and 2010s was dismantled in fundamental ways. This paper is part of a larger research project evaluating the outcomes of this former system as a distinct period of land use planning. Other parts of the research focus on issues of land value capture and the kind of public realm created under the system. Here we focus on the geography and types of residential intensification that took place.

For the analysis, we rely on a review of relevant Provincial and municipal policy and documents, supplemented by interviews with municipal planners and city councillors. We map and analyze development outcomes using a dataset of some 35,000 geo-coded building permits for the 2001-2021 period, plus planning reports for over 800 intensification projects that have detailed information on building and unit types, as well as bonusing agreements, and other information.

Preliminary results suggest that Toronto's intensification largely took place in designated growth areas in the form of large, high-rise condo towers that increased in scale over time. Less intensification occurred along designated arterials and was also significant in non-designated areas. Overall, transit-orientation was limited. This research adds to the literature on intensification policy in the Toronto region (Fillion, 2020; Grisdale and Walks, 2022; White, 2023). It also creates a baseline for a future comparison to outcomes of the current, evolving planning regimen which can be seen as even more neoliberal in orientation.

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Keywords: Intensification, Development Control, Compact City Planning, Neoliberal Planning, Toronto

CROSSING LINES: EQUITY IN A REGIONAL NETWORK OF COMPREHENSIVE PLANS

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Individual Paper Presentation

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From a land use planning perspective, there are many compelling reasons as to why sustainability, particularly as it relates to equity and justice, should be addressed at a regional scale. That said, planning in the United States is fundamentally a local activity and local governments rarely write and implement regional plans to address issues

that cross jurisdictional lines. Clusters of local plans, therefore, can resemble a patchwork quilt, exacerbating issues related to affordable housing, transportation justice, environmental protection and justice etc. at the regional scale. Currently, there is some empirical research regarding both the inclusion of equity related policies in local/individual comprehensive plans and the extent of coordination of equity related policies across the network of plans (e.g., comprehensive plans, hazard mitigation plans, parks and recreation plans) of individual local governments (Berke, Yu, Malecha, & Cooper, 2023; Loh & Kim, 2021). But what about how equity is considered in comprehensive plans by local governments that comprise a region? In this paper, we ask: how do local comprehensive plans, within a region, individually consider equity and justice, and to what extent, taken altogether, are they advancing goals to support regional equity?

We use well established plan content evaluation protocols (Norton, David, Buckman, & Koman, 2018) in conjunction with the American Planning Association's principles and evaluation tool for interwoven equity (Godschalk & Rouse, 2015) for four plans in northern Delaware to assess holistically each plan's considerations of equity, both locally and regionally. These plans include three municipal plans (Wilmington, Newark, and New Castle, Delaware) and one county plan within which the three municipalities are located. Together, these jurisdictions house over 570,000 residents, the majority of Delaware's population. We also perform supplemental qualitative keyword analysis using Atlas.ti software. We analyze the inclusion of equity and justice policies along several dimensions (Heffron, 2023): whether the policies are distributive, procedural, recognition, restorative, and cosmopolitan.

Our preliminary findings show that New Castle County addresses equity on a broader scale than the three municipalities. However, no plan addresses equity to the degree suggested by best practices in the field. While the plans place varying degrees of emphasis on the importance of regional coordination overall, there is no real focus given to how that coordination might be executed on the ground to address substantive issues of regional significance. Overall, references to regional equity and related coordination are limited to suggestions that are neither explicit nor central components of the plans although the need for such coordination exists given documented concerns in this region relating to transportation justice, environmental justice, spatial mismatch, and distribution of affordable housing. Our paper contributes to the plan content analysis literature on how equity is defined and operationalized and has implications for how we consider the networks of local plans that are implemented across a region.

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Keywords: Equity, Plan content analysis, Network of plans, Regional planning, Land use

DEFENDING FARMLANDS: AGROECOLOGICAL FARMERS' RESISTANCE IN PUERTO RICO

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Individual Paper Presentation

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Globally, small-scale farmers are experiencing land-related challenges from new development threats to farmland conversions that are not well-documented in the literature. Particularly absent in the literature are the challenges faced by small-scale agroecological farmers at the intersection of development pressure, extractive and settler-colonialism, and climate change—all of which are impacting Puerto Rico (PR). Drawing from the current political restructuring process imposing farmland conversion in PR, this paper delves into the experiences of small-scale agroecological farmers and the nuances of their land-related challenges and resistance to development. This paper asks, how do agroecological farmers in PR perceive, experience, and resist threats to farmland conversion?

In response to development, farmers are expected to adapt (Johnston & Bryant, 1987). The Johnson-Bryant model, used to analyze farmer's response in peri-urban areas (see Elhadary et al., 2013; Inwood & Sharp, 2012; Levi, 2007), examines farmer's agency in adapting either positively or negatively to development. According to this model, positive adaptations include "vertical expansion, horizontal expansion, and engagement with non-farming activities," while the negative adaptation is to "sell and give up farming" (see Elhadary et al., 2013). Scholars have depicted those who positively adapt to development pressure as successfully intensifying their operations and engaging in entrepreneurial activities (Inwood & Sharp, 2012). While this framework may be useful for analyzing farmer adaptation in the Global North, it overlooks the possibility of non-adaptive responses or resistance to development.

Drawing inspiration from Arturo Escobar's postdevelopment scholarship, I structure my analysis around the resistance of small-scale agroecological farmers in PR to the development pressure subverting the entire region into an urban/rural fringe. I adopt Gow's (2008) concept of counter-development to highlight the potential of agroecological farmers to create alternative forms of modernity and cultural change, including their adoption of non-extractive farming practices. Farmers actively engage in counter-development by employing various strategies to safeguard their farmlands and livelihoods. This includes "physically occupying lands to hold on to their 'places,' politicizing new legal 'spaces' and demanding territorial rights" (Brent, 2015, p. 690). Additionally, they seek to strengthen rural social networks, resist Western modernizing influences, and advocate for the rights of small-scale farmers to ensure their survival (De Schutter, 2011; Gutiérrez, 2023).

The paper draws from primary data that will be collected using ethnographic case study methods, including qualitative interviews and participatory observation with agroecological farmers in PR. Semi-structured interviews will inquire on the bureaucratic, economic, and legal aspects experienced by agroecological farmers when protecting farmland. Topic areas for questions asked to participants include demographic data, assets and challenges, and experience engaging with policies and protecting farmlands. Eligibility of participants will be determined by their self-identification as an agroecological farmer, being 18 years or older, and being actively growing food on a plot of land in PR. For the analysis of interviews, a thematic analysis will be employed using a phronetic iterative approach (Tracy & Hinrichs, 2017).

In the context of PR, where development pressure, extractive and settler-colonialism, and climate change intersect, documenting these alternative strategies is crucial. Farmers engage in counter-development by resisting the risk of being evicted or expropriated from their lands, particularly after a disaster (Fontánez-Torres, 2020), defending

farmlands from the development of roads due to damaged traffic lanes after hurricanes (as the case of Josco Bravo farm), preventing the construction of industrial-scale solar farms over the most productive farmlands, creating free non-formal agroecological schools for adults, embracing traditional farming practices (such as bueyes instead fossil fuel dependent machinery), and transferring land ownership to local land trusts. Documenting these strategies can shed light on the diverse ways in which farmers assert their rights to land, country, and nature amidst intersecting challenges in PR.

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Keywords: Development, Farmland Conversion, Agroecology, Urban/Rural Fringe, Land use policy

DEVELOPER POSITIONS TOWARDS INTENSIFICATION IN TWO MEDIUM-SIZED CITIES

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Individual Paper Presentation

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The promotion of compact development through intensification has been a prevailing planning paradigm in many large cities, however, mid-sized cities have struggled to achieve a market to realize this model. Canadian mid-sized cities (populations ranging between 50,000 and 500,000) are typically characterized as being auto-dependant and dispersed through the proliferation low-density development and segregated land uses (Grant et al., 2018). Growth patterns reflect a mix of urban sprawl and concentrated pockets of densification in downtowns (Graham et al., 2019). This may create a disincentive for the real estate market to densify outside of developed areas in the urban core as residents prefer single detached housing. There remains a deficit of research and planning models applicable to the circumstances of smaller and mid-sized cities (Bunting et al., 2007; Hartt and Hollander 2018; Pham et al., 2024).

This paper explores developer positions in relation to planning regulations and policies for intensification (e.g. redevelopment, infill, mixed-use development) in two fast-growing mid-sized Canadian cities: Halifax, Nova Scotia and Victoria, British Columbia. The primary research objective was to better understand the regulatory capacity for

residential intensification in mid-sized cities. A mixed-method approach (survey and semi-structured interviews) was utilized to explore the drivers of development and barriers to intensification from the perspective of builders and developers. The findings show existing regulations, local opposition, and low consumer demand impede the implementation of compact and dense city qualities. A viable incentive structure, enhanced municipal administrative support, improved collaboration between planners and developers, and better access to market benchmark data were considered important steps to enable dense development beyond core areas.

Research on developers in small and mid-sized cities – structure, identity, expertise, and networks - is limited (Novak 2020; Varna et al., 2020). This paper contributes to the relational dynamics between public and private actors in urban development, reenforcing that developers show a range of opinions and openness to planning ideas (Coiacetto 2000). The research raises questions about what appropriate modes of governance may entail in the context of urban growth models for mid-sized cities.

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Keywords: Intensification, Developers, Density, Mid-sized cities, Land use planning

DID RESIDENTS MOVE AWAY FROM HAZARDS? LINKING HOUSING PRICES TO RISK MAPS

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Individual Paper Presentation

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The Intergovernmental Panel on Climate Change (IPCC) has raised an alert that land degradation will increase in both frequency and severity; moreover, land degradation can exacerbate emissions and diminish carbon sinks due to the loss of vegetation. Therefore, land use and management have become critical issues. Landslides are one of the most severe forms of land degradation and can even claim lives instantaneously— with 55,997 fatalities recorded between 2004 and 2016. This hazardous phenomenon, triggered by human activity, is increasing, posing a risk but also representing an opportunity to reverse through appropriate land-use policies (Froude & Petley, 2018).

Governments use hazard maps as a risk communication tool, guiding individuals to restrict activities on vulnerable lands. For instance, the Federal Emergency Management Agency (FEMA) adopts floodplain maps for house insurance, impacting property markets and residency choices. Furthermore, research shows that hazard maps, such as the sea-level rise and flooding maps, affect residents' risk perceptions which leads to a decrease in housing prices (Tarui et al., 2023). Additionally, several studies have revealed that property prices decrease when people perceive actual disasters or environmental disadvantages, such as flooding, hurricanes, and toxic pollutants. (Zhang, 2010). A particular study has indicated that landslides resulted in an 11.3% reduction in property prices at the interface between urban and national parks (Kim et al., 2017). However, there has not been a previous literature that examined the impact temporally and spatially.

Thus, we propose three research questions: First, can landslide risk maps impact housing prices in urban areas adjacent to mountains, and to what extent? Second, do the effects of landslide risk maps change after an actual landslide disaster? Third, how long do these changes last, and when do the prices recover? To answer these questions, this study employs the Hedonic Model to obtain the coefficient of the proximity to risky areas of landslide maps and actual events on housing prices by controlling other factors, such as housing characteristics, distances to amenities, and economic fluctuations (Noh & Rogers, 2016). Subsequently, the difference-in-difference (DID) approach is used to identify the causal impact on the property market before and after landslide events.

For data collection, we selected Xizhi District, Taiwan, as our study area. Xizhi is situated at the interface between urban areas and mountains, making it prone to landslides. In 2022, a severe landslide led to a 141-person evacuation at the Bojue community in Xizhi. This event initially attracted considerable media attention; however, local governments' extensive efforts toward recovery mediated the media attention eventually. Local governments' actions might facilitate the recovery of housing prices. We have gathered 39,491 house transactions from the government's open database in Xizhi from 2012 to 2023. We expect that the map brings a mildly negative impact before the landslide event; the landslide event might amplify the effect of the landslide map; however, the negative price effect is not long-lasting. These results can imply better policies by informing governments whether the risk communication with landslide maps should be improved and that quick price recovery might attract developers to construct or reestablish houses on these risky lands. In sum, this study can contribute to safer land-use policies.

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Keywords: Land Use, Landslide, Hedonic Model, Risk Perception, Housing

DRIVE-THROUGH DINING AND DEVELOPMENT: ZONING REFORM & FAST FOOD RESTAURANTS
Abstract ID: 1108.0.0.27.2024
Individual Paper Presentation

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Fast food restaurants are ubiquitous in American cityscapes and produce challenges for urban planners because their sites require excessive provisions for automobiles in places where walkability and compactness is desired. This article explores the outcomes of a 2017 zoning reform in Buffalo, New York on the form and physical characteristics of drive through fast food restaurants. Analyzing site plan and variance applications, we compare all drive through restaurant proposals approved under the new zoning code (2017 to 2022) with those approved prior to the zoning reform (2000 to 2016). After Buffalo's transition to form-based zoning, fast food restaurant footprints consume on average 9 percent of property area, parking lots consume more land than building footprints in 90 percent of cases, and front setbacks are greater than 25 feet in 50 percent of cases. Automobile drivers continue to enjoy safer and more convenient site access than do pedestrians. The physical design and site layouts of drive through restaurants remain largely unchanged following the reform. Notable differences include a 25 percent decrease in parking lot size and 46 percent increase in vehicle stacking capacity in drive through lanes. Following the zoning reform, a majority (80 percent) of proposed fast food restaurants were granted variances in the approval process to allow reduced façade transparency, excessive setbacks, and drive through lanes in prohibited zones. Stricter implementation and stronger incentives to develop in appropriate locations would support achieving the vision of the zoning code to preserve neighborhood character and activate mixed-use centers.

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Keywords: form-based zoning, urban design, parking, neighborhood planning, land use

EFFECTS OF STATE GROWTH MANAGEMENT REGULATIONS ON MITIGATING SPRAWL
Abstract ID: 1108.0.0.239.2024
Individual Paper Presentation

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This article explores the effects of state growth management regulations in mitigating urban sprawl. This research is the logical follow-up of a similar study conducted two decades ago by Anthony (2004). The 2004 study examined the efficacy of state growth management regulations in curbing urban sprawl using data from 49 states spanning 16 years. That study's findings indicated that neither growth management regulations nor the duration they had been in force had a statistically significant effect in reducing urban sprawl. Since then, several researchers have analyzed the efficacy of growth management policies in limiting sprawl and promoting smart growth (Landis 2021). Some researchers have also developed precise indicators for measuring sprawl (such as Ewing 2022) and its negative impacts on the environment and public health. However, most of these studies focus on sub-state policies and usually on the effectiveness of specific growth management tools. While these studies provide critical information for local planners, researchers agree that their efficacy depends on the state level planning policies. Our study builds on all the work in the past two decades and evaluates the impact of state growth management regulations on sprawl from 2001-2022.

In this study, we leverage the state policy evaluation work done by the American Planning Association (APA), which has periodically undertaken a comprehensive survey of planning enabling laws in all 50 States. In the most recent (2022) APA study, researchers collated information on eight planning requirements in states' core planning laws; we used this information to construct our experimental variable. We employed incremental population density (2001-21) as the primary measure of sprawl as it effectively captures the outcome of several local sprawl measures commonly identified in the planning literature. We included change in three primary land cover categories (developed area, agriculture area, and forests) as effect mediators and initial population density (2001) and change in service sector employment (2001-21) as control variables. Using partial least squares structural equation modeling (PLS-SEM) enabled us to model the relationships between all these variables as it allows for modeling with small sample sizes without imposing strict distributional requirements (Hair et al. 2019).

The results indicate that state policies have a statistically significant positive effect on increasing population density, after accounting for many alternative factors. This research provides empirical evidence of the critical role of state planning policies in controlling sprawl. States experiencing urban sprawl could perhaps use our findings to tweak their planning laws to promote more sustainable growth patterns.

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Keywords: Growth Management, Sprawl, Density

ENVIRONMENTAL JUSTICE IN URBAN GREENING POLICIES: EVIDENCE FROM SHANGHAI

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Individual Paper Presentation

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Urban greening is gaining prominence in planning policies. Cities around the world are expanding their sustainability agendas through the planning and implementation of green spaces. Greening policies have significant social and environmental justice implications (Byrne, 2017). Environmental justice scholarship has widely revealed that disadvantaged groups face injustices in accessing green space: they are more vulnerable in terms of benefiting from green space and lack opportunities to participate in decision-making processes (Haase et al., 2017). However, most of these studies have focused on distributional outcomes of disparities across ethnic and socioeconomic status groups. It is unclear whether and how urban greening strategies and governance processes attempt to address justice-related objectives. It is also questionable to what extent environmental justice has been addressed in developing countries, where the availability and accessibility of green spaces are often lacking. At the same time, policymakers in developing countries face different challenges from those in Western cities, especially in the more diverse and complex context of the rapid urbanisation process (Das, 2021). The role of urban planning in promoting equity in green space provision in developing countries remains an under-researched topic.

This study aims to apply the well-established framework of environmental justice (Schlosberg, 2013), which includes three dimensions of distribution, recognition, and participation, to assess the potential and limitations of urban greening policies for the equitable provision of green space. The research question is: How do urban greening policies address justice-related concerns regarding the provision of green space?

In this research, the central city of Shanghai in China is chosen as a case study. Shanghai is one of the largest and most prosperous Chinese cities, and it has a perceived urbanisation process and dramatic demographic changes. The Shanghai Municipal Government is placing great emphasis on the supply of green space to achieve the goal of a sustainable, ecological, and green city. The data for this research comes from government planning documents and semi-structured interviews. The planning documents include standards, plans, strategies, and reports related to green space that have been released by the Shanghai municipal government over the past 25 years. Semi-structured interviews consisted of 38 one-on-one in-person and online interviews (from November 2022 to April 2023). Interviews were conducted with purposefully selected government officials, urban planners, and experts from government departments and planning institutions who were involved in making decisions, formulating plans, and implementing greening projects in Shanghai. Thematic analysis was used to code and analyse the transcribed text data.

The result shows that Shanghai's urban greening policies improve the availability of green space for all people by continuously increasing the area and quantity of green space. The plans focus more on quantitative criteria than quality and are limited in addressing barriers to the use of green space. In terms of recognition, the plan emphasises people with disabilities, the elderly, and children as groups that need special attention when designing green spaces, while other categories of vulnerable people are missing. Regarding participation in decision-making, public participation and consultation in green planning is simple and limited. The ideas of government officials and the knowledge of planning professionals dominate decision-making. A risk has been identified for the greening policies to bypass the different needs and vulnerabilities of different social groups. This study contributes to the discussion on the role of urban planning in providing equitable green space and to the empirical research of environmental justice. It also provides recommendations for policymakers in green space planning.

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Keywords: Environmental justice, Planning policy, Urban green space, Justice Planning, Shanghai

EXAMINING NATURE-BASED SOLUTIONS FOR CLIMATE POLICY IN GEORGIA COUNTIES

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Individual Paper Presentation

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The adverse consequences of climate change manifest through diverse forms, including escalating temperatures, extreme weather events, sea-level rise, and disruptions to social, environmental, and economic systems in Georgia, United States. Specifically, 406,440 properties face a 26% or higher likelihood of severe flooding within the next three decades, constituting 13% of the total property landscape. The necessity for strategic approaches to enhance resilience at the local level in response to climate change has led to the prominence of nature-based solutions (NBS) policies and actions.

However, the extent to which counties in Georgia embrace nature-based solutions planning to address climate change remains unclear. Given the complexity of planning decisions, this study systematically examines existing nature-based solutions planning efforts at the county level in Georgia, with specific objectives to identify nature-based solutions plans or concepts within county plans and evaluate the extent to which nature-based solutions programs address systemic racism and inequality issues. This research employs content analysis to meticulously scrutinize the plans of 159 counties in Georgia, delving into the conceptualization and operationalization of nature-based solutions within current county-led planning efforts. The identification of plans addressing NBS involves the systematic collection of formal plans/policies linked to official city budgets and programs such as comprehensive plans and other relevant planning documents. A screening process ensures the inclusion of only current plans authored or endorsed by county agencies, excluding regional and metropolitan planning initiatives, as well as plans lacking support from city governments, for instance, those led by community groups or non-profit organizations. Utilizing NVivo, thematic and open coding techniques will be applied to categorize and analyze NBS policies and actions in Georgia counties.

This research is ongoing and is expected to be completed by the end of summer 2024. The findings of this research will offer a comprehensive understanding of the ongoing nature-based solutions endeavors in Georgia counties. They will not only serve as a significant foundation for prospective nature-based solutions development but also stand as a valuable repository of insights for planners and policymakers engaged in urban planning. By contributing to the critical task of addressing climate change at the local level, this research will provide actionable

recommendations that are poised to guide planners and policymakers in enhancing the efficacy of their nature-based solutions planning strategies, thereby contributing to the creation of a sustainable and resilient future.

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Keywords: Climate resilience, Nature-based solutions (NBS), Georgia counties

HOUSING UNAFFORDABILITY AND THE SOFT DENSITY 'SOLUTION' IN SYDNEY, NSW

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Individual Paper Presentation

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Housing unaffordability is a critical issue in many cities, driving new and deepening existing urban inequalities. While the causes are multifaceted, a key response by governments in Australia, Canada and the US has been to reform land use policy in an effort to accommodate more new housing supply within established urban areas, through more compact housing forms and new housing typologies. This has ranged from high rise condominium developments delivered through major renewal projects, to incremental, 'soft' forms of suburban and backyard densification, supported, for example, through the creation of development rights for secondary or accessory dwelling units (ADUs). While there is a growing body of research examining and comparing land use policy for ADUs (Anacker and Niedt 2023; Wielga 2023), and implications for housing supply and affordability (Week 2021; Kim et al. 2023), the efficacy and effectiveness of regulatory settings to enable ADUs and the extent to which they address unmet housing need within suburban contexts, where built form and tenure diversity have been longstanding challenges, remains debated.

We contribute to these debates in this paper by examining the case of Sydney, NSW. In 2009, in response to concerns about overall housing production, and declining housing affordability, the NSW state government used its planning powers to introduce state-wide 'as of right' development rights for ADUs (called secondary dwellings or 'granny' flats in the Australian context). The state-wide code for ADUs effectively overrides any more restrictive

regulations enacted by the state's more than 120 local municipalities (33 across the Sydney Metropolitan Region). It also enables ADU proposals to bypass local government development assessment processes and be approved by a private certifier in as little as 14 days.

Focusing on this case, we ask (1) how this regulatory reform altered development rights for ADUs across Sydney and what the ensuing supply response has been; and (2) whether and how this has addressed unmet housing needs across Sydney's suburbs. To address our research questions, we undertake a detailed policy analysis to track how the state-wide code for ADUs altered permissibility and development rights across different Sydney suburbs. We then use development permitting data which we examine statistically and spatially to uncover patterns of take up. Finally, building on recent mixed methods research investigating the use of ADUs (Troy and van den Nouwelant 2023), we analyse the findings of 25 interviews with local government planners and building inspectors to uncover new evidence of the role ADUs are playing in addressing unmet local housing need across suburban Sydney. Local government planners are particularly valuable informants given their role in assessing and planning for diverse local housing needs, but have hitherto received little research attention.

We find that the state-led regulatory reforms to ADU policy have enabled ADUs in more locations, and have ceded additional development rights to property owners by allowing larger ADUs on smaller lots. Implemented at the beginning of a housing market boom, the policy appears to have resulted in a significant supply response. But that response has been geographically uneven. While the concentrated increase in ADUs in some locations has diversified the housing stock profile and intensified suburban land use, the interview findings also reveal local planner concerns about affordability, poor amenity, and ADUs opening opportunities for informal renting arrangements, all exacerbating tenure-based inequalities. Our findings reveal the limitations of relying on regulatory reform and market-led densification alone in addressing Sydney's housing crisis. But they also provide new empirical evidence to inform the development of future land use policy to deliver better affordability and housing equity outcomes from densification.

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Keywords: Housing affordability, Densification, Accessory dwelling unit, Policy reform

IMPACT OF GREENSPACE ON OLDER ADULTS' ACTIVITY DURING EXTREME WEATHER

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Individual Paper Presentation

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The population share of older adults aged 65 or over has grown substantially, leading to aging cities around the world. This trend creates new urban problems, such as health issues and the quality of life of older adults. Often, these problems worsen due to climate change. For example, higher temperatures in summer caused by climate change prevent older adults from participating in outdoor activities. This could lower their quality of life as well as deteriorate their health conditions due to the lack of physical exercise.

Moreover, the increasing frequency and intensity of heatwaves, a direct consequence of global warming, exacerbate these challenges, posing a significant risk to the well-being and safety of the elderly population. Heatwaves, characterized by prolonged periods of excessively high temperatures, can significantly hinder the physical activity of older adults, further isolating them and increasing their vulnerability to heat-related illnesses.

There are planning tools that could mitigate these negative effects. For example, some researchers have examined the locations and types of trees to decrease temperatures on streets and in neighborhoods. Green and blue spaces can also help alleviate urban heat island issues. However, few empirical studies have investigated the extent to which street trees or good access to green spaces in neighborhoods could encourage outdoor activities, even during hot summer days. Additionally, the effects could vary between young adults and older people due to their physical and health conditions. Considering the growing population of older people, it is critical for planners to understand the role of green spaces in promoting outdoor activities for older adults, even during hot days, in order to build more sustainable, just, and resilient cities.

This study aims to examine how urban design strategies, such as trees on the streets and accessibility to green space, could influence people's outdoor activities during hot days, and how these roles change between young and older adults. We utilized four months of mobile phone data (June to September 2023) to measure activity levels at the Dong level (administrative areas in Seoul). Fixed-effect panel models with interactions were employed to examine the extent to which outdoor activity levels change depending on temperature and how these effects vary across neighborhoods with different urban design factors.

Our findings confirmed that rising temperatures do reduce people's outdoor activity levels significantly, indicating that climate change will continue to impact human activity patterns in the future. However, these effects are more profound for older adults, requiring attention from planners. This understanding of age-specific impacts empowers urban planners and policymakers to devise strategies that cater specifically to the needs of the aging population, ensuring their inclusion and active participation in urban life. Finally, we have identified that certain urban design elements could mitigate these effects. The incorporation of these design elements into urban planning can serve as a vital component of broader climate adaptation strategies, thereby enhancing the resilience of urban environments to the adverse effects of climate change. These results provide useful policy implications for establishing appropriate climate change adaptation policies and plans.

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Keywords: Climate Change, Activity Levels, Urban Design Strategies, Heatwaves, Green Spaces

INTEGRATING PLAN EVALUATION APPROACHES FOR HEAT RESILIENCE IN ARIZONA

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Individual Paper Presentation

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Heat resilience planning has recently gained momentum, with 90% of U.S. planners reporting concerns about longer heat waves (APA, 2024). The repercussions of increasing chronic heat and extreme heat events in Arizona's growing urban corridor have compelled policymakers to address extreme heat proactively. Planners, plans, and planning processes shape the built environment and can proactively mitigate and manage heat while building knowledge and adaptive capacity among heat-stressed and vulnerable communities (Keith & Meerow, 2022). To effectively confront this challenge, community plans of all sectors and scales, or the “networks of plans” (Berke et al., 2015), must collectively advance heat resilience. However, existing research suggests that silos and conflicts in the network of plans often impede resilience. Integrated heat resilience planning requires a systematic and comprehensive analysis of the silos and conflicts relevant to heat resilience within communities’ networks of plans.

This study is the first to combine three emerging plan evaluation methods and adapt them to systematically identify gaps in coordination on heat resilience in Arizona cities’ network of plans. We organize our discussion of coordinated heat resilience planning around three questions:

1. Are there inconsistencies in the degree to which plans within and across the cities adhere to principles of effective heat planning?

2. Are there inconsistencies in spatial policy attention to heat mitigation within and across cities’ plans?

3. Are there gaps in how networks of plans explicitly coordinate across the cities?

We applied Plan Quality Evaluation for Heat Resilience, Plan Integration for Resilience ScorecardTM for Heat (Keith et al., 2023), and Social Network Analysis (Woodruff et al., 2022) to city-approved networks of plans (21 plans) in

seven cities: Phoenix, Tucson, Tempe, Flagstaff, Casa Grande, Mesa, and Nogales. Our sample of cities represents communities of different sizes, geographies, planning capacities, and heat risks.

We find both similarities and differences in how Arizona cities' networks of plans address heat concerns. The seven networks of plans have consistently high-quality participation and coordination principles but lack details on vulnerability and climate change uncertainty, suggesting a need to move beyond immediate heat risks. Across cities, we find opportunities to diversify policy mechanisms and spatially target socially and physically vulnerable areas. Additionally, heat resilience in most cities would benefit from explicit coordination between city and county plans. These results lay the foundation for future collaboration with decision-makers to identify hotspots of need, adopt heat policies that meet current and future needs, and improve knowledge and adaptive capacities in disadvantaged communities.

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Keywords: heat planning, heat resilience, extreme heat, plan evaluation, network of plans

INTERMUNICIPAL COLLABORATION FRAMEWORKS IN ALBERTA, CANADA: AN ASSESSMENT

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Individual Paper Presentation

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The provincial government of Alberta in Canada introduced Intermunicipal Collaboration Frameworks (ICF) in 2017, which are mandatory agreements that contiguous municipalities must enter with each other and are expected to lead to improvements in how public services of regional benefit are delivered. This research explores the intersection between governance and local service provision to understand whether ICFs have achieved their stated purpose of improving intermunicipal collaboration when it comes to the regional coordination of services.

While there is ample academic debate on inter-jurisdictional agreements and intermunicipal cooperation, this study fills a gap in the literature on the theoretical framework of Institutional Collective Action (ICA); Alberta's agreements are of a mandatory nature, whereas, globally, most similar agreements to date are voluntary. This is what makes ICF unique and arguably the form of regional cooperation model available.

The study's main aim is to determine what factors are at play in ICF development processes that facilitate improved intermunicipal collaboration or hinder it, and particularly whether the mandatory nature of ICF agreements is a beneficial aspect. It may be too soon to ascertain any concrete impacts of ICF agreements in Alberta because they have only very recently been developed, but one advantage of conducting this study now is that informant experiences with the ICF process are fresh and prescient.

The study is based on a collection of 229 (out of about 442) publicly available unique ICF municipal agreements and scores of interviews with key informants across the province. The analysis employs the traditional method of manually categorizing, coding, and eliciting themes, layered with any additional themes or refinements generated by Microsoft Copilot Pro, a new AI-based tool for analyzing qualitative data.

The study concludes that the mandatory nature of ICF limits the risks of defection, division or lack of coordination among municipalities. However, significant challenges remain related to reconciling mutually beneficial opportunities and establishing agreement on the distribution of collective benefits and costs. Other challenges associated with ICFs are related to the negotiation of complex arrangements, including cost and revenue sharing, and the interplay of arbitration, or the threat of it, are significant hurdles that remain to positive working relationships between municipalities. Factors such as the timing of elections and the provincial role in legislating and changing the requirements of ICFs also present barriers to negotiating mutually beneficial agreements. Overall, ICF has the potential to be an effective model for regional cooperation and land use outcomes in the future if the current deficiencies are ironed out.

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Keywords: Intermunicipal Collaborative Framework (ICF), regional governance, Institutional Collective Action (ICA), Alberta, Canada

JOBS-HOUSING BALANCE AND COMMUTING PATTERN IN SHRINKING CITIES

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Individual Paper Presentation

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Encouraging workers to live closer to their workplaces offers several benefits, including shorter commutes, reduced reliance on personal vehicles, and increased use of alternative transportation modes (Blumenberg & King, 2021). Balancing job opportunities and housing is challenging, not only in central cities with numerous job opportunities but limited housing choices, but also in suburban areas where there are more houses than jobs (Giuliano, 1991). Balancing job opportunities and housing may be particularly challenging in areas experiencing population decline. Shrinking cities not only face depopulation but also encounter losses in both housing and employment opportunities, which creates difficulties in providing public services due to reduced revenue (Weaver et al., 2017). This imbalance can lead to longer commutes and increased reliance on automobiles. While numerous studies have examined jobs-housing balance, commute patterns, and shrinking cities, limited attention has been given to exploring how the interaction between jobs-housing balance and travel patterns unfolds in the context of population shrinkage. Therefore, this study aims to investigate how jobs-housing balance and self-containment may change with population change. The jobs-housing ratio signifies the potential for achieving greater balance, while the actual equilibrium is evidenced by the percentage of jobs filled by residents or the percentage of workers securing housing within that neighborhood, commonly referred to as “self-containment” (Cervero, 1996). The research will address the following question: how population shrinkage has an impact on self-containment through jobs-housing balance.

This paper utilizes longitudinal data collected from cities between 2010 and 2019 to examine the impact of changes in population on self-containment through jobs-housing balance. I will focus on city-level statistics because cities have authority to regulate land use, empowering them to address housing and employment-related issues (Cervero, 1996). When repeated measures are available for the independent variable, mediator, and dependent variable, a latent growth model (LGM) can be employed to test a mediation model. This allows researchers to determine if a mediating variable fully or partially accounts for the relationship between the independent and dependent variables (MacKinnon, 2008). In this study, population change serves as the independent variable, while self-containment acts as the dependent variable. The mediator between these two variables is jobs-housing balance. Longitudinal Employer-Household Dynamics Origin-Destination Employment Statistics (LODES) and the American Community Survey (ACS) from the Census will be used to measure the variables. LODES provides inflow and outflow data, which will be utilized to measure jobs-housing balance and self-containment. Population change and control variables will be analyzed using ACS data.

This paper is expected to enhance our understanding of the dynamics of jobs-housing balance and self-containment in shrinking cities. If population shrinkage is correlated with a reduction in the number of individuals living and working in the same locations, it would result in longer commutes and increased burdens on citizens and city governments already grappling with decline. Consequently, there would be a heightened emphasis on land use and transportation planning to effectively connect people with employment opportunities.

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Keywords: Shrinking city, Jobs-housing balance, Self-containment, Latent growth model

LAND USE "LAWFARE": JUDICIAL CHALLENGES TO LOCAL ZONING

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Individual Paper Presentation

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Residential development is often highly contested at the local level, especially when local government approvals might facilitate the construction of suburban multifamily residential buildings (Whittemore and BenDor 2019). Such land use conflict stalls or impedes new construction, with the potential to diminish housing supply and solidify racial exclusion. Political mobilization at the municipal level – and the attendant "NIMBY" phenomenon – are well-documented in the planning literature (Pendall 1999; Einstein et al 2019). Yet, conflict over development does not come to a stop when local government makes a decision. Instead, land use actors often turn to the courts, asking judges to overturn local government decisions.

This paper explores judicial review of local zoning. I look to answer three research questions in particular: How prevalent are legal challenges to local land use decisions and development approvals? Who are the main actors in judicial review and what legal techniques do they use? And what types of claims are made in court and how do these claims differ from the arguments made during local municipal approvals? To answer these questions, I use a mixed methods approach combining content analysis and descriptive statistics, I analyze the types of projects that are challenged, tracing two representative cases in depth. Results of the analysis show that the judiciary comprises almost a de facto second stage of land use approvals – especially in municipalities with highly polarized development politics.

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Keywords: judicial review, zoning, land use conflict

LAND USE BASED WILDFIRE PLANNING FOR UNINCORPORATED COMMUNITIES

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Individual Paper Presentation

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The escalating frequency of catastrophic wildfires across the US has heightened concerns about the need for effectiveness of risk management strategies (Burby et al., 2000; Liu et al., 2015). Unincorporated areas are at particular risk of wildfires due to heightened development pressures, conflicting land uses, and the emergence of intermix Wildland-Urban Interface (WUI) which increases exposure to wildland (Carruthers, 2003; Canadas et al., 2023). Unincorporated areas are also challenged in their wildfire risk response due to limited control over land use, inadequate governance and unique socio-political structures systems further exacerbate their vulnerability (Chase, 2015). Despite the escalating risks associated with wildfires to unincorporated areas, however, there remains a significant gap in the understanding of to what extent unincorporated areas implement strategies for mitigating wildfire hazards.

Land use planning is a well-established, proactive tool for enhancing resilience and adapting to wildfire risks, but it remains underutilized in the context of wildfire management (Miller, 2017; Mockrin et al., 2020). Current wildfire management practices disproportionately emphasize protection measures such as fire suppression and fuel management over mitigative and adaptive land use strategies (McGee, 2011). The issue is further compounded by the fact that unincorporated areas are generally less likely to engage in mitigation and adaptation actions than incorporated areas (Platt, 2006; Beebe & Wheeler, 2012). This points to the need for empirical research that investigates the implementation of land use based wildfire planning within unincorporated territories and its underlying dynamics.

This paper investigates the integration of land use planning within Community Wildfire Protection Plans (CWPPs) for wildfire management in unincorporated areas of the Western US. We address two primary research questions: to what extent are land use strategies integrated into CWPPs for wildfire planning in unincorporated communities in the Western region? And what policy, community, and planning factors influence the integration of land use strategies into CWPPs? Through content analysis of 60 county-level CWPPs across 11 Western states, identified with a "Very High" or "Relatively High" FEMA Wildfire Risk Rating, we evaluated the degree of land use strategy integration using 23 indicators across five categories. The findings highlight a preference for vegetation management and building regulations over broader strategies like zoning and buyouts, suggesting institutional and consensus-based barriers.

Data was analyzed using a regression analysis incorporating variables such as state mandates, planner involvement, community wealth, population growth, previous wildfire experiences, and wildfire risk scores to identify factors affecting land use planning integration in CWPPs (Burby & Dalton, 1994; Berke, 1996; Berke & Godschalk, 2009; Lyles et al., 2014). The results indicate that state mandates regarding integrated land use and hazards planning, and prior wildfire experiences positively correlate with greater integration thus highlighting the importance of regulatory frameworks and capacity building in promoting land use based hazard planning. Conversely, community

wealth negatively impacts the willingness to adopt land use strategies underscoring the influence of economic conditions on resilience-focused hazards planning.

The study reveals significant variations in integrating land use strategies within CWPPs, pointing to the complexities of planning in unincorporated areas. Study findings also suggest that integrated hazard mitigation planning, supported by broader state mandates, can enhance land use focus in wildfire management plans. Furthermore, the direct experience of wildfires motivates communities to reassess their risks and adopt more adaptation-focused planning approaches.

This research contributes to the development of effective wildfire risk reduction strategies in unincorporated areas by advocating for increased integration of land use and hazards planning through policymaking and by promoting capacity building in unincorporated communities at risk of wildfires.

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Keywords: Wildfire Planning, Land Use, Unincorporated Communities, CWPPs, Plan Quality

LAND USE IMPLICATIONS OF INCOME DISTRIBUTION IN CITIES

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Individual Paper Presentation

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Income inequality in cities is associated with more crime and less happiness, and rises with the size and wealth of cities. It is less known, however, whether income inequality also affects the urban form. Does inequality interact with policies that shape cities? For example, do cities with inequitable income distributions share a common pattern of residential segregation that can be traced back to local land use regulations?

This study hypothesizes that such patterns exist. In cities with inequitable income distributions, the demands of the rich minority and poor majority are usually divergent. Responding to these divergent demands requires municipalities to organize urban space differently in different locations, which creates unevenness in urban form.

To minimize the risk of losing their wealthier taxpayers, cities tend to prioritize the demands of the rich, which could translate to spatial segregation. Primarily, the study tests whether growth in income inequality is correlated with inequitable zoning outcomes in cities.

Secondly, the study asks which comes first: Is it income distribution that shapes land use policies, or are they the local land use policies that induce income inequality? To untangle the endogeneity between income inequality and segregation, the study uses changes in the local industrial composition as an instrument. The instrumental approach is based on the premise that changes in the mix of local industries can affect income distributions, but are presumably independent of the outcome of interest, local land use.

The study sample covers the 100 largest Metropolitan Statistics Areas (MSAs) in the U.S. The primary variable of interest is the equity of land use regulations, captured by various segregation metrics such as the ratio between the lowest and highest residential densities. The zoning data to construct these metrics are obtained from the National Zoning Atlas. The main explanatory variable captures the change in the MSA's income inequality between 2000 and 2022, using metrics such as the top-to-bottom income ratio. The income distribution data are from the Integrated Public-Use Microsamples (IPUMS). These data are used to establish percentiles of income distribution in each MSA in the beginning and end of the study period, and to compute the changes in the different measures of income inequality. The changes are then used as predictors of zoning outcomes.

For the instrumental variable analysis, I use shifts in the local industrial composition as a source of exogenous variation in income across MSAs. The instrument takes the national growth in the earnings of high-wage industries between 2000 and 2022, and interacts it with each MSA's proportion of jobs in those industries in 2022. Data on industry-specific earnings are from the Quarterly Census of Employment and Wages (QCEW).

Preliminary findings show a strong correlation between income inequality and spatial segregation. The MSAs with fastest growth in income inequality (those with more than 40 percentage points increase in their income inequality metrics) have performed most poorly in terms of segregation between 2000 and 2022—measured by the diversity of land use, single-to-multifamily area ratio, and minimum lot size requirements. The instrumental analysis confirms that the distribution of income in cities plays a statistically significant role in shaping their land use outcomes.

Inequitable zoning restricts access to large labor markets for many workers, and can further exacerbate income inequality by distorting returns to human capital. Alleviating spatial segregation (e.g., by allowing more multifamily homes in larger urban areas) provides workers with better access to well-paid jobs and can improve their economic mobility. If more workers from different wage groups can afford to live in larger cities, cities would benefit from a larger labor force and become more productive, which boosts national growth.

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Keywords: land use, income inequality, segregation

LEGISLATING GENTLE DENSITY FROM ABOVE?

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Individual Paper Presentation

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As single-family zoning (R1) repeal in the name of broader housing availability and the promotion of more compact land use patterns spreads to more jurisdictions in North America, the central questions are shifting from whether to do it to whether it is effective and under what circumstances. Certain celebrated breakthrough R1 repeal episodes, such as that in Minneapolis in 2018, have not resulted in substantial production of the intended new permitted housing unit types (Kulhmann, 2021). Others, such as the much less publicized case of Ramapo in suburban New York, have resulted in thoroughgoing transformations and the production of large numbers of new types of housing units (Huennekens, 2023). What makes for success in some cases but not others? A comparison between three modes of small lot densification in California, with divergent outcomes, offers important clues. First, the accessory dwelling unit breakthrough in California, is an overnight success four decades in the making (Mukhija, 2022). Its ingredients include persistent state legislators, the political appeal of homeowners building for themselves, the emergence of a professionalized ADU industry, and the inherently favorable economics of this housing type. A second, contrasting story is found in the failure to date of California's lot splitting reform, Senate Bill 9 (SB9), to yield significant housing production, in strong contrast to the feverish attention that accompanied its legislative debate and passage. There are myriad reasons for its anemic yield, including political compromises inherent to the legislation as well as previously unanticipated ones such as the need for lien releases on existing mortgages. The third case, San Diego's unexpectedly impactful and productive (though innocuously named) Bonus ADU reform, arises from a pro-housing jurisdiction facing a severe housing shortage, taking advantage of new provisions under state law, and pursuing a low-key strategy on the part of the city's elected officials and staff passing and publicizing the reform. Based on a dozen key informant interviews, a survey of municipalities, the economic analysis of prototypical housing developments, and geospatial mapping and analysis of project distribution, we identify the local and contextual factors that make some state legislation effective and other bills fall flat. By synthesizing findings across the three cases from prior literature (for ADUs) and from our recent empirical research (for SB9 and Bonus ADU), we derive and report lessons that can benefit localities and states seeking to achieve small-lot densification at truly meaningful scale.

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Keywords: Accessory dwelling units, statewide zoning preemption, single-family zoning, gentle density

METROPOLITAN GOVERNANCE IN EUROPE: A CLASSIFICATION OF EXISTING MODELS

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Individual Paper Presentation

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In the last decades, new territorial configurations have emerged and consolidated in Europe to deal with the increasingly complex spatial relations between core urban centres and their suburbs. Whereas overall agreement exists on the relevance of these metropolitan phenomena, their institutional definition and governance is subject to debate. On the one hand, methodologies to define and compare metropolitan spaces have been developed, conceptualising them as characterised by densely inhabited urban cores and less-populated municipalities whose labour market is highly integrated with the cores (Dijkstra et al., 2019). On the other hand, metropolitan areas have become both the scope of and the reason for institutional experimentation. Public authorities and private actors across Europe have progressively engaged in the development of strategic visions and plans that tackle metropolitan challenges (i.e. housing, mobility, planning, employment, economic development, culture etc.), as a way to guide the integration of different spatial developments, beyond the core city alone (Saleet et al., 2015). Whereas these metropolitan activities often occur via informal inter-municipal cooperation, which varies through time and in relation to the issues at stake, in a number of European countries dedicated, more or less 'rigid' institutional structures aimed at metropolitan governance structures have been set up. Various models of metropolitan governance have been identified, that differ greatly in relation to their level of institutionalisation, the distribution of powers, competencies and resources, their internal structure and the actors involved (ESPON, 2021). The exact nature of metropolitan cooperation is often unique, and different arrangements also depend on the different multi-level regional governance and planning systems that characterise the European continent and their (albeit path-dependent) changing patterns (Berisha et al., 2021).

Aiming at shedding light on the matter, the proposed contribution draws on the results of the ESPON COMPASS and METRO projects (ESPON 2018, 2021). First, the paper surveys the various institutional models established in the European countries to handle metropolitan governance. Then, it develops a classification pivoted around four variables: (i) the institutionalisation process leading to the emergence of metropolitan governance, (ii) the governance model, (iii) the degree of correspondence between the geographical scope of the institutional action and the actual functional phenomena, and (iv) the spatial development and planning competences and the instruments through which they are practiced. The results of the analysis constitute a preliminary compass to navigate the boundaries and characteristics of metropolitan governance in the EU.

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Keywords: Metropolitan governance, Metropolisation, Functional Urban Areas, Institutional models, Europe

NAVIGATING WORK-LIFE SYMMETRY: A MULTI-STAKEHOLDER INDICATOR SYSTEM

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Individual Paper Presentation

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Urban planning practices, such as fiscal and exclusionary zoning alongside urban redevelopment, are exacerbating the jobs-housing imbalance in contemporary urban areas, thereby reshaping land use patterns and contributing to various socio-economic challenges. These dynamics, manifested through the workforce's difficulties in affording housing near employment locations, lead to increased commuting costs, traffic congestion, air pollution, socio-economic segregation, and diminished quality of life. Land use planning can significantly affect the ability of the workforce to reside near their workplaces. However, while the engagement of multiple stakeholders—each with distinct needs and interests—in land use planning is widely accepted, it introduces complexities into community governance. This paper introduces a multi-stakeholder indicator system designed to evaluate the impacts of land use policy adjustments on work-life symmetry within the context of Kendall Square, Cambridge, MA, responding to the question: How can land use policy adjustments be assessed through the lens of diverse stakeholder impacts to enhance work-life symmetry in community development?

Our process starts by identifying and prioritizing community stakeholders, including residents, local business owners, government agencies, developers, non-profit institutions, and workforce groups. Subsequently, the system employs land use adjustments as simulation triggers, enabling quantitative assessments of both positive and negative developmental impacts on stakeholders and their interrelationships. Its application in a case study based in Kendall Square not only validates our model but also highlights the system's potential in navigating the

practicalities of achieving housing affordability and job opportunities balance. This equilibrium is referred to as “work-life symmetry” in this study.

This research contributes to resolving the complex associations within community governance that affect work-life symmetry, with land use playing a pivotal role. Experiments conducted in a real-world community setting have demonstrated how our method can be integrated in the process of community governance: By leveraging the multi-stakeholder indicator system, users are empowered to evaluate the impact of proposed land use policies. The system interface allow users to observe the interplay of benefits among different stakeholders and the potential of policy impacts to achieve win-win outcomes across the system. Throughout this process, users have the flexibility to adjust stakeholder weights and land use plans in response to varying scenarios. The web application then presents outcomes that facilitate discussions and decision-making among planning participants, showcasing a dynamic tool for enhancing urban planning and governance. Furthermore, the developed web-based interactive tool can be integrated with a collaborative urban planning platform called CityScope, enhancing its functionality in coordinating stakeholder engagement in participatory urban planning. It could assist stakeholders in identifying areas needing targeted interventions, evaluating the effectiveness of various land use policies, and promoting sustainable, equitable, and inclusive urban development.

Finally, we discuss the limitations and future directions of the proposed system. While our tool facilitates planning decisions through quantitative methods, visualization, and interactive technologies, it requires active participation from multiple stakeholders in real-world scenarios. Our paper strives to enhance community development more inclusive through a multi-stakeholder indicator system. Although accommodating the opinions of diverse stakeholders equitably remains a challenge, our research demonstrates an innovative approach to advancing multi-party collaboration.

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Keywords: work-life symmetry, multi-stakeholder indicator system, community governance, land use policy, web application

PARTICIPATION, ACTIVISM AND CORRUPTION: REZONING WATERFRONT LAND IN GOA

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Individual Paper Presentation

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Participation, activism, and corruption: Rezoning waterfront, forest and agricultural land in Goa

Global debates on public participation in rezoning are contentious. Planners argue about the influence the public should have over rezoning decisions. There is an increasing concern of communities "overparticipating", co-opting participatory processes, and constraining public interest. Simultaneously, rezonings are government functions with a high incidence of Corruption (Gardiner, 1985, Chiodelli & Moroni, 2015).

"Overparticipation" is defined as a minority of (often-privileged) residents leveraging their power in participatory systems to hegemonize planning decisions (Lemar, 2021). This paper attempts to examine a case study of Goa India, where in 2023, the state legislature passed a groundbreaking law, enabling appointed officers to preempt local governments and rezone specific lands without any public participation requirements. Goan communities, especially Non Governmental Organizations (NGOs) participated actively in historic plans, occasionally shaping decision making in the absence of the state (Kudva, 2002). At times however, participation has been in large numbers, and confrontational (Raghunathan, 1998; Sampat, 2017; Da Silva et al 2021). A section of lawmakers criticize NGOs and activists for overparticipating, seeking to reinvent planning and prioritize 'productive' participation through this law. Under it, appointed technicians on a state planning board make rezonings under the guise of "corrections", forsaking public participation, and raising concerns over corruption and land dispossession (Levien 2018).

The paper utilizes quantitative and qualitative methods, incorporating stakeholder analysis, six in-depth interviews, participant observation, and intensive document review. The study is structured into three parts: Part I analyzes of financial disclosures from Goa's state legislators elected in 2022. By cross-referencing candidate affidavits with records from the Ministry of Corporate Affairs (MCA) and the Goa Real Estate Regulatory Authority (RERA), I reveal the business interests of state legislators. Part II features participant observation of grassroots planning resistance, focusing on the activities of the Goa Bachao Abhiyan (GBA) seeking to participate, even when statutorily they cannot. Part III dissects the non-participative rezoning data extracted from government gazettes and court documents — 172 rezonings made under §17(2) between April and October 2023—georeferenced and analyzed for land use changes, and beneficiaries business interests tracked by filings in the High Court, as GBA and local activists have challenged each rezoning in court.

Findings indicate that over half of the state assembly is directly involved in real estate, aligning with the national perception of Goa's lucrative market for retirement and holiday homes. The non-participative rezonings overwhelmingly upzoned natural or agricultural land for development, and over 80% benefited major real estate corporations. Notable beneficiaries include multinational corporations and firms owned by state legislators. The competitive market, opacity, and complicated administrative procedure have several hallmarks of corrupt land use practices (Gardiner, 1985; Chiodelli and Moroni, 2015), and the outcomes do not appear to benefit affordable, environmental or social justice goals; rather, dispossessing more land from local communities and accumulating capital with elites.

Across the world, the elite class and agenda setters don't have the same motivations as the broader public (Bachrach & Baratz, 1962; Forester, 1988; Levien 2018). Upzonings can grant windfall profits to landowners. While it can be improved, Public Participation is necessary to ensure equitable growth. Erasing public participation in Goa,

though legislation, has essentially “legalized corruption” (Kauffman and Vicente, 2011; Chiodelli and Moroni, 2015). The findings in Goa could easily be applied to other geographies, and suggest that without mechanisms to balance windfall profits, similar policies will ultimately lead to more corruption and inequity in an already harsh housing and real estate market.

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Keywords: rezoning, participation, dispossession, corruption, India

PLANNER’S PERSPECTIVES ON GROWTH MANAGEMENT TO PREVENT EXURBAN SPRAWL

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Individual Paper Presentation

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Exurban development, also known as low-density development with ties to the urban environment, has been the most substantial areal change in the US since the 1970s, and researchers project its continued increase (Vogler & Vukomanovic, 2021). Between 1950 and 2000 in the conterminous US, urban areas (defined as more than one house per acre) grew from less than one percent to nearly two percent of land, while exurban areas (defined as between 1 and 40 acres per house) increased from five percent to 25 percent of land. From 2000 to 2010, the rate of development beyond the urban fringe—typified by low-density exurban and suburban housing growth and impervious surfaces in once-rural landscapes—exceeded forecasts (Vogler & Vukomanovic, 2021). Such sprawl engenders negative externalities, which state and local governments in the US have attempted to deter through growth management policies.

Growth management combines state and local planning, regulatory, and fiscal authority to guide the pace and location of development, promoting efficient urban form. However, the deterrence effect is highly context-dependent (Ewing et al., 2022; Landis, 2021), and Fischel (2015) contends that growth management regulations are primarily demand-driven, with economically rational voters collectively choosing to use or not to use regulations based on the personal fiscal effects. Fischel's model posits a growth redistribution between the exurban, suburban, and urban areas, as follows: suburban voters are primarily owner-occupied homeowners whose homes are their most significant asset and will overuse growth controls. Development will be directed to the central city as infill,

leapfrog into exurban and rural areas, or move to another metropolitan region. Central cities, traditionally more pro-development than suburbs, now often display signs of "homevoters," as homebuyers in gentrified areas demand more regulatory controls to protect property values. In response, development leapfrogs into the exurban and rural areas, where growth controls are often weaker. Voters in rural areas generally oppose growth management regulations as they regard development as a potential future source of income from which they do not want to be restricted.

This study examined the contexts supporting successful growth management to prevent exurban and rural sprawl in twelve rapidly developing US counties. We used in-depth qualitative interviews with local government planners and measurements of the change in housing density by Census block group between 1990 and 2020. We gathered perspectives from planners regarding the amount and type of sprawl occurring in their county, their perception of residents' view on growth and growth management, and their perceptions of the most effective strategies for controlling sprawl. We then assigned each county into groups based on the effectiveness of their growth management policies, highlighting shared characteristics of the counties.

The most notable finding was that many planners did not define low-density residential development as sprawling. In these counties, low-density residential development was allowed per the zoning code and the comprehensive plan, so therefore it was not sprawling. This finding indicates a disconnect between scholarly concern over exurban sprawl and on-the-ground planning. Planners in weak growth management counties indicated that rural opposition to downzoning limited their ability to implement growth management, as predicted by Fischel's model. Counties that were able to downzone rural areas did so by addressing rural landowner's fiscal concerns, such as providing increased funding for land preservation or alternative development pathways. This finding supports Thompson's (1999) assertion that the most effective rural protection programs marry the "carrot" and the "stick" "in ways that enable the advantages of each to offset the drawbacks of the other" (p. 831). More research is needed to inform best practices for rural development that support sustainable housing, rural economies, and biological conservation targets.

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Keywords: exurban development, growth management, rural preservation, sprawl

RECONCILIATION PLANNING IN BC: A REVIEW OF OFFICIAL COMMUNITY PLANS

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Individual Paper Presentation

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British Columbia (BC), Canada, is the first and only province to enact the United Nations Declaration on the Rights of Indigenous Peoples in 2019. Since then, there has been an increase in understanding of the role planning plays in the colonization and oppression of Indigenous populations (Barry & Agyeman, 2020; Dorries & Harjo, 2020; Porter & Barry, 2016). Much of this harm has been perpetrated through strategic plans and planning tools (Albrechts, 2015; Porter & Barry, 2016). While planners are beginning to reflect on how to change their practices and mitigate colonial harm, no practical guidance is available on how planners can use strategic and statutory planning to support reconciliation action. Official Community Plans (OCPs) are long-range plans municipalities use to consider the land and community connections. OCPs do not have legislative power. However, they often set the basis for tools that do, including zoning, development permit areas, and urban containment boundaries. We argue that OCPs have the potential to be used to support relationships between settlers and Indigenous peoples because of their long-range visions for land management. Yet, more empirical work is needed to implement reconciliation in practice.

This study seeks to better understand the state of reconciliation planning in BC and the municipalities' role in reconciliation. The aim is to understand if OCPs can support reconciliation efforts,, if so, how, and in what context. To do this, we conducted a policy analysis of all OCPs (or comparable plans) (n=160) to investigate the inclusion of reconciliation-based language and initiatives/actions. We found that municipalities' reconciliation action is ad hoc and varies between municipalities. For example, 35 municipalities do not mention Indigenous peoples or lands in their OCP. While other municipalities explicitly name planning tools used to support reconciliation.

Drawing on coexistence planning literature, we developed four themes to analyze the language in the OCPs regarding Indigenous peoples or reconciliation. The themes are 1) acknowledgment, 2) engagement, 3) action, and 4) bounded co-creation. ‘Acknowledgment’ refers to inclusions such as naming the local Indigenous Nation; a land acknowledgment; recognition of the city's Indigenous history; maps that include local Indigenous Nations or Indigenous names or peoples; or reference to the local Indigenous community throughout the document. ‘Engagement’ includes community engagement strategies with Indigenous peoples and working with neighbouring Indigenous Nations’ plans. ‘Action’ includes actionable and tangible policies and strategies, such as planning tools with legislative power and how they support Indigenous priorities. ‘Bounded Co-creation’ refers to established partnerships with local Indigenous Nations or the inclusion of agreements for how local Indigenous Nations would like to be included in plan development.

There was substantial variation in the degree to which each OCP included Indigenous Peoples, and there was no specific pattern to attribute to this variation (i.e., age of plan, location, etc.). However, more OCPs included themes of acknowledgment or engagement with Indigenous Nations, while concrete actions or bounded co-creation were less common. The types of actions included also varied, examples are the use of design guidelines, bylaws, and urban containment boundaries to support reconciliation efforts. We highlight exemplary actions taken by municipalities through their OCPs with the aim of supporting planners and local governments to highlight opportunities for action within their jurisdictional context.

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Keywords: Strategic planning, Statutory planning, Indigenous, Land use planning, Coexistence planning

REGIONAL POLICIES AND PRACTICES TO IMPLEMENT POLYCENTRIC DEVELOPMENT

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Individual Paper Presentation

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Many of the larger US metropolitan regions promote polycentric development as a way of fostering livability, accessibility, and sustainability. Polycentric urban structures can increase transit ridership, promote active transportation, and decrease vehicle miles traveled (VMT) and CO2 emissions. Although many regions include ambitious polycentric aspirations in their plans, only a few follow up with rigorous implementation and see their efforts come to fruition. The topic of implementation is also widely omitted from scholarly inquiry. This research aims to explore three examples of successful implementation of urban polycentricity: Portland, Oregon; Seattle, Washington; and Denver, Colorado. Each region employs a very distinct polycentric development model, but each relies heavily on its regional governance organization for direction, guidance, and even command in the implementation process. To understand specific strategies and methods used by each region, the authors conducted interviews with metropolitan planning organizations, central cities, and transit agencies in the three regions and used qualitative techniques to analyze the interview transcripts and collected documents. As regional governance organizations play a crucial role in implementing regional plans, their policies and practices were also investigated by the authors. Based on collected data and insights, we conclude that the three regions are great examples of an advanced implementation of polycentric development. This research can be helpful to other US metropolitan regions that wish to promote polycentric development. The lessons learned from the three case studies can provide guidance and possible paths to successful implementation.

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Keywords: polycentric development implementation, regional transportation planning, metropolitan planning organizations (MPOs), growth management, Portland OR; Seattle WA; Denver CO

STATE MANDATED ZONING FOR MIDDLE HOUSING: CODE ADOPTION PATHWAYS IN OREGON

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The causes, consequences and prevalence of exclusionary zoning weighs as a critical topic facing the land use discipline today. Oregon is on the forefront of statewide zoning reform. Passed in 2019 by the Oregon Legislature, HB2001 required cities over 10K in population to allow duplexes on lots zoned for single homes, and larger cities over 25k to allow triplexes and quadplexes in addition to duplexes. While this concept sounds simple in practice, the convoluted structure of zoning codes regulating density, setbacks, height parking, and lot coverage meant that cities needed to update their zoning codes to address how duplexes, triplexes, quadplexes, and cottage clusters would be permitted under zoning codes.

There has been tremendous attention paid to zoning reform by think-tanks and special issues of academic journals like the Journal of the American Planning Association which published several articles debating the merits of middle housing zoning reform in 2020. (Wegmann, 2020; Manville, Monkkonen & Lens, 2020) Recent studies have examined the number of units built in Minneapolis after middle housing zoning reform. (Kuhlmann, 2021) However, there has been limited research by planners examining the implementation of Oregon's HB2001. (Liberty, 2020; Adams-Schoen & Sullivan, 2023)

Under Oregon statutes, cities over 25K were provided two options: 1) adopt their own land use regulations or amend its comprehensive plan by June 30, 2022, or 2) implement the state's model missing housing ordinance. The model housing ordinance was developed by a Rules Advisory Committee constituted by stakeholder groups representing local government, development, environmental and housing advocacy groups, and state agency staff. Essentially, cities could adopt their own regulations, as long as they were not more restrictive than single family zoning, or default to the model code. Our study examines three questions: 1) What policy adoption approach did local governments pursue to meet state mandates? 2) Why did cities choose to pursue their own ordinances or the model code? 3) What is the relative level of permissiveness of each city's zoning code relative to the Oregon Administrative Rules and the Model Code?

In this project, we use content analysis to score the zoning codes against Oregon Administrative Rule statutory minimums and the Rules Advisory Committee Model Code. We use interviews with local and state agency staff to examine which approach cities chose to use and why. We examine the 11 cities in the state with populations between 50K-500K.

Research has revealed that cities opted out of using the state's model code to implement their own code in accordance with state statute. On many topics, cities implementing zoning code changes that are more restrictive than the model code – potentially retaining barriers to building duplexes, triplexes, and quadplexes. This research provides valuable lessons about the value of model codes and a default approach for other states considering statewide zoning reform. This study provides insight into the role of the state in tracking and enforcing zoning changes at a local level. Ultimately, this scoring of local zoning codes will be used to examine whether cities with permissive middle housing codes produce more units of middle housing.

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Keywords: middle housing, Zoning, state mandates, comprehensive plan

UNLOCKING POTENTIAL: MID-RISE DEVELOPMENT ALONG WINNIPEG'S CORRIDORS

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Individual Paper Presentation

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Mid-rise residential and mixed-use development along arterial corridors brings significant social, economic, and environmental benefits. However, implementing such projects in mid-sized, slow-growth cities like Winnipeg presents unique challenges. This study explores the benefits and challenges associated with realizing Winnipeg's vision for densification along transit corridors, while also investigating tools available to planners and policymakers for incentivizing this urban form.

In the context of Winnipeg, characterized by 'sprawl without growth', recent political and federal initiatives have aimed to address housing shortages and promote transit-oriented development. The mayoral candidate's commitment to easing restrictions on residential development along corridors, alongside the federal Housing

Accelerator Fund (HAF), signals a shift towards densification and transit-oriented development. However, decisions about these developments should be informed by an evidence-based understanding of their likelihood of success. Towards this end, this study aims to analyze how current urban morphologies and policy regulations in Winnipeg influence the feasibility and success of mid-rise development along transit corridors, and what adjustments might be necessary to facilitate more effective implementation.

Transforming car-dependent cities towards denser development requires addressing the challenge of increasing densities along arterial corridors within existing urban morphologies and policy regulations. This study focuses on two main arteries in Winnipeg, each characterized by varying intensity and patterns of development. By analyzing these diverse contexts, the study aims to identify common trends, challenges, and opportunities that may also apply to similar corridors elsewhere in the city.

The research team will utilize GIS analysis to examine lot capacities for commercial and residential uses, considering current and proposed zoning regulations. Stakeholders, including planners, elected officials, and developers, will explore the opportunities and challenges presented by proposed changes. Developers will provide insights into the conditions required for desired development patterns, such as construction costs and land value considerations. Planners will offer feedback on available tools to encourage and shape development. This study also acknowledges the role of taxation policies in shaping the feasibility and success of mid-rise development initiatives along corridors. While city planners may integrate taxation policies into broader development strategies, economists may assess their impacts on development feasibility and market dynamics. Consequently, various stakeholders, including city planners, economists, and policymakers, may be consulted regarding taxation considerations.

This study addresses a significant gap in the existing literature by focusing on corridor intensification in Winnipeg, which is a relatively understudied area. As the city emphasizes development along these corridors, our study is timely and essential, offering insights into the opportunities and challenges involved. It is intended to have a concrete short-term impact by helping to inform changes in municipal bylaws and the shaping of development incentives. Additionally, we aim to lay the groundwork for future research that evaluates the outcomes of changes in the functioning of these and similar corridors in Winnipeg as well as other comparable cities.

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Keywords: Corridor Intensification, transit-oriented, Urban Morphology, Mid-rise Development, Land use

URBAN SUSTAINABILITY? THE STORY OF THE MELBOURNE URBAN GROWTH BOUNDARY

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Individual Paper Presentation

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Planning is a complex endeavour involving competing objectives and interests. Through analysis of Melbourne's Urban Growth Boundary (UGB), this research explores how narrative frames influence the integration of social, environmental and economic objectives (or logics) in strategic spatial planning, as components of urban sustainability. Through a single case study approach, the research explores policy processes that brought the UGB into Melbourne's strategic planning lexicon, including the initial formalization of the UGB (Department of Infrastructure, 2002). Changing its location four times in its first decade of existence, the continued expansion of the UGB provides a useful illustration of the ways strategic planning is influenced by complex institutional and governance settings, and pressures of urbanization, whilst overtly attempting to ensure growth and development is undertaken in a sustainable manner. A blistering critique (McLoughlin, 1992), reiterated decades later suggesting the "effective abandonment of the UGB" amounted to "serious failure" (Buxton, Goodman, & Moloney, 2016, p.91), points to a persistent lack of awareness of city dynamics and research insights; citizen needs, interests and desires; and private sector dominance in planning.

This research poses a central question: "Why did the UGB change so much within the first decade of its establishment?" Supporting questions focus on how different logics are articulated and at which critical decision points, whose logics are prioritized, and ultimately what is good and bad about this story (with reference to normative values of planning and urban sustainability). The research focusses on the effects of the dominant growth-dependent paradigm, and the ability of planners and other professionals to navigate uncertainty, acknowledge and negotiate value judgements, and address uneven power expressed at key decision points and between different stakeholders and communities.

In the spirit of Flyvberg's deep dive into one case study (1998), the research uses frame analysis (Schön & Rein, 1994) to understand how competing perspectives are articulated through implicit and explicitly stated values, behaviours and ideals, rendering assumptions and logics more visible, as the units of analysis. The research provides a macro lens on urban consolidation policy, and meso/micro lens through 45 stakeholder interviews of those involved in the spatial planning process for Melbourne's UGB. Stakeholder views are triangulated against frames evident in policy and regulations, to build on academic thought and practice related to urban sustainability and governance.

Findings highlight contradictory narratives about the success and implementation of the UGB, planning controls and tools utilized to embed the UGB in spatial planning practice, and equity of outcomes. There are differing perspectives on the contribution of the UGB to one of the stated aims of the UGB, to provide for more affordable housing. The research raises questions about explicit statements of planning policy, how different stakeholders understand these, and whether they can be seen as objective measures to review policy implementation. Insights are also provided about the nature of those involved in decisions, decision points, the logics drawn on in advising decision-makers on the need for urban expansion and the role of governance, public participation and understanding the sometimes unseen political imperatives.

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Keywords: urban sustainability, urban growth boundary, public participation, affordable housing, transport planning

WHAT ATTRACTS GREENING INVESTMENTS TO GENTRIFYING COMMUNITIES?

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Individual Paper Presentation

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Introduction. Green gentrification has often been described as a linear process wherein new greening initiatives implemented in underserved communities of color attract new affluent residents, often displacing the previous residents from their neighborhoods. Recent research, however, has questioned whether green gentrification is a linear process in which gentrification is a consequence of greening. Because some studies show that gentrification also precedes greening, we suggested that green gentrification might be better described as a cyclical process wherein gentrification both precedes and follows greening. Yet the mechanisms through which large green space investments are targeted to gentrifying communities are understudied, a gap we begin to address in this study.

Research questions. What are the factors that attract large green space investments to gentrifying communities? Specifically, what are the roles of gentrifiers, longtime residents, elected officials, developers, and environmental nonprofits in this process?

Methods. We use comparative case studies of the Bloomingdale Trail in Chicago, a 2.7-mile elevated greenway, and Los Angeles River revitalization in Northeast Los Angeles, which includes several projects. Both greening initiatives include new large green spaces in neighborhoods that were experiencing gentrification as these projects were conceived. We conducted interviews with 20 professionals and advocates involved in the two green space projects (11 in Chicago and nine in Los Angeles), and we reviewed relevant documents about the greening initiatives in these sites. Interviewees in each site have experiential knowledge of each respective local greening initiative as it was being planned. Interview questions focused on to what extent gentrification attracted green space investments and the roles of different actors in advocating for green spaces (e.g., gentrifiers, politicians, real estate developers). We analyzed the interview transcripts and documents about both initiatives using constant comparative analysis, reaching theoretical saturation.

Results. We find marked differences in what has attracted green space investments in the two sites. In Chicago, the Bloomingdale Trail started as an equity-oriented project to address disparities in green space access and gained momentum as gentrifiers organized to advocate for the project, rendering the project more feasible due to private investments. The Bloomingdale Trail was built when a green growth machine coalition led by a strong mayor took over the reins and used a skilled environmental nonprofit to fundraise and implement the project. In Los Angeles, Latino grassroots advocacy and politicians drove the early green space projects to revitalize the river. Yet, as gentrification progressed, larger, charismatic projects were completed (Los Angeles State Historic Park) or planned (a 100-acre park at Taylor Yard), the project governance became more top-down and catered more to the interests of gentrifiers and developers. In both sites, affordable housing policies were mostly reactive to ongoing gentrification, as cities failed to tackle the issue proactively. Overall, our findings show that the mechanisms attracting green space to gentrifying communities might be affected by local politics, power dynamics, and governance systems, with top-down planning led by mayors generally accelerating gentrification.

Implications. Our findings suggest that planners should help underserved communities control greening projects to avoid the projects becoming highly publicized, large redevelopment initiatives that do not serve the values and interests of the community. Community control can also help ensure that outreach activities for greening initiatives include discussions about broader equitable community development goals (e.g., housing, workforce). Additionally, to facilitate equitable investments, park equity policies need to dedicate some green space funding for low-income communities that are not gentrifying, where the risk of subsequent green space-induced gentrification might be relatively low.

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Keywords: Green space, Gentrification, Environmental justice, Growth machine, Urban sustainability

WHO BENEFITS FROM NEGOTIATED COMMUNITY BENEFITS IN BOSTON, MA?

Abstract ID: 1108.0.0.384.2024

Individual Paper Presentation

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This study examines the role of negotiated community benefits (NCBs) in promoting spatial and social equity in urban development projects in Boston, MA, from 2014 to 2021. Considering the increasing reliance on private sector financing for infrastructure and community benefits (Smolka, 2013), this research investigates the redistribution of NCBs and their alignment with equity (Wolf-Powers, 2019; Fainstein 2012) and comprehensive planning goals.

Boston has been in a building boom since 2014. About 60% of the development projects with known board approval dates were approved in 2014 or later (Author's calculation). With a strong real estate market in its favor, Boston has been using both prescribed schedules and the negotiated process to capture community benefits (Kim 2020a). Boston imposes obligations on real estate developers in exchange for permission to build a large project otherwise prohibited by local zoning regulations. Since 1998, the majority of the development projects consisted of large projects which were mainly concentrated near Boston's commercial core. Three key questions guide this research: What types of NCBs were negotiated pre and post the comprehensive plan? How has the spatial distribution of NCBs among Boston neighborhoods changed over time? How has Imagine Boston 2030—Boston's first comprehensive plan since 1965- influenced the types and spatial distribution of NCBs?

Using a content analysis approach, we track the incidence, nature, and distribution of NCBs in large-scale development projects. Preliminary findings suggest an imbalance in the distribution of NCBs, with approximately 80% of projects located in moderate to high-income neighborhoods. However, the primary beneficiaries of NCBs are multi-faceted and not necessarily from high-income brackets. The benefits are intended to serve very diverse groups, often with the aim of reaching those who need them most. Preliminary results also indicated a comprehensive plan's role in facilitating some of the type of NCBs, with less emphasis on the location.

This research contributes to urban planning policy by highlighting the need for a reimagined approach to zoning and development negotiations that prioritizes equity and redistribution. The findings from Boston's experience offer valuable insights for other cities to review and reform their strategies for negotiated benefits, contributing to a broader commitment to justice and inclusivity in urban development.

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Keywords: Negotiated community benefits, Land value capture, Redistribution, Spatial equity, Social equity

CLIMATE ACTION PLANNING EVALUATION: AN INTEGRATED APPROACH

Abstract ID: 1110.0.0.788.2024
Research-in-Motion (RiM)

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In the face of intensifying climate change impacts, the 2023 IPCC report urges policymakers to foster climate resilience by integrating adaptation and mitigation efforts. Municipal plans and plan-making processes can advance integrated climate resilience (Bucchin & Tuley, 2022). Through cross-sectoral visioning, inclusive collaboration, fact-base preparation, and policy implementation, plans can reduce greenhouse gas emissions (mitigation), limit the cascading impacts of extreme disasters (hazards planning), and prepare communities against slow-onset and future climate impacts (adaptation). Yet, empirical research on climate change tends to be siloed into individual hazard types, adaptation, or greenhouse gas emissions mitigation. The few studies that do analyze the interactions between adaptation and emission mitigation tend to be either conceptual (Reckien et al., 2023; Hamin & Gurran, 2009) or binary assessments on whether plans include mitigation and adaptation (Grafakos, et al., 2019), and they rarely delve into specific hazards. Consequently, we know little of the state of progress on integrated climate action planning and even less about underlying tradeoffs that might impede progress.

To address this gap, we conducted a systematic literature review and developed the Climate Action Planning Evaluation (CAPE). CAPE evaluates the planning process and policies reported in plans and analyzes the degree of integration across mitigation, adaptation, and multi-hazards planning, focusing specifically on synergies and tradeoffs. We pilot CAPE during the preparation of Pima Prospers, an update to Pima County's (Arizona) comprehensive plan. Opportunities to advance integration are discussed through two questions:
1. To what degree does the planning process uniformly integrate emissions mitigation with climate adaptation and multi-hazards mitigation?
2. To what degree do policies uniformly advance emissions mitigation with climate adaptation and multi-hazard mitigation?

Using standard content analysis procedures, we analyzed three versions of the plan- the old version, the draft, and the final plan. To a handful of longitudinal plan evaluations (Lyles et al., 2023), we add new insights on the evolving attention to mitigation broadly, three emissions scopes, adaptation broadly, and four relevant hazards- heat, drought, wildfire, and flood. Preliminary findings indicate successes in recognizing mitigation and adaptation broadly. In the plan-making process and policy catalog, we find opportunities to improve attention to climate

mitigation and emission scopes. However, considerations of synergies and tradeoffs across climate mitigation, adaptation, and hazard types are low. These findings pave the way for more empirically informed collaboration with stakeholders on how a comprehensive plan can advance integrated climate action. The CAPE framework offers a systematic method to comprehensively analyze the state of progress on integrating climate mitigation with adaptation and multi-hazards mitigation planning. In addition to advancing local climate action planning, this research methodologically contributes to broader conversations on the mainstreaming of development and climate resilience.

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Key Words: climate action planning, integrating climate mitigation and adaptation, multi-hazards, plan evaluation, case study

GREEN INFRASTRUCTURE DECISION-MAKING IN THREE DIVERSE US CITIES

Abstract ID: 1110.0.0.890.2024
Research-in-Motion (RiM)

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Communities throughout the U.S. are increasingly making green infrastructure a priority through investments to address growing climate risks and provide other social and environmental benefits (Grabowski et al., 2022). Although vegetated green infrastructure – networks of vegetated areas such as bioswales, rain gardens, and street trees – is widely acknowledged as essential and versatile infrastructure, its implementation often lacks strategic planning to advance equity and promote multifunctionality (Matsler, et al., 2022). Expanding green infrastructure is a key focus for many US cities, as well as the most commonly identified strategy for addressing heat in cities across the US (Meerow & Keith 2022). While many studies have highlighted the need to proactively mitigate and manage climate impacts or examined the potential for green infrastructure to support these efforts, limited research examines the governance structures, processes, and knowledge institutions that influence green infrastructure planning decisions and implementation. The literature that does exist points to weak approaches for achieving or evaluating multifunctionality and equity, but it is still unclear why these challenges persist and how data and tools can improve green infrastructure planning.

This research helps to fill a gap in current knowledge of heat and green infrastructure governance structures by combining plan and policy document analyses and interviews with key local decision-makers to conduct an in-depth study of green infrastructure governance institutions and processes in three US cities that represent contrasting social, environmental, and green infrastructure contexts: Phoenix, Arizona, Boulder, Colorado, and Detroit, Michigan. Our analysis focuses on the actors, information, and formal and informal processes for deciding where to develop green infrastructure in the city, what type of green infrastructure to use, and what benefits to prioritize and monitor, and how implementation is prioritized. The results provide more insight on what governance processes are influencing green infrastructure planning and how these decisions are made. For example, in Phoenix green infrastructure decisions-making spans many departments, even though there are designated practitioners who work solely on green infrastructure investments. This research can inform how decision-support tools for stakeholders may help in targeting green infrastructure investments where multiple functions, such as mitigation of stormwater and heat, are most needed and where they have the greatest potential to improve human health and well-being

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Key Words: green infrastructure decision-making, green infrastructure, stormwater, heat mitigation, spatial planning

Track 9 – Food Systems, Community Health, Safety

Track 9 Individual Paper Presentations

(DIS)TRUST IN TAP WATER: HOW EMBODIED EXPERIENCE SHAPE HOUSEHOLD PERCEPTION

Abstract ID: 1108.0.0.978.2024
Individual Paper Presentation

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Flint, Michigan's aftermath has reshaped how people around the United States perceive the safety of their water (Pierce & Gonzalez, 2017; Wilson et al., 2022). Through 91 semi-structured interviews with residents of Orange County, California, from a variety of demographic groups and contexts, we explore (1) how trust is built through residents and their utilities and (2) the methods residents' perceptions and embodied experience of their tap water influence trust and behavior usage. Previous studies have examined how communication and perception can build trust in residents' attitudes toward their tap water (Grupper et al., 2021; Weisner et al., 2020).

The interview respondents represent seven water utility service areas, consisting of small and large utilities, serving low- and high-income populations, communities of color, limited English speakers, and differing governance structures - municipal, special district, small private, and investor-owned utilities. This diversity allowed us to examine multiple perspectives and explore how experiences and trust-building processes can differ across service populations' income, utility size, and governance. Preliminary results indicate that 1) proactive and consistent communication plays a significant role in building trust with service populations; 2) residents who have had poor water quality experiences with tap water have negative perceptions of tap water, trust their utility less, and more heavily rely on bottled water. Based on this data, we develop recommendations on how water utilities can better facilitate consumer trust, including updating the modes of communication for diverse demographic groups.

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Keywords: Tap water, Communication, Trust, Perception, Embodied experience

311 REQUESTS AS COMMUNITY-GENERATED BIG DATA TO PLAN FOR HEALTHY CITIES

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Individual Paper Presentation

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A healthy city is greater than the sum of health in its parts, the urban and the urbanites. Leonard Duhl, an advocate of the 20th-century Healthy Cities movement, pioneered a system perspective which characterizes the city as a "health organism" that responds to its developmental needs and modifies itself to meet the changing requirements of life (Duhl 1988). Today, emerging spatial data enables us to revisit his vision with unprecedented empirical resolution. However, in doing so, it also raises the need for new theoretical and methodological instruments.

The "311" is a municipal service in the United States for citizens to access information, report non-urgent issues, and request assistance through phone calls, mobile apps, and online platforms. From reports of illegal dumping to a request for fallen tree removal due to the storm — it communicates a rich and nuanced spectrum of local concerns that proxy the dynamic health statuses of urban communities and their inhabitants. With long time series, multi-city coverage, and by-street-and-second granularity, these naturally occurring public records offer a unique opportunity for the scalable, sustainable assessment of health determinants in the built environment as a social process, otherwise hard to extract from conventional data sources. Like a civic stethoscope, 311 captures the “pulse of the city” with the everyday eyes and ears that sense and compose it (O’Brien 2018).

Our study marks a first step in coupling place-making and city planning through urban analytics with a relational approach. To this end, we propose a generalizable street segment-based spatial analysis framework for cities with 311 services. Namely, it examines the distribution and emergence of health trends at the city scale through 311 data, while preserving the diversity and hyper-locality of the original requests. First, we recategorize request categories as primarily driven by natural or social forces, and the latter are further remapped into infrastructure and detritus calls (Wheeler 2018). Then, we interpret street-level dynamics based on four metrics: (1) total request volumes, (2) the main source of built environment concerns characterized by four quadrants–natural or built and infrastructure or detritus, (3) top detailed driver of health symptoms, and (4) municipal response efficiencies. Next, we apply the framework to 30 U.S. cities with 311 data in 2023, examining each individually to explain spatiotemporal distributions and comparing horizontally to summarize recurring emergence patterns into descriptive street-symptom archetypes.

Field wisdom inspired the conceptualization of our methodology, where community members report avoiding street segments with cracked sidewalks, dumped trash, or vandalized walls. Collectively, theories in sociology and urban design informed our development of analytical metrics. Specifically, the city’s imageability and legibility, as

described by Kevin Lynch, are joined with the broken window theory to interpret the sense of place and ownership among pedestrians and residents. Built on this framework, our street-level spatial analyses serve as a guide for small-scale, place-based interventions.

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Keywords: Healthy Cities, 311 Requests, Urban Analytics, Social Determinants of Health, Urban Design

ARE THOSE IN BIGGER CITIES MORE ACTIVE, BETTER FED, FITTER, AND HEALTHIER?

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Individual Paper Presentation

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The links between health and the urban environment have been extensively studied at the neighborhood level. We examine urbanization on a more macro scale, looking at whether the size of a metropolitan area has any relationship with active travel, recreational exercise, diet, obesity, and health.

Our data are from the American Time Use Survey, which collects data about daily time spent on activities. These include active travel for utilitarian purposes (walking, bicycling, etc,) and also recreational physical exertion (tennis, basketball, running, yoga, dancing, dog walking, etc.). The ATUS also collects body mass index, as well as self-reported health. In addition, in one year the ATUS asked respondents to rate the quality of their diet. Metro area population is assigned in seven bins, with the smallest being nonmetropolitan and the largest being metro areas of over 5m persons. We take the log of population. We also employ a suite of demographic and geographic control variables. There are roughly 68,000 adults in our overall sample. We utilize linear OLS regression, ordered probit regression, and structural equations modeling.

In our preferred models (with demographic but not geographic controls) we find significant associations between living in a larger city and all of our dependent variables of interest. A doubling of metro area size is associated with about 0.35 more minutes per day of active travel, as well as 0.5 more minutes per day of recreational physical activity. Average marginal effects predictions suggest a probability of .503 that residents of a metro area of 8m people have an “excellent” or “very good” diet, versus .479 for residents in an area of 50k. Doubling metro size is

associated with a reduction in BMI of 0.12. Those in a city of 8m are predicted to have a probability of being in "excellent" or "very good" health of .578, versus .546 for residents in an area of 50k.

These results persist in models without demographic controls, as well as models that add geographic variables: location in a principal city, suburbs, or small metro area; Census region; and residence in the New York metropolitan area (which we include since our data show unusually high levels of walking for residents of principal cities in New York). Our results also hold up when excluding non-metropolitan residents and only examining dwellers in areas with 100,000 persons or more.

Structural equations modeling suggests that metro area size affects health through both direct and indirect pathways. The healthy correlates of big city living that we find – more frequent active travel and exercise, better diet, and higher incomes – are all associated with lower BMI, and better health. However, most of the association between metro size, BMI, and health is direct, so other factors must be at play. Further, since our models control for demographics, we can rule out that demographic differences between small- and big-city dwellers, for example in terms of race/ethnicity or education, are causing the effects we observe.

Some possible explanations for our findings include higher densities and more walkable environments in larger metro areas; more prevalent, more specialized, and higher-quality recreational facilities in larger areas; and more varied and healthy food shopping options in larger cities. But our results suggest there must be more explanations: these might include higher-quality big-city medical care (e.g., more varied medical specialists and advanced health facilities), and a perhaps a greater cultural focus on healthy living in larger places. However, further research will have to investigate these and other possible causes. Our findings suggest planners might encourage the growth of cities to promote public health.

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Keywords: Obestity, Walking, Health, Cities, Diet

BUILDING HEALTHY COMMUNITIES THROUGH PLACE-BASED SMARTPHONE INTERVENTIONS

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Individual Paper Presentation

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Background/Purpose

Recent smartphone applications serve as handy tools for individuals with limited access to healthcare, providing essential services and bridging the gap in medical care. Numerous studies have confirmed that health and fitness applications have a positive impact on physical exercise, playing a crucial role in fostering an active lifestyle. These applications employ various strategies based on behavior change theories to promote physical activity among users. Meanwhile, mobile apps for physical activity often struggle with sustaining user engagement, frequently being abandoned after just a few uses. Some studies have suggested that integrating context, meaning, community, and partnerships could be critical to fostering sustainable user engagement with mobile apps.

Currently, mobile apps mostly leverage online-accessible interventions and do not adequately integrate strategies that enhance physical activity by connecting with users' local living environments. Walk-on, a smartphone application in Korea, stands out as a successful app for promoting physical activity, offering online communities that are tailored to the geographical locations of its users. The app enhances walking activity by providing place-based interventions targeted at communities formed by users at the city and neighborhood levels. We aim to explore the potential of place-based strategies and mobile apps in sustaining physical activity and enhancing app usability, using the case of Walk-on.

Methods

We conducted a mixed-methods study on user feedback (n=3,678) for the Walk-on, examining app efficiency, user experience, and satisfaction from the user's perspective. The analysis was conducted in three stages: First, Topic Modeling was used to identify overall trends in user experience. Second, thematic analysis was conducted to analyze the functions and features provided by the Walk-on app, extracting types of place-based interventions. Third, detailed user comments on place-based interventions were examined to validate the effectiveness of these interventions.

Results

User feedback was categorized into five themes: "Step Count Measurement (27.7%)" and "Wearable Device Integration (21.4%)" emerged as the most prominent. These were followed by "Battery Consumption and Installation Errors (19.7%)", "Health and Exercise Benefits (17.5%)", and "Version and Friend Management (13.8%)". User feedback primarily focused on app usability issues, expressing inconveniences caused by various technical errors. However, users also reported experiencing improvements in health habits and increased physical activity by regularly checking their step count, setting target amounts, and utilizing the community features of the app.

Six types of place-based interventions were identified: "Goal setting linked to the local environment", "Common goal-setting with community members (donation)", "Rewards linked to local events", "Information (knowledge) about local places/routes for walking", "Social comparison/competition within the local area", and "Social network extended to the offline community". These strategies support individuals in setting exercise goals by utilizing the local physical environment and enhancing exercise opportunities by coordinating with local events. They provide users with meaning beyond personal physical fitness through connections with meaningful activities within the community. Furthermore, they offer opportunities to expand online communities into offline communities, thus enhancing the sustainability of exercise activities. Users receive motivation for exercise and feel a sense of challenge through these features. They also express the effectiveness of consistent daily management and the enjoyment derived from these features.

Conclusions

We have confirmed the user satisfaction and potential of place-based interventions within the context of public health. Integrating a sense of place or utilizing well-equipped local spaces for physical activity can effectively promote the health of local residents. While previous research on mobile health promotion apps has mainly focused on the individual's behavioral psychology, this study highlights the potential of mobile apps from an environmental psychology perspective to enhance exercise effectiveness through integration with the local environment.

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Keywords: physical activity, community health, place-based, smartphone app, user feedback

CARE PLACES FOR IMMIGRANTS LIVING WITH DEMENTIA, CAREPARTNERS + CAREWORKERS

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Individual Paper Presentation

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Background: Dementia is characterized by degenerative and progressive symptoms like impaired short- and long-term memory, difficulty navigating space, inability to focus, and issues with communication, reasoning, depth perception and risk judgement. For people living with dementia (PLWD) who live in neighbourhoods (61% in Canada), we know these areas can play a role in their physical, mental and social wellbeing. For PLWD, their

informal care-partners (spouse, child) play a significant role in their lives (only 13% live alone), often along with professional care-workers who visit them in the community. Care-partners' and care-workers' wellbeing is tied to neighbourhood experiences, like social support networks and access to infrastructures like healthcare, social services, public space, food, public transportation and housing (Alhasan et al., 2021). However, in the literature on dementia and the built environment, less is known about carepartners and "how the built environment helps/hinders their feelings of support in their caregiving responsibilities and lives overall" (Biglieri & Dean, 2022, p. 12). Even less is known about the neighbourhood experiences of gender-racialized careworkers facing labor precarities and poor mental wellbeing (Breen et al., 2022). The ways in which people living with dementia (PLWD) care and are cared for in the city is not fully understood. Research with non-white and immigrant PLWD and their care neworks is nascent (Groleau, 2022), with virtually no research examining their neighborhood experiences (Ward et al., 2020) much less in under-resourced suburban areas. Thus we ask: What are the built and social care networks for immigrants living with dementia, their carepartners and careworkers in the highly diverse inner suburb of Scarborough?

Methodology: We recruited immigrants living with dementia, care-partners and care-workers (n=15) in Scarborough. Scarborough is an inner suburb of Toronto, where 73% of the population identifies as racialized and 57% immigrants, part of the 'in-between city' containing a mix of built forms and housing typologies (low-density subdivisions, high-density apartment towers, ethnic retailing, industrial uses), and diverse social relations, making it an ideal location to study (Keil, 2021) . Part of a larger project on care in the suburbs, we draw on the results from mapping techniques, categorizing each of the place-relations mentioned by participants by type (administrative, self-care, medical, social, cultural, spiritual, recreational, physical activities), transportation mode, distance from home and accompaniment, type of support (emotional, instrumental, social, cultural), type of social relationship (neighbours, shopkeepers, family, doctor, strangers, etc.), and the type of care relationship according to Bond & Barth (2019) (care receiving, caring with, etc.).

Findings: We provide a detailed analysis of seven categories of place-relations associated with all members of the triad–places each member of the triad goes to alone, places members of the triad go as a dyad, and finally places all three members of the triad go together. This is to understand who or what infrastructures care or do not care for them, and how these complexities intersect between the categories of places. We reveal complex, fluid, and changing patterns of mobility and places of care shaped by built and social environments that enable/limit care and support at all scales, as well as its impacts on perceptions of inclusion and belonging in a car-dependent culturally diverse area. We demonstrate how diverse caring places and relationships shape perceptions of wellbeing for the triad – from culturally appropriate grocery stores/restaurants, to self-care places like beauty salons, places of worship and places for recreation and social interactions (like the park or bench outside their apartment). Importantly, we document who and what places also care for carepartners and careworkers - painting a picture of the caring complexities in suburban spaces and identifying potential planning policy and program interventions.

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Keywords: care, dementia, suburb, wellbeing, neighbourhood

CHARACTERIZING THE DYNAMIC NATURE OF FOOD ENVIRONMENTS IN THE UNITED STATES

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Individual Paper Presentation

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Current and historical factors contribute of poor-quality food environments, though the primary driver is poverty: communities lack the income to generate economic demand and therefore do not appear as stable investment opportunities for food retailers [1, 2]. Furthermore, the food retail landscape has changed in recent decades, including the entry of new non-supermarket formats, and retail store consolidation, which could disproportionately affect disadvantaged communities [3]. Critically, traditional measures of the food environments tend to be static and do not capture these kinds of changes, nor the persistence of particularly high or low-quality food environments over long periods of time. While previous studies on the durability of food environments over time have focused on particular cities or regions [4], broader approaches are needed to explore potential macro-level patterns. To describe the dynamic nature of food environments, this study leverages USDA's historical SNAP retailer database to assess tract-level changes in the availability of different types of SNAP-accepting food retailers between 2000 and 2020. The database summarizes all retailers which have been authorized to accept SNAP, including information about the date(s) when retailers began (and in some cases stopped) accepting SNAP, street address, and category of food retailer (i.e., supermarket, convenience store, farmers market, etc.). Using the OpenStreetMap Nominatim API, store addresses were geocoded and linked to 2010 Census tracts. Using these boundaries, monthly food environment summaries were generated, including the counts of each category of food retailer, and the Modified Retail Food Environment Index (mRFEI), a CDC-developed measure that indicates the proportion of "healthier" to "less healthy" food retailers in each tract. To investigate the underlying socioeconomic trajectories of tracts, all 5-year ACS estimates of median household income and household SNAP participation (2006-2020). Recognizing that retailer's economic incentives may also be driven by local conditions, these figures were placed into a regional context by assigning each tract's observation a decile ranking within its metropolitan area. Tracts that remain in the top/bottom two deciles throughout all time periods are labelled as "persistent," such that dimensions of persistent socioeconomic advantage (i.e., high income and low SNAP participation, relatively to the metro area; n=4462) and disadvantage (i.e., low income, high SNAP; n=6287) can be differentiated. Early findings clearly identify food environment differences between these tracts, such that the most disadvantaged tracts (persistently high SNAP, low income; mRFEI=0.29) had, on average, substantially lower quality food environments than the most advantaged tracts (persistently low SNAP, high income; mRFEI=0.68). Besides these more stable high and low-quality food environments, additional exploration of tracts which experience

substantial change over time (i.e., “upgrading” or “declining” [5]) will be pursued with multivariate mixed effects models. Ultimately, this paper will illuminate where food environments have and have not changed over the last two decades, which socioeconomic factors are most closely associated with those changes, providing additional insights into the root causes of unequal built environments.

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Keywords: food environment, Supplemental Nutrition Assistance Program, neighborhood change, poverty

CHILDHOOD DEVELOPMENT & COVID-19: MITIGATING EFFECTS OF OUTDOOR ACTIVITIES

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Individual Paper Presentation

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The COVID-19 pandemic has had profound and widespread negative effects on various aspects of human life across the globe. Notably, significant disruptions have been observed in mental health. As physical distancing became a necessary precautionary measure during the pandemic, coupled with lockdowns that restricted access to recreational activities and disrupted essential daily routines, feelings of self-isolation, loneliness, and depression may have intensified. A scientific brief released by the World Health Organization (WHO) highlighted a concerning trend: the global prevalence of anxiety and depression increased by 25%, while insomnia saw a staggering 33.3% p rise in the first year of the pandemic. Research suggests that exposure to nature, whether through passive means or active engagement in physical activities, may help alleviate declining mental health. Even just proximity to green space and view toward the naturalistic scenes have been reported being associated with improved mental conditions in various types.

While disruptions in daily life are particularly critical for early childhood development, studies on this topic have been relatively scarce. Factors such as reduced outdoor physical activities, limited outdoor playtime, decreased social interactions, and increased exposure to media may negatively impact diversified aspects of childhood development, including motor skills, language acquisition, cognitive development, and social skills. The precise

effects of the pandemic on childhood development and the potential buffering effect of recreational facilities, including green spaces, have not been fully elucidated using medical data.

Against this backdrop, this study aims to examine effect of COVID-19 pandemic on childhood development, and the mitigating effects of leisure-time physical activity in outdoor facilities, such as outdoor playgrounds, parks and natural green space. Our hypotheses are as below.

H1) In the pandemic, the childhood developmental disorder has increased.

H2) The increment of the childhood developmental disorder is mitigated by the outdoor leisure activities.

We conduct a two-fold analysis; First, using change point detection (or segmented regression), we suggest whether the period of COVID-19 saw substantial increment of the hospital visits related the symptoms “intellectual developmental disorders (F80)”, and “behavioral and emotional disorders typically diagnosed in childhood and adolescence (F90)" in comparison with more general mental disease groups. We also compare the service usages of other types of diseases or symptoms those are known to be less affected by the pandemic; cardiovascular disease. Second, using Structural Equation Model, we examine the mitigation effects of the outdoor leisure activities to the children’s developmental disorder.

We use the proxy variables indicating the areas and counts of facilities that support such activities in the face of the social distancing rules. The primary dataset is the information of healthcare services usage, as the number of visits to healthcare facilities in a day, aggregated to a ward (Dong, in Korean) unit provided by Health Insurance Review and Assessment Service. The study site is Seoul Metropolitan Area, in South Korea, wherein more than half (50.5%, as of 2023) of the population in the country is concentrated. The study period is from Jan. 2018 to Dec. 2022, containing about two years before pandemic, and three years after pandemic. The 2022, the last year of the study period, is deemed as the beginning of the post-pandemic period, as most of the preventive rules have been lifted.

This study will shed light on the effects of pandemic on the child development disorder, and press the importance of the outdoor leisure activities in mitigating its negative effects. This study will also provide useful reference to urban and rural planners on a mission of providing healthy environments, particularly to the vulnerable groups such as children.

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Keywords: Childhood development disorder, COVID-19, Outdoor leisure activities, Structural Equation Modeling, Segmented Regression

CHOOSING TO WALK TO GROCERY STORES: INFLUENCES AND BEHAVIORAL TRANSITION

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Individual Paper Presentation

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The promotion of walking for routine tasks, such as grocery shopping, is increasingly recognized as vital for public health, urban planning, and environmental sustainability. Walking, a key physical activity, significantly lowers the risk of chronic conditions, including cardiovascular diseases, obesity, and type 2 diabetes. However, the determinants of individuals' attitudes towards this practice, and how these attitudes influence their decision to walk to grocery stores, remain unclear. This research aims to fill this knowledge gap by investigating how attitudes mediate the relationship between personal, social, and environmental factors and the behavior of walking to grocery stores.

The research conducted in Orlando, FL, utilized an online survey (sample size = 517) to assess multiple factors impacting walking to grocery stores. These factors encompassed residents' proximity to grocery stores, socio-demographic attributes, access to public transportation, the quality and availability of pedestrian-friendly routes or bike lanes, social influences, and individual attitudes towards walking. Structural equation models were used to perform the analysis.

The findings revealed that attitudes significantly mediated the behavior of walking to grocery stores. Factors such as lower-income levels, positive social influence, proximity of grocery stores within a walkable distance, and the high quality and availability of pedestrian routes correlated with enhanced enjoyment and reduced attitudinal barriers, subsequently leading to a higher propensity for walking to grocery stores. Conversely, higher levels of car ownership and pronounced concerns about traffic safety diminished enjoyment and heightened attitudinal barriers, thereby lowering the likelihood of walking to grocery stores.

The findings highlight the importance of attitudes in the decision to walk to grocery stores, suggesting policy interventions such as enhancing pedestrian infrastructure for safety and enjoyment, supporting lower-income communities with better access to nearby grocery options, promoting policies to reduce car dependence, and leveraging social influences through community programs.

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Keywords: Walking, attitude, built environment, structural equation model

ENVIRONMENTAL AND COMMUNITY BENEFITS OF URBAN GARDENING IN LONG BEACH, CA

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Individual Paper Presentation

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Throughout California, communities of color are disproportionately located in areas lacking access to grocery stores and green space (Horst et al., 2017; McClintock & Cooper, 2009).

Community gardens are land collectively gardened by a group of individuals to grow food. These spaces are examples of community-driven development, often with a grassroots organizational structure. There is evidence that community gardens increase access to green space and food, while also strengthening opportunities for socialization and the exchange of resources and knowledge (Audate, et al., 2019; Siewell et al., 2015). Community gardens can be an empowering tool to address health disparities and develop inclusive public spaces. This study aims to answer the following research questions:

1. How can community gardens reduce greenhouse gas emissions?

2. What are the potential benefits of community gardens for advancing social and racial equity in urban communities?

These questions were collaboratively developed with California Air Resources Board (CARB), who generously funded this project. This study will summarize the first phase of research focusing on community gardens in Long Beach, California. Over 450,000 people reside in the City of Long Beach, located in Los Angeles (LA) County of Southern California. As of 2024, Long Beach has about 28 community gardens, about 22% of the county's estimated 125 community gardens. These gardens serve a diverse population, as over 70% of Long Beach residents identify as non-White. The major racial/ethnic groups represented are Hispanic/Latino (44.1%), Asian (12.7%), and African American (12.0%). About 11.3% of the population identifies as two or more races (U.S. Census Bureau, 2022). However, Long Beach's communities of color are also at higher risk of experiencing food insecurity and health conditions such as asthma, diabetes, and hypertension (City of Long Beach Department of Health and Human Services, 2019).

The objective of this study is to better understand the benefits of community gardens. We examined community gardens through an environmental justice lens and observed if they were geographically located near food deserts and areas that lack green space. From 2023-2024, surveys and interviews were conducted with community garden leaders to collect data related to the agriculture site, management, transportation, health, environment, and community engagement. Over 20 community garden leaders participated in the pilot study. The community gardens included in this research served about 700 adults (including people of color, seniors, and disabled

gardeners). Our findings suggest that community gardeners were empowered to enrich their environment, improve physical and mental health, and increase their agricultural knowledge and skills. Community gardens in Long Beach transformed communities and their residents by improving underutilized or contaminated spaces, such as a former oil field and dumping site. Community garden leaders advanced social equity and food justice by building gardens in urbanized areas, offering free or low-cost membership, and donating produce to local food pantries for low-income residents. Gardens also offered space for public workshops and classes. Surrounding neighborhoods also received environmental benefits as gardens improved air quality and reduced greenhouse gas emissions, by planting trees and edible crops on 0.06 to 8.5 acres of land. Participants identified hosting volunteer events and forming partnerships with community organizations as best practices for gardeners to build social capital and learn about new cultures, languages, and cuisines. Challenges of maintaining gardens included lack of funding, safety concerns with unhoused people seeking shelter, and conflicts with the city and private landowners. Gardeners called for cities to support community gardens by protecting and supporting their right to use the land and provide social, environmental, and health benefits.

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Keywords: urban agriculture, food justice, green space, environmental justice, equity

FOOD AS INFRASTRUCTURE: REIMAGINING THE ROLE OF COMMUNITY GARDENS

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Individual Paper Presentation

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Community gardens serve as a multidimensional space that facilitates recreation and social cohesion, contributes to health and well-being, and to some extent improves food security among low-income populations (Raj et al 2017). During COVID-19, gardens became lifelines for socialization, and bolstering food security across North America (Kingsley et al. 2022). The City and County of Honolulu (CCH) is home to one of the earliest iterations of community garden programming, that began in the 1970s (Strubeck 2022). However, over the decades, the community garden programming and its associated regulations and even the sprouting of new gardens has quietly evolved with minimal involvement and oversight from the City and County (Strubeck 2022). Post-pandemic, recognizing community gardens as critical public infrastructure, the CCH has a renewed interest in revitalizing and growing the community garden programming.

This study looks at the varied experiences of gardeners across 10 community gardens that are part of CCH's portfolio to understand how these spaces are being utilized, and to understand differences in urban, sub-urban, and rural garden networks. We juxtapose our exploration of community gardens in Hawaii against the vast majority of literature on the subject that comes from spaces where there is more land and less density (Detroit, Buffalo, Cleveland) to inform planning and policy for higher density coastal cities that may not have as much land available to prioritize gardens. While tensions around land are evident even within communities with higher amounts of land available, these tensions we hypothesize are different in places like Hawaii where land is a limited commodity.

We apply an exploratory mixed methods research design to understand garden use and gardener experiences across the City and County's 10 community gardens. The study relies on survey data to: (1) understand the membership demographics, gardening practices, and produce utilization; and (2) to identify the strengths and weaknesses of the program and recommend improvements to ensure equitable expansion and enhanced gardening experience. This study focuses on current members of any one of the 10 City and County run community gardens on the island of Oʻahu: approximately 1,500 garden members spread across the island. Gardeners were recruited to participate in the study at monthly garden meetings, through emails sent out by the garden presidents and random recruitment at the garden through flyers that were posted at all 10 gardens. The survey had a 26.5% response rate with 398 respondents across the 10 gardens.

Gardeners who responded to the survey are a diverse population in terms of race, ethnicity, and age. A majority of gardeners report household incomes below the County's median household income and report that being able to grow food in the garden helps them on multiple dimensions of food security. Even though the garden infrastructure is provided by the City and County to mainly function as a recreational space, user perceptions and experiences are telling of the critical role these green spaces and their availability play in the lives of both the urban and rural gardeners - especially with regards to food security. The food security aspect is of concern given most of our gardeners are middle-aged and older adults, who may not have other means of increasing their income streams. While not included in this study we also know that Honolulu has some of the longest waitlists for garden plots and it might take years for individuals on waitlists to get a plot. When we juxtapose the high levels of demand for garden plots against the food security benefits, it paints a substantially more complex picture than the mission and vision adopted by the City and County program.

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Keywords: community gardens, Honolulu, infrastructure, biocultural resources, land use

FOOD SOVEREIGNTY AS COMMUNITY-LED CLIMATE ADAPTATION IN THE AMERICAS

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Individual Paper Presentation

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Structural racism, colonialism, disinvestment, and lack of representation of people of color in civic and decision-making processes are among the root causes that drive disparities in access to healthy and sustainable food systems (Chrisinger 2022). These systemic factors also limit the capacity to protect, cope, respond, and recover from climate impacts on community health. While there is ongoing planning research regarding climate injustices (Porter et al. 2020), there is a growing body of inquiry on the promising approaches that intersect food sovereignty and community-based development planning outcomes with climate change action in ways that are sustainable, systemic, and transformative (IFPRI 2023; Horst et al. 2017).

This paper contributes to this stream of inquiry using an empowerment theoretical lens (Perkins et al. 1995) to examine projects that promote food security in their communities and assess the extent to which these efforts intersect with health equity goals and climate change adaptation efforts. Through qualitative document reviews, in-depth interviews with project members across three community-led food sovereignty projects in Puerto Rico, Alaska, and Brazil, and in-depth interviews with mainland USbased food justice community leaders, program officers, and policymakers, the study develops a comparative case study analysis to answer the following research questions: 1. How are communities addressing climate and health equity impacts through food systems planning? 2. How are facilitating and constraining factors influencing these actions? 3. How do the outcomes of prioritizing food sovereignty over food security shift program priorities? 4. How can these lessons translate to the mainland US context?

Our case studies related to food systems planning were identified across a diversity of contexts to present multiple ways of knowing, customs and traditions, experiential practice, and lived experiences in addressing climate and health equity issues. The Kake Tribal Heritage Foundation in Alaska developed a closed-loop hydroponics system to climate-proof food security for Kake in the coming decades. Organización Boricuá consists of farmers and activists working to re-develop the local food systems in Puerto Rico. After the devastation of Hurricane Maria, which

destroyed approximately 80% of agricultural production, the group organized support brigades to aid food producers while employing a community-led strategy to disseminate knowledge on agroecological farming practices that would make Puerto Rico's domestic food producers more resilient to future storms. The Valo de Ribeira Quilombo community of Brazil has practiced traditional smallholder agriculture, which not only sustains their livelihoods but also works to preserve the rich ecological fabric of the region. The practice of agroecology, including regenerative farming, seed exchange fairs, and small-scale burning techniques learned from indigenous peoples aims to strike a balance between human activity, nature, and systems change.

Common themes across interviews indicate that community-led food systems planning serves as a gateway to facilitating climate and health equity adaptation planning action. Interviewees revealed common barriers to progress including funding, sustainability of actions over time, and disconnection from national governance structures. Facilitating factors include strong leadership, community buy-in, autonomy in decision-making, collaboration, and an internal will to act. These findings can inform the process of conducting community-informed research to broaden cross-cultural opportunities for learning and practice to advance equitable climate action in non-extractive and collaborative ways. By disseminating knowledge about just, resilient, and reparative food systems and practices occurring in multiple contexts, this research offers promising knowledge exchanges between the U.S. and other countries in the Americas to elevate shared learning outcomes that guide policy, philanthropic funding, and academic engagement in transformative community-led health equity and climate change adaptation planning.

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Keywords: Food sovereignty, community development, climate adaptation, health equity, Americas

FOREST BATHING: ELDERS' EXPERIENCES & STAKEHOLDER INSIGHTS

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Individual Paper Presentation

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The increasing pressure on healthcare systems due to population aging emphasizes the need for new and proactive health strategies. In recent years, nature-based programs have gained popularity and have been integrated into traditional healthcare systems as alternative treatments to promote health and well-being (Mao et al., 2017; Zhou et al., 2019). Among the various types of nature-based programs—forest bathing stands out for its potential therapeutic benefits (Timko Olson et al., 2020). This program, rooted in the Japanese tradition of shinrin-yoku, involves guided walks and mindful experiences in forested environments. It offers a range of benefits for older adults, including reducing stress, anxiety, and depression while improving cognitive function and mood (Wen et al.,2019; Rajoo et al., 2020). Despite these advantages, forest bathing programs frequently cater to individuals who are generally fit and non-disabled, potentially excluding a significant portion of the older population. Senior citizens frequently experience significant barriers to participation in forest bathing programs due to their functional limits, physical challenges, and access constraints (Shanahan et al., 2019). Furthermore, research on the requirements and preferences of older individuals concerning forest bathing programs is scarce.

This study seeks to address these gaps by examining the barriers and facilitators of participation in forest bathing programs for older adults. Specifically, we aimed to investigate 1) older adults' and stakeholders' perspectives on the therapeutic benefits and challenges of forest bathing programs and 2) the best way to implement and integrate forest bathing into the traditional healthcare system for older citizens. Using a qualitative research method, we conducted a structured forest bathing program at Red Butte Garden in Salt Lake City, Utah. This included pre- and post-program interviews with older adults (n = 15), as well as focus group sessions and stakeholder interviews (n = 9) to gather a comprehensive understanding of the program's impact and barriers to its implementation. Our results showed the potential of forest bathing to significantly increase mental and physical well-being among older adults. Participants expressed significant benefits from connecting with nature and emphasized the therapeutic potential of such interventions. Key themes identified from the interviews included motivations and expectations, benefits and facilitators, barriers and challenges, preferences, and therapeutic potential.

Stakeholder perspectives highlighted practical problems in providing and integrating forest bathing into older individuals' healthcare, emphasizing the necessity for a tailored program design and delivery to meet their unique needs and constraints. The Themes from their interviews included knowledge and attitudes, facilitators and recommendations, barriers and challenges, integration and collaboration, and therapeutic potential. Our findings emphasize the importance of creating forest bathing programs that are accessible, engaging, and responsive to the specific needs of an aging population. The study highlights how forest bathing combines group-based mental health intervention with nature-based therapy for a synergistic effect. Our research shows that forest bathing is not just a nature-based program; it also has the potential to increase social connection. Additionally, our results underscore the significance of considering institutional and adoption factors when integrating forest bathing programs into healthcare systems as a preventative and therapeutic strategy.

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Keywords: Nature-based Program, Forest bathing, Older adults, Health promotion, Therapeutic potential

FROM PATCHWORK TO INFRASTRUCTURE: MUNICIPAL CHILDCARE PLANNING IN B.C.

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Individual Paper Presentation

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The contemporary crisis of care poses a major challenge to equity and livability in cities around the world, and has prompted planners, policymakers and scholars to explore how planning tools and strategies can alleviate the crisis of care and foster more caring cities (Binet et al., 2022; Kussy et al., 2023; Lyles & White, 2019; Nelischer et al., 2024).

One pressing and opportune area for planners to play a role in alleviating the crisis of care is in expanding equitable, affordable and accessible childcare. Recent studies have found that about half of Americans and Canadians live in “childcare deserts” where there are three or more children for every licensed childcare space; this gap is wider in most major cities (Macdonald & Friendly, 2023; Malik et al., 2018). These deserts are a feature, not a bug, of policy traditions that encourage private and market-based care over coordinated planning and investment (Prentice & White, 2019). The childcare spots that are available are increasingly expensive, forcing families to make difficult tradeoffs between childcare, living expenses, and employment. At the same time, wages in the sector are low, and childcare workers are being priced out of the cities they work in. As with the crisis of care more broadly, women and people of color disproportionately bear the brunt of the consequences. While planners have studied and applied child-friendly city strategies (e.g. Warner & Rukus, 2013), to-date there have been few comprehensive approaches to planning for childcare at the municipal level in the way that we plan for other key urban resources like economic opportunity or housing.

Cities have a crucial role to play in creating quality childcare spaces, ensuring equitable access to affordable childcare, and fostering equitable economic development in the ELCC sector. Recognizing this, in 2019-2020, the Union of B.C. Municipalities secured provincial funding to award childcare planning grants to about 60 municipalities across the province. For almost all recipients, the funding supported their municipality’s first childcare plan. Recipients ranged from large urban municipalities in Metro Vancouver like Richmond and Surrey, to mid-sized regional centres like Kelowna and Kamploops, to smaller remote communities.

This paper examines how this wide range of B.C. municipalities are planning for childcare through an evaluation of the content and quality of their childcare plans. The 60 plans are evaluated across eight quality characteristics (Guyadeen, 2018; Lyles & Stevens, 2014). Findings describe how municipalities conceive of the task of childcare planning, formulate goals, and scope their role; what strategies municipalities employ to enhance equitable access to affordable childcare and how they plan to coordinate across domains; how equity is operationalized in efforts to plan for care; and key outcomes and approaches to evaluating progress. Across these topics, the analysis explores how municipalities of varying types are approaching the challenge of building universal care infrastructure out of a patchwork, market-based system.

This paper makes three scholarly contributions. First, it offers a novel analysis of emergent approaches to comprehensive, outcomes-focused planning for care. Second, it offers new perspectives on how planning can support healthy childhood development. Third, it explores the potential of childcare planning for advancing efforts to plan for social and economic equity in cities. A clearer picture of the emergent childcare planning landscape and promising practices therein also has important implications for practice, particularly in Canada, where municipalities in other provinces are now developing childcare plans in the wake of the federal rollout of $10/day childcare rolls out across the country, but also in other cities around the world seeking municipal planning responses to childcare shortages and their major implications for social and economic equity.

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Keywords: childcare, care work, equity, social planning

HEALTHCARE ACCESSIBILITY IN NEW JERSEY: INSIGHTS FROM ONLINE REVIEWS

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Individual Paper Presentation

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Healthcare access is critical to quality of life. Yet in the United States, healthcare services are unevenly distributed across space and thus population groups. Research has traditionally focused on the potential spatial accessibility of healthcare by evaluating the number of doctors within specific travel times from census centroids. This approach

has been criticized for overlooking actual healthcare utilization influenced by socio-demographic and time-space constraints (Guagliardo, 2004). Recent advancements have attempted to refine accessibility measures through enhanced data sources, including real-time transit data and hospital registries. Despite these improvements, such studies have yet to encompass the dimensions of healthcare access—namely, affordability, accommodation, and acceptability (Penchansky & Thomas, 1981) —that can influence where patients are able and willing to receive care. Hawthorne & Kwan (2013) noted that patients might avoid the nearest or most affordable providers due to perceived low service quality. Moreover, online reviews on platforms have become crucial in shaping patients' choices, serving as a proxy for service quality and influencing patient flow to healthcare facilities (Chen & Lee, 2024). Yet, no studies have accounted for online reviews when assessing the spatial accessibility of quality healthcare providers.

Our study addresses this gap by investigating the spatial variation in accessibility to healthcare providers in New Jersey, based on online review ratings, and identifying factors contributing to these differences. We analyze data on approximately 9,000 primary care physicians from HealthGrades, covering internal medicine and family practice. The dataset includes information on doctor names, qualifications, review ratings, review counts, and addresses. Applying the Enhanced 2 Step Floating Catchment Area method (Luo & Qi, 2009), we assess the accessibility of primary care physicians within a 30-minute travel time by both driving and public transit, based on the population estimates from LandScan raster data. This analysis is performed for all providers and specifically for those with higher review ratings, to compute the ratio of accessibility for high-rated doctors to general accessibility. Through regression models that integrate census, land use, and transportation data, we aim to identify factors associated with variations in accessibility to quality healthcare. We expect our results to uncover disparities in healthcare provider distribution and accessibility, particularly concerning highly rated doctors, and anticipate variations across different modes of transport. Our research will contribute to a deeper understanding of how quality and equitable healthcare services can be delivered, with implications for healthcare policy, land use, and transportation planning.

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Keywords: healthcare, spatial accessibility, disparity, online reviews, quality of care

HEAT RISKS AND ASTHMA HOSPITALIZATION: THE MITIGATING ROLE OF TREE CANOPY

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Individual Paper Presentation

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Background: Extreme heat significantly impacts the health and well-being of vulnerable populations, particularly individuals with asthma (Han et al., 2023). Hot and humid conditions often trigger asthma symptoms, exacerbating the disease and impeding respiratory function. Research indicates that extreme heat disproportionately affects children, older adults, individuals with certain medical conditions, and outdoor workers (Abokhashabah et al., 2021; Grant & Wood, 2022). Concurrently, tree canopy cover emerges as a crucial environmental factor capable of mitigating the effects of extreme heat on asthma hospitalization. Trees offer shade, reducing temperatures in urban settings and enhancing air quality, which potentially helping mitigate the asthma (Lee et al., 2022). Despite the recognized importance of trees, little is understood regarding how tree canopy can effectively alleviate the impact of extreme temperatures on asthma hospitalization.

Aim: This paper aims to investigate the moderating role of tree canopy cover in the relationship between heat risks and asthma hospitalization. The study will consider the impact of social vulnerability on this relationship and test the hypothesis that increasing tree canopy cover in urban areas can mitigate the impact of extreme heat on asthma hospitalization.

Methods: Like the global and national trends, Colorado, USA, has also witnessed a noticeable rise in temperatures in recent years. To analyze neighborhood-level asthma hospitalization rate, we used census tract as the unit of analysis, with a total of 1,249 census tracts within Colorado. Data on asthma hospitalization rates (2015-2019) were sourced from the Colorado Electronic Disease Reporting System. The independent variable is the heat risk, average number of high heat days between May and September, 2015-2019. The moderating variable is the percentage of tree canopy in 2017. Control variables include the Social Vulnerability Index, air pollutants, socio-demographic factors, population density, and historical heat days (1979-2014). Analytically, a spatial lag regression model utilizing Queen Contiguity-based spatial weights, linear models for heat risk and tree canopy, alongside interaction terms, was employed.

Results: The study reveals a positive association between heat risk and asthma hospitalization rates (Coeff.=0.78, p-value=0.013) after adjusting for control variables. Conversely, there exists an inverse relationship between tree canopy and asthma hospitalization rates (Coeff.=-6.47, p-value<.001). Additionally, a significant interaction term between heat risk and tree canopy (Coeff.=-0.062, p-value=.035) was identified. We also found that the coefficient of tree canopy variable was stronger in the areas with high social vulnerability, compared to other areas.

Discussion: Findings demonstrate the significant role of heat risk and tree canopy in asthma hospitalizations in Colorado. While heat risk is associated with increased hospitalization risk, tree canopy exhibits a protective effect. When there are more trees, the detrimental effects of heat on asthma hospitalization rates are reduced. This implies that the cooling and air quality benefits of the trees, along with their potential to reduce stress, contribute to better asthma outcomes, even in the presence of heat risks. Furthermore, tree canopy moderates the impact of heat risk on asthma hospitalization, particularly in socially vulnerable areas. These insights highlight the potential of urban tree canopy expansion in mitigating extreme heat's adverse health effects on asthma, especially in marginalized communities. Prioritizing such measures is crucial in reducing asthma-related health disparities and enhancing overall community well-being.

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Keywords: Climate change, Heat risks, Asthma hospitalization, Tree canopy, Social vulnerability

HISTORICAL REDLINING, ENVIRONMENTAL COMPLAINTS, AND MENTAL HEALTH

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Individual Paper Presentation

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Historical redlining, a discriminatory practice was technically barred with the passage of the Fair Housing Act and Housing and Urban Development Acts in 1968, continues to exert enduring effects on contemporary urban neighborhoods. Primarily based on racial demographics, historical redlining policies and practice categorized certain neighborhoods as undesirable, impeding new investments and hindering environmental improvements in the long run, thus exacerbating feelings of marginalization, contributing to chronic stressors, and ultimately leading to adverse mental health outcomes. While numerous studies have demonstrated a significant link between historical redlining and present-day mental health well-being, the mediating role of perceived environmental quality remains inadequately explored. In this study, we investigate this mediation effect by utilizing environmental complaint incidents as an indicator for existing environmental challenges and perceived living environmental quality, examining how it mediates the association between historical redlining and mental health at the neighborhood level in Chicago.

Drawing upon Meier and Mitchell's (2021) historical redlining scores of census tracts, alongside environmental complaint incident data from the Chicago Department of Public Health, and neighborhood health data from Centers for Disease Control and Prevention's PLACES project, we employ the mediation analysis approach proposed by Baron and Kenny (1986) to in-depth investigate the research question. In particular, the mediation analysis in this study is comprised of three sets of regressions: firstly, we explore the effect of historical redlining on mental health without controlling environmental complains, capturing the total effect of historical redlining; secondly, we examine the effect of historical redlining on environmental complaints; thirdly, we include both historical redlining and environmental complaints as exposures in the model to observe how the statistical significance of historical

redlining changes in this model compared to the first model. Based on the three regression models, we further calculate the mediation effect of historical redlining through environmental complaints on mental health measures and employ the bootstrapping approach to assess whether the mediation effect is statistically significant.

Our findings provide valuable insights into the complex interplay between historical redlining, perceived environmental quality, and mental health outcomes at the neighborhood level in Chicago. By examining the mediating role of environmental complaints, we elucidate the extent to which perceived environmental quality serves as the pathway through which historical redlining impacts present-day mental well-being. Understanding whether environmental complaints fully or partially mediate the association is crucial for developing targeted interventions to address the underlying mechanisms driving health disparities. Moreover, given the environmental complaint incident data also record the types of the complaints, including “abandoned sites,” “air pollution,” “noise,” “illegal dumping,” and others, this study also identifies the specific types of environmental challenge that substantially mediate the association between historical redlining and mental health. By pinpointing these specific challenges, policymakers and urban planners can tailor interventions to address the root causes of environmental inequities and mitigate their adverse impacts on neighborhood mental well-being.

Through this comprehensive analysis, our study contributed to the growing body of research aimed at promoting health equity and resilience in historically marginalized neighborhoods. In particular, this study enhances our understanding of the mechanisms through which historical redlining continues to shape present-day health disparities. These findings hold implications for policymakers and urban planners, highlighting the importance of addressing environmental inequities to mitigate the adverse mental health effects of historical redlining. Moreover, this research underscores the need for comprehensive approaches to urban revitalization that prioritize equitable access to safe and health living environments, particularly in historically marginalized neighborhoods. Building upon this study, further studies could explore additional pathways in the relationship between historical redlining and neighborhood mental health. By advancing our understanding of these complex relationships, future research can inform evidence-based policies and interventions to create healthier, more equitable urban environments for all residents.

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Keywords: Historical Redlining, Health Disparities, Environmental Complaints, Structural Racism, Mediation Analysis

HOW DOES DISASTER GOVERNANCE EFFORT ENHANCE URBAN DISASTER RESILIENCE?

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Individual Paper Presentation

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On April 3, 2024, a strong earthquake measuring 7.2 on the Richter scale struck off the coast of Hualien County, on Taiwan's east coast, marking the largest seismic event in Taiwan in 25 years since the 1999 Chi-Chi earthquake. However, the city of Hualien emerged from the earthquake largely unscathed, with relatively low casualties and damages. The high level of disaster resilience exhibited by Taiwan's urban areas during the event has garnered global attention, being hailed as a "success model" for earthquake response.

Against this backdrop, this study focuses on the core question of "how government governance enhances disaster resilience." It delves into the depths of public sentiment data following the Hualien earthquake in Taiwan, revealing the public's perception, evaluation, and the actual effectiveness of government governance behind the disaster response. It explores the central role and specific pathways of government governance in enhancing urban disaster resilience.

The study adopts a mixed research method, combining quantitative and qualitative data analysis. First, using web scraping technology, a large amount of raw data on the Hualien earthquake was collected from social media platforms, news reports, and government announcement channels, covering multiple stages including pre-earthquake warnings, response during the earthquake, and post-earthquake recovery. Then, through text analysis, the collected massive public sentiment information was cleaned, categorized, and used to construct topic models, quantitatively analyzing the public's focus and evaluation trends on government disaster prevention, reduction, relief work, and urban resilience construction. In addition, content analysis was used to meticulously review policy documents and regulatory changes, revealing the government's reform measures in building regulations, seismic technology standards, early warning systems, emergency management systems, and public education over the past two decades.

The research is currently ongoing, and preliminary data scraping and analysis have shown that life in Hualien quickly returned to normal after the earthquake. The Taiwanese people have shown a high degree of calmness and rationality, with a general focus on social needs such as communication network disruptions, while physiological and safety needs have been largely met, providing strong evidence of the effectiveness of government disaster governance.

The study's conclusions aim to emphasize the core role of government governance in formulating long-term disaster prevention strategies, strengthening infrastructure construction, enhancing public awareness, and emergency preparedness. It also provides important empirical evidence and strategic references for other countries and regions on how to reduce disaster losses and enhance urban disaster resilience through scientific, precise, and efficient governance means when facing natural disaster challenges.

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Keywords: Disaster governance, Urban resilience, Public sentiment analysis, Goverment, Earthquake

HUNGRY AFTER DARK: SPATIO-TEMPORAL ANALYSIS OF FOOD AVAILABILITY

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Individual Paper Presentation

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Food availability, characterized by the presence of food options and access to an adequate quantity and variety, is a critical issue for both social and health aspects in urban environments. While food availability is often studied from a spatial perspective, the importance of temporal attributes on availability remains less explored. The spatial dimension is static as it primarily focuses on the physical locations of food outlets and their proximity to residential areas. In contrast, the temporal dimension provides a dynamic perspective on how the availability of food retail outlets changes over time. This dynamic aspect allows for the observation of variations and trends in food availability throughout a day. A holistic approach that integrates spatial and temporal dimensions becomes crucial, discerning any disparities or inequalities in food availability across different locations and times. Thus, this study delves into the spatio-temporal dynamics of food availability, specifically focusing on fast food and non-fast food options in Singapore. In such a densely populated city-state, the challenge does not lie in food scarcity but rather in the availability of healthier food options amidst the competing temporal availability of fast food options. Therefore, this context provides a unique perspective for highlighting the role of dynamic availability over time.

This study introduces the Spatio-Temporal Accessibility (STA) index, incorporating a temporal aspect into assessing the spatial food environment. This index goes beyond simply counting the number of food retail outlets, integrating their opening hours to provide a more comprehensive picture of food access. High STA scores indicate areas with both a dense concentration of food outlets and extended cumulative opening hours, indicating residents have more readily available food options throughout the day. By comparing STA indices across different areas, this study identifies how temporal factors, such as limited opening hours, may contribute to localized disparities in food access. To evaluate STA, food outlet and home locations are identified, with a focus on public high-rise dwellings or Housing Development Board (HDB) buildings, which accommodate 78.3% of Singapore's population. Using a 400-meter hexagonal grid from each HDB building centroid, spatial proximity to food outlets is measured using the Euclidean distance method for citywide analysis. For neighborhood-level analysis, network distance is utilized to assess food outlet accessibility, considering a 400-meter threshold. This approach provides insights into realistic travel distances to food options via actual road networks.

The results reveal both spatial and temporal disparities in food availability across Singapore. Specifically, there is a geographical imbalance in the distribution of food retail outlets, with the prevalence of fast food outlets surpassing non-fast food options after dark. Our findings demonstrate that accessibility to food establishments in Singapore is relatively well-aligned with the population and activity centers in the city, meaning that food establishments in Singapore are spatially accessible. However, disparities in accessibility become evident when accounting for temporal aspects. Temporal accessibility to food options is notably poorer outside of lunch and dinner time periods. Furthermore, accessibility to non-fast food retail outlets during these periods is considerably lower than that of fast food retail outlets, restricting individuals' choice between these options during other times of the day. Given that fast food is assessed to be less healthy than non-fast food options in general, our findings suggest that there is an urgent need to improve access to healthier food options outside of traditional meal times. The findings

provide valuable insights for policymakers in developing strategies that improve food environments by ensuring equitable access to non-fast food options and promoting healthier food choices.

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Keywords: food availability, spatio-temporal accessibility, transport equity, neighborhood food environment

IMAGINING A FOOD SYSTEM THAT NOURISHES DISABLED YOUTH

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Individual Paper Presentation

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Though disabled adolescents are disproportionately impacted by food insecurity, most of the research on food inequity and disability focuses on adults. Little is known about disabled youths' experiences navigating choice within their food systems. This paper aims to fill this gap by centering the experiences of disabled adolescents and exploring how disabled adolescents (re)imagine supportive food environments. A qualitative case study methodology is employed, utilizing grounded theory methods of analysis to 'crip' concepts of food equity. A case study research design is applicable because the case is specific and bounded to phenomenologies of food insecure, disabled adolescents in Buffalo, NY between the ages of 12 and 18. This research is inductive and will engage disabled food insecure youth in Buffalo in focus groups and a data walk. Resulting findings and discussion will open the food equity literature to a critical disability lens.

Disability is among the strongest predictors of food inequity, encompassing both lack of access of food as well as upstream systemic factors which marginalize disabled individuals from their food systems (Heflin et al., 2019; Schwartz et al., 2019). It is important to keep in the forefront that disabled youth have agency. Disabled youth are active participants in their food system and are harmed by long standing unequal power relationships which structurally marginalize them from their food system.

Theoretically, this dissertation aims to connect crip feminist theory with anti-adultism theory and sparks opportunities to 'crip' concepts of food equity. Crip feminist scholars move past the binary of disabled/able bodied and argue that disability should be viewed as operating along a spectrum with constantly shifting degrees of needs, disability, and "extra-ordinariness" (Thomson, 1997). In contrast to productivist institutions, "disability justice communities see all bodies as inherently worthy and situated within a network of care-relationships regardless of a bodies' ability to work for a wage… disability justice asserts that the disabled body is not broken, but a magnificent

one" (Spektor & Fox, 2020, p. 351). This paper adopts Spektor and Fox's claim that disabled bodies are magnificent, not broken, and should be seen as innately worthy, not inherently burdensome. Diverse bodies and brains are not inferior drags on society (Swenor, 2021). Rather, following the social model of disability in crip feminist literature, ableism's nefarious hold on built environments, policy frameworks, and socio-political systems is actively disabling by creating worlds unwelcome to the existence of 'othered' bodies (Stiegman, 2022).

This research could have a multitude of contributions to practice and to scholarship. For example, this work can be leveraged by planning practitioners to introduce zoning and land use changes to meet the needs of disabled adolescents who struggle to access food in their current spatial environments. Findings might inform where investments should be made to empower adolescent food equity through food retail investment. Program coordinators may use this research to tailor disability-positive food assistance programming. Disabled youth may use this research to advocate for policy priorities to meet their needs. The opportunities for practical application of this research are far-reaching. From a scholarly lens, this paper will apply a crip feminist lens to contextualize youth food insecurity—a novel contribution to the body of research on food equity.

ACSP has long hosted conversations about disability and aging, but it's time to include disabled youth in the conversation, especially since rates of disability among youth in the US are increasing. This paper pushes the boundaries of planning by centering the experiences of disabled youth, and hopefully will spark future conversations about co-creating built environments and social systems which nourish diverse bodies of all ages.

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Keywords: food equity, disability, feminist crip theory, youth, accessibility

IMPACT OF URBAN DENSITY, SOCIAL VULNERABILITY, MEDICAL SERVICE ON COVID-19

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Individual Paper Presentation

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The outbreak of COVID19 pandemic brought reconsiderations and doubts on urban density as compact cities became epidemic hot spots. Density though provides an upside in that medical services required to protect citizens against the spread of disease are concentrated within compact cities which helps reduce the mortality rate.

Sociodemographic characteristics are also a crucial factor in determining the vulnerability of the population, and the purpose of this study is to empirically discover how these three urban factors affect the severity of the epidemic impacts.

The research questions are as follows: (1) How do urban density, sociodemographic vulnerability, and medical service affect epidemic impact(infection and mortality rates? (2) Does medical service accommodate mediated effects that help reduce severity of the impact? The study aimed to investigate the influential relationships between the urban factors and epidemic impacts and provide answers to whether superbmedical service in compact cities can scale down the impacts of COVID19.

SEM(Structural Equation Modeling) was applied as the suitable research method for verifying interrelationships between factors based on theoretical grounds. The study accounted for 144 municipalities in South Korea during periods from the first emergence of COVID19 to December 31st of 2022. The study collected data related to infection and mortality cases from each municipal, and it holds significance as primary research that enlightens the aspects of epidemic impact concerning urban settings and investigates for the first time the mediated effects of medical service. The result of the evaluation shows that compact cities are most likely to have lower sociodemographic vulnerability and better quality of medical service, while cities with low density contain higher portion of vulnerable population and poorer medical service. However, the quality of medical service had no significant influence in reducing neither the infection rate nor the mortality rate. Instead, density acted as the major influencing factor to infection rate, while the sociodemographic vulnerability was the major determinant of the mortality rate. Thus, the findings strongly paraphrase that compact cities, although with high infection rates, tend to have lower mortality rates due to less vulnerability in sociodemographics, Whereas death was more frequent in less dense cities due to higher portions of vulnerable populations such as the elderly and low-income classes.

Findings suggest an important lesson for post-pandemic urban planning-intrinsic characteristics of urban settings such as density and its population must be taken into account to effectively counteract future epidemics and minimize the severity of their impacts. Moreover, the study is expected to contribute as a primary reference material for follow-up studies that further investigate related subjects including urban medical services during the pandemic.

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Keywords: urban planning, sociodemographic vulnerability, medical service, COVID19, pandemic

NEIGHBORHOOD PUBLIC SPACE, QUARANTINE EXPERIENCE, AND DEPRESSION: EVIDENCE FROM BEIJING, CHINA

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Individual Paper Presentation

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Central theme: Neighborhood public spaces, defined as public spaces within proper walking distance, provide venues and opportunities for citizens' social interactions, and their growing values in building healthy and resilient cities have been recognized by scholars, planners, and policymakers in the context of rising mental illness propensity in urban residents, especially after the COVID-19 pandemic outbreak. Existing literature has shown the direct and positive roles that having access to neighborhood public spaces access plays in lowering urban residents' risks of mental illnesses and increasing people's life satisfaction in both pre- and post-pandemic periods. Nonetheless, more studies are needed to understand the latent indirect effects of neighborhood public spaces access on people's mental health. This study examines whether access to neighborhood public spaces can moderate the existing relationships between certain external pandemic-related sources (quarantine experience) and people's mental health outcomes (risk of being depressed) during the COVID-19 pandemic, following the stress process model.

Methodology: The study uses survey data on 3,022 adult residents in Beijing, China, conducted in July 2020 after the pandemic outbreak. We measure respondents' risks of depression by using the 10-item Center for Epidemiologic Studies Depression (CESD-10) scale. We utilize their self-reported information on whether being quarantined mandatorily, and access to five selected public space types (park, bus stop, subway station, points-of-interest (POIs) for food service and shopping) measured by their densities within a buffer with an 800-meter radius from respondents' reported home addresses respectively. Our statistical analyses are conducted using the Logit regression model with individual and district-level controls.

Findings: We find that having been quarantined in either a designated facility or own home is associated with a 27.7% higher risk of depression. Furthermore, we find that access to certain public spaces, namely parks and areas with high density of shopping POIs, strengthens the positive quarantine–depression association (coefficients of interaction terms between access to these two public spaces and quarantine experience are 0.468 and 0.559). In other words, good access to parks and shopping POIs can amplify the adverse effects of quarantine on mental health. Subsample analyses reveal that the magnitudes of such positive moderating effects are larger for those who identify themselves as extroverts. Our findings suggest a dual role for accessing public spaces: while offering first-order mental health benefits, it can also intensify negative effects on people's mental health brought by stressors such as quarantine in emergencies. We believe that access to public spaces become not preferable for residents during the pandemic period due to high risk perception, which can be the underlying mechanism of the negative effect.

Implications to planning practice: This research aligns with the United Nations' Sustainable Development Goals (SDG), highlighting the increasing social concern over mental health, exacerbated by the pandemic. The study underlines the need for public health and urban policy to consider not just the therapeutic aspects of public spaces but also their potential to amplify adverse effects in crises. Besides, this study shows the importance in lowering risks perceived by people when using public spaces to maximize public spaces' positive effects on people's mental

health. This nuanced understanding is crucial for designing more resilient urban environments that support mental well-being, especially in extroverts, during the post-COVID healthy city creation.

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Keywords: Mental health, COVID-19, Parks, POI, Public space

PLANNING HEALTHY COMMUNITIES: INSIGHTS FROM CANADA

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Individual Paper Presentation

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Development practices throughout the 20th century created conditions for inequitable health experiences. Scholars (e.g., Barton, 2015) bestow some responsibility for these conditions on plans that restrict health-promoting opportunities. The more recent contributions of planners to improving population-level health has been through their efforts to create 'healthy built environments' by, for example, designing spaces that support active transportation (Strapper et al., 2018). However, it is planners' ability to collaborate with various stakeholders and engage with the public to inform decision-making that has positioned them as key contributors to the creation of healthy communities.

In Canada, planning's engagement with healthy community objectives stems back four decades when the Canadian Institute of Planners collaborated with the Canadian Public Health Association and Federation of Canadian Municipalities to implement the Canadian Healthy Communities Project (CHCP). As a response to the World Health Organization's Healthy Cities Initiative implemented in the 1980s, the CHCP sought to engage municipalities of all sizes in the creation of multi-sectoral working groups that would identify current health concerns and inequities, and develop strategies to address these issues through built and social environment interventions (Lane, 1989). In the 21st century, many healthy community goals have been institutionalized through, for example, provincial planning legislation that mandates efforts to support 'building strong healthy communities.'

Much of the research and action on healthy community planning has prioritized the relationship between individual health behaviours and built environment interventions. Recent policy and practice recommendations have stipulated that interventions target both the physical and social environments (i.e., broad determinants of health) where people live, and assessments be conducted to explore how governing bodies influence interventions development (Corburn, 2017). In order to examine whether and how such recommendations have been adopted, this research is guided by two questions: how have 'healthy communities' been conceptualized and operationalized in the planning profession over time? And how do planners utilize existing resources (e.g., strategies and expertise) to address broad determinants of health in their communities? These questions will shed light on how planners navigate intersectoral relationships with other stakeholders, government officials, and the public to enhance health in the community.

To address the research questions, this study gathers qualitative data from professional institutions and key informants to better understand the connection between healthy community ideology and professional practice. Specifically, this paper presents findings from a content analysis of information on healthy communities published by the Canadian Institute of Planners and Ontario Professional Planners Institute over a thirty-year period. Additionally, interview data from practicing planners, public health professionals, and government officials whose work portfolios include healthy community initiatives are thematically analysed. The results demonstrate the changing conceptualization and operationalization of healthy communities in Canada over time. Further, the results include a comparison of the ideologies shared in planning documents with the perspectives and actions taken by planners working on healthy community initiatives. Major facilitators and barriers to healthy community planning are discussed. The discussion untangles how institutions and professionals have incorporated the built and social environments into their healthy community initiatives over time and makes recommendations for considering local health circumstances. This work concludes with critical reflections on practical guidance and valuable lessons for implementing healthy community initiatives in the future.

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Keywords: Healthy communities, Healthy built environment, Health equity, Document analysis, Key informants

PLANNING TO REDUCE HEAT VULNERABILITY FOR UNHOUSED POPULATIONS

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Individual Paper Presentation

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Extreme heat is the greatest weather-related cause of death in the US and up to half of heat-related deaths are people who are homeless/unhoused. People who are unhoused are constantly exposed to the elements; are often sensitive to heat because of age, underlying health conditions, and medications; and experience challenges accessing water, shade, and air conditioned spaces. Climate change and the rise of unsheltered homelessness necessitate research about planning interventions to reduce heat vulnerability for unhoused populations.

Traditional local government responses to heat have been siloed between short-term emergency management strategies and long-range planning initiatives. Scholars emphasize the necessity of dedicated city roles and organizational structures spanning various disciplines, including urban planning, to effectively tackle heat governance issues (Keith et al., 2021). However, despite scholars' and planning practitioners' growing interest in heat resilience in general (Meerow & Keith, 2021), the specific experiences and needs of the unhoused are rarely addressed.

Our study focuses on Santa Clara County (SCC), California for several reasons. Nearly 30% of the US unhoused population reside in California and about two-thirds of the state's unhoused residents are unsheltered, the highest percentage in the nation. SCC has an estimated 10,028 unhoused residents, 77% of whom are unsheltered. Of large American cities, San Jose and the SCC continuum of care has the highest share of unsheltered homelessness. Previous research on homelessness and heat in SCC indicates that unhoused residents disproportionately live in hotter areas, experience significant health effects from heat, and grapple with trade-offs when finding locations to stay (Gabbe et al., 2023).

We answer three research questions that examine planning and governance to reduce heat vulnerability for unhoused people: (1) How do local plans, policies, and programs target and mitigate the effects of extreme heat on the homeless population? (2) How do governmental and non-governmental entities collaborate across sectors and jurisdictions to address heat hazards for the homeless population? (3) What obstacles hinder collaborative efforts across sectors and jurisdictions in enhancing heat resilience for the homeless population, and what strategies could be employed to overcome these barriers?

We conducted a content analysis of adopted plans and semi-structured interviews. Our content analysis first included five countywide plan types: general plan, hazard mitigation plan, emergency operations plan, climate action and adaptation plan, and homelessness plan. We then included general plans and climate action plans for the six municipalities with the most unhoused unsheltered residents. Our content analysis builds on recent heat-focused plan evaluations with criteria related to issue identification, heat mitigation, heat management, and implementation (Gabbe et al., 2021; Keith et al., 2023). We conducted semi-structured interviews with staff and leaders from city and county agencies, and non-profit organizations, that were involved in heat-related and/or homelessness-related issues, such as planning, housing, public health, emergency management, social services, and sustainability.

Preliminary results from the content analysis indicate that municipal and county plans have relatively limited heat-related content in general, although there is some variation by plan type. About one-quarter of the plans identify the unhoused population as particularly vulnerable to heat, but none include any data or maps to demonstrate this vulnerability. While some strategies, such as tree canopy, are commonly included in plans, almost no plans specifically target their heat mitigation, management, or implementation strategies on the unhoused population.

This extends past planning scholarship on the adoption of heat resilience strategies. The semi-structured interviews are currently underway.

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Keywords: Extreme heat, Climate adaptation, Homelessness, Unhoused, Heat resilience

PUBLIC-PRIVATE PARTNERSHIPS FOR SMART HEALTHY COMMUNITIES: A CASE STUDY

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Individual Paper Presentation

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As information and communication technologies continue to develop since the early 21st century, the applications of these technologies for public health are often discussed as a major domain of smart cities. Recently, a mobile app named “Walk-On” gained great attention in Korea and helped develop public-private partnerships and local communities to promote walking. Since the app was introduced in 2017, more than half of the local governments in Korea started using the Walk-On app and running place-based walking promotion programs within the app. The present study sheds light on the public-private partnerships and online walking communities established for individual local areas using the Walk-On app and analyzes the facilitating and limiting factors that affect the public-private partnership relationships. We use mixed-method approaches to understand the case of the Walk-On app. First, to quantify the effects of the Walk-On app on public-private partnerships and community engagements, we tracked cases of partnership formation by year, the number of users, and the number of related ordinances by searching in the application. Second, to explore the facilitating and limiting factors, we conducted face-to-face interviews with the officials at the local government, the entity leading the formation of PPP, and a virtual interview with one representative from Swallaby, the developer and provider of the Walk-On app. For the interviews with local governments, we met a total of four municipal officials from different regions in Korea; Nowon-gu in Seoul, Dong-gu in Gwangju, Pohang-si, and Pyeongchang-gun. Citizen opinions on app usage were indirectly collected through interviews with these two entities. The results of quantitative analyses showed that 154 local governments

have established a partnership with Walk-On for their community health, which accounts for 62% of the total number of local governments in South Korea. Among the 154 local governments, 47 cities enacted ordinances to operate app-based walking promotion programs. When collecting the time of each government starting the Walk-On app service, 12 cities (0 cities with ordinance) in 2017 increased to 154 cities (47 cities with ordinance) in 2023, which appears to continue to increase. The increase in local governments using the Walk-On app was partly due to the outbreak Covid-19 pandemic in South Korea when governments greatly limited in-person physical activity promotion programs. Further, we also identified facilitating and limiting factors from the interview responses. While the app developers mentioned technical innovation, economic viability, and commitment to public interests as facilitating factors to sustain a strong partnership with local governments, they explained that a lack of understanding of mutual roles makes it difficult to maintain partnerships. Further, local governments emphasized the importance of political support, staff competency, and a reliable partner as facilitating factors; however, they also mentioned a lack of flexibility to support the needs of individual governments as a limiting factor. This study provides an in-depth understanding of how smart technology can help build public-private partnerships and develop a sense of community at local levels. We expect this study to help advance our knowledge of the key factors of public-private partnerships for community health promotion and how smart technologies can support healthy community development.

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Keywords: Public-private partnership, Community development, Smartphone app, Smart city, Healthy city

STREET FOODS AND DIETARY HEALTH OUTCOMES: A SYSTEMATIC REVIEW

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Individual Paper Presentation

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The community food environment can be crucial in facilitating or hindering access to food as the types of foods and beverages available depend on the type of food venues in the community (Glanz, 2009). For example, supermarkets and grocery stores are associated with the availability and consumption of fresh, nutritious foods such as fruits and vegetables and healthier diets (Block & Kouba, 2006). In comparison, fast-fast restaurants and

convenience stores are linked to the availability of highly processed, less nutritious foods and beverages such as fatty foods and sugar-sweetened beverages. These food venues have been linked to adverse dietary health outcomes such as overweight and obesity, diabetes, chronic diseases, and some types of cancer. A key limitation of community food environment studies is their focus on the Global North (Bridle-Fitzpatrick, 2015). Culturally relevant sources of food that are prevalent in the Global South are often neglected in the literature. Such is the case with street food businesses (SFBs). SFBs are a popular, affordable, and convenient food source. However, most studies on street food have focused on food-borne diseases and contamination (Abrahale et al., 2018). A clear understanding of the SFBs' role in dietary health outcomes is missing. In this project, we conducted a systematic review of street food studies across the globe to evaluate the role that SFBs play in food availability, food security, and their connection with dietary health outcomes. The research team used the electronic databases PubMed/MEDLINE, Scopus, Web of Science, Science Direct, the Cochrane Library, and Google Scholar to identify original English, Spanish, and Portuguese peer-reviewed articles. The researchers also searched the international databases SciELO and Redalyc. A combination of the following key terms was implemented to identify research articles: 'street food' OR 'street food stand' OR 'street food vendor' OR 'mobile vendor' OR 'sidewalk vendor' and 'availability,' 'food consumption,' 'nutrition,' 'diet,' BMI, 'body fat,' 'weight,' and 'bodyweight.' Our review includes 100 articles that met the inclusion criteria. Results show that SFBs offer a large diversity of foods and beverages ranging in nutritional quality from very nutritious (e.g., unprocessed fruits and vegetables) to less nutritious (e.g., ultra-processed foods and beverages). SFBs provided crucial access to food to urban residents, especially near worksites, transportation centers, and schools. Only X studies assessed the relationship between street food consumption and dietary health outcomes. Overall, there was an inconclusive association; some studies found a positive relationship between consuming street foods and adverse health outcomes, while others found an inverse or no relationship. Only one study used participants' biometric data, but the results were inconclusive. Additional projects with longitudinal study designs are needed to establish a clear relationship. While SFBs are a ubiquitous element of the food environment, the public and, at times, the informalized nature of these businesses have made them a target for removal in city planning beautification campaigns. Removing these businesses from public spaces may jeopardize food security for millions of people. Rather than removal, some researchers argue that SFBs should be integrated into the urban fabric of cities worldwide (Hayden, 2021). This entails amending local land use and zoning regulations and creating a legalization pathway for SFBs in cities where street vending permits do not exist. Furthermore, additional regulations based on nutrition guidelines could modify food and beverage offerings at SFBs to include healthier options. To achieve this, decision-makers must work together to identify beneficial strategies for all parties, including planners, public health experts, politicians, and community members.

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Keywords: Street food businesses, Food availability, Health, Systematic review

TOXIC URBAN: PLANNING AND POLICY INERTIA IN ADDRESSING SOIL CONTAMINATION

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Individual Paper Presentation

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Lead contamination is a considerable issue in post-industrial cities with old housing stock and transitions from industrial to residential land uses. Residents may be exposed to lead both inside and outside the home through drinking contaminated water, eating contaminated food, or breathing in lead dust (Billings and Schnepel 2018; Naranjo, Hendricks, and Jones 2020). Scholars have found that high lead levels tend to be in low-income Black neighborhoods (McClintock 2012), and exposure to lead can have detrimental cognitive and behavioral health impacts, especially for children (Billings and Schnepel 2018; Naranjo, Hendricks, and Jones 2020). Buffalo, New York, a post-industrial city, has been named “a dangerous lead hotspot” (Bell, Schneyer, and Sullivan 2017).

Lead enters water, homes, and soils in various ways, but for this research, we focus solely on soil contamination. Urban soils can become contaminated with lead through paint from existing or demolished homes (lead paint was not banned until 1978) or from gasoline (leaded gasoline was mostly phased out by the mid-1980s and banned in 1996) (Domonoske 2021). Lead in soils is associated with housing age and distance to roadways (Schwarz et al. 2012) and is especially prevalent in places that went from industrial to residential land uses (Pavilonis, Maroko, and Cheng 2020).

Soil health is critical for a healthy built environment, and planners play a role in ensuring urban soils are healthy. Planners can access a wide range of tools and strategies for identifying sources and pathways of lead soil contamination, can make provisions for financial and technical resources to address soil contamination, and can address inequitable outcomes from soil contamination. This article addresses both policies and resident experiences and wishes regarding soil contamination and remediation strategies in Buffalo. We ask two questions: First, what are the perceptions, challenges, and prospects among individuals and community groups in addressing soil contamination in Buffalo? Secondly, to what extent do local and regional policies address soil contamination in Buffalo? These questions are answered by a survey and focus group discussions and analyzing the content of local government policies to understand how (1) local government policies address soil contamination and remediation solutions, and (2) residents in the City of Buffalo understand and experience soil contamination, and remediation strategies they would like to see utilized.

Our analysis shows that a mismatch exists across policy and planning practice and the experiences and needs of residents. While soil contamination is widespread, existing policies solely focus on housing structures, leaving out the prevalence of soil contamination, especially on vacant land. Additionally, policies focus on technical solutions, rather than financial-based support and incentives to assist remediation efforts by individuals and community groups. In response to the survey and focus groups, participants report low soil quality and contaminated soil, resulting in avoidance of soil use and perceptions that soil contamination has made family members sick. Unfortunately, high costs of soil testing and remediation, a lack of economic incentives to implement testing and remediation, and in some cases, constraints of housing tenure, result in many people not addressing soil

contamination issues. Findings suggest that communities in post-industrial cities can benefit from local government involvement in soil testing and remediation as well as education from community groups.

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Keywords: soil contamination, urban gardening, post-industrial cities

TREE CANOPY, COVID-19, ANXIETY PSYCHOLOGICAL BEHAVIORS: SPATIAL DISPARITIES

Abstract ID: 1108.0.0.397.2024
Individual Paper Presentation

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Background: The COVID-19 pandemic has exacerbated mental health globally, particularly among urban residents, due to lockdowns, movement restrictions, and social isolation (Zhang et al.,2022). Many studies have revealed the positive impact of greenery and tree canopy on mental health by providing shade and opportunities for physical and social activities (Jimenez et al.,2021). Despite the expanding body of evidence highlighting the positive impact of green spaces and tree canopy on mental health outcomes, there is a notable gap in comprehending the nuanced relationship between tree canopy and anxiety or psychological behaviors, particularly in the context of ecological studies. Additionally, not all neighborhoods have equal access to these benefits, and low-income areas often face barriers to accessing and utilizing greenery and tree canopy, especially during the COVID-19 pandemic (Gao et al.,2023).

Objectives: This study aims to 1) investigate the correlation between urban tree canopy and the mental health of urban residents using emergency medical service (EMS) data between March 13, 2019 and March 12, 2021; 2)

assess the impact of the ongoing COVID-19 pandemic on the connection between two, systematically comparing associations before and during the pandemic; and 3) analyze the moderating effect of neighborhood socio-economic status on this relationship.

Methods: The area of our study is Marin County, located northwest of San Francisco Bay, California. We focused on 2,219 Census blocks in an urban area with 160 census block groups. The dependent variable was the frequency of occurrences of anxiety and psychiatric disorders. The primary independent variable is tree canopy coverage derived from 2018 National Agriculture Imagery Program aerial imagery at a spatial resolution of 1 meter. Additionally, we incorporated residential population as an exposure variable. To account for confounding factors, we adjusted for a range of sociodemographic and economic variables as well as built environment factors associated with mental health outcomes. We included spatial lags of the explanatory variables using the inverse distance method. We then utilized zero-inflated negative binomial regression models to assess the potential correlation between tree canopy and mental health illness.

Results: Before the Covid-19 pandemic, there were 638 mental disorders, while there were 662 mental disorders during the COVID-19 pandemic, which showed no significant differences. After adjusting for control variables, the study revealed a strong negative association between tree canopy and mental health disorder rates (β = -0.774, p-value = 0.024). Notably, the study showed that tree canopy was a significant predictor for low mental health disorder rates (β = -1.279, p-value = 0.002) before the COVID-19 pandemic, but we can't observe such an association with mental health disorders during the early pandemic. Finally, the study found the moderating role of neighborhood income on the relationship between tree canopy and anxiety/psychological behavior (β = 0.109, p-value = 0.02).

Implications: Our study contributes further evidence to the understanding that tree canopy plays a role in reducing anxiety and psychological disorders in urban residents. Surprisingly, the pandemic did not significantly affect mental health disorders, and tree canopy did not appear to play a significant role in mitigating the COVID-19 pandemic impacts on mental health. Instead, the benefits of these tree canopy appears to be more important before the COVID-19 pandemic. This suggests the importance of recognizing the potential of tree canopy in promoting mental health under typical urban conditions. Furthermore, socioeconomic factors have been shown to increase mental health issues during the pandemic, which highlighted the need for interventions to address mental health challenges due to income disparities. Our study has important implications for making urban communities healthy in the face of urban planning, public health, and global challenges.

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Keywords: Tree Canopy, COVID-19, Anxiety, Psychological disorder, low-income area

UNRAVELING THE ROLE OF POPULATION AND URBAN ENVIRONMENT IN SHAPING CRIME

Abstract ID: 1108.0.0.1100.2024
Individual Paper Presentation

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Research Background: Environmental crime theory highlights the significant influence of urban settings on crime, underscoring the importance of comprehending the concept of place for a thorough understanding of crime occurrence. Variations in demographic-social characteristics such as urban population concentration, compact development, urban growth and decline dynamics, and alterations in the physical environment potentially impact crime occurrence. Moreover, the interrelations with adjacent areas and the functional aspects of cities contribute to crime dynamics.

Research Objective: This study aims to elucidate the influence of both non-physical (socio-demographic and economic characteristics) and physical environment of urban spaces on crime occurrence. It meticulously considers the alterations in surveillance resulting from demographic-social changes within urban settings, grounded in crime opportunity theory. Specifically, we concentrate on territoriality and surveillance's role in shaping crime opportunities, aiming to clarify the effects of community consciousness and sense of place, which serve as surveillance mechanisms. It also delves into the nexus between the physical and social disorder of cities and their demographic features (de facto population, de jure population, migrating populations)

Research Questions: 1) Which type of disorder within the urban environment—urban decline or growth—exerts a more significant influence on crime? How are the characteristics of vulnerable urban environments manifested? 2) How are the effects of crime occurrence manifested across different demographic characteristics? In which population types are surveillance predominantly observed to deter crime occurrence?

Method: The study area is Seoul, the administrative capital of South Korea and a metropolis where logistics and human resources are concentrated. Characterized by compact development, Seoul is marked by vibrant migration patterns (internal city, inter-city, and national migration), making it an ideal case for examining the effects of surveillance and urban settings on crime. Acknowledging that changes in the socio-demographic structure and physical environment, neighboring areas' crime status, and crime prevention policies can sway the likelihood of crime occurrence, this study constructed spatiotemporal data by collecting quarterly crime data from 2019 to 2021. Despite limitations in accessing crime data, which often restricts crime research to city-level analysis or the use of proxy variables such as subjective perceptions, this study aggregated data at the administrative neighborhood level post-acquisition of coordinate data detailing crime occurrence sites from the Korean National Police University. The analysis encompasses crime types, non-physical(socio-demographic and economic characteristics), and physical environment, from public transport accessibility to crime prevention facilities.

Results: Using the spatial Durbin model, this study challenges traditional crime opportunity theory by showing that areas with increased surveillance can also have higher crime rates influenced by local population characteristics, such as visit timing and migration patterns. The impact of the de facto population on crime is complex, serving either as an opportunity or a deterrent based on their proximity to migration. Conversely, the de jure population, especially workers, strengthen community ties and surveillance, as new arrivals often feel like outsiders,

diminishing their involvement in community monitoring. Moreover, this study shows that areas with signs of low territoriality and urban growth(active area), including nightlife venues and 24/7 convenience stores, are particularly vulnerable to crime. Areas with high nightlife activity and potential conflict exhibit greater crime opportunities than those with higher sales volumes. Interestingly, targets traditionally deemed vulnerable due to low territorialities, such as old buildings and parking lots, do not uniformly influence crime occurrence, with effects varying by crime type (e.g., sexual harassment, assaults).

Given these insights, this study highlights the necessity for crime prevention policies to integrate urban planning considerations. This approach aims to tackle the rise in crime in areas experiencing significant external population influxes and commercial activities, thereby addressing potential oversights in existing strategies.

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Keywords: Crime, Crime opportunity theory, Urban Safety, Surveillance, Urban environment

URBAN ENVIRONMENTS AND HEALTH OUTCOMES: A CASE STUDY OF LANSING, MICHIGAN

Abstract ID: 1108.0.0.38.2024
Individual Paper Presentation

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Central Research Theme: Research on urban environments and physical health outcomes have been conducted for decades, mostly in form of physical activity, obesity, and chronic health outcomes. Similarly, research on mental health impacts of being in green spaces has been researched heavily in other countries but less so in the U.S. Mental health impacts of being in various green/open spaces is newer and has gained importance since the Covid-19 Pandemic. However, the effects of being in various urban built environments on mental health has not been researched much at all. Green spaces do have a restorative effect on mental health, but other characteristics have an impact on mental health as well, such as boarded up houses, other people on the streets, aesthetics, isolated or unlit areas, just to name a few. Spatial analyses allow researchers to visualize the various areas in an urban environment and the prevalence of health outcomes in order to get a more nuanced understanding of the area and how it contributes to overall health. This study is part of a European Union grant, Horizon 2020, titled eMOTIONAL Cities, that looks at the mental perceptions of being in various urban environments in cities across Europe, UK, and the USA. This presentation focuses on the Lansing, Michigan case study and is the first step in corroborating data available on urban environments and health outcomes which then informs the next parts of the study that include

indoor and outdoor experiments to test mental perceptions (through sensors and specialized equipment) of being in these urban environments.

Methodology: This study used secondary data on health outcomes, urban environmental data, and socioeconomic characteristics for Lansing, Michigan and used spatial analyses to map out areas where health outcomes could be associated with various urban and residents' characteristics.

Findings: Results show areas within the City where mental health outcomes correlate with urban physical and socioeconomic characteristics. The visual nature of the results helps in understanding results of the statistical analyses, and aid in understanding the nature of the urban areas that have significant impacts on mental (and physical) health that would not be discernable otherwise. The study points to a critical need for planners to use various techniques to understand the nuances and perceptions of residents and their urban environments. These nuances are discernable when spaces are visualized and provide context to numbers and data that are frequently used.

Relevance to planning scholarship: Research carried out in this study is important to planners as it provides evidence of various characteristics of the built environment and how it impacts mental health, both in real time, and long-term health outcomes. With evidence at their hands, planners are able to target specific areas within their jurisdiction, for improvement that helps not only the mental health of its residents, but also translates to overall health and wellbeing.

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Keywords: Urban Areas, Health Outcomes, Spatial Analyses, Lansing, MI

URBAN-PERI URBAN FOOD SYSTEMS FOR LOW-INCOME SENIORS' DAILY FOOD ACCESS

Abstract ID: 1108.0.0.941.2024
Individual Paper Presentation

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Background:

Planning urban and peri-urban food systems is gaining global attention as a potential solution in urban planning to ensure safe, diverse, and healthy food access, especially in rural areas. (American Planning Association, n.d.). In this current global trend, scholarly investigations closely examine the food desert phenomenon among the low-income,

senior population in South Korea, a nation that has transitioned into a hyper-aged society (Seong & Lee, 2021). Nevertheless, concrete solutions at the urban planning level to operationalize this scholarly concept are still in their initial stage. Therefore, further research is needed to explore effective spatial solutions that integrate urban and peri-urban food systems to ensure equitable access to food options, particularly for low-income seniors, who are more vulnerable due to reduced mobility, lack of access to transportation, and economic insecurity (Runzheimer et al., 2023).

Purpose/Research Question:

This paper investigates spatial strategies, particularly referring to the 'networked-compact city' concept, and presents an urban structural model that integrates urban and peri-urban food systems to enhance food accessibility for low-income seniors. By conducting an in-depth case study in Sejong City, Korea, a city recognized for its successful integration of urban-rural food production (Kim & Koo, 2020), this study aims to explore two key research questions:

1. What spatial strategies can be employed to enhance food accessibility for low-income seniors?

2. Is the 'networked-compact city' concept a viable urban planning solution to improve food accessibility for low-income seniors?

Methods:

This paper begins with an intensive literature review of planning policies and case studies of urban and peri-urban food systems and spatial strategies, such as the 'networked-compact' model, drawing insights from relevant existing studies, such as the Location Normalization Plan in Japan (Yoon & Takefumi, 2019). Next, quantitative measurements of food accessibility were conducted by obtaining geo-location information of food outlets from the Open Government Data Portal and performing Urban Network Analysis (UNA) in GIS. In addition, qualitative methods such as stakeholder interviews and surveys of seniors in peri-urban areas were employed. Then, a spatial model that consists of urban facilities of food outlets, based on the ‘networked-compact city’ concept, is developed. Finally, the Location-Allocation Model is utilized to allocate suitable locations for the developed spatial model, aiming to enhance food accessibility for low-income seniors.

Findings:

Findings reveal a striking contrast in spatial accessibility of food outlets between urban and peri-urban areas of Sejong City. In the 1 eup and 9 myeons that make up the city's peri-urban regions, the ratio of service area within a 400m walkable radius of primary food sources—supermarkets, traditional markets, and specialized stores like fruit and vegetable shops—is significantly less compared to the 13 dongs constituting the urban core. Furthermore, the Accessibility Index for low-income senior residents is notably lower in these peri-urban areas, underscoring the urban-rural divide in accessing essential resources within Sejong City. Despite the lower food accessibility of food outlets within a 400m walking buffer in peri-urban areas, the number of food outlets per low-income seniors was similar both in urban and peri-urban regions. This finding suggests that the food outlets are located beyond a 400m walking distance, indicating that lower-income seniors, regardless of their home locations, either in urban or peri-urban areas, are living in what can be described as a food desert area with limited mobility and transportation options.

Relevance:

This study establishes the foundation for developing spatial solutions that enhance food security for low-income seniors in urban and peri-urban areas. By addressing the specific challenges related to food accessibility in each

region, this study emphasizes the critical need for tailored urban planning strategies to improve low-income seniors' access to healthy food.

Citations:

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Keywords: food accessibility, urban and peri-urban food systems, food deserts, food systems planning, low-income seniors

WOMEN FARMERS STRENGTHENING FOOD SYSTEMS AMID CONFLICT

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Individual Paper Presentation

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Global South cities face multiple challenges because of how Western frames of planning are blindly used (Watson 2013). Acontextual planning negatively affects people, especially women, and their food systems. Women farmers form a crucial part of food systems, yet they face systemic inequities in access to productive resources, markets, and services in the Global South (Gobeze 2020; Swain 2018; Azong 2018; Nations 2011; Rao 2005), particularly in conflict-hit regions where challenges are further exacerbated. In this paper, I argue for a more nuanced understanding of these inequities by highlighting how existing research overlooks the complexities of food systems of the Global South with a focus on conflict cities such as Kashmir and the experiences of women farmers living there. The key research question asked in this paper is: How do Kashmiri women farmers support themselves while living in a conflict setting? I look at barriers experienced by women farmers, as well as their adaptation techniques. Focused on women's experiences, I draw from the concept of “Vyestoan,” a critical affective female alliance and companionship of resistance (Falak 2018) showcasing their remarkable resilience and agricultural adaptation practices within existing food systems. The paper uses results from ten in-depth qualitative interviews with women farmers living in two areas: Pattan and Srinagar in Kashmir along with an extensive literature review on food system and gender, Women farmers from Srinagar City and Pattan village were interviewed during the Summer of 2023 using a questionnaire approved by the Institutional Review Board of the University at Buffalo. The results shed light on their daily experiences navigating a conflict-hit city. It focuses explicitly on barriers women farmers face and

their adaptation practices while working in conflict. Ultimately, the paper explores the probable causes of the gendered nature of food systems in cities experiencing protracted crises.

Drawing on women farmers' livelihood strategies and insights, I argue for incorporating a gender-centered approach to planning frameworks moving beyond Western frameworks. Additionally, I argue for empowering women farmers by recognizing women's contributions and supporting their participation in markets to improve their livelihood. Empowering women farmers is crucial not only for women farmers but also for achieving long-term sustainability goals of food security, improved nutrition, and better health outcomes. Through this paper, I highlight the urgency of integrating gender and conflict considerations within food systems planning to build equitable and resilient food systems.

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Keywords: Women farmers, Global South, Conflict, Kashmir, Gender disparities

Track 9 Research in Motion (RiM)

ACHIEVING ZERO WASTE AND NET ZERO: SCALING UP URINE DERIVED FERTILIZER

Abstract ID: 1110.0.0.1023.2024

Research-in-Motion (RiM)

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The embodied and direct greenhouse gas (GHG) emissions caused by throwing away 30 to 40% of food in the United States signals that circular food systems are urgently needed. Concerns over food waste, however, overlook the fact that a significant amount of food nutrients are also lost down the toilet. Urine derived fertilizer (UDF) is generated through a process that recycles captured nutrients excreted by people at the front end of our wastewater system – before the flush. We argue that planners could play an important role in scaling up UDF as part of an overall strategy to achieve zero waste and carbon neutrality goals.

Our modern nutrient management system is the epitome of a linear approach to "waste". Nearly 80% of Nitrogen (N) and 65% of Phosphorus (P) in sewage comes from urine. When flushed, these nutrients are either stored in septic systems that often fail, or move through centralized treatment facilities that only recover 11% of N and 21% of P, releasing the rest as gaseous emissions or into waterways. At the same time, linear industrial food systems rely upon N and P fertilizer inputs from synthetic production and international mining. Closing this loop could enable regional food systems and circular economies, lower farmer dependence on unstable, GHG emitting fertilizer supply chains, and revolutionize aging, costly and polluting wastewater systems.

To understand the regulatory pathways to scaling up UDF, we carried out: semi-structured interviews with state environmental, wastewater and agriculture agencies and UDF advocates who made significant strides in scaling up UDF in Oregon, Vermont, and Massachusetts; a policy scan of historic laws and existing wastewater, composting toilet, plumbing and fertilizer regulations in these states; and action research to test the effectiveness tactics to secure public health permits, plumbing code approvals, and agricultural fertilizer labels needed to launch a UDF demonstration site in Michigan.

Drawing on the theory of street-level bureaucracy (Lipsky 1980), our findings show how front-line staff exert considerable discretion over UDF-related permitting, typically erring on the side of risk-aversion that can be contrary to intended policy, especially when faced with organizational goals that are unclear. Based on Multiple Streams Theory (Hoeffer 2022), however, we also show how "focusing events" that shift organizational priorities – or leadership changes, can also create windows of opportunity to secure necessary approvals. We also demonstrate how simple principles like "no surprises" – consulting early with bureaucrats about a potential UDF project – can also create allies who later shepherd the permitting process along. Finally, we map the key laws and agencies we found to create the policy environment within which UDF operates in the US, including international standard plumbing codes, EPA and USDA federal laws, state codes and programs, and local-level rules managed by health departments and wastewater treatment operators. Together, our findings outline various regulatory pathways planners could follow to scale up UDF supply chains.

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Key Words: food systems, circular economy, environmental planning

AGING PLAYFULLY

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Research-in-Motion (RiM)

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Society is aging and there is increasing recognition of the important role that urban planning will play in creating communities that support and connect older adults. The emergence of the older adult focused planning discourse is in part a result of the huge policy push for age-friendly cities in the last two decades led by the World Health Organization. Age-friendly policy development, implementation, and academic research have informed and guided the conceptualization and creation of enabling social and physical environments for older adults (Biglieri & Hartt, 2024). But could age-friendliness go further? There is an opportunity to expand our conceptualization of aging and age-friendly communities to embrace spontaneity and creativity – to embrace opportunities to plan for play.

In city planning, as in society, play is considered to be an activity only for children. But why? Play has incredible physical, mental, and social benefits for people of all ages. I argue that play is particularly well suited to support the health and wellbeing of older adults. Play's utilitarian benefits such as improved cardiovascular and muscular fitness, mental wellbeing, and social participation counter many of the challenges often associated with later life, including loneliness and frailty (Holt-Lunstad et al., 2015; Kerr & Apter, 1993). Play's non-instrumental benefits, like the emancipation from the preconceptions of everyday life (Stevens, 2007), may transform routine barriers such as ageism.

Despite the congruence between play and age-friendly conceptual models, there is virtually no research on older adult play in the planning, gerontology, or play discourses (Hartt et al., 2024). Play is firmly siloed in the age-segregated corrals of children's research, planning, and development. I present the results of several connected studies in the Aging Playfully project. Together, they delineate and unpack conceptualizations, social constructions, opportunities, and challenges of older adult play and planning for older adult play. The studies were conducted with older adults in British Columbia, Canada, and Florida, USA, as well as with planners and age-friendly practitioners from around the world. A range of research methods (observations, interviews, photovoice, and focus groups) were used to gain insight to place-based perceptions and potential of older adult play.

The findings demonstrate the conceptual and pragmatic fit of play and age-friendly planning. Together, they are well suited to combat the challenges associated with aging and should be considered a key planning consideration of age-friendly communities. The investigation of the relationship between play, public space, and older adult wellbeing offers an opportunity for planning academics and practitioners to initiate and lead a new trajectory of age-friendly research and practice. Cities can be designed to help facilitate opportunities for older adult play. But

first planners, policymakers, and the public at large must eschew traditional social constructions of older adults and of play in order to rethink how we can transform our cities, public spaces, and communities to be more than age-friendly, to support older adults to age playfully.

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Key Words: play, aging, age-friendly communities, older adults

MARIJUANA IMPAIRMENT AND CRASH OUTCOMES: A STUDY OF THREE STATES

Abstract ID: 1108.0.0.389.2024
Research-in-Motion (RiM)

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The increasing complexity of traffic incidents involving drug use, especially marijuana, necessitates a sophisticated understanding to enhance road safety measures effectively. In the U.S., drug-related traffic fatalities rose to 25.3% in 2020, highlighting a disturbing trend (Chen et al., 2022). Specifically, crashes involving cannabis users spiked from 9% in 2000 to 21.5% in 2018 (Lira et al., 2021), signaling an escalating risk on road safety. Research identifies Tetrahydrocannabinol (THC)’s role in heightening crash risks leading to death, indicating marijuana's significant hazards (Steinemann et al., 2018) and its detrimental effects relative to alcohol (Romano et al., 2017). States like Oregon, Colorado, and Washington saw increased crash rates post-marijuana legalization (IIHS & GHSA, 2018), contrasting studies indicating no significant uptick in crashes post-medical marijuana legalization (Lee et al., 2018; Sevigny, 2018). Das & Theel (2021) acknowledge marijuana's impact on driving abilities, such as lane swerving and delayed decision-making, albeit less severely than alcohol. These studies on marijuana and crash patterns reveal inconsistencies in the research findings on the impact of marijuana, and while insightful, they lack a comprehensive view on the legislative impacts across diverse regions. This study aims to fill that gap by examining the nexus between marijuana impairment and traffic incidents across three states with varied marijuana legalization: Texas (restrictive), Colorado (recreational), and Oklahoma (medicinal), highlighting implications for public health and safety. Objectives are to (i) analyze the relationship between marijuana-impaired driving and crash severity, and rate, (ii) explore legislation’s impact on marijuana-related crashes, (iii) investigate marijuana's impact compared to other explanatory factors, and (iv) examine crashes for instances of marijuana usage in legislatively restricted areas. We specifically, examine the following questions:

1) What are the differences in crash rates and severity among different regions with different legal statuses of marijuana use for drivers?
2) Is marijuana use a significant factor to travel safety?
3) How is the effect of marijuana impaired driving on crash compared to other factors that define driver's behavior, built environment, and demographics factors?
4) What are implications of the research findings for developing effective traffic safety policies and planning strategies?

The study assess the relationship between crash outcomes (rate, and severity) and the independent variables in several categories including (i) Driver intoxication (defined by presence of marijuana, alcohol, other drugs); (ii) Driver's behavior (speeding, lane change, unsafe turning, distractions, violation); (iii) built environment (road functions, speed limit, intersection, number of lanes, road types); (iv) demographics (age and gender), and (v) Legalization (recreational, medicinal and restrictive). Data from Texas Department of Transportation (TXDOT), Colorado Department of Transportation (CODOT), and Oklahoma Department of Transportation (ODOT) crash databases (2019-2021) is analyzed for this purpose.

The study hypothesizes that marijuana-impaired driving correlates with higher crash rates, influenced by built environment and demographics. Similarly, young, male drivers are prone to intoxicated driving, increasing accident risks. We assume that the impact of marijuana legalization on crashes varies by state, with counties as the analysis unit.

We employ Multivariate Analysis of Covariance (MANCOVA) to compare crash outcomes across states, adjusting for covariates and exploring interaction effects. We perform structural equation model (SEM) to investigate how marijuana impairment affects crashes relative to driver behavior, built environment, and demographic factors.

Initial findings reveal crash rate and severity variations among the states, highlighting how marijuana legalization in Colorado and Oklahoma affects crashes compared to Texas. The study identifies notable interaction effects, like marijuana use with road type, gender, or age on crashes, aligning with prior research (e.g., Romano et al., 2017; Steinemann et al., 2018; Lira et al., 2021; Chen et al., 2022). The analysis incorporating other factors of built environment, demographics, and driver' behavior will verify the effects and the extent of the effect of intoxication factors. When considering all the variables, the results will provide empirical evidence for our research questions. Implications of the findings for planning and future research will be discussed.

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Key Words: road safety, marijuana-impaired driving, public health, intoxication, crashes

RACIALIZED INACCESSIBILITY IN GENERAL ACUTE CARE FACILITIES OF LA COUNTY

Abstract ID: 1110.0.0.1175.2024
Research-in-Motion (RiM)

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Attainable healthcare is the bedrock to resilient communities, and universal access to healthcare is fundamental to the proper and timely management of acute and chronic illnesses. Accessible transit infrastructure is an extension of healthy urban communities. As such, public transit network/infrastructure is inextricably linked to healthcare access, and in turn, community health. However, disparities in healthcare access as a direct symptom of structurally racist planning and policy remain pervasive. The COVID-19 pandemic laid bare the structural inequities in our nation's public health systems as well as other public infrastructure access. In recent years, the spatial component of healthcare accessibility has also further complicated and enriched the discourse, with rare overlaps over spatial healthcare accessibility. Our research attempts to fill some of the gap by mapping correlation between acute care physical accessibility and demographic characteristics. We examined comparative access to general acute care facilities among majority Black, Latino, Asian, and White communities in Los Angeles County. We identified Census Tracts with high (>50%) demographic proportions of Black, Latino, and Asian ethnicities, and determined accessibility determined by derving bed-to-patient ratios of general acute care facilities within a Euclidean buffer of 4.4 miles (national average distance for access to healthcare in urban areas), from Census Tract centroids. Spatial heterogeneity and dependence were then established via spatially explicit geographically weighted spatial models. Tract-level characteristics of various contexts, such as ethnic demography, population income level, healthcare facility distribution were obtained based on the 2021 ACS survey, Southern California Association of Governments, and California Department of Public Health open data. Our preliminary findings show accessibility to acute care among White-majority tracts is up to three times higher than in tracts with mostly minority (White Black, Latino, and Asian) communities. Majority-Latino tracts in urban core spaces (Downtown Los Angeles) have higher acute care accessibility than other minority-dense tracts, highlighting both migration patterns and differential socioeconomic mobility compared to other minority populations. High spatial clustering of adjacent minority communities, especially that of denser tracts in Los Angeles County, align with historically redlined or blighted areas – and therefore by extension – with historically discriminatory policies that perpetuate disparate health spatial access, such as exclusionary zoning and redlining. Further study and review of public healthcare and transit access in historically exclusionary zoning areas can remedy spatial injustice and reshape the current public health landscape by redeveloping current healthcare "desserts" (cold spots) such as reimagining and implementing new transit networks.

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Key Words: Spatial Accessibility, Acute Healthcare, Community Health, Racial Disparities

SOCIAL JUSTICE IN THERAPEUTIC LANDSCAPES: A CRITICAL SCOPING REVIEW

Abstract ID: 1110.0.0.365.2024
Research-in-Motion (RiM)

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The integration of health geography into urban planning research and practice presents compelling opportunities for planners to become robust partners in championing public health. However, while recognizing the potential synergies between these fields, this integration also coincides with the rise of a “psychocentrist” variant of global therapeutic culture—a neoliberal phenomenon that places undue emphasis on individual resilience while neglecting systemic drivers of health disparities and collective harm (Rimke 2020). As a result, instead of solely enriching the planning discipline, there is a risk that importing this framework may divert attention away from the endeavor to plan for social justice, including through health equity (Rosenberg 2017).

This paper presents initial findings from a critical scoping review that investigates how social and environmental justice has—or hasn’t—been attended to within the literature on therapeutic landscapes, with a specific emphasis on urban contexts. The emergence of new health geography in the 1990s, epitomized by the influential concept of the therapeutic landscape, aimed to transform the quantitative approaches of medical geography by incorporating concepts such as sense of place and lived experience, as well as by analyzing how political, economic, and cultural processes contributed to different experiences of health and wellness. However, despite this initial interest in making space for the political, the resulting literature has remained largely disengaged from conversations about environmental and social justice.

By analyzing health geography literature focused on everyday urban spaces, including both nature-based and non-nature-based therapeutic landscapes, we explore whether these environments serve primarily as spaces for palliative coping, or whether these spaces also possess the potential to support resistance movements against the harmful—and unevenly distributed—health conditions perpetuated by societal forces (Masuda and Crabtree 2010). These findings then shed light on the broader question of whether the integration of new health geography into urban planning discourse is pushing planning research towards justice-oriented frameworks (e.g., Fainstein 2010) or towards depoliticized coping (e.g., Duff 2016).

While recognizing the value of healing- and recovery-oriented landscapes in partially soothing the stressors of inequity, poverty, and racism, our findings suggest that the field's increasing emphasis on individual responsibilization may inadvertently detract attention from the justice-oriented interventions that are critically needed to address a myriad of public health disparities in urban contexts. We propose future research directions including advocacy for a closer examination of how the therapeutic landscapes concept can more closely align with—and amplify—social justice goals within the field of urban planning.

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Key Words: health geography, therapeutic landscapes, social justice, health equity

WHO IS MORE VULNERABLE? GENDERED FOOD SECURITY ACROSS RURAL-URBAN SPACE

Abstract ID: 1110.0.0.1123.2024
Research-in-Motion (RiM)

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The world market prices of staple crops (e.g. rice, maize, wheat, and legumes) increased dramatically over 2006-07 and 2010-11, reversing the long-run pattern of declining prices of food commodities since the past 50 years. The food insecurity impacts of higher staple commodity prices are particularly significant for countries in the Global South, where poverty and food insecurity are highly concentrated since low-income groups routinely spend more than half of their income on food consumption (Ivanic, M., & Martin, W., 2015). While the mechanisms to attain and maintain food security are constantly evolving, well-designed and well-targeted safety nets can only be

achieved if the current knowledge gaps regarding food security at the regional, household, and individual levels amid food inflationary stresses can be addressed. For instance, scientific evidence on the place-based and gendered food security impacts of rising food prices across the rural-urban continuum is lacking, especially among subpopulations of the poor such as informal sector wage laborers (Ruel, M. T., Garrett, J., Yosef, S., & Olivier, M., 2017; Tibesigwa, B., & Visser, M. 2016). This is despite rapid rural-to-urban migration across Low-and-Middle-Income Countries (LMIC), informalization of urban economies and rising rural and urban poverty (FAO 2023). Staying with food security but introducing regionally heterogeneous analysis focusing on the specific subset of informal sector wage workers, we explore links between place and food security vulnerability amid a food inflationary scenario in a single framework through comparative case study analysis of an intra-household dataset of 618 males and females from three villages in the Mandi Bahauddin district of Punjab, Pakistan, and three slums in Islamabad capital territory, recognizing differences in social and policy environments. Our reliance on qualitative interviews and multivariate regression analysis unveils crucial rural-urban heterogeneities across key socio-economic attributes that impact food accessibility. We find that with rural regions lag on key accessibility metrics. There are also notable differences in the determinants of food (in)security across rural-urban space, including the mediating role of food price rises. We demonstrate that rural residents have a lower food consumption status than their urban counterparts but are also relatively less likely to adopt adverse food-based coping strategies to maintain food consumption as food prices rise. In addition, the gender gap in food consumption is higher in the rural region, reflected in rural females' lower food consumption status relative to their male counterparts amid food inflation, while no such statistically significant gendered difference is found in the urban region. On the other hand, urban women are more likely to report difficulties in accessing food compared to their male counterparts, as reflected in a higher adverse coping strategies index score. Our findings underscore important nuances in low-income rural and urban informal wage laborers' vulnerability across different dimensions of food security at the intrahousehold level. This carves a meaningful role for regional planners to support the formulation of food security policies and associated safety nets that are gender and place sensitive, especially amid increasing food insecurity stress globally (Raja, S., Morgan, K., & Hall, E. 2017).

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Key Words: Food Security, Regional Heterogeneity, Intrahousehold Analysis, Food Inflation, Casual wage labor

Track 10 – Planning Education, Process(es) and Law

Track 10 Roundtables

EXPANDING ACCESS TO PLANNING THROUGH APPRENTICESHIP (ACSP-AESOP DISCUSSION)

Abstract ID: 1109.0.0.165.2024
Roundtable Submission

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Planning master's programs throughout the United States are looking to stabilize and even grow student enrollment, at the same time that the planning profession is striving to become more diverse and racially inclusive. This proposed roundtable explores whether these reinforcing goals can be supported through the creation of a Federal Registered Apprenticeship in Urban and Regional Planning.

Apprenticeships are dual-training systems, that require a combination of classroom education and on-the-job learning. Employers sponsor individual apprentices, paying them a guaranteed wage, along with career mentoring and a flexible schedule to accommodate in-person or on-line coursework. An educational institution provides the associated classroom training, including managing assessments linked to a nationally-recognized credential.

Traditionally associated with construction and manufacturing jobs, apprenticeships have been expanding steadily in the United States, inclusive of a broader set of occupations and industries, ranging from insurance and finance to health care and social work. Since 2012, the United States has seen a 60% increase in the number of federally registered apprentices, with nearly 600,000 individuals participating in active programs on an annual basis.

While still small-in-number, a handful, but growing number of registered apprenticeships are tied to post-secondary degree programs in the United States, including master's degree. Social Work, an allied field for planning, was the first profession to link an apprenticeship to a master's degree program the United States, launched in 2021 by HBCU Alabama A&M University. Other degree programs have followed.

A U.S. apprenticeship in planning could attract students from diverse backgrounds that might not be able to take on the financial uncertainty of a multi-year graduate degree and who would want assurances that an investment in a master's degree would result in a high-quality job with a well-illuminated career pathway. For planning-related employers, including public agencies, a planning apprenticeship would create a structure for organizing and sequencing professional learning and development, while also creating an applied experience that contributes to occupational success. In many states, funding through grants and tax credits is available to help offset some of the costs for sponsoring employers and with it, also remove student debt.

Apprenticeship is not entirely new to the planning profession. The Royal Town Planning Institute in the United Kingdom created a national apprenticeship option about a decade ago, which is linked to a network of 12 public universities that offer planning undergraduate and master's degrees. The UK's institutional leadership thus creates an opportunity to bring that learning to planning institutions in the United States.

This ACSP-AESOP roundtable will focus on three learning and action-oriented objectives. First, a discussion to educate participants from US accredited planning institutions about apprenticeships and their structure in the United States. Second, a shared space for learning from UK institutions that have apprenticeship experience. And third and lastly, an opportunity to build a core group of sponsoring academic institutions in the United States that are willing to test the apprenticeship model within their respective regions and build supportive partnerships with regional employers and philanthropic institutions.

Leaders from the American Planning Association and the Association of Collegiate Schools of Planning have indicated tentative support for apprenticeship exploration.
The University of Minnesota's Hubert H. Humphrey School of Public Affairs is providing faculty time and resources to support this effort, led by labor and economic development planning scholar Professor Nichola Lowe. We envision this roundtable at ACSP to be one of many discussions on this topic, including the possibility to carry this forward to the ACSP Administrator's Conference in Spring 2025.

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Key Words: apprenticeship, diversity and inclusion, student enrollment, dual training, planning education

GENERATIVE AI IN CLASSROOMS: THE GOOD, THE BAD & PEDAGOGICAL IMPLICATIONS

Abstract ID: 1109.0.0.996.2024
Roundtable Submission

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This roundtable will debate the use of generative AI in planning classrooms. Students rely on AI tools such as Chat GPT, generative writing features of Grammarly, image-generation software, and summary-generation features to complete classroom assignments. While AI detection software exists, some student uses of AI remain undetectable such as summarizing academic articles instead of reading assignments, generating text through AI and then paraphrasing before submission, using AI to generate lines of code before running data analysis, and using AI to generate images. There are also AI tools for professors which grade student submissions, generate assignments, and more. Some argue that banning AI use in classroom assignments leaves students ill prepared for future jobs which embrace generative AI use as revolutionizing the urban planning field. Others argue that the use of AI in academic settings limits development of critical thinking, critical reading, and writing skills, which are central to a high-quality urban planning education.

Accurate detection of AI-generated text is complicated, making it more difficult to enforce policies limiting use of AI in the classroom. Weber-Wulff et al., (2023) find that Turnitin and Plagiarism Check, two systems widely used in academic settings, are respectively less than 80% and 55% effective at accurately detecting AI generated text. The predisposition of tools such as Turnitin and Plagiarism Check to falsely identify AI-generated text as human written leads some professors to take strict stances about penalizing any use of AI flagged by such software. However, the ethics of (dis)allowing AI use in the classroom must also include attention to equity. For example, AI detectors disproportionately identify text written by non-native English speakers as AI-generated (Liang et al., 2023) and students with disabilities using accessibility features of online platforms are increasingly flagged as using generative AI while accessing reasonable accommodations. The applications and capabilities of AI within environments of higher education are snowballing at a faster rate than academic integrity policies can keep up, leaving many professors left to set their own boundaries on AI use. Hopefully, debates encouraged in this roundtable will lay a foundation for more discussions of how AI use is being permitted within scholarship, what counts as cheating, how AI is advancing student learning outcomes, and how to enforce such policies across schools of urban and regional planning.

This roundtable will highlight debates in how generative AI is transforming educational institutions and weigh the pros and cons of such technological changes on student learning outcomes. Many educators are navigating such new terrain, and a national setting such as ACSP provides an opportune outlet to discuss best practices across urban and regional planning schools. This roundtable welcomes both esteemed professors who stand at the forefront of teaching pedagogy and generative AI utilization, as well as new professors navigating these terrains at the start of their careers.

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Key Words: Generative Artificial Intelligence, student learning outcomes, Chat GPT, Classroom Ethics, Teaching Pedagogy

INNOVATING PROJECT-BASED PEDAGOGIES TO BRIDGE PLANNING THEORY AND PRACTICE

Abstract ID: 1109.0.0.92.2024
Roundtable Submission

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Planning scholars and practitioners share the goal of fostering new knowledge and creativity to reinvent urban futures (Healey et al. 2000; Schott 2019). However, gaps between theory and practice can present challenges for planning educators. Project-based courses, such as studios and workshops, offer an opportunity for planning academics and students to confront and remedy this gap between theory and practice. In these courses, students critically engage with real-life issues, diagnose problems in specific contexts, analyze assumptions and biases, and creatively imagine solutions. Entities such as government agencies, NGOs, consultants, and/or local community groups are often invited to participate as partners or clients. Project-based pedagogies embody a reflection-in-action approach that is vital for fostering creative problem-solving (Schön 1983). They engage students in active and democratic learning and cultivate practitioners who could adapt creatively to a dynamic world (Dewey 1997).

This roundtable brings together planning educators who have designed, coordinated, and taught project-based courses in recent years to collectively reflect on lessons learned from their experiences. The dialogues will address the following questions: How do you balance encouraging students to be visionary, imaginative, and/or advocacy-driven with the need to respond to practical project demands? What are some effective project-based pedagogies that can enable both academic learning and professional skill development? How can instructors better engage partners/clients, especially when discrepancies exist between a course's learning objectives and the partners'/clients' expected outcomes? Following the panelists' reflections, audience members will be invited to share their perspectives and experiences.

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- Schön, D. (1983). The reflective practitioner. How professionals think in action. New York: Basic Books Inc.
- Scott, M. (2019). Reflecting on theory and practice. Planning Theory & Practice 20, 3-7.

Key Words: theory-practice gaps, project-based pedagogy, reflective practitioners

INTEGRATING CONSTRUCTIVE DIALOGUE INTO PLANNING EDUCATION

Abstract ID: 1109.0.0.1238.2024
Roundtable Submission

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In today's world, where polarization is pervasive, it's crucial to foster constructive dialogue among public affairs and planning students. This division, often due to misunderstandings and distrust, leads to a stagnant impasse and binary thinking, hindering nuanced comprehension and progress. Students must be adept at navigating complex discussions in and outside of the classroom, particularly in contentious scenarios. Beyond debating, mastering challenging conversations is a skill requiring both development and practice.

To nurture these vital skills, students should engage in conversations that seek to understand diverse perspectives, not just tolerate them. This process of listening and responding aids in mutual understanding, finding common ground, and possibly enabling previously unthinkable collaborative efforts. Training in dialogic skills prepares students for public involvement, bolsters their leadership abilities, and enhances their capacity for advocacy and bridge-building, contributing to a richer democratic society. However, facilitating these dialogues can be challenging and requires skilled faculty and staff.

This roundtable discussion will share insights from planning deans who have integrated constructive dialogues into various academic levels, from university-wide discourse initiatives to individual class activities addressing societal dynamics. The facilitator will discuss the experiences and obstacles of implementing this curriculum and provide practical strategies and guidance for incorporating constructive dialogue into educational programs. Attendees will gain insights on incorporating open, informed discussions into their teaching, essential for developing empathetic and engaged citizens prepared for a complex world.

Citations:

- Allen, D. (2004). Talking to Strangers: Anxieties of Citizenship since Brown v. Board of Education. University of Chicago Press. https://press.uchicago.edu/ucp/books/book/chicago/T/bo3636037.html
- Ben-Porath, S. R. (2023). Cancel Wars: How Universities Can Foster Free Speech, Promote Inclusion, and Renew Democracy. University of Chicago Press. https://press.uchicago.edu/ucp/books/book/chicago/C/bo185875213.html
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Key Words: Constructive dialogue, Polarization, Empathy, Societal dynamics, Planning education

SEEKING THE NEXT GENERATION OF URBAN PLANNING ACADEMIC LEADERS

Abstract ID: 1109.0.0.901.2024
Roundtable Submission

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As the profile of urban planning schools and programs continues to grow in higher education, we are seeing an increase in the number of planners moving into leadership positions as associate deans, deans, and beyond. While leadership in higher education is challenging, especially currently as universities and their leaders face ever greater scrutiny from legislators, parents, employers, and others, there are tremendous opportunities to make meaningful change. Opportunities for planners to contribute to the innovation we need in higher education, offers great potential for our institutions, for students, faculty, and for the communities we serve.

Urban planning faculty and planning program leaders are particularly well positioned to move into leadership positions in their schools and analysis are central in higher ed administration. Planners' particular sensibilities and ability to outline not just a vision but a pathway to implementation are often sorely needed in academic units and universities. Further, the substantive and values-based focus in urban planning on community engagement and diversity, equity, and inclusion, positions planners to bring not just expertise, but also leadership to the increasing number of university-wide initiatives in these areas.

The roundtable discussion will bring together current Planner Deans to highlight the unique capacities of urban planning faculty as academic leaders. Roundtable participants will highlight early and mid-career strategies for leveraging these capacities to gain leadership experience and build networks at their school and university level. They will also discuss potential pathways for gaining initial leadership experiences that can offer faculty an opportunity to reflect on their interests and potential roles in academic leadership. Issues related to diversifying leadership in planning and higher education will be highlighted.

The roundtable will also explore, among speakers and attendees, needs and preferences for leadership development in the urban planning academy. The discussion will consider potential roles for ACSP, PAB, member schools, current planning academic leaders, and others in supporting new leadership development activities.

Citations:

- Zulfqar, A., Valcke, M., Quraishi, U., & Devos, G. (2021). Developing Academic Leaders: Evaluation of a Leadership Development Intervention in Higher Education. Sage Open, 11(1). https://doi.org/10.1177/2158244021991815
- Manongsong, A. M., & Ghosh, R. (2021). Developing the Positive Identity of Minoritized Women Leaders in Higher Education: How can Multiple and Diverse Developers Help With Overcoming the Impostor Phenomenon? Human Resource Development Review, 20(4), 436-485. https://doi.org/10.1177/15344843211040732
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Key Words: leadership, engagement, professional development

YOUTH IN PLANNING: TRANSFORMING THE PROFESSION AND CIVIC PARTICIPATION

Abstract ID: 1109.0.0.414.2024
Roundtable Submission

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This roundtable brings together representatives from several projects in which youth (middle and high school-age) are centrally engaged in planning activities, including: community science, urban planning coursework, neighborhood planning, and planning internship and workforce development programs (Reardon 1995). While the motivations and objectives of youth engagement vary between the projects, this roundtable aims to advance the prospects of youth involvement to transform the planning profession and modes of civic participation in place-based, collective decision-making.

Despite long-standing recognition of the needs of planning processes to be more inclusive of underrepresented populations and the importance of making amends for the harms that top-down, “expert”-driven planning practices have caused, the profession of planning continues to be majority white (Greenlee et al 2018). More universities have created undergraduate urban studies or planning programs, but students, especially students of color from underrepresented backgrounds, may not be aware of these majors and face barriers to higher education. Simultaneously, research shows that place-based education in K12 levels is one pathway towards creating cultural relevance, improving student learning outcomes and academic interest, and opening pathways for students to imagine diverse career options (Vesterinen et al 2016). This trend creates opportunities for planners to be involved in the creation of curricular opportunities for planning education at the K12 level.

In this roundtable, we will discuss our experiences working with youth of color in planning-related activities. Our efforts include: building career pipelines, infrastructures that support university-community partnerships, cross-level learning opportunities that integrate middle and high school student and undergraduate and graduate student learning objectives, integration of community science and planning, and how youth involvement influences the quality of civic participation in communities of color (Cahill 2013; Driskell 2001; Fine 1999). We welcome audience participation in our conversation.

Citations:

- Cahill, C. (2013). Doing research with young people: Participatory research and the rituals of collective work. In Doing Children's Geographies (pp. 98-113). Routledge.
- Driskell, David. (2001) Creating better cities with children and youth: A manual for participation, Routledge.
- Fine, M. (1999). The unknown city: The lives of poor and working-class young adults. Beacon Press.
- Greenlee, A. J., Jackson, A., Garcia-Zambrana, I., Lee, C. A., & Chrisinger, B. (2018). Where Are We Going? Where Have We Been?: The Climate for Diversity within Urban Planning Educational Programs. Journal of Planning Education and Research, 0739456X18815740. https://doi.org/10.1177/0739456X18815740
- Vesterinen, V.-M., Tolppanen, S., & Aksela, M. (2016). Toward citizenship science education: What students do to make the world a better place? International Journal of Science Education, 38(1), 30–50. https://doi.org/10.1080/09500693.2015.1125035

Key Words: youth in planning, diversity and inclusion, workforce development, participatory action research (PAR)

Track 10 Workshops

SYSTEMATIC, SCOPING OR LITERATURE: WHAT TYPE OF REVIEW IS RIGHT FOR YOU?

Abstract ID: 1111.0.0.829.2024
Professional Development Workshop

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As research continuously grows, so does the use of systematic reviews, scoping reviews and meta analysis as a way to select, identify, and critically appraise published studies and reports. Reviews are critical components of academic research and evidence based decision making.

This workshop, taught by two academic planning librarians, will provide an overview of the different types of reviews (systematic, scoping, literature, etc.), describe the components and stages of each review, as well as the protocols, frameworks, standards and resources available for each review type. Attendees will have the opportunity to explore the various review types and identify which review fits their current research needs.

Reminder for Workshop Participants: Although attendees do not need to bring a laptop or a current research project, having both will enhance the workshop experience.

Citations:

- Arksey, & O'Malley, L. (2005). Scoping studies: towards a methodological framework. International Journal of Social Research Methodology, 8(1), 19–32. https://doi.org/10.1080/1364557032000119616
- Gough, D. A., Oliver, S., & Thomas, J. (2012). An introduction to systematic reviews. SAGE.

- Grant, M.J. and Booth, A. (2009), A typology of reviews: an analysis of 14 review types and associated methodologies. Health Information & Libraries Journal, 26: 91-108. https://doi.org/10.1111/j.1471-1842.2009.00848.x
- Petticrew, M., & Roberts, H. (2005). Systematic reviews in the social sciences : a practical guide. Blackwell Pub. https://doi.org/10.1002/9780470754887
- Sutton, Anthea, Mark Clowes, Louise Preston, and Andrew Booth. "Meeting the Review Family: Exploring Review Types and Associated Information Retrieval Requirements." Health information and libraries journal 36, no. 3 (2019): 202–222. https://doi.org/10.1111/hir.12276

Keywords: Systematic Reviews, Literature Reviews, Research Protocols, Research Methodologies

"WHAT DO I DO?" SUPPORTING FACULTY DURING TARGETED HARASSMENT BY THE PUBLIC

Abstract ID: 1111.0.0.769.2024

Professional Development Workshop

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When engaging in anti-racist planning education, research, and practice, everything from the effects of anti-DEI legislation to growing faculty watchlists means we must be aware of and attuned to potential perils in higher education produced by a polarized political climate. Faculty face an ongoing threat of harassment by members of the public related to their teaching, research, or personal identities (AAUP, 2023; Doerfler, et.al., 2021). Targeted harassment is when groups or individuals engage in aggressive and often organized campaigns that are meant to silence and censor (Ferber, 2018). During these incidents, the overwhelming emails, online messages, tweets, social media comments, phone calls, doxxing (the wide release of personal information such as home address, children's names, and more), and even threats of rape and death contribute to silencing, self-censorship, and a lack of safety — all of which prohibit faculty and staff from fully engaging in academia, higher education, and with the public. At public universities, harassment can also produce open records requests in which members of the public issue formal requests for faculty member emails and more (Polsky, 2019).

As the Senior Fellow with the UC National Center for Free Speech and Civic Engagement, I developed a workshop series based on my interviews with faculty members who experienced targeted harassment by the public, including faculty in schools of urban studies and public affairs (Flores, 2021). During this interactive workshop, participants will learn about the issue of targeted harassment, and will leave with ideas of what should be included in their personal safety and individual-level support plans. Research shows that there is no one-size-fits-all approach, and we will explore a range of formal and informal ways of supporting colleagues, consider what it means to center the faculty member (versus the institution) during these incidents, and discuss strategies for what support looks like at department, college, and university campus levels.

Workshop Agenda – 90 minutes:
00:00-00:10 – Welcome and introductions
00:10-00:20 – Overview of targeted harassment (what it is, how it happens)
00:20-00:30 – Key findings from my research that led to developing this workshop
00:30-00:45 – Scenario Small Group Exercise: What if this happened to you?
00:45-00:60 – Individual Activity: Personal Safety and Individual Support Plans
00:60-00:70 – Dialogue: Formal and Informal Supports

00:70-00:80 – Dialogue: Support at Department, College, Campus Level
00:80-00:90 – Committing to Next Steps and Q&A

The goal of this workshop is for participants to learn about the issue, identify best support practices during incidents of targeted harassment, and leave with both ideas for their own personal safety plans and next steps for bringing these strategies to their departments or colleges. Workshop outcomes include:

- Learning about target harassment of faculty by members of the public
- Learning about how and why faculty become targets
- Learning about the multiple ways in which targeted harassment affects faculty
- Identify formal and informal sources of support
- Identify support mechanisms on- and off-campus
- Identify support at department, college, and campus levels
- Develop personal safety and individual support plans
- Leave with next steps for bringing strategies to your own campus

Reminder for Workshop Participants: Participants of this workshop may share their own personal experiences with targeted harassment, so please use the Vegas Rule: What happens here stays here, but the lessons we learn we take with us.

Citations:

- American Association of University Professors (AAUP). Fighting Targeted Harassment of Faculty. Last retrieved July 31, 2023, from https://www.aaup.org/issues/fighting-targeted-harassment-faculty
- Ferber, A. L. (2018). “Are you willing to die for this work?” Public targeted online harassment in higher education. Gender & Society, 32(3), 301-320.
- Flores, N. M. (2021). Tweets, Threats, & Censorship: Campus Resources to Support Faculty Through Incidents of Targeted Harassment. UC National Center for Free Speech and Civic Engagement. Permanent Link: https://issuu.com/ccowper/docs/flores_-_tweets_threats_and_censorship_2_
- Doerfler, P., Forte, A., De Cristofaro, E., Stringhini, G., Blackburn, J., & McCoy, D. (2021). " I'm a Professor, which isn't usually a dangerous job": Internet-facilitated Harassment and Its Impact on Researchers. Proceedings of the ACM on Human-Computer Interaction, 5(CSCW2), 1-32.
- Polsky, C. (2019). Open records, shuttered labs: Ending political harassment of public university researchers. 66 UCLA L.Rev.208. p. 212-293.

Keywords: Planning Education, Faculty, Researchers, Harassment, Public

Track 10 Individual Paper Presentations

A CURRICULUM MODEL FOR COMMUNITY-ENGAGED LEARNING IN PLANNING PEDAGOGY

Abstract ID: 1108.0.0.920.2024
Individual Paper Presentation

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As instructors in an applied field, planning educators balance providing a theoretical understanding of the dilemmas planners navigate and the practical skills that enable efficacious responses. Recent conversations among planning educators have considered how the classroom can be a 'portal' for emphasizing the value of planning theories in professional environments through pedagogy that brings these theories to life. While many planning educators utilize various methods of experiential learning to rehearse the uncertain and adaptive work of planning praxis in their courses, planning pedagogy and theory lack a model for incorporating impactful experiential learning at the program scale.

This paper reports on a two-stage process that informed the curriculum development for the planning component of a new Bachelor of Arts in Urban Studies (BAUS) program at the University of British Columbia. Outreach with industry personnel and prospective students encouraged BAUS faculty to scaffold one typology of experiential learning, 'community-engaged learning' (CEL), across the program. Community-engaged learning is a relational learning environment where students co-investigate a problem posed by a community partner and devise possible responses (Pyyry 2017). Through CEL, students build reflexive praxis, navigate interpersonal dynamics, develop technical prowess, and commonly foster a motivation to act in the face of structural inequity (Taylor et al. 2015; Norton et al. 2022). Seeing connections between CEL and core capabilities needed for planning theory in practice, a strategy for collaborative curriculum development was devised to create a strong and sustainable "arc" of CEL through BAUS. This paper reports the process designed to develop the arc, and the model the process produced. In doing so, this paper asks:

What would a program-wide arc of community-engaged learning in planning pedagogy look like if it held connecting theory and practice as a primary motivation? How can planning departments engage with their community to collaboratively design such a program arc?

Helping students draw connections between planning theory and practice is an area of "significant concern" for planning education (Frank 2006). In response, this paper first provides a novel synthesis of the experiential approaches planning educators have applied to help students build a bridge between theory and practice. Next, this paper reports on over 700 surveys with students and 28 interviews and surveys with planning professionals conducted to gauge demand for the new program and inform curriculum design. Responses highlight skills needed for entry-level positions in practical (i.e. Plan reading, report writing, governance structure) and relational (i.e. Conflict resolution, relationship building, problem-solving) domains, regarding opportunities for applied learning and practical skills development. BAUS faculty saw considerable alignment between desired skills for the planning profession and the promise of CEL to develop transformative planning practitioners. This led to a collaboration of core faculty across two disciplines, which produced a ten-part model for CEL in BAUS. This model explicitly engages with the transformational potential of CEL in planning pedagogy.

By synthesizing approaches to experiential education in planning and reporting on skills desired by planning professionals and future students, this paper offers a partial response to calls in planning pedagogy literature to concretely articulate the effect and value of community-engaged learning in training future planners (Harwood and Zapata 2014). For planning educators seeking to advance how students connect theory and practice in the classroom, this paper contributes a case of program-wide CEL curriculum design to draw from. This paper sets the

foundation for future research exploring how well this model can deliver on its aim to foster transformative planning practitioners.

Citations:

- Frank, A. I. (2006). Three Decades of Thought on Planning Education. Journal of Planning Literature, 21(1), 15–67. https://doi.org/10.1177/0885412206288904
- Norton, R. K., Gerber, E. R., Fontaine, P., Hohner, G., & Koman, P. D. (2022). 'The Promise and Challenge of Integrating Multidisciplinary and Civically Engaged Learning,' Journal of Planning Education and Research, 42(1): 102–117. https://doi.org/10.1177/0739456X18803435.
- Taylor, A., Butterwick, S., Raykov, M., Glick, S., Peikazadi, N., & Mehrabi, S. (2015). Community Service-Learning in Canadian Higher Education. Department of Educational Studies: University of British Columbia.
- Pyyry, N. (2017). 'Geographies of Hanging Out: Playing, Dwelling and Thinking with the City,' in (eds.) Sacré, H. and De Visscher, S. Learning the City: Cultural Approaches to Civic Learning in Urban Spaces. Cham, Switzerland: Springer.
- Harwood, S. A. and Zapata, M. A. (2014). 'Changing racial attitudes: Community-based learning and service in East St. Louis, Illinois,' in (eds.) Bose, M., Horrigan, P. Doble, C. and Shipp, S. C. Community Matters: Service-Learning in engaged design and planning (pp. 210-232). New York, NY: Routledge.

Keywords: community-engaged learning, transformative pedagogy, planning capabilities, planning education, planning theory in practice

ARRESTED UTOPIA: REIMAGINING PLANNING FROM THE CARCERAL SYSTEM

Abstract ID: 1108.0.0.723.2024
Individual Paper Presentation

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Utopia has been an influential concept in the planning field to envision and pursue transformative changes. As a methodology, it can leverage people's mental models and transcend the barriers in institutional and spatial settings (Hatuka and D'Hooghe, 2007; Koning and Dijk, 2024). Recognizing its potential, we utilized utopia as a pedagogical tool within the unique educational setting of a prison to explore its potential in an environment with different forms of restrictions. Planning education in a carceral setting is critical as it requires learners to reflect on communities and urban spaces while being removed from them. It also occurs in facilities where access to technology and information is strictly controlled, thus learners rely on memory and imagination, two essential components of learning which are also intimately connected cognitive processes (Schacter et al., 2012). Utopia as pedagogy harnesses the power of memory and imagination to produce an effective, student-centered course and overcomes some limitations of a carceral environment.

We utilized the concept of utopia as an assignment in a course we offered through the Texas Prison Education Initiative (TPEI). TPEI is a volunteer-run organization at the University of Texas at Austin with the mission to provide

free, credit-bearing classes to incarcerated people to reduce inequalities in higher education (University of Texas at Austin, 2024). Since the Spring of 2023, we have offered Introduction to Urban Studies at a facility about 40 miles from Austin. One of the reasons this particular opportunity appealed to us is because TPEI's mission aligned with our values and approach to planning for equitable access to opportunities for all. Five weeks into the class, having discussed the historical development of cities, provided an introduction to rights to the city, and exposed the class to the basic concepts of inclusive design and hostile architecture, students are asked to apply what we have covered in class along with their own life-experience to rapidly design a utopian city. The objective of the exercise is to design a built environment that supports the ideals that the students want to use to guide their own idealized society. In this study, we connect utopia and imagined futures to planning education in prison to argue for this as a pedagogical approach that is well suited for the challenges of learning and teaching in a carceral setting.

Pedagogies of utopia can be seen as an extension of pedagogies of hope as they motivate learners to envision a possible future rooted in the current reality (Busby, 2015). After three semesters of using this lesson, we find that this approach has critical implications for reimagining planning from the perspectives of the incarcerated population whose opinions are rarely sought after in traditional planning processes. This approach builds on the lived experiences of the students and provides insights for planning from the perspectives of those who believe that our present societies have fallen short of providing the means for a fuller life opting instead for systems of oppression, including incarceration. This lesson also helped us identify contrasting meanings of utopia from the vantage points of the incarcerated population. It provided a ground for critiquing the existing systems and for more serious engagement with the emergent ideas around abolitionist planning that can both–provide hope, care, and aid today–while imagining radical transformation (Scott, 2013).

Citations:

- Busby, Selina. "A pedagogy of utopia." Research in Drama Education: The Journal of Applied Theatre and Performance 20, no. 3 (2015): 413-416.
- Hatuka, Tali, and Alexander D'Hooghe. "After postmodernism: Readdressing the role of Utopia in urban design and planning." Places 19, no. 2 (2007).
- Koning, Joey, and Terry van Dijk. "Rehabilitating utopias: The importance of imagination to confronting our spatial challenges." Planning Practice & Research 39, no. 1 (2024): 136-155.
- Schacter, D. L., Addis, D. R., Hassabis, D., Martin, V. C., Spreng, R. N., & Szpunar, K. K. "The future of memory: remembering, imagining, and the brain." Neuron 76, no. 4 (2012).677-694.
- Scott, David. (2013). Visualising an abolitionist real utopia: principles, policy and praxis. In Crime, Critique and utopia. (pp. 90-113). London: Palgrave Macmillan UK.

Keywords: planning pedagogy, utopia, prison education, abolitionist planning

CO-CREATING CHILD-FRIENDLY CITIES: A PARTICIPATORY DESIGN PEDAGOGY

Abstract ID: 1108.0.0.916.2024
Individual Paper Presentation

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This article presents reflections on a participatory design experience conducted in an architecture design studio focused on child-friendly planning and collaboration with school children in Toronto, Canada. In this experience, we challenged the traditional master-apprentice model in design education to promote active learning and collaborative knowledge creation. The primary question guiding this experience was, "How can participatory design education bridge the knowledge gap between academic learning, professional practice, and lived experiences of citizens?" The community design objective addressed over one academic semester was to enhance children's play experiences in spaces connecting their school to a nearby park.

Informed by the UN Convention on the Rights of the Child (Askew, 2019), scholars and designers have made valuable efforts in advocating for children's agency in the public realm. However, children's engagement in urban policies remains limited to consultation, instead of meaningful collaboration and idea initiation, as they are often perceived as incompetent beings in the process of becoming adults (Gillespie, 2012). This article underscores the importance of integrating children's participation rights into design education curricula (Salazar Ferro et. Al., 2020), emphasizing that children, like other citizens, have a fundamental right to shape their environment (Askew, 2019).

To do so, in our architecture studio at the University of Waterloo, we engaged graduate and undergraduate students in envisioning opportunities for unstructured play within and around the school environment. Drawing on the epistemology of multiplicity (Sandercock and Lyssiotis, 2003), we created a multigenerational learning environment for university students. A key component of this experience was a two-day workshop at an urban school in Toronto. We collaborated with 500 school children aged five to thirteen to gain insight into their play experience in and around the school environment, especially their common journey through the laneway system from school to a neighborhood park.

Employing various participatory methods such as group idea generation, focused discussions, drawing, mapping, model-making, and child-led tours, we gathered what Sandercock (Sandercock and Lyssiotis, 2003) refers to as "tacit knowledge" or children's experiential knowledge. Leveraging insights from working with school children, our students proposed diverse design interventions to enhance children's play experiences. Design interventions underwent rounds of review and evaluation and were finally presented to a diverse group of audience including children, child-friendly planning scholars, and design practitioners.

By providing a multigenerational learning opportunity, this work promotes children's early engagement in community design and participation, fostering their citizenship rights. It also equips university students with practical experience in community engagement and exposes them to diverse realities beyond academia. This approach redistributes knowledge power, moving away from a master-apprentice dynamic. For university students, knowledge was created through different channels, from the existing scientific knowledge (e.g., child-development studies and Child-Friendly Cities Initiative), through interaction with the community members (children), and by actively engaging in design-thinking processes with peers (other design students).

This article outlines challenges, lessons learned, and achievements of this participatory design experience with university students. Working with children to improve their play experience in their daily environments was an opportunity to highlight the often-overlooked aspect of participatory design with vulnerable stakeholders in higher education and design pedagogy. Given the evolving landscape of professional practice, particularly in urban contexts striving for social justice and equity, this pedagogical approach is applicable across various community planning and design domains to promote active citizenship among diverse communities while fostering practice-ready skills among design students.

Citations:

- Askew, J. (2019). Shaping urbanization for children: a handbook on child-responsive urban planning: by Jens Aerts, New York, United Nations Children's Fund (UNICEF), 2018, 188 pp., ISBN: 978-92-806-4960-4. Taylor & Francis.
- Gillespie, J. (2013). Being and becoming: Writing children into planning theory. Planning theory, 12(1), 64-80.
- Salazar Ferro, C., Artega Arredondo, I., Rodriguez, C. M., & Nadal, D. H. (2020). Active learning in architectural education: A participatory design experience (PDE) in Colombia. International Journal of Art & Design Education, 39(2), 346-366.
- Sandercock, L., & Lyssiotis, P. (Eds.). (2003). Cosmopolis II: Mongrel cities of the 21st century. A&C Black.

Keywords: Participatory Design, Community Engagement, Design Pedagogy, Child-Friendly Cities, Citizenship Advancement

HORROR NOIR: ANTI-BLACK RACISM IN NEIGHBORHOOD PLANNING AS DEPICTED IN FILM

Abstract ID: 1108.0.0.1111.2024
Individual Paper Presentation

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The use of film as a storytelling medium in urban planning work can be traced to the early 20th century's "town planners' cinema" used to persuade the general public about the "social duties and the potential for town planning" (Sandercock & Attili, 2010, p. 23). The use of films in planning evolved to digital ethnography by the 21st century, again for the purposes of advocacy but centering on the narratives of individuals and groups impacted by planning policy (Sandercock & Attili, 2010). But what of fictionalized film works, what value could they offer the field, specifically planning education? And what opportunities might they present that are unavailable in documentaries? I propose that fictionalized films allow planning courses to further vary the learning modalities available to students and portray narratives that highlight historic planning policies and their contemporary implications for built environments designed for and entrenched in anti-Black racism.

Drama films have long dominated as award show darlings and the disproportionate site of critical praise. Other genres such as action and comedy enjoy widespread appeal, perceived as acceptable, if not low-brow, forms of entertainment for all. Yet, the horror genre is often derided as the realm of adolescents in search of shock value and gratuitous violence (Mariani, 2019). Despite its underrated standing among film genres, horror, in fact, has been a genre that is consistently responsive and timely to the social tensions of the day. Stretching back to the origins of film itself, horror has been present as a genre since the days of classic silent films and traverses other genres creating critically acclaimed films such as horror-action Alien (1979), horror-comedy Shaun of the Dead (2004), and horror-drama Hereditary (2018) (Mariani, 2019).

This paper examines two horror films: Candyman (1992) and The People Under the Stairs (1991) as case studies for intersectional depictions of anti-Black housing policy and structural racism in American neighborhoods (Shabazz, 2015; Taylor, 2019). Both films showcase housing inequalities and racialized landscapes as the physical manifestations of overt racism and portray protagonists and antagonists that must traverse the resulting structural racism of the built environment. The horror depicted acts as allegories for the violence (both physical and social) that inevitably follows discrimination and the stakes of the characters' motivations are framed by their

compounding sometimes conflicting identities of age, economic circumstances, education, gender, race, etc. (Crenshaw, 1989).

Set in the now-demolished Cabrini Green housing projects in Chicago and the now-gentrified West Adams neighborhood of Los Angeles, respectively, the films employ well-known tropes and unlikely storytelling beats to convey planning topics such as carceral spaces, gentrification, rent burdens, and structural racism. The films act as territorial memorials of sorts, capturing the imagery and cultural narrative of neighborhoods long since dismantled and reshaped, but preserved in film. Leveraging critical viewings, I explore gender, race, and ideological analyses of the films as well as the films' conceptual origins including the directorial and writing processes and their impact on the respective narratives. By centering films in geographic locales and distinct communities that are intrinsically intertwined with dominant urban narratives, there is a pedagogical opportunity to introduce counternarratives that challenge majoritarian preconceptions about the people and places depicted and debate the choices made by the filmmakers in bringing these stories to life. Ultimately, I reveal the ways in which planning-oriented themes and compelling narrative devices position fictionalized films as an accessible and dynamic storytelling medium for community development, housing, and social policy courses. The results demonstrate why planners too have narrative choices to make and why horror is both an apt descriptor and film genre for the fruits of racism.

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Keywords: anti-Black racism, planning education, film, storytelling, community development and housing

INTERVIEWING IN PLANNING RESEARCH: THE SCIENCE AND ART OF ASKING QUESTIONS

Abstract ID: 1108.0.0.625.2024
Individual Paper Presentation

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"Planners are already well-versed in quantitative research methods… But planners cannot afford to ignore qualitative research strategies when they are confronted with nonquantifiable problems" (Gaber, 2020: 1, emphasis added).

The need for deeper engagement with qualitative methods has been a longstanding concern in the fields of planning research and education. In line with the communicative planning turn (Healey, 1999), planning scholars have begun to seek out new tools to meaningfully account for diverse social perceptions, to make sense of complex situations, and to support policy recommendations that are inclusive, often by engaging with wider social-science approaches to qualitative and mixed-methods research (Eizenberg and Shilon, 2016). While the gradual growth of qualitative methods exemplifies an important shift in the planning field, some aspects of qualitative-research methodology may require greater examination.

Here we use in-depth interviews as a window into the tensions and opportunities that emerge as qualitative methods gain momentum in planning research. Drawing from the planning and social-science literature (Patton, 2014; Swaminathan and Mulvihill, 2017) as well as our own experience using diverse interview methods, we review seven approaches to conducting research interviews—including pragmatic, hermeneutic, phenomenological, ethnographic, go-along, object-oriented, life history, and epistemic strategies. Through a systematic exploration of these approaches, we aim to support the advancement of high-quality interviewing skills and to consider the potential implications of different interview methods.

We begin with a general discussion of best practices for conducting interviews in planning research, including structuring the interview and question characteristics. Recognizing the diversity of available interview methods, we next organize our review around the current and potential uses of different interview approaches in planning research, including their theoretical undercurrents, ethical and reflexive orientations, practical and social-equity considerations, as well as significance for policy and planning practice. Although interview approaches are seldomly explained in planning literature, we advocate for greater engagement and elaboration of interview methods. We posit that engaging with an established research approach not only allows researchers to enhance the quality of interview questions, but to increase the transparency of the research process, to blend interview approaches carefully, and to offer methodologically sound planning and policy recommendations.

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Keywords: Qualitative methods, Interviewing, Planning research, Interview approaches

INVESTIGATING EQUITY IN LOCAL PUBLIC MEETINGS AND PLANNING OUTCOMES

Abstract ID: 1108.0.0.189.2024

Individual Paper Presentation

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Research Question and Significance:

This project examines the socioeconomic determinants of procedural equity in local public meetings and how procedural equity is associated with equitable planning outcomes. Procedural equity emphasizes the participation of all relevant groups and sectors and relies on communicative planning processes to neutralize preexisting power inequalities (Bond & Thompson-Fawcett, 2007). The concept can be traced back to Davidoff (1965), who advocated for citizen participation in planning decision-making. Arnstein (1969), further stratified the levels of citizen participation in the "citizen ladder". Although not the top, public meetings are widely used to transfer decision-making power, in varying degrees, from the government to other nongovernmental actors (Gaber, 2019). However, procedural equity could be jeopardized when stakeholders are excluded from the planning process, which fails to deliver equitable planning outcomes that involve gentrification, segregation, and degraded environmental amenities. However, the current literature is unclear about which socioeconomic determinants (e.g., income level, racial composition, and political affiliation) are associated with procedural equity in local public hearings, and how public perceptions of equitable planning outcomes in cities are related to procedural equity. This research addresses gaps in understanding how socioeconomic factors influence procedural equity in public meetings and how this equity translates to public perceptions of planning outcomes. Findings will not only bring insights that help policymakers and planners take actions to remove the barriers to procedural equity in planning decision-making processes and enhance the equity in planning outcomes.

Approach and Methodology:

Methods such as natural language processing (NLP) and topic clustering have been adopted to evaluate planning documents (Fu et al., 2023). This project thus uses efficient Large Language Model (LLM) techniques such as ChatGPT and machine learning approaches to analyze local public meeting transcripts and social media perceptions of planning outcomes.

First, procedural equity in local public meetings is measured by indicators of the level of participation, the diversity of participants, and the relevance of topics. Semantic Analysis, Thematic Analysis, and Trend Identification will be applied to the analysis of 6,400 transcripts of local public meetings held by the planning/zoning board or commissions in 280 cities between 2006 and 2023. The transcripts are retrieved from LocalView, an open-source data portal of local government public meetings captured and uploaded to YouTube. Specifically, the level of participation is measured by the percentage of unilateral (e.g., the government informing the participants) and reciprocal (e.g., discussing an issue) interactions. The diversity of participants is extracted from the self-introduction of each person's speech (e.g., I'm the climate program director). The relevance of topics is measured by whether the meeting has explicitly addressed equity-related topics (e.g., equity, inclusive, inequality, disadvantaged, etc.).

Second, we will merge the local public meeting date with city-level socioeconomic determinants data to test the correlation. The transcript data includes location, racial composition, median age, median rent, median income, and population size. We will use the location data to further extract data on population density, education level, and employment type from the American Community Survey, and data on presidential and mayoral election outcomes from TargetSmart and the MIT Election Data and Science Lab.

Third, we will conduct a sentiment analysis of the public's views on equitable planning outcomes in the 280 cities using data from Twitter and Google Reviews. Twitter data will be purchased, and Google Reviews data will be

collected using web crawling. Differentiating from the traditional binary classification, we will examine the sentiments toward equity (e.g., #equity, #inclusiveness, #inequality, etc.), categorize the extracted sentiments into a wider range (e.g., happy, angry, concerned, optimistic, etc.), and capture the reasons behind these sentiments (e.g., concerns or satisfaction with housing affordability, safety, eviction, etc.).

Citations:

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Keywords: Equity, Planning Process, Public Meeting, Social Media, Machine Learning

LEARNING AND PRACTICING ACROSS DIFFERENCES IN DEEPLY POLARIZED CONTEXTS

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Individual Paper Presentation

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Mounting political polarization has led numerous organizations to reach across political divides to better understand and converse with Others with significantly different viewpoints and lived experiences. Many are non-profit organizations and include Braver Angels and Living Room Conversations, and others have university research affiliations such as the Othering and Belonging Institute at UC Berkeley. They hold in person and online trainings and workshops on facilitation, communication and engagement as well as conferences, speaker series and more with the aim of cultivating open and meaningful dialogue between different participants. A common tenant is that they seek to humanize the other side(s) and potentially uncover unexpected areas of agreement even if partial with the recognition that policy work's ways forward long term begins in the now at the interpersonal scale. Participants and actors of these organizations and related networks range from members of the public to elected officials and scholars. Policy topics discussed include social justice, immigration, criminal justice and mass incarceration, government spending among others.

Notably, their work on relationship building, facilitation and common ground parallels conflict negotiation and resolution (e.g., Forester, 2009), tactical coalitions of actors across the political divide (Trapenberg Frick, 2021) and other key areas. However, it is understudied in planning scholarship, and thus this research examines such group formations which I call "transpartisan networks". I draw from Dagan and Teles' (2016) use of transpartisan in which actors from across the political spectrum come to similar policy or other positions but from fiercely different

vantage points. Actors with differing identities focus on issues on which they can agree, set aside those of disagreement, and maintain independence through their individual affiliations. I also draw from Ghorashi's framing concept of "unsettling politics of connection through unconventional engagement…(as) a powerful way to subvert the subtle and ungraspable power of normalisation [of who is 'supposed' to be allies and friends with whom']" (Ghorashi, 2018, 660).

The research questions addressed are:

· How do transpartisan networks emerge and evolve over time and who are the participants?

· What is the range of network formations and what policy/other topics do they focus on and why? To what extent do these topics challenge broader structures, histories and power dynamics?

· What strategies do they employ to train participants in conflict resolution/negotiation, finding areas of agreement and areas on which to agree to disagree?

· To what extent, do organizations evaluate participants' perspectives on their involvement in such networks and the organizations' work more broadly on policy processes and outcomes?

Research methods include semi-structured interviews with participants and detailed analysis of organization policy documents and reports, and training/conference and other materials. Though this research, I find as Ghorashi argues that unconventional engagement and exchanges unfold between disparate actors in these transpartisan networks; they are able to bridge across the divide and challenge common conceptions of relationships and areas of agreement and, thus provides significant learning opportunities for researchers and practitioners working on lightning rods issues in deeply polarizing contexts.

Citations:

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Keywords: Polarization, Conflict Resolution, Tactical Coaltions, Transpartisan Networks

MULTIPLE STREAMS THEORY AND SEA LEVEL RISE POLICY IN HAWAII

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Individual Paper Presentation

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According to the National Oceanic and Atmospheric Association, two feet of sea level rise (SLR) along the U.S. coastline is increasingly likely between 2020 and 2100, and failure to curb future emissions could cause an additional 1.5 - 5 feet of rise. This will dramatically affect coastal communities and ecosystems across the U.S.

According to the Fifth National Climate Assessment, US. Coastal communities—home to 123 million people (40% of the total US population)—are exposed to sea level rise, with millions of people at risk of being displaced from their homes by the end of the century. However, a quick search of the National Conference of State Legislature's (NCSL) Environment and Natural Resources State Bill Tracking Database for the term "sea level rise" reveals only 14 bills proposed across all US states in 2023 that clearly target sea level rise (SLR) in their contents, despite there being 30 states with significant coastlines. Why is sea level rise (SLR) adaptation policy advancing so slowly across the coastal states? What are the chief opportunities and obstacles to advancing SLR policy?

The following paper seeks to answer this question by applying John Kingdon's multiple streams policy framework (MSF) for policy analysis to the case of Hawaii. The State of Hawaii presents a "most likely" case study for the rapid advancement of sea level rise (SLR) policy due to its high vulnerability in the middle of the Pacific, domination of the democratic party, and relatively hight public awareness about climate change. Drawing upon the MSF, this paper employs a multiple-method analysis to identify "policy windows" (in which policy proposals make it onto the legislative agenda) that arise when several policy streams converge. These streams, according to Kingdon, include the problem recognition stream (impacts of new data, budgetary changes, and occurence of focus events), the policy generation stream (degree of cohesiveness vs fragmentation of policy communities, availability of viable ideas, and role of prevailing ideology), and the political stream (which focuses on changes in administration, the election cycle, jurisdictional overlaps and disconnects).

The study begins by showcasing a new dataset of all SLR bills proposed by the Hawaii State Legislature over the past decade (n=168), and then applies MSF to explain why the topic of SLR is much more salient some years than in others. The dataset identifies a significant increase in the number and topics of of SLR-related bills introduced since 2017, and MSF analysis reveals a policy window created by converging developments across all three streams. In particular, the creation of new SLR mapping data and foundational plans for Hawaii; the occurence of several SLR and Climate-related focusing events in 2017 and 2018; strong cohesiveness among the coastal management policy community; and changes in political administration interacted to create a policy window favorable for the introduction of SLR policy.

While the specific interaction of these events are unique to Hawaii, the paper will discuss how these findings might be generalizable across other coastal U.S. States. The paper will be of interest to coastal managers, lawmakers, and community planners looking to identify and foster the main drivers of policy change.

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Keywords: Coastal Management Policy, Sea Level Rise, Climate Adaptation Drivers, Environmental Governance

PLANNING AND HUMAN RIGHTS? LEGAL EXPLORATIONS OF PLACE-BASED IMMIGRATION

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Individual Paper Presentation

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In 2022, Canada reached a pivotal moment in its immigration history when it welcomed over 430,000 immigrants in a single year (StatsCan, 2023). While immigration has long been the major driver of both population and economic growth in the country, the benefits of immigration and immigrants themselves are unevenly distributed across the country. Over the past 50 years, the settlement location of newcomers has been primarily urban; however, recent trends indicate that newcomers are settling outside of traditional gateway cities in favour of the suburbs and small and rural towns (Zhuang, 2023). These trends are driven in large part by state-led place-based settlement programs (e.g., Atlantic Immigration Pilot, Provincial Nominee Program, Rural and Northern Canada Immigration Pilot), which acknowledge that immigration is crucial for the survival of small, rural, and remote communities. Despite having very little decision-making power over immigration levels, local municipalities are responsible for settling diverse newcomers and supporting their integration into Canadian society (Rishworth et al, 2023; Zhuang, 2023). This includes the provision of a range of necessary services and resources that support immigrant settlement, such as housing, employment, language training, transportation, education, places of worship, ethnic retailing, social infrastructure, and spaces for physical activity and play (Rishworth et al, 2023; Zhuang, 2023).

Over the past two decades, planning scholarship and practice have explored how land-use tools can better incorporate the needs of diverse immigrant population into the design of local municipalities (Harwood; 2022; Zhuang, 2023). Yet, little of this work has considered the unique planning needs and constraints of smaller cities and rural areas where new place-based settlement initiatives are being promoted by federal and provincial governments. These initiatives, while important, solely consider immigrants as economic assets to shrinking communities, with scarce attention to how place-based settlement program impact the rights and freedoms of immigrants themselves. Thus, the aim of this research is to explore the human rights implications of place-based settlement programs for immigrants and identify the role of municipalities and planners in protecting human rights and freedoms of newcomers.

The study draws on a small but growing body of literature that examines how the Canadian Charter of Rights and Freedoms interacts with municipal law and planning practice (Agrawal., 2021; Makuch et al., 2004). To that end, this research explores the human rights implications of place-based settlement programs for immigrants and identifies the role of municipalities and planners in protecting human rights and freedoms of newcomers. Utilizing content and discourse analysis of Canadian case law, the study presents spatio-temporal trends in the frequency and outcome of human rights litigation related to place-based settlement. More specifically, the results assess the specific rights and freedoms that are most litigated as well as interrogate the adoption of the Charter of Rights and Freedoms and allied legislation in the context of place-based settlement. The paper concludes with a discussion of the role of municipalities and planners in the protection of human rights and fundamental freedoms of newcomers, as well as future research and policy directions related to place-based settlement programs and human rights.

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Keywords: human rights & freedoms, municipal law, Immigrant settlement, place-based settlement programs

TEACHING PLANNERS TO EMBRACE EMOTIONS THROUGH REFLECTION

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Individual Paper Presentation

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Emotions are increasingly recognized as an inescapable part of planning practice (Lyles and Swearingen White, 2019). Planners utilize emotion both consciously and unconsciously when making judgements (Hoch, 2019), and regularly encounter the emotions of the public in the course of their work. Yet, Baum (2015) points out that planners continue to "resist emotion" and thus plan with only "half a mind." If emotions are so embedded within the day-to-day work of practitioners, how might educators better prepare students for these realities?

The purpose of this paper is to explore how structured reflection activities can support planning students in gaining emotional intelligence. Emotional intelligence (EI) is a psychological construct that refers to a set of capabilities for perceiving, understanding, managing, and leveraging emotions in oneself and in one's relationships (Mayer et al., 2016). EI has been studied in a variety of professional education contexts and it appears to be both a mutable trait (meaning that individuals can develop their skills in this area) and a useful measure of interpersonal effectiveness (O'Connor et al., 2019). In planning, scholars have argued that emotional intelligence may contribute to more effective collaboration in the workplace (Lyles and Swearingen White, 2019) and that it is a key cultural competency skill (Agyeman and Erickson, 2012).

In this exploratory mixed methods study, students completed a variety of structured reflection activities and had their level of emotional intelligence assessed repeatedly across the semester. The reflection activities included both individual reflection assignments that incorporated mindfulness alongside a half-page prompt that students responded to by writing, speaking aloud, drawing, collaging, or diagramming. Students also participated in seven in-class workshops and practitioner panels that included real-time collaborative and individual reflection. Students' reflection assignments were qualitatively coded for level of reflection (Das et al., 2020; Kember et al., 2008) and

their handling of emotional content. Additionally, a pre-existing psychometric scale for EI (TEIQue-SF; Cooper and Petrides, 2010) was used to measure students' (N=26) self-rated level of emotional intelligence five times across the semester.

Quantitative results were mixed, with students with low starting levels of EI gaining across the semester, while students with medium and high starting levels of EI saw little change. Yet when paired with the qualitative results, all students increased their self-awareness and appeared to gain more comfort in handling emotional content. Students also articulated real value from the reflections: they identified modes of reflection that worked best for them – which will make sustaining a reflection practice easier over the long term – and gained clarity around their values and career aspirations. Importantly, students also noted that the required reflections created space for them to work through challenging emotions related to planning history and theory, and encouraged conversations within their cohort that would not have otherwise occurred.

Additionally, reflection level coding suggests that the structure of the prompt has an important impact on students' level of reflectiveness: prompts that more explicitly instructed students to incorporate both class content and personal experience/emotions saw students engage in more cognitively challenging levels of critical reflection. Ultimately, this work suggests that there are important benefits to explicitly instructing students on emotional intelligence concepts; and that educators should integrate more structured reflection activities into required coursework.

Citations:

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Keywords: Planning education, Emotion, Reflection

TEACHING STUDENTS HOW TO STRUCTURE ILL-STRUCTURED PROBLEMS IN PLANNING

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Individual Paper Presentation

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Urban planning is undergoing an evolution in pedagogical approaches and methods. The rising smart city development brings increasing complexity of planning and the emergence of urban science as a multidisciplinary field, making problem structuring a crucial skill. Ill-structured problems are authentic, multidisciplinary, and complex, with multiple potential solutions (Jonassen, 2000). Structuring such problems is imperative for addressing them effectively, and the skills required to do this are highly sought after in the global workforce (World Economic Forum, 2020). Ill-structured problems are prevalent in urban planning, but to the best of the authors' knowledge, there are few published works on teaching undergraduate urban planning students formalized methods of structuring ill-structured problems.

This study sets out to teach urban planning or architecture students how to structure ill-structured problems and evaluate the method and approach we used. We did this via two case-based remote workshops on the response of large cities to extreme heat waves, in January 2023 (n1 = 13) and January 2024 (n2 = 9), with two undergraduate students in their senior year, 17 master's students, and three doctoral students. The problem structuring method we taught students, DIMES, had five stages, each with its product: Describe—a vague and limited problem description; Inquire—a case description of the problem from a design thinking perspective, exploring the 'five Ws' of the problem (why, what, where, when, why); Model—a conceptual hierarchy of the problem from systems thinking perspective; Extract—a list of leverage points for impacting the problem identified in the model; and State—a succinct summary of the five Ws and the identified leverage points. The learning objectives for both workshops were (a) students will learn how to apply a methodology for structuring ill-structured problems in urban studies, and (b) students will learn about implications and planning implementations of extreme heat waves in large cities from an urban studies perspective.

We created assessment rubrics (scoring guidelines) for three products: case description, leverage points, and problem statement—across two criteria: (a) problem structuring (PS)–how well students understood and applied DIMES, and (b) problem understanding (PU)–the domain expertise demonstrated in students' products. In a small number of cases, Authors 2 and 3 could not reach an agreement on PU and had a 1-point difference in score. One team had a bold expectation of this, where the raters scored differently on many products. A conversation between all three authors uncovered a difference in view on the definition of urban planning and its scope. In this way, the assessment process helped facilitate a theoretical discussion about urban planning. Individual reflections from participants following both workshops indicated they found the workshop and DIMES clear and potentially useful for their future work.

We conclude that both workshops achieved their learning objectives, while improvements need to be made to some of the instructions, especially to the Model stage of DIMES. Also, the instructors should provide students with an explicit outline that defines the scope of urban planning implementations at the start of the workshop. We propose an updated DIMES method and discuss insights concerning urban planning instruction.

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Keywords: case-based learning, problem structuring, urban planning education, graduate education, undergraduate education

THE PROMISE OF PRODUCTIVE CONFLICT FOR PLANNING

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Individual Paper Presentation

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Planning is rife with conflict. As a function of their job, planners are tasked with developing and implementing plans that require them to navigate public values, worldviews, and politics and integrate these with data, technical knowledge, and best practices of the planning field to meet current and future expectations about how a neighborhood, city, or region is to function. Inevitably, conflicts will arise as part of this process. At an individual level, ask a planner about their experiences with conflict, and many will mention members of the public yelling at them at a public hearing, challenges getting different interest groups to agree on a path forward, or having to navigate local politics. While these instances can be difficult to address, they are not uncommon. Thus at both broad and interpersonal scales, conflict is a natural and inevitable part of the governance process.

And yet, it is surprising that planning scholarship and education do not have a more explicit focus on understanding and teaching students and practitioners how to productively engage with conflict, especially in the context of the United States. Conflict is rarely defined - a challenge in and of itself - and is undertheorized, with relatively little understanding of the role it plays in affecting planning outcomes (Verloo & Davis, 2021). It tends to be treated as a symptom of a larger problem rather than a natural part of a plural, democratic system. Additionally, there seems to be a lack of focus within education and training available to planning students and practitioners that teach them how to address conflict well. This is problematic, since skills related to communication, negotiation, ethics, and navigating politics - all relevant for addressing situations of conflict - have been identified as some of the most valued skill sets for planners (Edwards & Bates, 2011; Seltzer & Ozawa, 2002). The lack of focus on conflict makes it difficult to understand the role that conflict plays in planning, have a strong rationale for teaching these skills to students, and presents challenges when looking to derive concrete actions for planners to steer conflict in a productive direction.

To address this gap, I reviewed literature across policy, conflict resolution and negotiation, organizational theory, and communication to identify the productive aspects of conflict relevant to planners. I make the case that planning scholars, educators, and practitioners need to reframe and center the role of conflict in planning, and particularly the opportunities it presents for better serving the current and future public. To support these efforts, we developed a conceptual framework from the literature that centers individual action (e.g., of a planner) within a network as a basis for enacting system change, based on the theory of network power (Booher & Innes, 2002). Finally, we offer suggestions on how to use this framework to reframe conflict in planning, as well as suggest

research directions and potential next steps that planning scholars and educators can take to better train planning students and practitioners to address conflict in their work.

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Keywords: conflict resolution, planning education, governance, planning practice

TRAUMA-INFORMED, HEALING-CENTERED PLANNING AND TRANSFORMATION

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Individual Paper Presentation

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Trauma deeply affects many contexts in which planners operate. In order to effectively engage with communities that have experienced trauma, increased attention is being paid to trauma-informed care, which has roots in mental and behavioral health service provision. The frameworks and principles of trauma-informed care have been adopted in many professional contexts by non-mental health service providers as well, including in education, nonprofit organizations, and government. Practitioners of planning have suggested that the principles of trauma-informed care also be adopted by the planning profession and that planners form partnerships with trauma experts to learn about trauma-informed approaches and consider how the built environment can play a healing role in restorative trauma-informed neighborhoods (Knapp et al., 2022; Schroeder, 2023). However, the planning profession itself is also complicit as a cause of systemic community trauma, therefore, manifestations of trauma are not only something that planners must learn to appropriately navigate; the planning profession has a responsibility to stop harm and to make amends for past harms caused by the profession (Schweitzer, 2016). It is this latter imperative, a restorative planning ethic to transform the institutions and norms of planning, that motivates this paper. How can trauma-informed and healing-centered practices result in this transformation?

In this paper, we put forward a framework for trauma-informed, healing-centered (TIHC) planning. We present our experiment of integrating TIHC in a graduate-level planning course on collaborative planning and community engagement. Our students worked directly with a group of resident activists trying to protect a forested area from development, called Evans Spring, in Roanoke, Virginia. Evans Spring is located adjacent to a predominantly African American neighborhood, many of whose residents were forcibly displaced there during the period of Urban Renewal. The specter of Urban Renewal in Roanoke is a source of unhealed trauma that is associated with urban planning. Plans to develop the Evans Spring area, partially funded by the City itself, have been called "Urban Renewal 2.0." In our engagements with the community, we tried to operationalize lessons from the literature on

empathy and emotion in planning (Porter et al 2012; Forester 2021), and trauma-informed care in mental and behavioral health. In this process, we found ourselves personally transformed. Using evidence gathered through our process, we suggest our experiences of transformation of ourselves as planners as the first step in the process of how to achieve change of the institutions of planning toward restorative planning ethics. Key components to finding ourselves transformed included: (1) questioning of the idea of truth through the realization of conflicting interpretations and perspectives; (2) conscious reorientation toward emotion and values; and (3) the experience of discomfort with our own identities and uncertainty, coupled with introspection and reflection.

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Keywords: Trauma-informed planning, Healing, Urban Renewal, Planning education, Emotion

TRIPLE-LOOP LEARNING IN INTERNATIONAL PLANNING EDUCATION.

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Individual Paper Presentation

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Internationalizing planning education has been a relatively recent planning scholarship concern to improve planning academic curricula across the US (Anacker, 2023). Research on this topic has revolved around the capacity of pedagogical approaches to enter and deal with non-US contexts, learn their planning cultures, train planning professionals, and even produce planning interventions for those foreign contexts. Research highlighted how entering a foreign context might favor unexpected learning processes, not necessarily about the context abroad, but about the students' context of origin and how they intimately relate to it (Goldsmith, 1999). Being context-sensitive has been considered crucial when learning about planning subject matter, and different approaches have been suggested to deal with non-US contexts depending on the political and socio-cultural implications (Sanyal, 2005). Qualities such as "cosmopolitanism" have been considered pivotal in generating planning curricula so that future practitioners can navigate complex circumstances while learning from other cultures to reflect and act in their contexts (Chiu-Shee & Shi, 2023).

In this paper, we are interested not only in how to design and deliver international pedagogical programs that are cognizant of diverse contexts but also in how these can be instrumental in questioning existing pedagogical structures to train change-thinker researchers and professionals. We introduce and assess a decade-long international educational experience called the Community Planning and Ecological Design Program (CoPED) International Program in Eastern Sicily (Italy). Our methods include annual US students' reflective essays and program evaluations, a survey to evaluate previous editions, and the two authors' direct involvement and personal reflections in developing, delivering, and implementing the CoPED Program. We found that US-based pedagogical structures often prevent students from learning processes that are genuinely open, sensitive to context, and cosmopolitan. Intentionally generating collective reasoning and mutual engagement between North American students, their foreign peers, their relative contexts of origin, and Sicilian communities, spaces for new learning processes occur. By expanding the notion of double-loop learning, teaching, and research (Argyris, 2002), we argue that such spaces determine triple-loop learning processes by which US students not only "learn how to learn," but also question assumptions, values, and beliefs rooted in their context of origin.

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Keywords: Engagement, International Planning Education, Action learning, Sicily

UNIVERSITY-COMMUNITY COLLABORATION AND ANTI-URBAN STATE POLICY

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Individual Paper Presentation

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Over the past six years, the Department of Urban Planning at Ball State University has endeavored to build new planning institutions that are responsive to community need through three interrelated strategies: Institution building, recursiveness and shared labor. These strategies have been deployed in the context of and in response to anti-urban state policy, and a climate of fiscal austerity for higher education (Hackworth 2019, Mallach 2017, West 2021). Since 2011 the state passed laws that, for example, limit cities' ability to collect taxes, regulate abandoned property, and protect tenants from predatory landlords. At the same time, since 2012, state allocations to higher education have diminished, relative to inflation. University-community partnerships have resulted in the creation of new institutions (including a land bank) that serve one of the poorest zip codes in the state of Indiana. At the same

time, these efforts have helped the department survive within because of the ability to draw in students interested in 'hands on' and altruistic work.

The context of the case presented here is similar to many cities and universities in the United States. Muncie, Indiana is a post-industrial, shrinking mid-sized city of just over 65,076 residents (Census 2023). Approximately 92 million people live in small to mid-sized American cities, and half of them live in cities experiencing either low or no population growth, like Muncie (Connolly et al., 2022). Muncie is located in Indiana, which is like 23 other states in that all three branches of stage government in Indiana are controlled by Republicans.

State policy towards higher education is also broadly similar to other conservative states. Most recently, the state passed legislation requiring post-tenure reviews that include an assessment of the 'ideological diversity' of faculty teaching. State funding has decreased relative, and students are baring more of the burden for their education in the form of tuition and loans. In 2005, the state of Indiana contributed approximately 60% of the budget of Ball State and student tuition covered the other 40% (Ball State University, Office of Budget). Today this ratio has flipped, with students paying the majority of the cost. As Ball State has become more reliant on student tuition, the university has shifted to a budgeting model that allocates funding based on the number of students in each program, which in turn creates a competitive environment for student attraction.

Within this context, the Urban Planning Department at Ball State University, has a history of engaged scholarship. Building on this legacy the department has adopted practices aimed at creating more enduring relationships with the Muncie community.

Specifically, this paper explores the development of the Muncie Land Bank as a vehicle for engaged learning and community benefit, by exploring the institutional development of the land bank, in conjunction with a series of five specific community-engaged classes. Through this case the author argues for three interrelated strategies. First, engaged classes should be oriented towards institution building, which includes writing policy, building community connections, and applying for grants, rather than one-off class projects or plans. Second, engagement should be recursive, with classes collaborating with the same institutions and neighborhoods through many semesters to build trust and awareness in the community, and expertise and relationships among faculty and students. Finally, our department was successful because we invited leaders of the nascent land bank to lead classes, employ student and faculty labor, and define the direction of class projects.

Through this case the author seeks to demonstrate that one niche for academic planning departments is becoming emmeshed in the struggle of ordinary people to revitalize their built, social and political environment in the face of anti-urban state policy.

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Keywords: Red-state Planning, Pedagogy, Community Engagement, Land Banking, Conservative

WHO HAS DEVELOPMENT RIGHTS? REFLECTIONS FROM CHINA'S PLANNING LAW REVISION

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Individual Paper Presentation

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The notion of development rights emerged in China towards the end of the 20th century, accompanied by the urban land marketization reform. In recent decades, it has spread from academic research to urban planning practice, especially in urban renewal and historic preservations. However, such rights are neither defined nor protected by national laws.

China's 1982 Constitution Amendment declared that all urban land to be state-owned but didn't nationalize development rights specifically. Nor did the 1990 Urban Planning Act or later 2007 Urban and Rural Planning Act make such a statement, as it happened in the British Planning Act of 1947. Indeed, even the term "development" is yet to be incorporated into the Chinese Planning Act: the section that the British Planning Act would title "control of development" is labeled "planning implementation"(1990 & 2007). This term is inherited from the planning regulation under the planning economy when the land was a socialist means of production but not a commodity to sell. There was "construction management" (jian guan), but not development control, in "planning implementation."

Nevertheless, the definition of development rights, still ambiguous, arises from the interplay between land use rights holders and governments. It has begun to impact the revision of several municipal planning regulations under the National Territorial Spatial Planning Reform initiated in 2018. This article attempts to review the introduction and application of the development rights notion in China's urban planning profession and examine how different definitions of such rights have been incorporated into the revision of local planning regulations in some pioneer Chinese cities, such as Nanjing, Ningbo, Dalian, and Zhengzhou.

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Keywords: Development Rights, Planning Law, China, Urban Renewal, Historic Preservation

NAVIGATING THE FRONTIER: INTEGRATING GENERATIVE AI INTO PLANNING EDUCATION

Abstract ID: 1110.0.0.1147.2024
Research-in-Motion (RiM)

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As the technology landscape evolves, large language models (LLMs) and Generative AI emerge as both opportunities and challenges within academia and planning agencies, which find themselves at a crossroads, grappling with the implications of these technologies. While many faculty members express reservations about introducing these tools into the classroom, students actively and independently explore LLMs. At the same time, planning agencies nationwide are beginning to pilot internal and external LLMs to support staff in various tasks, including repetitive administrative work, analysis of historical deeds, and simplifying language for governmental documents. Several cities have established AI coalitions to deliberate on integrating AI technologies in public service, underscoring a proactive approach towards technological assimilation.
This disconnect between academia and real-world planning applications poses a critical concern for planning education, as future planners may find themselves at a technological disadvantage and potentially sidelined in discussions. Instead, engineers and IT professionals lead citywide conversations about the proper use of AI technologies despite potentially lacking a foundational understanding of the ethical and historical dimensions pivotal to planning principles. The necessity for planning students to engage with and critically evaluate the benefits and challenges of LLMs and Generative AI before entering the workforce cannot be overstated.

This presentation will discuss two different courses centered on AI and city planning. The first course is a daylong seminar that includes graduate students for course credit and planning practitioners earning AICP continuing education credit. The second course is a half-semester, during which students have the opportunity to do more in-depth technical practices. Each course includes significant time to explore the ethical debates around AI and critically assess the power structures that prop up these technologies. By ensuring students can navigate the ethical use of these emergent tools, we help graduate planning professionals with well-rounded technological fluency who can use these tools to challenge oppressive systems. Through this presentation, we anticipate expanding the conversation around AI in planning education so that we prepare students not just to participate but to lead the conversations around AI that will shape the future of cities and communities to be more just and inclusive.

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Key Words: Generative AI, Planning Education, Critical pedagogy

PLACE AND PROCESS: EARTHQUAKE MITIGATION IN PORTLAND, OREGON

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Research-in-Motion (RiM)

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Disaster studies have found ample evidence that a community's sense of place is a significant factor in disaster recovery. Few studies have considered the implications sense of place has on mitigation phases of disaster management. This research takes a case study of a policy making process in Portland, Oregon intended to revise policy on the retrofitting of unreinforced masonry buildings (URMs). The process and City Council's drafted ordinance were met with great tension. A coalition of URM building owners formed during the process and eventually filed a lawsuit to examine the potential of a takings based on the draft ordinance. In addition, a group representing Black Portlander's led a public outcry to highlight how the process and recommendations reproduced the anti-black racism prevalent in Portland's planning history. While not uncommon events, this unique case may offer insights into the place-based and identity-based connections people have to places -- in this case, specifically URM buildings. Through up to 40 semi-structured interviews with community stakeholders with small-property portfolios (fewer than five commercial properties such as mom and pop shops or churches) and committee members, the study seeks to understand how senses of place (as a construct of place identity and place attachment) influence mitigation processes. The research asks: To what extent do connections to places influence processes and outcomes of disaster mitigation planning processes? And how can identity-based and emotional connections to a place be honored in future planning processes? Findings from this work will be used to offer guidance on how decision-making processes can become aware of and honor the place-identity and emotional impacts that mitigation has for those with small-property portfolios. Findings will be transferable to other mitigation processes involving people being most directly impacted by mitigation policies.

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Key Words: Planning Processes, Disaster Mitigation, Community Engagement, Sense of Place, Policy

SHAPING FUTURE CITIES: DIVERSITY & EQUITY IN PLANNING PROGRAMS AND PRACTICE

Abstract ID: 1110.0.0.884.2024
Research-in-Motion (RiM)

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The 2019 American Planning Association (APA) Planning for Equity guide defines equity as the "just and fair inclusion into a society in which all can participate, prosper, and reach their full potential (Ross, et al., pg. 3). And in 2021, the American Institute of Certified Planners (AICP), revised the Planner's Code of Ethics placing social justice, diversity, equity, and inclusion at the center of planning practice. These are critical resources for planners as we reckon with the role our profession has played in reinforcing systems of inequality.

Miriam Solis, in Racial Equity in Planning Organizations, argues that institutions that acknowledge and rectify their own racialized biases will enable "planners to advance racial equity in the United States … [and] lead to local change and recalibrate how planners envision their role in changing their communities" (2020, p. 297). Planning education has an important role to play here, as the Association of Collegiate Schools of Planning/American Planning Association Diversity Climate Survey outlines (Jackson, et al, 2020). Students, faculty, and staff in the Urban and Environmental Planning & Policy (UEPP) department at Western Washington University (WWU) are leaning into this call. The "research in motion" presentation shares findings from UEPP's work to understand what diversity, equity and inclusion mean for planning education and the profession and how to best to put it into practice.

Internally, we are focused on retaining and recruiting a diverse group of future planning professionals, that "encompasses, but is not limited to, race, ethnicity, class, gender, age, sexuality, ability, educational attainment, first-generation status, spiritual beliefs, creed, culture, tribal affiliation, nationality, immigration status, political beliefs, and veteran status" (APA, 2019). Actions range from revising syllabi to ensure content from diverse voices to thinking critically about our collaborations with communities and how we coordinate those partnerships, and more. We are broadening our recruitment to include community colleges and high schools. On campus, we participate in the admitted student day, compass to campus days for primary and secondary students, and other opportunities to spread the word about urban planning major across campus to various clubs and student groups.

Our work carries us beyond campus, to engage with the planning professional in our state, in both an educational capacity and to get feedback. Our faculty and students hosted a well-attended interactive session on diversity, equity, and inclusion at the WA APA conference in September 2023 (which met the new AICP Equity CM). After providing introductory remarks that featured insights from academic planners including June Manning Thomas and Miriam Solis and recent APA publications on equity in planning and zoning, the session invited planners to reflect and share about their organization's policy and program successes and areas for growth, suggestions for curricular content, and where and how urban planning programs should be recruiting the next generation of diverse planners. We also seek input and feedback from diverse voices in the field through our program's advisory board, which includes a diverse range of members from indigenous and tribal planning to activists and government representatives, and our alumni.

With this presentation, we hope to make a small contribute to the important movement to educate and foster a diverse future workforce that understands that “if planners’ toolboxes can be used to exclude, limit, and segregate, then the same tools and regulatory frameworks can be used to implement policies that result in fair, equitable communities”(Ross et al, 2019, p.5).

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Key Words: Equity, Diversity, Planning Profession, Planning Education, Retention & Recruitment

STUDENTS' SAFETY ATTITUDES AND EDUCATION IN PLANNING

Abstract ID: 1110.0.0.884.2024
Research-in-Motion (RiM)

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Early career planners and planning students are future decision-makers in our communities; they will shape communities’ health and safety outcomes, directly depleting or enhancing people’s lives. Planners in general play an outsized role in determining community safety outcomes; they inform policies and plans that become transportation system designs, land use development, environmental impacts, and housing – all of which contribute to the built environment and its impact on people. As early career planner step into these roles, it is important to know how students conceive of safety in urban planning: What do planning students think about safety as it relates to their planning domains? Do they believe that safety is fundamental part of good planning practice? Do they understand the systemic nature of unsafe events, like traffic crashes, fires, and infrastructure failures? Are students receiving adequate training about systems safety in planning programs?

These are key questions for those who study planning practice, pedagogy, and community health outcomes. There is limited research, however, on students' attitudes towards safety, and even less research about how those these attitudes change over time as planners enter practice and engage with their employers’ organizational culture.

Additionally, it is unclear whether current planning education effectively primes students towards safety concepts; while students may learn about planning failures during their degrees, likely there is little coursework that directly helps students understand their roles in preventing unsafe events in cities. Some research has investigated student attitudes towards safety among engineering students (Panik et al., 2024), with concerning results. Panik et al. found that engineering students have uneven safety knowledge across majors, and computer science students in particular have negative views towards safety in their field. Planners, much more so than their allied professionals, are poised to protect and enhance public welfare and to engage in safe, ethical practices. Not only does the field of planning set itself apart from other disciplines by its focus on ethics and the protection of public welfare, but planners are also embedded within decision-making organizations that have power to set a policy context that can save lives and prevent unsafe events from occurring. It is crucial, then, that the future planners of our communities understand systems safety, and that pedagogy and practice researchers understand how to improve students' conception of safety in their fields.

This is the aim of this "Research in Motion" presentation: to share early investigations of students' attitudes towards and knowledge of system safety, and to present potential frameworks for teaching students about systems safety. First, the author will present a working framework for measuring student attitudes towards safety. This framework will ultimately be developed into a survey instrument to be deployed to planning students in U.S.-based planning programs. Second, the author will present a synthesis of frameworks for thinking about systems safety generally, with examples pulled from urban planning (Wallace et al., 2021), public health's approach to injury prevention (Ederer et al., 2023), and systems reliability engineering (Saleh & Pendley, 2012). This synthesis will be leveraged to direct potential educational interventions. This work-in-progress research will benefit greatly from engaging with planning researchers and educators across different domains of planning, so the presentation will be designed to be interactive and engaging.

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Key Words: Safe systems, Planning education, Survey methods, Community health outcomes

Track 11 – Regional Planning

Track 11 Individual Paper Presentations

ASSESSMENT AND CLASSIFICATION OF COASTAL VULNERABILITY IN SOUTH KOREA

Abstract ID: 1108.0.0.957.2024
Individual Paper Presentation

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South Korea is one of the countries with remarkably high population density, surrounded by sea on three sides, with mountains covering approximately 80% of its territory. Consequently, there is significant pressure for coastal area utilization and development due to these geographical features. However, the absence of specific criteria for establishing coastal buffer zones means that current coastal vulnerability analysis lacks a solid foundation. Nonetheless, proactive measures through coastal buffer zone designation are essential for effectively mitigating damages from coastal disasters and enhancing regional resilience.

In this study, we aimed to identify and classify coastal vulnerabilities in South Korea by incorporating local characteristics. Previous approaches to coastal vulnerability analysis have typically adopted a uniform methodology across three major sea areas (East Sea, West Sea, and South Sea), limiting the reflection of specific local features. Therefore, we employed the InVEST Coastal Vulnerability Model, a tool that allows rapid integration of climate change scenarios and local characteristics, to derive coastal vulnerability in South Korean coastal regions and monitor its changes over time.

The analysis results were as follows. Based on land cover map, we identified approximately 20,000 points with varying degrees of vulnerability, scored between 0 to 5, with an average vulnerability score of around 2.7. About one-third of the points exhibited a vulnerability score of 3 or above, and over time, there was an increase in points with a vulnerability score exceeding 3. Additionally, assuming complete degradation of natural areas surrounding coastal regions due to development, the average vulnerability score rose to about 3.2, indicating that nearly half of the points could transition into high-risk vulnerable areas.

Subsequently, we classified regions into four types based on two criteria: the average vulnerability score and whether vulnerability increased or decreased over time. These types include areas requiring urgent intervention due to high risk, regions currently stable but requiring vigilant monitoring, areas with ongoing improvement efforts, and areas maintaining a high level of resilience.

This classification provides a framework for implementing tailored management strategies and improvement standards for different types of coastal areas, facilitating efficient coastal management. And understanding and objectively assessing the coastal vulnerability, as demonstrated in this study, is crucial. It not only aids in efficient

management of coastal regions but also allows for quantitative evaluation of the effectiveness of existing coastal buffer zone policies. Moreover, it enables prioritization of areas needing intervention based on vulnerability score distribution and changes over time. However, it is essential to acknowledge limitations, particularly regarding areas heavily frequented by tourists, where actual vulnerability might surpass calculated values due to substantial transient populations. Therefore, future research aims to address such disparities by incorporating temporal population data.

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Keywords: Coastal Vulnerability, InVEST model, Resilience, Coastal buffer zone, Coastal disaster

CHARACTERISTICS AND INFLUENTIAL FACTORS OF REGIONAL ECONOMIC RESILIENCE

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Individual Paper Presentation

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The outbreak of COVID-19 has resulted in significant health, social, and economic damages not only to individuals but also to local communities. Among these, the economic impact on local commercial districts has been particularly severe due to the fear of COVID-19 and various prevention measures such as social distancing, restrictions on gatherings, remote work, and the transition to online learning. The COVID-19 outbreak led to a decrease in sales revenue in commercial districts compared to pre-COVID-19 levels, but many districts have shown signs of recovery, surpassing their pre-pandemic sales levels. However, others have struggled to recover, experiencing continuous declines in sales revenue post-COVID-19, while some have seen sustained growth despite the pandemic.

Previous studies tried categorizing districts into growth or decline types post-COVID-19 or identifying factors influencing commercial district sales revenue. However, existing research often analyzed sales revenue using singular values or failed to dynamically measure the effects of various district characteristics on sales revenue changes over time. Yet, the concept of resilience is better understood not as static but as continuously evolving

over time. In particular, from the perspective of social-ecological resilience, resilience is not simply a linear recovery from a fixed state, but is viewed as a city that continuously transforms while simultaneously resisting and adapting to shocks. Consequently, it's crucial to dynamically assess the factors influencing resilience as they change over time. Furthermore, understanding whether the effects of various district-related factors on sales revenue are short-term or long-term can significantly contribute to enhancing resilience.

This study aims to measure regional economic resilience and identify the influential factors that enhance resilience and its dynamic effects in terms of the socio-ecological resilience. We conducted an analysis covering the period from the fourth quarter of 2019, just before the onset of COVID-19, to the fourth quarter of 2022, when COVID-19 had stabilized. Based on the 240 developed commercial districts in Seoul, we used sales revenue as a proxy variable for economic resilience and incorporated various data on district characteristics, such as floating/resident/working population, accessibility, and income-consumption levels, in the analysis. We classified districts based on sales recovery patterns: those that recover after a decrease, continuously decline, and sustain growth. We employed the Panel Vector Auto-regression (PVAR) model to analyze the granger-causal relationships and volatility of shocks and responses among sales revenue and various districts and their hinterland characteristics. Furthermore, we used impulse-response functions and variance decomposition to analyze district characteristics' lag effects and variance on sales revenue changes. This innovative methodology provides a comprehensive understanding of the dynamic effects of COVID-19 on regional economies.

As a result, population-related factors were found to have significant impacts, particularly showing varying degrees of influence on sales recovery depending on age demographics. While floating population notably affects sales revenue, some districts preserved sales revenue or recovered quickly, depending on other factors like resident populations. Additionally, the duration of the impact on sales revenue varies across different district and hinterland characteristics, ranging from short-term to long-term effects. This study can contribute to establishing more sustainable and effective resilience enhancement policies in the face of future external shocks by analyzing dynamic relationships beyond the static effects of influential factors and decomposing variance affecting actual resilience.

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Keywords: Regional economic resilience, COVID-19, Vector Auto-Regressive (VAR), Local commercial district

DECLINING AND DISEMPOWERED: THE POWER OF PEOPLE AND PLACES LEFT BEHIND

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Individual Paper Presentation

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The world's economic landscape is changing at a rapid rate. Globalization has led to the concentration of resources and accelerated demographic growth in a small number of larger cities and their regions, while cities located beyond the orbit of these growing regions have been "left behind". As large growing cities garner a disproportionate amount of government funding, media limelight, and academic research focus, left-behind communities are quietly grappling with population and economic decline, and deteriorating infrastructure. The solitude of perceived neglect in left-behind places is fueling the discontent of local residents (Rodríguez-Pose, 2018).

Left-behind places experience shifts to their perceived power from local and resident perspectives. The concept of power in left-behind places is often assumed to be reliant on prosperous regions, which influences the identities of declining places (Willett & Lang, 2018). However, this is a simplistic perspective of power which removes agency from the residents of left-behind places, reinforcing negative spatial stigmatizations. Residents' collective reactions to this disempowerment can range from apathy, to resentment, to future agency focused on hope (Rodríguez-Pose, 2018).

"Left-behind places" have been examined and discussed in various economic, political, social, and cultural settings by academics, politicians, and policymakers (Pike et al., 2023). However, the breadth and prominence of the term make it difficult to define. Notably, scholars are divided as to whether it is "places" that are truly left behind, or whether it is the people in these places who are left behind (Pike et al., 2023; Martin et al., 2021; Overman, 2019). Scholars researching place-based "left-behindness" measure this phenomenon through spatially differentiated economic change and argue that creating a more spatially even distribution of resources would improve the prosperity of left-behind places (Martin et al., 2021). A person-based approach, on the other hand, focuses on individual inequality, and notes that policy interventions should concentrate on improving individual opportunities instead of attempting to mitigate inequality between places (Overman, 2019).

I argue that a mix of people and place-based approaches are necessary to determine the socio-political ramifications of living in a left-behind place, while also acknowledging the spatial inequality of places. My paper introduces a new conceptual framework for left-behind places in North America. Through a socio-political lens, I draw on left-behind places literature to 1) conceptualize the interrelationships between local power, personal power, and collective power, 2) demonstrate how external factors and spatial stigmatization can accelerate these processes, and 3) consider how mitigation techniques can disturb the positive feedback loop occurring in left-behind places.

Using the conceptual framework as a guiding analytical tool, I examine the implications of left-behind places on urban and regional planning by outlining the demographic, economic, and political repercussions within these places, as well as how solutions tailored to the unique contexts of communities can mitigate these challenges. I apply the conceptual framework to an American left-behind community to demonstrate how its power structures have shifted across time. By exploring left-behind places through a socio-political lens, I advance a new direction for planning within left-behind places while contributing to existing discourse on spatial divergence, discontentment, and collective resident power.

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Keywords: left-behind places, regional planning, spatial inequality, power

DOES REGIONAL ECONOMY CONVERGE WITH THE BIL INVESTMENT

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Individual Paper Presentation

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The Bipartisan Infrastructure Law (BIL), enacted in response to the growing infrastructure challenges facing the United States, represents a significant investment in the nation's pillar industry. This paper investigates the potential effects of BIL investment on regional economic convergence across the country. The hypothesis posits that the infusion of resources into infrastructure projects could lead to greater economic convergence among regions, narrowing the gap between economically advanced and lagging areas. This study employs the computable general equilibrium (CGE) model with both bottom-up and top-down frameworks to estimate the county-level economic changes stimulated by the BIL investment. With the result of CGE model, the conditional beta convergence regression is applied to analyze which sectors contribute to the regional convergence and with there is a spatial aggregation at the megaregion level.

Many empirical studies have found the regional convergence trend in the US since 1950s, some have proved the spillover effects and shed light on spatial dynamics. However, the most recent studies found opposite trends of polarization and the increasing gaps between superstar city-regions and the remote areas. Transportation investment plays a vital role in economic development. Short-term impacts are realized through inter-regional and inter-sectoral purchases and trades, while long-term impacts include facilitating the movement of goods, services, and people. Many theoretical models explain the relationship between transportation infrastructure and economic convergence, for example, the New Economic Geography theory. Given the most recent federal level transportation investment, the Bipartisan Infrastructure Law, it is vital to test whether those investments bring a more equitable outcome or exaggerate the gap between the wealthy regions and the poor regions.

The CGE model is the major assessment tool to estimate the short-term investment impact of the BIL. The multi-regional CGE model is constructed with sub-national and inter-regional trade matrices. $550 billion of BIL investment are proportionally distributed to five regions in the US by 7 sectors directly receiving the federal funds. With the bottom-up framework, each region has its own equilibrium where the prices and productivity are affected by the inter-regional trades. The top-down framework allocated the sectoral changes to each county within the region given its industrial share. The value-added change by county is summed by the total sectoral changes. The

post analysis in this study utilizes the result from the CGE model to examine the relationship between infrastructure investment impacts under the BIL and various indicators of regional economic performance. Key variables include measures of infrastructure spending, employment growth, gross domestic product (GDP) growth, productivity, and whether the county exists in a megaregion or not.

The findings of this study contribute to the ongoing discourse on the efficacy of infrastructure investment as a tool for promoting regional economic convergence. Moreover, the study sheds light on the importance of considering regional disparities and local contextual factors in designing and implementing infrastructure policies. The preliminary results show that 1) the productivity of art and entertainment, education and health, professional services, are positive associated with the growth after the investment, while the accommodation, agriculture and mining, construction and utilities are negatively associated with the growth. 2) counties located in the Great Lakes, Front Range, Northern and Southern California megaregions are associated with a higher increase in the GVA per capita. On the contrary, Texas Triangle megaregion shows a negative impact on the GVA per capita.

Overall, this research advances our understanding of the complex relationship between infrastructure investment and regional economic convergence. By examining the effects of the Bipartisan Infrastructure Law on diverse regions across the United States, this study provides valuable insights for policymakers, practitioners, and scholars seeking to foster inclusive and sustainable economic development.

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Keywords: regional convergence, transportation investment, Bipartisan Infrastructure Law, computable general equilibrium (CGE) model

ELUENT: A PLAN/POLICY AND ECONOMIC DEVELOPMENT PSS FOR CITIES AND REGIONS

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Individual Paper Presentation

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To some estimates, 83% of the US population lives in urban areas1. Cities in the United States constitute these areas, forming our urbanized regions. According to the Bureau of Census, there are 384 metropolitan statistical areas and 543 micropolitan statistical areas in the United States2. The cities in these dynamic metro and micro areas deal with ongoing social and economic changes and prepare and implement plans and policies to enhance economic development in the area and accommodate the demographic and employment changes. While most of

these efforts are undertaken at city levels, an overlooked point is that a city in the US is a creature of the state, a political jurisdiction to which economic waves and forces are blind. As a result, the effectiveness of these economic development policies and planning efforts is questionable. The persistence of social equity problems in poverty-stricken areas with overwhelming minority populations in so many cities is the evidence. At the same time, strategies of different nature have been implemented sometimes for decades. Considering all the related information beyond a city boundary was not entirely possible until recently. However, the technological and theoretical advancements of the last few decades in big data, GIS, urban analysis, visualization, etc., have made the setting ready for new ways of dealing with old problems.

This paper presents a planning and support system (PSS), ELUENT, that helps with many problems of this nature in urban areas. It utilizes all the relevant information that facilitates the analyses and processes urban-related institutions need to go through for various developmental objectives in the city, a larger subregion, or regional levels. ELUENT considers social, economic, and political considerations when preparing plans or socio-demographic analyses for various policymaking purposes. Its open framework can be tailored to different settings and helps economic development, comprehensive plan-making, and policy decisions of all types at the local, city, county, or regional levels. It introduces innovative approaches to planning an urban area, including a variant of geographic information system-based land-use analysis and environmental suitability analysis to derive development potential for small zones or cell grids in the study area. This approach enables public and stakeholder input into the process, facilitating micro-level consideration of different attributes of economic activities and demographic changes in the analysis along with the related land uses and social dimensions. It also includes the effects of future developments on the environment, economic development, stakeholders' input, ease of use for decision-makers, and better integration with other regional planning efforts and MPO's transportation planning process.

These features allow the planning process to be open to human interaction, making it possible to input social and political aspects and decisions into the easy-to-work structure. The input is accomplished by including and participating representatives of the decision-making bodies, stakeholders, and the public in various aspects of the planning process to elicit their information and intimate local knowledge in this critical step and continue during the necessary land-use activity allocation process. This inclusiveness would involve multiple voices during the process from the outset, making it more open and understandable to the public and the decision-makers, avoiding later surprises when the results become public. Such information is critical in decision-making, economic development, land-use planning, and resource allocation, which helps achieve results in line with stakeholders' development perceptions, local economic activities, and jurisdictional plans and visions. Furthermore, this input allows the derivation of development potentials in the suitability stage and the more critical land-use activity allocation process, which helps allot commercial and economic activities and households to their most appropriate locations, thus facilitating social equity problems.

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Keywords: Regional Planning, Economic Development, Land Use, Transportaion, planning support system

ENDOGENOUS ECONOMIC GROWTH IN US METROPOLITAN STATISTICAL AREAS, 2013-2023

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Individual Paper Presentation

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[Significance of research, Research questions, Objectives]

Human capital (HC) accumulation and technological change (TC) have been the main drivers of regional economic growth (Lucas, 1988; Romer, 1990). Years of schooling has been widely used to measure workers' HC levels, but it may not reflect the unique traits of workers (Abraham & Mallatt, 2022). Moreover, with the recent emphasis on the re-combinant nature of technology (Castaldi et al., 2015), simply using patents as a proxy for regional TC levels may not be appropriate. We needed a new effort to proxy regional HC and TC levels. The main research question is: to what extent do levels of HC and TC, measured in new ways, affect regional economic growth? To answer them, our study aims to estimate regional HC and TC levels using network analysis and relatedness approach, which has recently gained traction in the social sciences, and to identify their impact on regional economic growth.

[Data and Method]

This study analyzes U.S. metropolitan statistical areas (MSAs) from 2013 to 2023. We obtained Occupational Information Network database to identify occupational skill levels and combined it with occupational employment distributions from the Occupational Employment and Wage Statistics to build a regional skill levels database. Next, we have acquired patent data from the United States Patent and Trademark Office. After constructing the skill and patent relatedness matrix and building the network using Python, we calculated the regional relatedness density (RD). The RD measured here is a proxy for skill and technology level. We then applied an autoregressive cross-lagged model (ACLM), as part of the structural equation model for longitudinal analysis, to estimate the impact of HC and TC on regional economic growth. ACLM allows for the identification of longitudinal correlations between variables, which facilitates the handling of endogeneity issues that often arise in economic growth models. The remaining control variables were constructed from the U.S. Bureau of Labor Statistics.

[Main findings]

First, the skill composition of the MSAs was quite heterogeneous. Regions with higher RD in social-cognitive domain nearly always had lower RD in physical skill domain, and vice versa. We observed that some MSAs had high RD in both domains, characterized by large MSAs with populations over 1 million and located in the Sun Belt or Rust Belt. Second, we were able to identify that the majority of large MSAs have high social-cognitive RD, while small MSAs mostly have low social-cognitive RD. Third, technology RD was particularly strong in a few MSAs, which were large and have very high social-cognitive RD. These are primarily MSAs along the northeastern coastline from Washington, D.C. to Boston, MA, with other major MSAs including Los Angeles, CA; Seattle, WA; and Chicago, IL etc. Last, conducting ACLM, we uncovered the presence of significant positive autoregressive and cross-lagged effects

for each variable. It is worth noting that the autoregressive and cross-lagged effects are getting progressively stronger, and the larger the MSAs, the stronger they are.

[Implications]

Our findings suggest that the mechanism of endogenous economic growth is becoming increasingly stronger. This leads to a negative view of regional convergence. We often worry about spatial inequality in terms of urban-rural dimensions, but disparities between cities or regions can be even more problematic. Randolph and Currid-Halkett (2021) noted that planners often tend to think at the city scale, emphasizing the need for multi-scalar thinking that focuses on relationships with external cities or regions. Hence, we stress the need for planners in smaller, lagging MSAs to engage in policy design at the federal level while working to promote development at the local level, leveraging locally-based knowledge.

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Keywords: human capital, technological change, regional labor market, regional disparities, autoregressive cross-lagged model

ESTIMATING OF ECONOMIC RESILIENCE IN RESPONSE TO NATURAL DISASTERS

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Individual Paper Presentation

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[Problems] It is a fact proven through numerous research results that the frequency and intensity of natural disaster damage is increasing due to climate change. The sudden occurrence of a disaster can have a strong impact on a city, disrupting the normal operation of social infrastructure and businesses, and even causing a downturn in the local economy. After a disaster, there are differences in the level and pattern of economic recovery by region, which can be explained by differences in regional economic resilience (Botzen et al., 2019).

In disaster prevention research, the concept of Resilience is defined and used as the ability of social organizations to mitigate disaster risk, contain the impact of a disaster when it occurs, and carry out recovery activities in a way

that minimizes social disruption and mitigates the impact of future disasters (Bruneau et al., 2003). The concept of resilience can be divided into three aspects depending on the economic context. The first is a reduction in the probability of damage from a disaster, and the second is a reduction in the consequences of damage from a disaster. Thirdly, the time aspect is added to shorten the recovery time. Attempts to measure economic resilience to disasters are actively underway at national and regional levels. However, many previous studies attempted to quantify economic resilience by simulating disaster scenarios. This study began with an attempt to estimate regional economic resilience in South Korea by directly using statistical data related to actual disaster damage, rather than a simulation.

[Approach and Methodology] To examine the research questions, this study measured economic resilience by region based on the resilience concept of previous related research. Bruneau et al.(2003) defined the ‘Resilience triangle’ through a time series graph showing changes in system performance in response to disasters, and conceptualized this as system resilience. Based on this, Zobel et al.(2021) estimated 'Predicted disaster resilience' by measuring the time it takes for 'loss' and 'recovery' due to a disaster. This study selected parameters that can represent the economic loss and recovery of a region in response to the impact of a natural disaster, and calculated the Resilience triangle using the area concept. Damage exceeding MBCO was targeted, and the value was estimated by dividing it into impact resistance and impact recovery based on the maximum damage by region. The calculation results were mapped, and spatial clustering of impact resistance and impact recovery was identified through LISA analysis.

[Findings and Implications] The concept of resilience used in this study is based on the concept of economic loss due to natural disasters, so paradoxically, it means that a region is resilient only when damage occurs. Therefore, a city with a low resilience value because no damage occurred cannot be interpreted as a city without resilience. This means that the results should not be interpreted by applying general regression analysis. Preliminary analysis results showed spatial clustering of impact resistance and impact recovery. Additional research is needed on the cluster characteristics of impact resistance and impact recovery. Strengthening regional resilience has become essential for sustainable development. This study shows the potential to be used as a tool to evaluate regional economic resilience before a disaster occurs by separately estimating impact resistance and impact recovery. The evaluation results can be used as auxiliary data for decision-making within limited local government budgets, whether to invest in improving impact resistance to reduce maximum damage or to improve impact recovery to establish a rapid recovery system.

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Keywords: Economic Resilience, Natural Disasters, GIS Analysis, Spatial Autocorrelation

FUNCTIONAL REGIONS AND REGIONAL CENTERS OF THE U.S. : A NETWORK APPROACH

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Individual Paper Presentation

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The planning approach at a regional scale has become an essential issue following recent trends, including globalization, growing interregional connectivity, supply chain expansion, and expanding influence of businesses in regional development and dynamics (Harrison, 2021). The advancing transportation and information technology has expanded human activities that transcend physical or non–physical boundaries. The diffused human activities form regions that are often referred to as functional regions, which in contrast to politically or administratively divided regions. Since the current planning system to manage regional planning issues chiefly correspond with boundaries that are about century-old, functional regions have become more critical in spatial planning. This is because they reflect the actual dynamics of various human activities or societal phenomena. Accordingly, identifying functional regions has become a crucial task, as places in a same functional region are stakeholders that share common interests. This task is even more important and challenging when the spatial interactions between places differ substantially from political boundaries.

Efforts have been made to identify functional regions of the U.S. by analyzing commuting (He et al., 2020; Zhang & Lan, 2022). Several studies analyzed multiple factors to find functional regions at a certain scale, i.e., megaregions (RPA, 2006; Ross et al., 2009). However, commuting or freight alone can provide limited aspects of regional dynamics. Although the studies on megaregions analyzed multiple aspects including freight and commute, these studies are before early 2010s and used static data, rather than relational data. These studies also did not include non-commute patterns in analysis which are the other substantial part of regional mobility patterns. Moreover, all of these studies did not put enough attention on the typology of functional regions. Instead, they only identified regional centers that have the greatest in/out flows, or suggested dichotomous classification of regional centers/peripheries.

This study analyzes novel data from the Next-Generation National Household Travel Survey National Origin-Destination Data (NHTS NextGen OD Data), which captures both commute and non-commute trips between 572 NHTS zones in the U.S. Using a social network analysis (SNA) approach, the study examines the nationwide mobility pattern as a network, with NHTS zones as nodes and trips as edges. Through the use of a community detection algorithm, the study inductively identifies functional regions. It also identifies 'regional centers' that are well-connected to other regions and analyzes factors associated with their regional centrality. Additionally, the study quantifies the typology of each functional region to examine the heterogeneity of functional regions in the country.

This study contributes to the literature in several ways. First, it analyzes the novel data set that captures both commute and non-commute mobility pattern at the national level, unlike previous studies that only analyzed commute patterns. By analyzing the comprehensive national data, the study can provide a holistic picture of mobility network and functional regions of the U.S. Second, the study captures the often-overlooked aspect of regional centrality as well-connectedness to other regions. Furthermore, it explores associated factors of the regional centrality that have been barely studied in the literature.

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Keywords: Functional regions, Regional centrality, Social network analysis, Community detection, Mobility pattern

HOW DOES A HOUSEHOLD COMPOSITION BY LIFE CYCLE STAGE AFFECT COMMUTING TIME?

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Individual Paper Presentation

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The Seoul metropolitan area has emerged as a global megacity, driving Korea's development. However, rapid urban growth has transformed Seoul, Gyeonggi, and Incheon into a single commuting area, resulting in an average commuting time of 83.2 minutes as of June 2023 (Statistics Korea, 2023). Consequently, individuals spend approximately 1.73 days per month commuting. While efforts to decentralize the urban spatial structure have been ongoing for three decades, it's become evident that solely restructuring the city may not suffice in reducing commuting time.

This study established the hypothesis that individual and urban socio-economic factors have a greater impact on commuting time than urban spatial structure factors and conducted an empirical analysis. In particular, the degree of division of household chores, presence of children, educational environment, and residential environment can have a significant impact on residential location and commuting patterns. Therefore, we focused on the impact of household composition characteristics and residential location characteristics at each stage of the life cycle due to marriage and childbirth on commuting time. We used the 2021 Personal Travel Survey data, which is the most recent travel survey data, and used a multilevel regression analysis model as a statistical model. As a result of the analysis, it was confirmed that residential location varies depending on the life cycle stage, affecting commuting time. Looking at each stage, the commuting time was the longest in stage 1 (adults not independent of parents) life cycle, and this can be understood as involuntary long-distance commuting because the location of the parents' home is fixed. Meanwhile, the life cycle of stage 5 (adults with school-age children) had the shortest commuting time, followed by the life cycle of stage 4 (adults with preschool children). What is unusual is that although the commuting time in stage 4 or 5 life cycle was short on average, excessive commuting was found to be quite common. This can be understood as a case of finding a house near one's parents' home or in-laws' house in order to receive help from grandparents in raising children. Commuters in stage 2 of the life cycle who became independent from their parents but were not married showed shorter commuting times than commuters in stage 3

of the life cycle who were married. This can be seen as due to limitations in choosing a residential location due to dual income, even though level 3 commuters have greater ability to choose housing.

In this way, the characteristics of household composition at each stage of the life cycle were found to be a factor that greatly influenced commuting time. This suggests that when deciding on the location of housing supply, rather than simply locating it close to the workplace, establishing housing and transportation policies that take into account the life cycle stages of workers at nearby workplaces can lead to an effective reduction in commuting time.

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Keywords: polycentric city, decentralization, commuting time, socio-economic factors, life cycle stage

HOW DOES TECHNOLOGICAL CHANGE AFFECT REGIONAL DISPARITIES AND RESILIENCE?

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Individual Paper Presentation

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Technological revolutions fundamentally redefine human tasks and occupations and reshape the structure of the labor market. Notably, the phenomenon of technological unemployment is not uniformly distributed, but varies regionally, causing the rise and fall of cities.

We start from the premise that technological change serves as a economic shock to regional economies, which can be examined from a resilience perspective. In this context, this study seeks to answer the following research question: How has technological change transformed regional economic structure? Does technological change affect regional disparities in resilience? We examine how technological change affects regional resilience, a concept we define as a region's ability to adapt to disruptive innovations and mitigate technological unemployment ("technological regional resilience"). We also examine whether technological progress is exacerbating disparities in this resilience across regions.

This multi-step analysis uses patent citation network analysis to identify key technological innovations and track their trajectories over time. Text analysis of these networks and occupational tasks helps to understand the impact

of technological change on specific occupations categorized by the Standard Occupational Classification (SOC). Finally, we correlate these findings with U.S. national and regional employment trends.

We highlight differences in regional technological resilience, as technological change has a disproportionate impact on the ability of regions to transition to new occupations. This resilience is strongly related to regional output, as measured by gross regional domestic product (GRDP). Regions with vibrant innovation ecosystems and higher educational attainment show greater adaptability, experiencing faster labor market realignment, which means recovery in terms of resilience. They also showed lower technological unemployment, which means resistance. Our study also highlights the importance of proactive policies, such as retraining programs and innovation incentives, in fostering technological resilience.

This research not only analyzes historical trends but also anticipates future disruptions, particularly the rise of artificial intelligence and robotics. We highlight the need for local governments to prepare for potential labor market polarization by developing informed strategies based on a thorough understanding of their employment structures. By proactively preparing, regions can navigate the coming technological wave and ensure a smoother adaptation.

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Keywords: Technological Change, Technological Unemployment, Resilience, Patent Citation Network, Text Analysis

INTERCITY TRAVEL IN CORE CITIES OF METROPOLITAN AREAS: A CONSUMER CITY VIEW

Abstract ID: 1108.0.0.1056.2024
Individual Paper Presentation

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The emergence of the “consumer city” concept has altered the trajectory of prosperity and development for many major cities worldwide. Previously seen as centers of production and employment, these cities are increasingly viewed as centers of consumption, offering a wide range of consumer services. Consequently, traditional research focusing solely on employment and commuting patterns may not fully capture the changing dynamics of urban and regional needs. Despite the significance of this shift, there remains a noticeable gap in empirical studies concerning intercity travel beyond the scope of commuting between core and peripheral cities, particularly with regard to consumer-driven travel and other associated city functions.

This research focuses on the Shanghai Metropolitan Area in China. Shanghai holds significant importance as a gateway to globalization in China. Propelled by national policies, Shanghai is currently undergoing a transition

towards becoming an “International Consumption Center”. This transition seeks to enhance Shanghai's role in consumption, further elevating its profile on the global stage.

Hence, this study aims to explore the patterns and demands of intercity travel driven by consumer functions in core cities within metropolitan areas. The results will provide deeper insights into how consumer functions in these core cities impact the broader development of metropolitan areas.

This study employs cellular signaling data from 2023, introducing an innovative method to analyze intercity travel, which circumvents the limitations of traditional survey techniques due to their broad scope and scale. We specifically focused on mobile phone users who completed round trips to Shanghai within a single day, thus narrowing our examination to travel within the metropolitan area's reach. The spatial clustering and hotspot characteristics of intercity travel destinations in core cities were identified using the Getis-Ord Gi* statistic and a relative threshold-based approach. Additionally, we analyzed the urban functions of these hot travel destinations by leveraging POI data from 2023. This allowed us to calculate travel distances to various urban functions and uncover the relationship between the spatial distribution and functional attributes of these destinations. This methodology provides new insights into how intercity travel patterns align with the core city's functional landscape.

The findings of this study, through the lens of the "consumer city" concept, indicate that intercity travel within the Shanghai metropolitan area, particularly towards the core city, is largely motivated by non-commuting purposes, primarily consumption. This pattern of travel highlights hotspot destinations within both the urban core and the suburban sub-centers of Shanghai, displaying two distinct spatial patterns: "Adjacent to Borders" and "Central Agglomeration." These patterns are significantly influenced by the hierarchical differences in consumer functions, leading to two main types of travel motivations: High-Level Function-Driven and Ordinary Function-Driven. High-Level Function-Driven travel is characterized by long-distance trips drawn to high-end commercial districts and tourist attractions in the core city’s main center. This form of travel enhances the breadth and depth of the core city’s consumer services and its external connectivity. On the other hand, Ordinary Function-Driven travel involves shorter trips to commercial areas in the suburban sub-centers, facilitating access to consumption opportunities within the core city for residents of peripheral cities at lower travel expenses. This classification underlines the nuanced ways in which different consumer functions influence the spatial and functional dynamics of intercity travel to the core city.

This study highlights how consumer-focused functions within the core cities of metropolitan areas shape intercity travel patterns and demands, offering valuable empirical insights for the functional planning and regional transport strategies of core cities globally. Future investigations could extend this research by examining the influence of varying consumption opportunity levels on travel behaviors.

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Keywords: Intercity travel, Metropolitan areas, Consumption, Cellular signaling data

INTERNAL MIGRATION AND SELECTION OF MIGRATION TYPE AMONG YOUNG ADULTS

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Individual Paper Presentation

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According to human capital theory, maintaining a young adult population is an important challenge for the development of each region. The world is experiencing a population decline due to various factors, and Korea is one of the countries with a severely declining birth rate. As the problem of population decline becomes serious, diverse programs are being implemented to prevent the outflow of young adults, but they are not having much effect. Therefore, this study aims to identify young adults' outflow and inflow and examine the impact of personal characteristics on the type of young adults' migration.

The data is based on a 2% sample of the 2020 Census. We use the Migration Effectiveness Index rather than the net migration rate, often used in previous studies, to analyze the outflow and inflow of young adults. This is to overcome the limitation of the net migration rate, which is affected by the cumulative population, and to identify young adult outflows and inflows in 2015 and 2020. It is also based on the theory of migration selectivity, which states that people choose to migrate when they expect the benefits of migration to exceed the costs. To apply a dynamic migration model in which migration occurs repeatedly during the selection process, we categorized migrants at the four-time points into non-migrants, primary migrants, short-return migrants, return migrants to their place of origin, and onward migrants. We use multinomial probit analysis to examine how young adults' characteristics affect migration type and identify mechanisms.

The analysis shows that the regions with high levels of young adults inflow in both 2015 and 2020, as measured by the MEI index, were characterized by having many jobs, large land developments, or military bases, while the regions with high levels of young adults' outflow in both 2015 and 2020 were characterized by small rural areas. In terms of demographics, multinomial probit analysis showed that young adults were more likely to stay in their place of birth if they were female, more likely to migrate if they were older, and more likely to migrate if they had more education. In terms of income, higher earners are more likely to choose to migrate, while lower earners are less likely to migrate. The probability of repeated migration was higher for those with more diverse social networks and increased for those in manufacturing, professional, scientific and technical services, and professional and service workers.

This study suggests that to achieve an even distribution of the young adult population, non-capital regions need to create incentives to keep the young adults from the non-migrants, who comprise the majority of the population, in the region. Rather than youth spatial planning to attract young adults from other regions, schemes such as providing housing to stay-at-home young adults are likely to be more effective, given that the lower the income, the more likely they are to belong to the non-migrants. In addition, based on prior research that shows that migrants in the onward migrants are more likely to be employed in specialized and skilled occupations and are more likely to move to seek better opportunities elsewhere, we assume that specialized science and technology service workers and professionals are characterized by a tendency to move in search of more knowledge. Given

that science and technology workers typically have more years of education and higher incomes, we suggest that improving the quality of research at local universities and local institutions should be prioritized rather than providing direct support, such as grants, to students entering local universities and local institutions.

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Keywords: internal migration, young adults, migration type, migration selectivity, Migration Effectiveness Index

MEASUREMENT OF URBAN CLIMATE RESILIENCE OF HEAT WAVE

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Individual Paper Presentation

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To build a model to diagnose and evaluate urban climate resilience to heat waves, we aim to develop a basic model by building a database of measured variables, estimating the thresholds of intermediate indicators of heat wave resilience, and verifying the suitability of the model. To measure urban climate resilience to heat waves, we used the number of heat illnesses in the summer season from June to August (2021 to 2023) and average household electricity consumption (2014 to 2022) as intermediate indicators. A panel threshold regression (Hansen, 1999) analysis was used to derive the threshold temperature at the national level. Borrowing concepts from the field of business continuity management (BCM) based on the work of Zobel et al. (2021), we applied the concepts of minimum business continuity objective (MBCO), which is the minimum level of service that must be provided in the event of a disaster, and maximum tolerable period of disruption (MTPD), which is the recovery time if the system lasts below MBCO, as thresholds and critical times for local systems.

First, the panel threshold regression analysis showed a significant non-linear relationship between the number of heat illnesses, summer electricity consumption, and temperature. The threshold temperature based on the number of heat illnesses is 32.04℃, while the threshold temperature based on summer electricity consumption is

30.05℃ and 33.68℃. To measure the climate resilience of cities to heat waves by region, the threshold (MBCO) based on the number of people with heat illnesses was set to 0, and the threshold (MBCO) based on summer electricity consumption was set to the average value of spring and fall electricity consumption. Based on this, we estimated heat wave resilience by region. The resilience based on the number of heat illnesses ranged from 0.42 to 0.89, while the resilience based on summer electricity usage ranged from 0.68 to 0.93. Regions with a high number of heat illnesses in a short period of time were less resilient, while non-metropolitan areas with low electricity usage were more resilient.

This study is unique in that it uses a model for measuring urban climate resilience to heat waves, which is directly perceived by humans, and examines heat wave damage in terms of the number of people with heat illnesses and summer electricity consumption. Furthermore, by measuring heat wave resilience by region, future studies can examine the influencing factors of heat wave resilience and provide policy implications for improving the climate resilience of cities by region.

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Keywords: Heatwave, Resilience, Threshold Temperature, Minimum Business Continuity Objective (MBCO)

PLANNING AT THE TOP OF THE WORLD: THE INUPIAT COMMUNITY OF THE ARCTIC SLOPE

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Individual Paper Presentation

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What motivates indigenous communities to collaborate their planning efforts across vast rural distances? For planning researchers and practitioners, much of what we know about regional planning is derived from lessons from urbanized areas and how they interact with their suburban and rural hinterlands. Indeed, far less is understood about how (1) entirely successfully rural regions collaborate or (2) how indigenous value and culture inform regional planning. In this paper, I explore both themes through a case study of the Inupiat Community of the Arctic Slope (ICAS), a regional Alaska Native government headquartered in Barrow (Utqiagvik), Alaska. The paper and its findings are the outcome of qualitative research conducted with tribal planning practitioners in the Arctic Slope region of Alaska during 2024, seeking to provide greater insight on what motivates tribal governments to collaborate, the mechanisms they use to do so, and the outcome of their efforts.

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Keywords: Regional, Indigenous, Planning, Transportation, Collaboration

PUBLIC CHOICE, PUBLIC INTEREST, AND PLANNING: INSIGHTS FROM LOS ANGELES

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Individual Paper Presentation

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Scholars have long debated contemporary problems of planning, governance, and provision of public goods in politically fragmented metropolitan regions. This discourse has become particularly relevant in contemporary times as we face growing inequality, challenges of climate change, problems of housing affordability, and growing homeless populations. Although often seen at the scale of local communities, we argue in this paper that serious planning and policy challenges lie at the regional scale.

We begin with the seminal contribution of economist Charles Tiebout (in a way celebrating his 100th birth anniversary this year) in explaining the public choice and efficiency rationale in the fragmentation of the metropolitan political space in major American regions (Tiebout, 1956). The literature, consequent to Tiebout’s hypothesis, has focused mainly on efficiency in local public finance, but not on regional welfare outcomes of local development decisions (see Fischel, 2006). We argue that achieving equitable regional welfare outcomes is imperative for addressing the public interest principle in planning practice (Alexander, 2004; Garde & Song, 2022; Heikkila, 1996). We thus examine both efficiency and equity outcomes of local development decisions in the politically fragmented Los Angeles metropolitan region.

We focus on 178 incorporated cities in five urban counties in the Los Angeles metropolitan region comprising Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. We use ordinary least square (OLS) regression models to examine the relationships between population characteristics of cities and the contextual attributes of cities that are hypothesized to be associated with, and are thus likely determinants of, sorting of households in the region. The population characteristics of cities included in the analyses are median household income, median home value, the share of the non-white population, and the “public burden” in cities resulting from multiple sources of pollution and population vulnerabilities measured by CalEnviroScreen 4.0 percentile scores. The

contextual attributes of cities are (1) two important public goods offered by cities—school quality and community safety, (2) six main land use categories that make up the land use portfolios of cities, and (3) other relevant attributes such as age, size, net housing density, and geographical location of cities. We posit three sets of models to sequentially investigate the association between population characteristics, and public goods as hypothesized by Tiebout (1956), then expand the analyses to include land use characteristics and contextual variables.

Our analysis suggests that households in the region have not just voted with their feet based on the packages of the public goods that the cities offer, they also have sorted themselves into cities based on the desirability of land use portfolios and other contextual attributes of cities. High-income and predominantly white households have sorted into cities with a significantly large share of single-family residential land uses, as well as a large share of land use devoted to open space, and proximity to the coast, while cities with a higher share of non-white population have less-than-desirable land use portfolios, characterized by a smaller share of land uses allocated for single-family housing and open space, and a larger share of land zoned for commercial and industrial uses, and greater distance from the coast. We conclude that this fragmentation of political space, claimed by public choice theorists to be an efficient outcome, is in fact Pareto inferior from a welfare economics point of view. In the absence of a regional governance that only can deliver a Pareto superior outcome based on the principles of diversity, equity, and inclusion, state-level intervention in local planning becomes necessary for addressing the public interest imperative of planning. Recent proliferation of state-level legislation with implications for local planning is a case in point.

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Keywords: Land use planning, Los Angeles metropolitan region, Public choice and public goods, Public interest, Tiebout hypothesis

REGIONAL COOPERATION FOR POPULATION FLOWS: THE SPATIAL ANALYSIS WITH LLMS

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Individual Paper Presentation

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The significance of interlocal collaboration, particularly for migrant populations, has gained increased attention in the realms of regional planning and development. This trend highlights a growing focus on leveraging the institutional building of region, such as regional cooperation, to bolster its functional capacities and achieve integrated development. In China, the ongoing state rescaling process accentuates the value of an inclusive regional network, promoting inter-city cooperation, especially between developed and underdeveloped cities. However, there remains a scarcity of research exploring the specific mechanisms through which this regional cooperation meets the interlocal functional needs of regions. This study aims to fill this gap by examining whether functional linkages between cities, as evidenced by population flows, lead to increased intentions to cooperate and the formation of formal partnerships through agreements and plans.

To capture inter-city cooperation, we collected over 130,000 pieces of cooperation news data from local government websites in the Yangtze River Delta (YRD), involving 4920 city-pairs from 2018 to 2023. The advanced Large Language Model (GPT-4) was utilized to assess each piece of cooperation news, categorizing them into either cooperative actions (such as plans, agreements, and institutions) or cooperative intentions (including visits, learning opportunities, and meetings). Additionally, migrant data was sourced from the AMAP Migration Big Data platform, which tracks population flows among cities. We employed both the fixed effects regression and the Geographic and Temporal Weighted Regression (GTWR) model to examine how population flows influence cooperative intentions and actions across space and time.

Our spatial network analysis highlights an overall increase in inter-city population flows and cooperations within the YRD. However, we have identified an asymmetric feature of high cooperative intentions but low cooperative actions in city pairs between the developed and underdeveloped areas. Regression findings reveal that inter-city population flows can significantly drive cooperative intentions. Yet, these functional linkages of cities primarily promote cooperative actions within metropolitan areas. Upon examine city pairs from nonmetropolitan to metropolitan and inter-provincial areas, it becomes evident that, despite high cooperative intentions—particularly from the left-behind and backward areas—actual cooperative actions like agreements, planning, and institutional developments are challenging to implement, as response to the interlocal service, infrastructure, and economic needs for migrants. These regions often face higher transaction costs and substantial institutional barriers in cooperation, especially when collaborate with developed cities. Consequently, our study casts doubt on the efficacy of state-led regional cooperation in fostering partnerships across diverse localities. Policymakers need to align interlocal needs with cooperative actions, and devise strategies that bridge the functional and institutional aspects of urban networks for regional integrated development.

Keywords: Inter-city cooperation, population flow, regional coordinated development, Large Language Model; Geographical and Temporal Weighted Regression

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Keywords: inter-city cooperation, population flow, regional coordinated development, Large Language Model, Geographical and Temporal Weighted Regression

REINTEGRATION OF URBAN-INDUSTRIAL SPACES AND REGIONAL CHARACTERISTICS

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Individual Paper Presentation

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Cities were historically the home to the wide range of industrial activities, embodying the convergence of production and urban life. However, the process of deindustrialization has incrementally facilitated the separation between urban and industrial spaces. This separation has been further exacerbated by the rigorous enforcement of environmental regulations within urban confines, aimed at mitigating pollution and noise levels. Additionally, the expansionary needs of mass production systems, coupled with the quest for economical real estate on city peripheries, have predominantly catalyzed the suburbanization of industrial activities. Such trends have historically imposed barriers to the reintroduction of industrial sectors into urban landscapes, thereby reinforcing the spatial separation of production-consumption and living-working spaces.

However, recent literatures have highlighted a notable shift towards the 're-urbanization of industry' or the 're-industrialization of the city,' with an acute focus on the manufacturing sector (Gornig and Werwatz, 2018; Hosoya and Schaefer, 2021). It is argued that the application of cutting-edge digital technologies enables enhancements in industrial productivity, facilitates lighter and cleaner production, and ultimately facilitating the return of industry to urban settings (Herrmann et al., 2020; Lane and Rappaport, 2020). In particular, Park's (2023) investigative work on South Korea post-2010 delineates a compelling case for this urban industrial revival, characterizing new manufacturing establishments as small, clean, and technologically advanced.

Despite these advancements, the literature reveals a pronounced dearth of empirical exploration into the nuanced process of urban-industrial reintegration, especially with respect to regional characteristics. In response to this gap, this study aims to examine the patterns and regional characteristics that drive the re-integration of urban-industrial spaces, with a focus on the Seoul metropolitan area in South Korea. Using spatial micro-data spanning from 2000 to 2021, this study calculated an urban location index for each 1km x 1km grid, thereby dissecting the trends and spatiotemporal dynamics prevalent in regions witnessing this reintegration.

Empirical findings, derived from a panel regression model, the critical role of urban industrial spaces, such as vertical factories and industrial parks, in fostering this re-integration. This study diagnoses the urban spatial restructuring process as being significantly influenced by the Industry 4.0 paradigm and the proliferation of digital technologies, which collectively foster a spatial proximity between living and working quarters or the reintegration of production and consumption domains. The study concludes by offering a series of policy recommendations aimed at nurturing the development of future urban industrial landscapes, thereby contributing to the scholarly discourse on urban planning and industrial resurgence within metropolitan settings.

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Keywords: re-urbanization of industry, urban manufacturing, urban-industrial space, digitalization, re-industrialization of city

RESEARCH ON ECOLOGICAL SPACE CONTROL AND PLANNING IN METROPOLITAN AREAS

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Individual Paper Presentation

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As a fundamental requirement for sustainable urban development, ecological space encompasses functions including the regulation of environmental elements, preservation of biodiversity, and provision of ecological services and products. In the context of trans-regional and densely populated metropolitan areas, achieving regional ecological environment co-protection and co-governance emerges as a pivotal challenge for coordinated development. Focusing on the Shanghai Metropolitan Area, anchored by Shanghai as its core city, this research holds paramount significance for the Yangtze River Delta region, facilitating synchronized progress in ecological environment preservation and economic development within the region and fostering the establishment of a high-quality development paradigm characterized by ecological friendliness.

This paper commences with an examination of the developmental landscape, ecological resource endowment attributes, and ecological security framework of the Shanghai Metropolitan Area. Subsequently, adopting a regional coordination mechanism perspective, it conducts an in-depth review and analysis of pertinent policies and regulations governing ecological space control and governance within the metropolitan area, encompassing policies at national, local, and trans-regional levels, along with frameworks such as ecological protection red lines and land use planning. Furthermore, through comparative analysis of international case studies, including Greater London and its environs, the Tokyo Metropolitan Area, the Greater Paris Region, and the New York Metropolitan Area, it distills key measures for ecological coordinated development, synthesizing experiences and insights to offer guidance for ecological co-protection and co-governance efforts in the Shanghai Metropolitan Area.

This study underscores that major metropolitan areas and global urban regions have preserved substantial ecological spaces through strategies such as delineation of protected areas and implementation of control requisites, underscoring the significance of legal underpinning and harmonizing ecological preservation with development imperatives.

Finally, it delineates the trajectory for sustainable development of ecological space in the Shanghai Metropolitan Area, advocating for initiatives including delineation of ecological protection red lines, establishment of a nature reserve-centric national park system, and formulation of mechanisms for ecological compensation, all aimed at fostering continuous enhancement of regional ecological environment and fostering high-quality development.

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Keywords: Sustainable development, Shanghai metropolitan area, Ecological space, Control pathways and planning, Regional coordinated governance

RURAL INDUSTRIAL DEVELOPMENT UNDER LAND USE TRANSITION IN SHANGHAI

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Individual Paper Presentation

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Since the introduction of research on land use transformation in China, numerous studies have emerged that combine China's socio-economic characteristics, with focus mainly on urban areas. At present, China is giving priority to rural revitalization, and the rough use of rural building land has great potential, serving as an important spatial resource for achieving rural revitalization. While undertaking the overflow of urban functions, the countryside in metropolitan areas has a faster level of industrial development, providing more non-farm economic opportunities. These areas are in urgent need of spatial resources to support their growth.

The study focus on scientific issues include identifying the potential value of rural land stock, analyzing the path and cost of land use pattern adjustment, selecting rural industries according to land use transition, and examining the key factors and mechanisms that affect the adjustment of rural construction land stock.

The study examines over ten villages in the Shanghai metropolitan area and conducts empirical research at two levels. Firstly, the scale, use and benefits of rural land use before and after transition are analyzed based on land use spatial data and economic census data. Secondly, the differences in the paths and actors of land use adjustment in different types of villages are analyzed based on field surveys and interview with key informants.

The study shows that during the early stages of ecological construction in China, the withdrawal of industries from rural areas and the decrease in homesteads have resulted in a significant amount of potential construction land in the countryside. In the current round of rural revitalization, villages in the Shanghai metropolitan area have relied on local resources and implemented diverse and functional complex development of on-site rural industries

through land transformation. In this process, the abundance of resources, local power of action, and the mode and intensity of external resource import are the three major influences, presenting the following characteristics:

(1) Land use includes both explicit(scale, land use type, spatial structure) and implicit forms(land quality, property rights, mode of operation, intrinsic input, output capacity), collectively determining the potential value and the mode of transition. Among them, land type and property rights have the greatest influence.

(2) External resource integration is influenced by the 'project system' policy, which limits the involvement of external actors in rural development. Local governments and SOEs increase resource imports via local institutional innovation.

(3) The degree of agreement between internal and external actors regarding the value of land, which refers to the subjective assessment of the potential transition value, affects the approach to adjusting land use and selecting rural industries. Actors at various levels, including county, town, and village, engage in dynamic interaction and relationship reconstruction to address rural development issues, resulting in a collaborative and innovative action network led by the Party, operating across scales and sectors, with the advantages of high resource utilisation, efficient implementation and interest control. Such a network is conducive to providing more support for rural industrial development. Simultaneously, rural land is often transformed to meet regional development goals, which can lead to coordinated allocation of resources but may not align with the needs of rural society.

This study explores the interaction between rural land use transition and rural industrial development in metropolitan areas in China. The conclusions will contribute to illuminate the valorization and augmentation of rural land in the dual flow of urban-rural dynamics, charting paths for nuanced rural revitalization in the new era.

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Keywords: rural revitalization, stock land, dynamical mechanism, metropolitan area, Shanghai

SPATIO-TEMPORAL CHARACTERISTICS OF INCOMING BUSINESS ACTIVITIES IN SHANGHAI

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Individual Paper Presentation

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1.Introduction

As a pivotal economic node in China, Shanghai serves as a strategic link connecting domestic and international markets. The number of incoming business activities in the city continues to expand, becoming one of the important driving forces of Shanghai's economic development. Shanghai establishes a network of connections with the region based on the flow of diverse elements such as population mobility, capital circulation, and commodity distribution. Business travel, a typical form of inter-regional element flow, often involves professional activities such as business collaboration and information exchange, serving as an excellent means to understand the functional connections between cities. Recognizing the spatial-temporal distribution characteristics of business activities coming into Shanghai is not only crucial for optimizing the city’s functional layout but also serves as a key approach to deciphering the cooperative mechanisms between cities.

2.Approach and Methodology

The research mainly uses questionnaire survey data and mobile phone signaling data. The questionnaire is conducted from May to August 2023 and collecting data from 652 Shanghai travelers in Shanghai, focusing on their purpose of trips, social attribute characteristics, mobile phone usage characteristics, and activity patterns. Subsequently, this paper constructs a binary logistic regression model to identify the incoming business population, with individual and activity traits as input variables and the type of traveler (whether a business person or not) as output. The model yieldes a pseudo-R square of 0.59 and an identification precision of 89.26%. Based on this model, mobile phone data is used to predict the type of travelers, and the number of business people identified is about 650,000 (without extrapolation).

3.Results

(1) The business travelers account for approximately 37% of the total incoming population in Shanghai, indicating that inter-city business activities have become a crucial component of urban economic endeavors. Shanghai’s incoming business travelers are mainly from the core areas of the Yangtze River Delta and big cities away from Shanghai, with Suzhou and Beijing particularly notable. (2) Business activities exhibit a polycentric spatial structure, which is highly correlated with distribution of enterprises in the city. Business activities in central urban areas are closely associated with high-value-added industries such as finance, law and high-tech manufacturing, forming a series of business centers serving high-tier and long-distance cities. In contrast, suburbs and new towns serve a more limited range, primarily providing services to neighboring lower-tier cities. (3) The distribution of business activities can be categorized into four tiers: bipolar core(Pudong and Hongqiao), horizontal core area, contiguous business zone, and business activity axis. (4) The urban scale and geographic location of the source cities significantly influence the distribution of business activities in Shanghai: as the scale of source cities increases and the distance from Shanghai grows, business activities tend to concentrate more in the central urban areas.

4.Discussion and Conclusion

This study goes beyond the general paradigm of "urban nodes—inter-city connections" by employing both big and small data methodologies to identify incoming business populations and their activities, thereby enhancing understanding of the spatial distribution characteristics of incoming business activities in Shanghai. However, due to the difficulty in collecting questionnaires from specific external populations, the research currently focuses on the business community as a whole without distinguishing between specific types of business activities, which is an area that needs further refinement. Additionally, future research could explore various factors affecting the distribution of incoming business activities, such as the distribution of companies, the industrial structure of the source cities, transportation networks, etc., to gain a deeper understanding of the motivations and decision-making processes behind inter-city business behaviors.

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Keywords: external business activities, identification, phone data, questionnaire, urban function

TAIHU LAKE CITY CIRCLE TRANSPORTATION EVOLUTION AND SPATIAL EFFECTS

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Individual Paper Presentation

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(Research Background) The Taihu Lake urban agglomeration, as one of the most economically vibrant regions in Eastern China, plays a crucial role where its transportation network development not only directly impacts regional economic growth and integration processes but also serves a pivotal function in facilitating the flow of population, resources, and information within the area. With the rapid economic advancement, the transportation network of the Taihu Lake urban agglomeration has undergone swift evolution. However, this progress has been accompanied by a series of challenges such as traffic congestion, environmental pollution, and uneven spatial distribution, which have constrained the potential for sustainable regional development.

(Research Problems) This study focuses on the spatiotemporal evolution and spatial effects of the transportation network within the Taihu Lake urban agglomeration, aiming to address the research questions: "What are the characteristics of the spatiotemporal evolution of the Taihu Lake urban agglomeration's transportation network? How do these changes affect the regional spatial structure and economic development?" Thus, it seeks to uncover the patterns of transportation network evolution, assess its spatial effects, and propose strategies to promote balanced regional development based on these insights.

(Research Methods) The study employs GIS spatial analysis, Social Network Analysis (SNA), and Structural Equation Modeling (SEM) to analyze the transportation network data of the Taihu Lake urban agglomeration from 2000 to 2023. Initially, GIS technology is used to construct a spatiotemporal evolution model of the transportation network, analyzing its trends and characteristics. Subsequently, Social Network Analysis explores the structural features of inter-city transportation links. Finally, Structural Equation Modeling examines the impact of the transportation network's evolution on regional economic growth and spatial structure optimization.

(Research Findings) The research reveals that the spatiotemporal evolution of the Taihu Lake urban agglomeration's transportation network is characterized by increased network density, enhanced connectivity, and the prominence

of core nodes. Improvements in the transportation network have significantly fostered regional economic integration, strengthened functional complementarity and resource sharing between cities, but have also led to accelerated expansion of central cities and relative lag in peripheral areas, manifesting spatial differentiation phenomena. Through simulation analysis, it was found that optimizing the transportation network configuration can effectively promote balanced regional development, especially by enhancing the transportation connections in peripheral areas, thus effectively alleviating issues of regional development imbalance. Moreover, optimizing the transportation network not only enhances regional economic efficiency but also supports the development of green transportation modes, contributing to the achievement of low-carbon development goals.

(Research Significance) The specific findings of this study will provide a scientific basis for transportation planning and regional development strategies in the Taihu Lake urban agglomeration, facilitating efficient inter-city connections and integrated regional development. Simultaneously, it offers a new perspective on understanding the impact of transportation networks on the spatial structure and economic growth patterns of urban agglomerations, serving as a reference for sustainable development planning in other urban clusters.

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Keywords: Taihu Lake Urban Agglomeration, Transportation Network Evolution, Spatial Analysis, Regional Economic Integration, Sustainable Development

THE IMPACT OF RELATIONAL POPULATION ON POPULATION DECLINING AREAS

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Individual Paper Presentation

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As phenomena such as natural population decline and the densification of populations within metropolitan regions intensify, the challenge of regional extinction becomes markedly severe. Historically, policy initiatives and scholarly research have been predominantly oriented towards the attraction of residential populations. However, the prevailing trend of a comprehensive decline in population renders the competition amongst adjacent regions increasingly obsolete, thereby necessitating the exploration of policy from novel perspectives. Accordingly, the notion of "relational populations" has garnered escalating interest, notwithstanding the paucity of empirical investigations in this domain. This study seeks to elucidate the impact of relational populations on regional extinction and demographic diminution within locales experiencing decreases in population. To this end, the research utilizes cluster analysis for the categorization of relational populations and employs multiple regression models to scrutinize the influence of these populations on regional extinction and demographic reduction, in addition to delineating the characteristics intrinsic to each cluster. Although the definition of a relational population

may exhibit minor variations contingent upon the scholarly perspective, this investigation delineates it as a populace that, while not residing within a specific area, exhibits interest or partakes in visits to the locale. The focus of this study encompasses 78 cities and counties identified as experiencing population decline by the government in October 2021, with the exclusion of the Seoul metropolitan area, other major cities, and Ulleung County. The variables indicative of the relational population comprise Origin-Destination data for purposes other than homecoming, mentions on social media platforms, and the number of visitors. This investigation segments the population-declining regions outside the Seoul metropolitan area into categories of relational populations through K-means cluster analysis. The analytical process yielded three distinct clusters.The research analyzed multiple regression model to assess the impact of relational populations within each cluster on the regional extinction risk index and population decline index, and examined descriptive statistics and analysis of variation for each region within the clusters to identify demographic, social, and economic characteristics specific to each cluster. The findings endeavor to furnish foundational data conducive to the formulation of policies aimed at mitigating population decline, with a particular emphasis on relational populations. This clarifies the interrelation between population decrease and relational populations, thereby proposing a fresh perspective for addressing the issue of demographic reduction. Anticipated to augment understanding of relational populations, this research contributes towards the development of tailored policies that accommodate the unique characteristics of different regions. It is poised to play a pivotal role in devising strategies to reinvigorate non-Seoul metropolitan areas that are markedly impacted by population decline.

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Keywords: Relational populations, Depopulaion Areas, Local extinction, Extinction risk index

THE MODERATING FACTORS IN CLIMATE-HEALTH MECHANISM：A CASE STUDY IN YRDUA

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Individual Paper Presentation

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The health of urban residents under climate change is regulated by a variety of factors, of which the blue-green pattern is an important one. On the one hand, planners attempt to reduce heat injury by increasing the blue-green elements to cool the city, while on the other hand, researchers have found that exposure to blue-green elements

significantly contributes to residents' health, but the ideal exposure state has the requirement of frequent access to the outdoors and high blue-green accessibility. In reality, this may lead to higher heat exposure while weakening the cooling effect under the land cost constraints, thus weakening the health-promoting effect of exposure or even presenting an inhibitory effect. This study argues that the planning of blue-green patterns needs to consider the cooling effect and exposure in an integrated manner. In addition to the blue-green pattern, the development pattern can also affect the health performance by changing the climate vulnerability. With health as the goal, seeking the most suitable urban blue-green and development pattern under the threat of climate change is important for building climate-just cities.

The objectives of this study are (i) to investigate the relationship between urban climate and health in the YRDUA (ii) to obtain the blue-green and development pattern factors with moderating effects, and to observe whether there are any interactions, and also to find the optimal values of the blue-green and development pattern under the multi-effects trade-offs (iii) to predict the health performance of the YRDUA cities in the SSP1-2.6 model and to provide suggestions in urban planning.

The years in which the empirical evidence was 2000-2020. the observed factors for the climate included the number of hot days, maximum air temperature and body temperature; the observed indicator for health was the all-cause mortality; the blue-green pattern included the number, shape, and distribution characteristics of the blue-green elements, as well as the integration characteristics of the blue-green elements; and the development pattern used the climate vulnerability indicators, including exposure, sensitivity, and adaptation levels. All indicators were standardized, tested for unit root and covariance, and then screened out indicators which did not pass the test.

The results showed that there was a significant negative correlation between climate and health, but the model fit was poor, which proved the presence of moderating variables. Meanwhile, the climate-health correlations, blue-green and developmental patterns of cities were significantly clustered. Using the K-means algorithm, the cities were categorized into three groups: the strong heat wave cities (category A), the low landscape level cities (category B), and the high sensitivity cities (category C). Second, some of the indicators in the blue-green and development pattern have significant moderating effects between urban climate and health. the moderating factors of category A are concentrated in the ratio of blue-green elements and the average patch area, which may be due to their excessive urbanization level leading to heat waves, while smaller blue-green ratios and patch areas weaken the cooling effect. The moderating factors of category B are concentrated in the blue-green fusion ratio and the shape index, which points to the inadequacy of the current blue-green planning and design level. The moderating factors of category C are concentrated in the blue-green aggregation and aging level, which is due to the relatively low degree of greening in urbanized area and the high sensitivity of the population, which needs to increase the contact of green space in urbanized area and the protection of special populations. Finally, a random forest model is used to predict future healthy performance, also give differentiated heat wave warning values and urban planning recommendations for different categories of cities.

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Keywords: Heatwave effects, City health performance, Moderating effects, Climate prediction, Region planning

THE RESEARCH ON REGIONAL CLASSIFICATION OF COVID-19 EMPLOYMENT RESILIENCE

Abstract ID: 1108.0.0.588.2024
Individual Paper Presentation

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This study aims to investigate the resilience of employment after the COVID-19 pandemic among cities and counties in Korea and to examine how differences in regional development influence the gap in employment resilience after the pandemic. The COVID-19 pandemic has had significant negative impacts worldwide, and its effects continue to persist. This pandemic has also adversely affected the economies and employment of cities, highlighting the need for individual cities to prepare for future occurrences of pandemics like COVID-19. Particularly, disparities in damages and recoveries have emerged among different social and economic strata following the pandemic. Vulnerable groups have suffered greater harm during the pandemic and have shown slower recovery from losses post-pandemic. This, in other words, suggests that disparities in development existing at the regional level can result in variations in recovery across regions. The study analyzes the resilience of employment in 155 cities and counties in Korea, excluding metropolitan cities and their self-governing districts. The analysis is conducted with clustering analysis and figuring out the characteristics of each cluster based on the index indicators measuring development levels such as housing, industry, transportation, etc. Categorizing designated cities and counties into clusters is based on calculated resilience which is expressed as resistance and recoverability using quadrant scatterplot graph. Furthermore, it investigates how differences in regional development affect the resilience of each area through analysis of variance between clusters and multinomial logistic regression using the indicators of Balanced Development Index, which is a form of nine categories of indicators, as independent variables created by the Korean government. The results reveal a significant gap in employment resilience among the researched areas. Among the five clusters of regions found, Cluster 1 consists of cities and counties with steadily increasing populations and industrial establishments, coupled with solid local infrastructure. They easily recovered from employment recession with positive resistance and recoverability compared to the national average. On the other hand, smaller towns allocated in Cluster 4 experienced negative resistance and recoverability, suffering significant shocks, and eventually declined further. This study provides insights into the differences in employment resilience among regions due to level of development using the government-invented index, and offers a rationale for supporting small declining towns and promoting balanced regional development on a national scale.

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Keywords: COVID-19, Resilience, Balanced Development, Multinomial Logistic Regression

THE ROLE OF CAREER STAGES IN MIGRATION FLOWS OF DECLINING REGIONS IN KOREA

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Individual Paper Presentation

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Background

Urban shrinkage is observed in various regions worldwide. In Korea, not only small and medium-sized cities experiencing youth drain and severe aging but also major cities excluding Seoul are facing shrinkage and decline. While there are studies identifying indicators of shrinkage and investigating policy responses, the mechanisms of urban shrinkage are yet poorly understood. In developed countries, characterized by a columnar population pattern, internal migration heavily influences regional population growth and decline. Individuals and households base their migration decisions on various life-course factors such as employment opportunities, education, family dynamics, and housing. Particularly, an individual's career stage can significantly impact their household's migration choices. The influence of career stages on migration decisions can vary based on regional industrial structures and labor market conditions, all of which are profoundly affected by regional growth and decline trends. Therefore, it is important to explore how shrinkage at the urban and regional levels influences individuals' migration decisions at different career stages.

Research objectives and methods

Against this backdrop, this study aims to examine the patterns of inter-regional migration from/to declining regions while distinguishing them by workers' career stages, and to identify factors driving the outflows and inflows of workers in these regions. This study employed a spatial shift-share approach to analyze differences in internal migration patterns between workers in declining regions and those in other regions while incorporating a dimension of career stage. We aim to address the limitation of classical shift-share analysis, in accurately interpreting regional data with inherent spatial dependence, by employing a spatial shift-share approach that accounts for interactions between neighboring regions. Specifically, we decomposed the migration flow within local labor market areas in Korea, focusing on regions experiencing decline, such as Busan, Changwon-Haman, Iksan, Mokpo-Yeongam, and Gangneung, into four components: national trend, cohort mobility, neighborhood effect, and

regional effect. The study used data on inter-regional migration flows from the Population and Housing Census of 2000, 2005, 2010, 2015, and 2020.

Findings

Our findings reveal that overall outflows of workers from regions experiencing decline are decreasing; however, there is an increasing proportion of workers in their early career stages among these outflows. Additionally, the national trend emerges as the primary driver of population flows only in a few groups and regions, while regional effects significantly impede the inflow of workers into declining regions. In regions experiencing decline and adverse local labor market conditions, individuals in later career stages, having accumulated social capital within the region, can maintain relatively stable career paths; meanwhile, young adults in early career stages, characterized by minimal sunk costs, may actively migrate between regions in response to fluctuations in the local labor market. By capturing the internal migration trends of workers across different cohorts, this study contributes to enhancing our understanding of the interplay between individuals' career stages and inter-regional migration dynamics. These insights may inform the formulation of tailored policy measures to support various categories of workers in declining regions.

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Keywords: urban decline, internal migration, life-course, spatial shift-share analysis, Korea

URBAN SPATIAL PATTERNS AND AIR POLLUTION--EVIDENCE FROM GERMAN REGIONS

Abstract ID: 1108.0.0.437.2024
Individual Paper Presentation

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Despite growing attention towards urban livability and sustainability, urban areas remain significant sources of airborne toxins and pollutants, disproportionately affecting air quality and human health. Moreover, this exposure is unevenly distributed, with marginalized neighborhoods and communities bearing a heavier burden (Schweitzer

and Zhou, 2010). While various factors influence local and regional air quality, urban form and spatial patterns are key determinants (McCarthy and Kaza, 2015). This paper aims to explore the role of urban spatial patterns in understanding ambient air quality.

There is a wide-ranging literature on the relationship between urban spatial patterns and air quality. Some studies proposed that a more spatially compact and denser urban form may worsen air quality due to higher emission concentrations from congestion, heating, and economic activities (Borck and Schrauth, 2021). In contrast, others have suggested that fragmented and sprawling metropolitan areas exhibit higher levels of pollution than their compact counterparts, owing to an increase in vehicular trips and mileage traveled, alongside lower energy consumption per capita (Stone, 2008; Schweitzer and Zhou, 2010). The lack of clarity presents a challenge for regional management practice to develop more sustainable cities and regions.

This study examines the relationship between urban spatial patterns and a series of ambient air pollutants (PM2.5, NO2, PM10, O3) in German metropolitan regions (Großstadtregionen) through regression analysis and case studies. Air pollution datasets provided by the German Environmental Agency, collected via extensive monitoring station systems, are utilized. Satellite-derived datasets are also collected for robustness checks. First, landscape metrics characterizing spatial patterns such as fragmentation, mixed-use, and patch complexity are employed to assess the impact of urbanized land and green space patterns on air pollution. Next, we investigate whether polycentricity results in lower pollution concentration, a subject yet to be explored in the German context. Regional polycentricity, an increasingly common description of contemporary development patterns around the globe, is an oft-cited goal of various spatial development policies to advance sustainability. Proponents suggest polycentric configurations offer the benefits of both compact and dispersed urban forms by distributing urban activities across multiple nodes as opposed to relying on a single center (Li and Schmidt, 2024).

Preliminary findings suggest that higher urban density and greater fragmentation of urbanized land correlate with elevated pollution levels. Conversely, more aggregated and regularly shaped forest patches tend to have a mitigating effect. Surprisingly, no significant positive impact of polycentric configuration on air pollution is observed. The subsequent case study reveals no notable differences in forest spatial distributions between paradigmatic polycentric and monocentric regions, with polycentric regions showing increased long-distance commutes leading to higher traffic-related pollution. In light of these findings, we are cautious about the role of polycentrism as a means to address metropolitan air quality, as advocating and supporting green infrastructure may offer more straightforward and advantageous paths toward improved metropolitan air quality and sustainability.

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Keywords: Polycentricity, Air pollution, Urban spatial patterns, Regional Planning, Germany

Track 11 Research in Motion (RiM)

AN EXPLORATION OF 15-MINUTE CITY AND PRIORITY EQUITY COMMUNITIES IN SOCAL

Abstract ID: 1110.0.0.896.2024
Research-in-Motion (RiM)

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To improve the quality of life of southern Californians, the Southern California Association of Governments (SCAG) has recently adopted its Connect SoCal 2024-2050 (i.e., Regional Transportation Plan/Sustainable Communities Strategy) with collaboration from 191 cities and 6 counties in the region. The '15-minute City' concept has been an important topic and was incorporated as one of Connect SoCal's Community Policies and Strategies for making our communities more just, equitable, diverse, and inclusive by providing adequate essential amenities and mobility options and reducing vehicular trips . This project investigates the 15-minute communities and potential VMT reduction in the region, and its relationship to SCAG's Priority Equity Communities (PEC) through state-of-the-art transportation demand modeling, regional comprehensive land use database, and spatial analysis.

The concept of '15-minute City' has become popular recently through initiatives proposed by major cities around the world such as Paris and Sydney . In addition, several U.S. cities (e.g., Ann Arbor, Cleveland, Portland, etc.) have been embracing the concept as it gains popularity and is showing positive externalities in improving the quality of life of residents. This concept is derived from renowned historical planning theories such as in Clarence Perry's Neighborhood Unit (1929) and Jane Jacob's book titled, "The Death and Life of Great American Cities" (1961) . The '15-minute City' concept was introduced by Carlos Moreno in 2016 and later became prominent in Paris with Mayor Anne Hidalgo's initiative called "Ville du quart d'heure" (aka "living smart city"), which became popular worldwide . As defined in SCAG's Connect SoCal plan, a 15-minute community is one in which you can access all of your basic, day-to-day needs, services and amenities within a 15-minute walk, bike or roll from your home. This is where people can make fewer and/or shorter trips due to the proximity of activity centers and destinations. For

SCAG's purposes, this represents a framework for making our cities more just, equitable, diverse, and inclusive, and more efficient by providing a range of mobility options and overall reduction in single-occupant vehicle trips.

SCAG Scenario Planning Model (SPM)'s accessibility module evaluates accessibility to specific opportunities (i.e., Point of Interest (POI)) by walking, biking, or taking transit based on an integrated active transportation network, developed by compiling data from Open Street Map (OSM), regional bike network, and General Transit Feed Specification (GTFS). The accessibility module (1) loads location data (e.g., jobs, housing, parks, schools, hospitals, etc.) that support the daily essentials of residents to the integrated network, (2) overlays with SPM data prepared at the Scenario Planning Zone (SPZ) level to perform advanced network analysis. Accessibility is measured in the form of the number of opportunities reached within a 15-minute travel time to the nearest POI by specific travel mode.

In consideration of the SPZ-level network, the '15-minute City' analysis is not just to reflect the existing conditions; it is more important to assess the future built environments to analyze the estimated outcomes of Connect SoCal scenarios. We anticipate that, within a 15-minute travel shed, residents are likely to reach more essential destinations across all modes of transportation in the future planning year. Furthermore, residents who live within PECs are estimated to reach slightly fewer essential destinations as compared to the regional average, which provides opportunities for further collaboration and investments in such areas. Future scenarios can be planned to improve equity in health, education, transportation, and so forth. More granular and accurate data coupled with artificial intelligence (AI) can also play a tremendous role in enhancing the 15-minute communities and fostering more meaningful collaboration and engagement with local jurisdictions for a more just, equitable, diverse, and inclusive future.

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Key Words: 15-minute communities, sustainability, equity, built environment, accessibility

IDENTIFICATION TECHNOLOGY AND SITE DETERMINATION FOR INTELLIGENT CCTV

Abstract ID: 1110.0.0.569.2024
Research-in-Motion (RiM)

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In recent years, Korea has seen a significant rise in the development and deployment of intelligent CCTV systems aimed at mitigating crowd accidents and crimes. Unlike traditional CCTV, intelligent CCTV utilizes deep learning technology to extract diverse object-related information from video footage, enabling automated situation identification. Therefore, intelligent CCTV holds high potential as a means of smart city management. However, the current capabilities of intelligent CCTV are limited to identifying people, vehicles, and motorcycles, primarily for tracking criminals or wanted vehicles within the realm of public security. Furthermore, the absence of guidelines for determining optimal deployment locations has resulted in arbitrary decisions by local authorities, often lacking scientific criteria and relying on public grievances. To address these challenges, this study pursues two main objective. Firstly, we aim to enhance object recognition technology by expanding the range of identifiable objects of intelligent CCTV to include bicycles. Secondly, we aim to develop and pilot a location decision process for intelligent CCTV deployment utilizing urban spatial big data. To bolster object recognition capabilities, we developed a deep learning model capable of extracting object features from video data captured by intelligent CCTV, facilitating object identification and counting. Additionally, to scientifically determine optimal CCTV deployment locations, we formulated a CCTV prioritization index incorporating crime vulnerability and surveillance vulnerability indices. These indices were calculated based on crime incidence predictions and the proportion of unmonitored areas per grid, respectively. To calculate the crime vulnerability index, machine learning algorithms were employed to predict the number of crimes per grid using 24 independent variables across four categories: crime, socio-economic, urban spatial, and crime response. The predicted values were categorized into 10 intervals and scored to establish the crime vulnerability index. Subsequently, for the surveillance vulnerability index calculation, the Viewshed function in the QGIS tool was utilized to analyze the visibility range of existing CCTV installations. A digital surface model was generated using contour lines and building data, incorporating CCTV installation height and surveillance radius to construct visible point data. The visibility analysis was conducted to calculate the proportion of unmonitored areas per grid, categorized into 10 intervals and scored to establish the surveillance vulnerability index. Finally, a survey of experts was conducted to determine the weights of the two indices and calculate the CCTV priority installation index. Therefore, the CCTV priority installation index ranges from 1 to 10, with grids having higher values designated as primary areas vulnerable to crime and surveillance. Among these, grids with both indices exceeding the median were selected as priority installation areas. Next, Intersections within these areas were then identified as potential CCTV installation sites, with the final location determined based on minimizing overlapping surveillance coverage while maximizing total coverage. Key outcomes of this study include the development of bicycle object identification technology for intelligent CCTV, enhanced surveillance area analysis accuracy through Viewshed feature utilization, and a more efficient approach to determining new CCTV installation locations. The object recognition data produced by intelligent CCTV systems can be integrated into local big data platforms for population and traffic congestion analysis, informing management strategies for these areas .Although this study primarily focused on crime prevention CCTV and utilized crime vulnerability as a primary criterion for location determination, intelligent CCTV can emerge as a more potent urban management tool when location decisions factor in a comprehensive assessment of various spatial characteristics of the area.

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Key Words: Intelligent CCTV, CCTV Location, Urban Management, Machine Learning, Visibility analysis

MEASURING SOCIAL SUSTAINABILITY: A CASE STUDY IN RURAL MINNESOTA

Abstract ID: 1110.0.0.950.2024
Research-in-Motion (RiM)

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Communities across rural America continue to experience persistent poverty, population loss, and demographic change. With these changes comes an increased importance of understanding the social aspects of life in these communities, in order to better inform rural policies and programs. Unfortunately, existing datasets for rural areas are often unreliable, inaccurate, or unavailable. In addition, there is no unifying definition of what 'rural' is, severely limiting the efficacy and consistency of rural policy. Differing geographic typologies of rural areas also provide a distorted or incomplete picture of these communities.

This paper builds upon the concept of 'social sustainability' to analyze the breadth, depth, and granularity of existing data on rural communities. Social sustainability deals with issues related to social equity, sense of community, social integration, quality of life, and community participation. These concepts are more qualitative than quantitative and, as a result, more difficult to observe and measure. This article explores current data and research on social sustainability indicators in rural communities, discusses its limitations, and offers recommendations for how this data can become more reliable, accurate, and granular.

Our data analysis of social sustainability indicators is driven by three key social goals – community, social equity, and common good – with each goal containing dimensions with corresponding indicators. The working definitions of the three social goals are briefly described below.

The concept of community involves multidimensional components integral to the relationship between individuals and individuals' social structure.

The concept of social equity has to do with fairness and justice in the equal distribution of public goods and services.

The notion of common good is a foundational concept in planning theory and practice. The common good relates to actions that benefit all individuals, not just a privileged few.

We analyze how different geographic scales – such as census block groups, tracts, ZIP code areas, counties, and rural-urban commuting areas – skew how rural data are collected and interpreted, and which social sustainability indicators have more robust and reliable datasets available. Using GIS software, we map data on key social sustainability indicators on different geographic levels in the state of Minnesota to look at how differing definitions of rural - as well as the various ways of measuring rural geography - impact purported social outcomes. We outline a geographic typology of rural spaces that more accurately reflects the social, demographic, and economic realities of these communities and that allows for greater data granularity.

This research hopes to aid rural practitioners and policymakers in crafting programs and policies that address the real, nuanced realities of rural places. It seeks to offer an alternative to the one-size-fits-all approach to rural data collection and analysis that institutions rely on and which all too often fails to bring meaningful social or economic benefits to rural communities.

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Key Words: social sustainability, social equity, rural planning, geospatial analysis, Census geography

RELATION OF SHRINKING CITIES, HEALTHCARE PROVISION AND AVOIDABLE MORTALITY

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Research-in-Motion (RiM)

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Shrinking cities, accompanied by severe aging and population decline, have emerged as a common global issue in recent decades. In regions experiencing significant shrinkage, the aging of living environments and the deterioration of essential local infrastructure, such as healthcare services, contribute to a decline in resident welfare and quality of life, leading to an increase in avoidable mortality. Avoidable mortality refers to deaths that could have been prevented through timely and effective medical services, and it is further categorized into preventable mortality and treatable mortality. This metric is widely employed to evaluate regional health standards and the effectiveness of national health policies.

According to related studies, avoidable mortality has decreased overall due to the development of medical technology in Europe, Korea, and Australia from the 1990s to the 2010s, but inequalities in medical service provisions among countries and regions remain unresolved (Atalay et al., 2023; Choi et al., 2022; Costa & Santana, 2021). Previous studies have mainly compared trends in avoidable mortality between urban and rural or capital regions and non-capital regions. The interconnected dynamics between regional decline, healthcare provision, and avoidable mortality have not been thoroughly examined. Specifically, the sequence and causal relationships among these factors remain unclear. It is uncertain which factor precedes the others and to what extent each influences the others. Additionally, the duration and magnitude of the impact when one variable changes on the others remain largely unexplored.

Against this backdrop, this study aims to elucidate the interrelationships between shrinking cities, healthcare infrastructure, and avoidable mortality, and to diagnose the causes of regional health inequalities. The study period is set at 17 years from 2006 to 2022, considering the availability and completeness of data, and the study site is all municipalities in South Korea. South Korea is one of the countries experiencing the fastest population decline. In 2005, only 15% of the total area was at risk of shrinkage in South Korea. However, this number rapidly increased to 35% in ten years by 2015, and it had surged to half of the total by 2022.

The specific research process is as follows. First, we analyze the spatial distribution and trends of regional health inequalities in South Korea using multivariate LISA clustering and hotspot analysis. Second, using Panel Vector Autoregressive (PVAR) model, we identify the dynamic relationship between shrinking cities, medical infrastructure, and avoidable mortality, and reveal the magnitude and direction of the impact each variable has on one another. PVAR has the advantage of being able to estimate dynamic interactions and causal relationships between multiple endogenous variables (Abrigo & Love, 2016). Variables representing shrinking cities include urbanized area, regional economic indicators, population migration, and regional deprivation index. For healthcare infrastructure, we use medical facilities, personnel, and accessibility. The avoidable mortality data is constructed based on cause of death statistics and the list of preventable and treatable causes of death designated in the January 2022 version of OECD/Eurostat.

This study is significant as an initial attempt to uncover the causal relationships and mechanisms of the shrinking cities, essential infrastructure, and regional health inequalities. Our findings can serve as a basis for subsequent research exploring strategies to address shrinking cities and socioeconomic inequalities, and for policy decisions that promote balanced development across regions.

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Key Words: Shrinking cities, Healthcare Infrastructure, Avoidable Mortality, Health Inequality, Panel Vector Autoregressive Model

THE EFFECTS OF CLIMATE CHANGE ON CONSUMPTIONS IN TOURISM INDUSTRY

Abstract ID: 1110.0.0.975.2024
Research-in-Motion (RiM)

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Climate change is a phenomenon that is occurring rapidly and on a broad scale. It has manifested as an annual average temperature rise and an uptick in extreme weather events, including severe storms, droughts, and floods. The average temperature has been rising at a rate of approximately 0.2℃ per year, and as of 2020, it had increased by approximately 1.11℃ compared to the pre-industrial era (IPCC, 2021). This significant environmental shift has brought about substantial transformations in the consumption patterns in tourism industry. Tourism, defined as activities where individuals seek experiences beyond their daily lives (Larsen, 2019), is directly impacted by climate change. The selection of tourist destinations, timing, and even the types of tourism activities are all affected, leading to significant changes throughout the tourism industry.

Although studies have investigated tourists' responses to climate changes, a significant gap still remains to secure comprehensive understanding (Gössling et al., 2012). Most of these studies adopted survey methods to primarily capture tourists' perceptions and opinions regarding climate change (Hwang et al., 2017), therefore, directly links between the actual consumption behaviors and the intricate changes in the weather conditions (assumed as indicators of climate change) has not been clearly established. This highlights the significance of utilizing big data analysis to accurately comprehend the direct and immediate effects of climate change on tourism consumption. Furthermore, the previous studies have focused on limited sections of the tourism actitivies, could not provide comprehensive views. Tourism consumption encompasses a complex combination of various components including accommodation, transportation, and shopping. However, much of the existing research has narrow focus on single items, often overlooking the unique dynamics and climate change vulnerabilities of each sector. This generalized approach could not reveal the specific impacts climate change has on different tourism sectors, subsequently affecting the formulation of nuanced adaptation strategies for the tourism industry.

Against this background, this study aims to quantitatively asses the effects of climate change on tourism in South Korea, by analyzing daily credit card transaction data from Lotte Credit Card between 2018 and 2019. Comprehensively, the research focuses on six key sectors related to tourism: accommodation services,

transportation services, food and beverage services, shopping services, culture, tourism and leisure services, and travel services. The study targets 250 municipal regions in South Korea over the specified period. Using spatial panel analysis, this study aims to uncover the specific impacts of climate change on tourism spending by analyzing daily transaction data. By analyzing real consumer spending, we contribute to understanding the detailed challenges that climate change poses to the tourism industry and exploring strategies to address these issues. The findings are expected to serve to policy decision makers and practitioners in the tourism industry.

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Key Words: Climate Change, Tourism, Big Data Analysis, Credit Card Transaction Data, Spatial Panel Analysis

Track 12 – Planning History or Planning Theory

Track 12 Pre-Organized Session Summaries and Abstracts for the Sessions

REPARATIONS, REPAIR, REFUSAL: 1
Abstract ID: 1112.0.0.339.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.358.2024, 1108.0.0.818.2024, 1108.0.0.672.2024

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This decade has been defined by a flourishing of political movements focused on structural harms related to colonialism, racism, poverty and ecological damage, as examples. These political movements also offer a spectrum of strategies from reparations - which often requires state action - to repair which might be a mix of state and community actions, and refusal. This can also be thought of as a turning away from the state towards what Dorries and Harjo (2020) describe from an Indigenous feminist perspective as "developing approaches to planning that do not rely on the state, which instead actively resist settler colonialism while imagining futures beyond colonialism". This session intends to provoke questions such as: what is the future and meaning of planning in the context of reparations, repair, and refusal? How do we think about planning teaching, education, and scholarship?

The goal is to bring together theoretical interventions, empirical analyses, and examples from practice that can support the development of planning theories that engage with the current political moments across the spectrum of reparations, repair and refusal. The first session includes papers that examine cases of reparations, repair, and refusal on the ground, in a variety of geographic contexts. The second session delves into theoretical investigations addressing the potential for these approaches.

Learning Objective(s):

- Learning objectives include what is the future and meaning of planning in the context of reparations, repair, and refusal.

THE MESSINESS OF REPAIR: RETHINKING SCHOOL PROPERTY IN JACKSON, MS
Abstract ID: 1108.0.0.358.2024
Pre-Organized Paper Presentation

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Land use policy, racial planning processes, and unjust development practices orchestrate the City of Jackson's present-day realities: a predominately Black school district burdened by the legacies of racial segregation and harassed by racial inequities embedded into the landscape of the City. The Jackson Public School District (JPS) is experiencing ongoing spatial injustice as it grapples with the histories that have led to the impending school closures and the need for facilities repurposing. Although limited in resources, the Jackson Public School district is land-rich. However, land use policies, funding mechanisms, and discriminatory practices have prevented JPS from stewarding the land in ways that produce collective well-being. Meanwhile, predatory development practices have extracted value from JPS land and at the expense of JPS students.

To disrupt this pattern of spatial injustice, we ask: how can we rethink land use policies related to school repurposing in reparative ways? To explore this question, we engage in community participatory action research to develop a reparative land-use framework. In building this framework, we engaged in theories of reparative planning (Williams 2024), fugitive planning (Harney and Morten 2013), trauma (Poe 2021), and refusal (Dorries and Harjo 2020). In this project, we define repair as the work of acknowledging and understanding communal trauma, centering community care, ways of knowing, and self-determination, and investing in direct restitution as defined by those impacted the most.

The goal of this project is twofold. First, we aim to engage in a reparative planning process that contextualizes the present-day realities in histories of harm and explores innovative solutions to the land use issues faced by the district. Second, the long-term vision for this project is to build a land (re)use policy framework for school districts facing the same problem that is grounded enough to hold public institutions accountable while being flexible enough to apply to diverse contexts. Centering community care and repair, we aim to advance just policies, practices, and processes that allow JPS to experience spatially just futures.

To achieve these goals, we engage in mixed methods to develop a community centered framework for gathering data on repair and facilitate community engagement activities that use radical imagination as a reparative method. These methods include interviews, oral histories, archival research, and culturally responsive focus groups. In engaging in community participatory action research, we design a process with the community in which the community leads a planning process from their ideations of just futures.

In this work, we find that the work of repair, what I call a reparative praxis (Knapp et al. 2022), is messy and riddled with contradictions as citizens vacillate between wanting reparations that meet the needs to thrive in this existing world and acknowledging the need for something otherwise for repair to be sustainable. This paper analyzes the complications that ensue when reparative theory meets practice and provides significant implications for those working towards repair in both scholarship and practice.

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Keywords: Repair, Race, practice, landuse

“IT’S A HARD KNOCK LIFE” REPARATIONS AND RESTORATIVE JUSTICE IN KANSAS CITY

Abstract ID: 1108.0.0.818.2024
Pre-Organized Paper Presentation

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The scholarship on U.S. cities provides a clear record of the disruption of Black neighborhoods over the course of the 20th century as a systemic feature of urban development. Displacement is linked to a long history of structural racism and racial capitalism (Fullilove 2001; Gilmore 2017; Harris 1993; and Woods 2002). Despite the facts of Black displacement, the planning profession has largely failed to adequately develop and sustain equity planning initiatives at the scale needed to stop the harm of continuing displacement, repair existing conditions of disinvestment, and reinvest in ways that counter-act the long history of racially biased real estate practices, and systemic discrimination.

This paper focuses on the racial dynamics at work through a case study of Kansas City, Missouri. The paper begins by briefly reviewing the history of race and neighborhoods in the region focusing on the interactions between the modern planning system and efforts by African American advocates to achieve spatial and social parity with predominantly white development practices and standards. Following this history, the paper presents the contemporary dynamics of the reparations movement – looking specifically at the ways in which the work of reparations are understood locally by different leaders, advocates, coalitions, and commissions.

The paper contrasts the place-based approaches rooted in efforts to reclaim and restore urban places - especially legacy neighborhoods and tangible heritage of Black Kansas City – with the policy-based approaches to reparations unfolding within the Mayor’s Commission on Reparations. Based on interviews, conversations and participant observation with local leaders and advocates – the paper seeks to better understand the complexity of reparations, restorative justice, and reparative planning for urban neighborhoods.

Three Kansas City initiatives are reviewed and analyzed. The first, known as the Central City Economic Development Sales Tax District (CCED) began as a ballot initiative to promote a citywide sales tax to reinvest in the Prospect Avenue corridor. The measure passed, creating a local funding mechanism for a wide variety of projects and local capital that can be used to leverage other funds. The sales tax provides dedicated revenue through 2027 and is governed by a five-member CCED Board composed of representatives for the city’s taxing jurisdictions (City, County and Public Schools). The CCED story raises questions about the financing of reparative planning.

A second area of advocacy for reparations in Kansas City includes the efforts of the Mayor and City Council. On May 1, 2023, Mayor Quinton Lucas – announced the establishment of a Mayor’s Commission on Reparations. The legislation that initiated the establishment of the commission, however, was begun in 2022 by Councilwomen Robison (3rd District) and Parks-Shaw (5th District). Nearly a year later – the Commission is on the verge of having a budget after months of meetings, advocating for a reparations plan while connecting local efforts with national and international movements.

The third component of reparative planning focuses on grassroots and neighborhood efforts to stabilize legacy African American places. Neighborhood leaders in the City’s Third and Fifth Districts continue to reinvest in their

neighborhoods through a wide variety of place-based practices including beautification, housing stabilization, environmental restoration and projects that advance and protect Black heritage and culture.

Black stewardship of place – in the face of generations of displacement stands as a testimony to the persistence of leadership that is inherently about one's relationship to place, to land, to tangible heritage, and community identities rooted in place. Against the erasure of Black history – as lived in place, these practices are an ensemble of political strategies, which can become a force for the reanimation of Black solidarity and political power.

Citations:

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Keywords: Kansas City, Place-keeping, Reparative Planning, Restorative Justice, Equity

PLANNING AND REPAIR AMID URBAN TRANSFORMATION IN POST-GENOCIDE RWANDA

Abstract ID: 1108.0.0.672.2024
Pre-Organized Paper Presentation

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"Repair" is a multivalent concept in considering the connection between the built environment and the social fabric of community for societies recovering from mass violence such as genocide, civil war, and conflict. It refers to a temporality of gradualism where survivors of violence rebuild lives and relationships in common, as well as to a "material politics of repair" in the built environment where neighbors and community members conduct repairs to broken houses, argue over stolen roof tiles, and mend worn walls (Hudani 2024). Scholars writing on repair connect it to questions of gradualism and infrastructural futures alternative to state-led planning (Mattern 2018, Millington 2019), particularly in the global South (Bhan 2019, Simone 2022), and to reparative planning in wider contexts (Knapp et al. 2022).

This paper draws off the author's book on urban transformation in post-genocide Rwanda (Hudani 2024) and suggests that planning practice in communities affected by violence must engage with deep social context and political history (Bollens 2012, and on Rwanda: Finn 2018, Goodfellow and Smith 2013, Shearer 2020, Wendel 2023). Planning scholars have focused on the postconflict city as an enduring space of silent trauma (Harris 2023), despite large scale attempts to rewrite histories of the city into the renewed nation state. Engaging displacement and changing ideas of home amid state-led master planning (Esmail and Corburn 2020), this paper presentation examines three topics that together give multiple meanings to questions of repair and reparative planning in

Rwanda's current context of urban transformation: the importance of place, urban pedagogy, and the idea of the city as a palimpsest that contests ideas of urban erasure.

Citations:

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Keywords: repair, pedagogy, Rwanda, transformation, postconflict

REPARATIONS, REPAIR, REFUSAL: 2

Abstract ID: 1112.0.0.339.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.351.2024, 1108.0.0.764.2024, 1108.0.0.398.2024

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Orly Linovski [University of Manitoba] orly.linovski@umanitoba.ca

This decade has been defined by a flourishing of political movements focused on structural harms related to colonialism, racism, poverty and ecological damage, as examples. These political movements also offer a spectrum of strategies from reparations - which often requires state action - to repair which might be a mix of state and community actions, and refusal. This can also be thought of as a turning away from the state towards what Dorries and Harjo (2020) describe from an Indigenous feminist perspective as "developing approaches to planning that do not rely on the state, which instead actively resist settler colonialism while imagining futures beyond colonialism". This session intends to provoke questions such as: what is the future and meaning of planning in the context of reparations, repair, and refusal? How do we think about planning teaching, education, and scholarship?

The goal is to bring together theoretical interventions, empirical analyses, and examples from practice that can support the development of planning theories that engage with the current political moments across the spectrum of reparations, repair and refusal. The first session includes papers that situate cases of reparations, repair, and refusal on the ground, in a variety of geographic contexts. The second session delves into theoretical investigations addressing the potential for these approaches.

Learning Objective(s):

- Learning objectives include what is the future and meaning of planning in the context of reparations, repair, and refusal.

FROM BLACK ARTS MOVEMENT TO CREATIVE PLACEMAKING: LEARNING FROM CHICAGO

Abstract ID: 1108.0.0.351.2024
Pre-Organized Paper Presentation

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This paper argues that arts-based initiatives in historically Black neighborhoods, primarily aimed at celebrating and elevating non-mainstream and historically marginalized arts and cultures, are frequently introduced as projects focused on placemaking, community revitalization, and economic development. However, the engagement, contributions, needs, and assets of the community are frequently neglected in these planning and design processes, often resulting in adverse outcomes like increased exclusion and displacement of everyday Black residents.

This study adopts an ethnographic approach, utilizing participant observation, semi-structured interviews, document analysis, and archival research, to delve into the multifaceted and multi-layered role of an arts organization of color in a historically Black neighborhood. It pays particular attention to the discrepancies between the original objectives of the artistic endeavors, how these projects are portrayed by public administrators, philanthropic entities, and the media, and the tangible impact these initiatives have on the Black communities involved. The research aims to dissect the nuances of these disparities, exploring the potential misalignments or convergences between intended outcomes, public representation, and community experience.

The research focuses on the intricate landscape of South Side Chicago, celebrated for its rich history and dynamic cultural scene, yet burdened by persistent systemic anti-Black planning. This includes the legacy of redlining, racially restrictive covenants, and blockbusting, coupled with segregationist policies akin to apartheid and significant socio-economic inequalities (Lipsitz, 2006; Shabazz, 2015). The study focuses on the artistic and cultural endeavors of a globally acclaimed Black arts organization, aiming to discern how the “growth machines” (Jonas & Wilson, 1999; Molotch, 1993) driving these initiatives either contribute to or potentially impede the ongoing pursuit of justice, equity, and community empowerment in this iconic American city, entrenched in anti-Black systemic racism.

The study explores the complex definition and role of art, framed by the Black Arts Movement (BAM) that emerged during the 1960s and 1970s as the creative arm of the Black Power Movement. BAM was distinguished by its fundamental commitment to amplifying community voices and using artistic expression as a vehicle for resistance and societal transformation. The movement’s artists and advocates sought not only to produce art but also to create spaces where Black culture, experiences, and challenges could be openly expressed, celebrated, and harnessed as tools for empowerment and advocacy (Collins & Crawford, 2006; Crawford, 2017). In contrast, contemporary placemaking initiatives, despite their potential to transform urban spaces through art and culture, often overlook the imperative of critical engagement and inclusion of the communities they intend to serve (Zitcer, 2020). This disconnect highlights pressing concerns about the changing role of planning and public administration, especially at a time when demands for reparations, systemic reforms, and the reimagining of urban spaces are intensifying, aiming to rectify historical injustices and foster healing.

The findings call for a critical reassessment of placemaking and arts-making interventions to align them more closely with the needs and aspirations of Black communities, challenging the prevailing privilege notions of Black excellence at the expense of everyday Black communities. This paper highlights the problematic labeling of contemporary arts initiatives as placemaking or community development, which misinterprets their artistic goals and inappropriately burdens Black creatives with reparative tasks. These individuals, operating within restrictive capitalist and white supremacist structures, are ill-equipped to tackle extensive systemic issues, inadvertently absolving various institutions from their role in fostering reparations and equitable transformation in Black areas. To address this, the study advocates for inclusive dialogue among stakeholders, including funders, policymakers, and the community, to avoid reinforcing the exclusionary "white spatial imaginary" and to ensure urban development initiatives equitably benefit Black communities.

Citations:

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Keywords: Black Arts Movement, Creative Placemaking, Growth Machine, Reparation

PLANNING FOR ABOLITION: SURVEY OF REENTRY AND DIVERSION PLANNING

Abstract ID: 1108.0.0.764.2024
Pre-Organized Paper Presentation

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Abolition is a politics of repair that in the contemporary moment is focused on repairing the harms of law enforcement including the violence of uniformed police alongside incarceration in jails and prisons. Abolition also addresses the violence of the broader carceral system, the ways in which the logics of policing flow out of prisons and into communities producing space through practices of surveillance, punishment, enclosure and banishment. Theories of abolition demand practices of community safety and repair that reject the violence of policing, and center community, healing and liberation.

Theories of abolition are relevant to planning practice because of the ways in which planning has played a role in producing carceral space through specific theories and practices like crime prevention through environmental design, or the broken windows theories, and through broader practices such as zoning codes that support racial segregation, and the underfunding of community-based and controlled services in favor of policing. Theories of

abolition provide a lens through which to look at planning practices, and to think through planning practices that move away from craceral logics.

Our study examines a particular area where planning the carceral and abolition intersect: planning for re-entry and diversion. A key step of abolition would be the radical reduction of prison populations, which would mean people returning to community with complex needs stemming in part from incarceration. We survey planners across Canada to ask what is currently known in planning circles about carceral infrastructure land use, alongside infrastructure that supports community safety in the areas of housing, economic development and social planning. In addition to learning more about what planners know we also ask about any involvement in processes of developing or managing carceral and community-safety resources in a professional capacity as a practicing planner, and in their capacity as community members and individuals. The survey includes municipal planners as well as people in private consultant and development roles, community housing, and non-profit work.

The findings of the survey build on an earlier US study, updating the results after the actions and events of spring and summer 2020, and adding a comparative element to our understanding. That survey found a lack of both engagement and knowledge around carceral issues. While we expect a similar lack of opportunity for professional engagement, we expect to find greater awareness and personal engagement.

We analyze the results of the survey first descriptively, mapping the resources, knowledge and engagement across the country to build a stronger understanding of the carceral–and possibility for abolitionist–landscapes. We then build a typology of planners from our results thinking about knowledge, engagement, interest and personal characteristics. This is an important step because it helps us to think about the possibilities for applying theories of abolition within planning practice, for example identifying those planners with a sense of the promise of abolition, but without an organizing home, as compared to those planners who are hostile to the politics.

The study contributes by asking how theories of abolition might be applied in planning practice, our analysis is also an opportunity to build theory from practice, identifying what planning might offer to abolition theories and politics as well as building out a theory around the spectrum of planning from the carceral to abolition.

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Keywords: Abolition, Prison Re-entry, Restorative Justice, Repair

REFUSAL, REPAIR, AND ADVANCING RACIAL JUSTICE

Abstract ID: 1108.0.0.398.2024
Pre-Organized Paper Presentation

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It is widely acknowledged that planning has played a pivotal role in perpetuating and exacerbating intertwined forms of racial oppression, including imperialism (Roy 2006), settler colonialism (Porter 2010), and racial supremacy (Williams 2024) Despite widespread societal demands for racial justice and the growing awareness among planning scholars regarding the field's connections to racism, the discipline persists in being shaped by racial biases. Agyeman and Stewart (2023) underscore this issue, contending that discriminatory planning practices and resistance to adopting a racial justice lens remain prevalent throughout the United States. Consequently, the profession remains dogged by instances of planning that defy efforts towards racial equity.

This paper examines the potential avenues through which planning can actively contribute to social and racial justice, acknowledging planning's involvement in perpetuating diverse forms of injustice. Specifically, it scrutinizes the transformative implications of incorporating concepts such as repair and refusal into planning theory and practice. This examination focuses on the inherent tensions between repair and refusal. While repair signifies the potential of planning to rectify injustices, and refusal denotes a rejection of the prevailing guiding theories and practices within planning, these two concepts may initially appear in opposition. Some may argue that repair seeks to salvage planning and its identity as a practice that promotes justice, while refusal might be regarded as an outright rejection of planning.

In this paper, I suggest that genuine repair requires accompanying acts of refusal. In other words, to solidify its commitment to fostering conditions of justice and equity, planning must not only engage in reparative actions but also actively reject the underlying epistemological and ontological frameworks that contribute to the perpetuation of injustice. Thus, the integration of repair and refusal is critical for the transformative potential of planning in the pursuit of social and racial justice.

Citations:

- Fainstein, S. S., Forester, J., Lee, K. L., Na'puti, T., Agyeman, J., Stewart, N. J., Novy, J., Dedekorkut Howes, A., Burton, P., Norgaard, S., Smith, N. R., Zukin, S., Lubinsky, A., & Keith, M. (2023). Resistance and Response in Planning: Edited by Susan S. Fainstein and John Forester. Planning Theory & Practice, 24(2), 245–283.
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Keywords: racism, justice, repari, refusal

HONORING TED JOJOLA: HOLDING SPACE FOR THE FUTURE OF INDIGENOUS PLANNING

Abstract ID: 1109.0.0.650.2024
Roundtable Submission

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The proposed roundtable is a tribute to the work of Pueblo of Isleta scholar Ted Jojola and his contributions to the field of Indigenous Planning. In light of his soon retirement, participants in various stages of their academic careers will gather to exchange knowledge and experiences on their formulations of Planning from a theoretical and practical perspective. The influences of Ted's work include understanding the long-term and uninterrupted planning systems Indigenous communities sustain through seven generations framework, the importance of placeknowing, and the grounded principles: of land tenure, world view, the people are beautiful already, no translators, no cultural amnesia, and not minorities that enhance community development. In this way, this roundtable reaffirms Ted's legacy and the continuity of his work through future generations of planners and scholars working with Indigenous People(s).

Ted's literature re-imagines the theoretical framework of Urban Planning through counter-stories, from his immediate relationships to his Pueblo cultural protocols and traditional land stewardship. The roundtable engagements and networks may nurture current planning scholars' research topics or co-develop new ideas on diversity and inclusion in their planning metrics. These dialogues perpetuate a form of place-making in which Indigenous and non-Indigenous scholars, planners, practitioners, and educators collectively speak truth and understand the realities of rural and urban Indigenous communities and their built environments.

We celebrate how Ted has provided spaces for Indigenous peoples in academic disciplines and research approaches in the context of ways of knowing, the erasure of Indigenous lands, and the invisibilities of Indigenous peoples' practices and ethics. The roundtable's audience engagement will include opening remarks by Dr. Ted Jojola followed by three small breakout groups of faculty/practitioners/scholars (emerging, mid-level, and advanced). Ted will float between the groups to provide support and answer questions during the group activity. The three facilitators will take notes of the shared discussions. We aim to perpetuate reciprocity and advocacy for Indigenous peoples and their community principles in the Planning discipline.

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- Jojola, T. (2008). Indigenous Planning—An Emerging Context. Institute of Urban Studies, University of Winnipeg, 17(1), 37–47.
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Key Words: Indigenous Planning, Seven Generations Model, PlaceKnowing, Indigenized Planning Discipline, No Translator

PATSY HEALEY - MORE THAN AN INTELLECTUAL

Abstract ID: 1109.0.0.284.2024
Roundtable Submission

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This roundtable seeks to celebrate the scholarly life of Patsy Healey, who died on 7th March 2024. The breadth and profundity of Patsy's influence within the planning field is striking. There seem few corners of the globe that have not felt her loss, with the constant refrain not just of an intellectual giant, but of an institution builder, who embodied integrity and humanity.

Patsy's contribution to the conceptual and empirical understanding of planning, as place governance, has few peers. However, alongside reflection on her intellectual contribution, the roundtable will open space to trace a broader narrative: about commitment to the institutional infrastructure that supports and sustains a discipline and the unseen work of mentoring that nurtures an intellectual community.

Patsy's institution building activities extended beyond the places in which she was employed, including for example, co-founding the formation of the Association of European Planning Schools (AESOP) in 1987, and the journal of Planning Theory & Practice in 2000. Beyond academic arenas she was invited to advise government departments and most recently sought to grow capacity in her community in Wooler, through the work of the Glendale Community Trust.

There is limited discussion within the academic community of the value of the unseen work of mentoring. Many of the stories shared since 7th March speak to Patsy's commitment to such activities. She would take time and trouble to participate in workshops and attend presentations, clearly listening, and ready to offer support and suggestions.

The roundtable has been initiated by the journal Planning Theory and Practice, for which Patsy was the first Senior Editor. She was the journal's guiding inspiration, framing what it was to become. A phrase Patsy often uses in her writings is 'knowledge resources'. She was strongly motivated by a belief that ideas (which are our 'knowledge resources') make a difference. This was not in the sense that knowledge resources are determinative or their influence linear, but rather that ideas matter, as they offer the prospect of new possibilities and hence of improving the lives of the most vulnerable. A natural extension of this ethos was to become a journal editor.

Our purpose in proposing this roundtable is two-fold. Firstly, to provide an opportunity for collective sharing and reflection, and secondly, in light of Patsy's scholarly life, to reflect on the qualities which sustain a vital academic planning community.

Citations:

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- Campbell, H. (forthcoming) Editorial: Patsy Healey – more than an intellectual. Planning Theory and Practice, 25(2).

Key Words: Patsy Healey, Scholarship, Academic community

PLANNING AND PALESTINE

Abstract ID: 1109.0.0.632.2024
Roundtable Submission

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Laura Harjo [University of Oklahoma] harjo@ou.edu

As this roundtable is proposed, Israel's siege on Gaza continues, with more than 32,000 Palestinians killed by Israeli forces. The massive destruction that followed the surprise attack by Hamas on October 7, 2023, has involved entire residential neighborhoods leveled, institutions of learning, health, and safety attacked, bedrocks of society violently dismantled.

What does planning as a field of study and practice have to say about this? This roundtable explores core concerns of planning through the prism of the long-term conflicts and the present moment of the Israel-Palestine question. Roundtable participants approach this issue from a variety of perspectives and identities, from within and beyond the Middle East. Some questions to be addressed include:

How can urban planning scholars, presumably dreamers and makers of cities, make sense of the urbicide, as Marshall Berman (2014) framed it – the "killing of cities"?

How does the Israel-Palestine issue, one of territory, borders, control, identity, and history (Yiftachel 2006), play in the history and theory of planning?

What does the current siege, with its unprecedented scale and speed of destruction and humanitarian catastrophe, challenge the work of planning theory in 2024 onward?

What is the relationship between territorial control and hopeful, livable futures (see, e.g., Sorkin and Sharp 2021)?

How do the attacks on academic freedom surrounding Israel-Palestine as an issue hinder or prevent the study of exemplary planning questions?

What is the role of themes and concepts of colonial/postcolonial planning (Roy 2008), or the planning of settler colonial cities and states (Blatman-Thomas and Porter 2019), with regard to Israel-Palestine, and how does this reflect back on studies and practices of planning in other sites?

Citations:

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Key Words: Israel-Palestine, conflict cities, urbicide, territorial control, planning theory

POLYCRISIS

Abstract ID: 1109.0.0.933.2024
Roundtable Submission

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We live in a time of “polycrisis”: multiple protracted, compounded, and interconnected crises that produce conditions of profound uncertainty, volatility, and fragility in contemporary cities. Scholars have grappled with substantive definitions of polycrisis. “Polycrisis” was first used by Morin & Kern in 1999, and scholars have since built upon their original formulation. Recently, Lawrence et al. (2024) adopt a harm-based definition of global polycrisis as “the causal entanglement of crises in multiple global systems in ways that significantly degrade

humanity's prospects." They highlight the need for research on crisis interactions rather than isolated crises and point to the need for conceptual work on the amplification, acceleration, and synchronization of crises. In comparison, anthropologists understand polycrisis through an ethnographic lens as knotted eventedness. They call for textured analyses of polycrisis through thick description and with attention to the multiplicity of social life, historicity, messy temporality, and intersectionality. This roundtable seeks to highlight these features of polycrisis within grounded, empirical studies of urban life.

Urban and planning scholars are uniquely positioned to research polycrisis. As urban scholars, we are concerned not only with compounding social, economic, and ecological crises in cities but with the politics of planning in the public interest. Critical urban scholarship has a long theoretical engagement with interconnected urban challenges. The capitalist city remains in a state of permanent crisis. In cities of the Global South, urban crises intersect with social divisions in caste and class and informalized state planning in the form of practices of deregulation, ambiguity, and exception. Studies of urban polycrisis inherit this critical lineage and risk recycling uncritical ideas of crisis and vulnerability. We are informed by David Madden's call for research on the polycritical city, which exposes urbanization's crisis tendencies and uncovers "the political-economic and structural causes of urban immiseration" (Madden, 2023). In this roundtable, we discuss different dimensions of polycrisis and ask how polycrisis originates, who it harms, and how the term is deployed and politicized. What are "emancipatory alternatives" that challenge the systemic roots of polycrisis, mitigate its everyday effects, and transform the co-constitutive relationship between urbanization and crisis?

Questions for this roundtable discussion center around two themes. First, we examine what the notion of polycrisis offers urban and planning scholarship. How do intersecting crises—with varying temporalities and sectoral origins—unfold, who do they impact and why, and what structural and institutional processes do they amplify? Whose interests are served and harmed by use of polycrisis as a framing? Second, we ask how planners and communities have addressed polycrisis? What can planning research practice and study learn from grounded practices (e.g. community-based activism, mutual aid, everyday care) and insurgent and grassroots planning (Miraftab 2009, Gilmore 2008) to diagnose and plan for interconnected crises? Through this discussion, we seek to engage diverse perspectives, pragmatic and normative, on what can be done to address conditions of polycrisis and how planning and planners are situated within conditions of compounded vulnerability.

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Key Words: planning research, planning practice, polycrisis, urban futures, climate change

(UN)FIELD NOTES FOR A GLOBAL CLIMATE CRISIS

Abstract ID: 1108.0.0.1022.2024
Individual Paper Presentation

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What do we do when we have learned to learn in grounded ways in a context where knowledge might be found in the flows and in the multiplicities? This paper probes the problems of fieldwork in a time of globalized climate impacts, and information and capital flows, and globally networked institutions of governance and action. Climate change is understood, on the one hand, to be a global problem, understood through standardized planetary measures, and, on the other, a problem with disparate causes and impacts on the ground. But the problem of climate change challenges core ideas about knowledge. Sheila Jasanoff, notably, states that climate change "tends to separate the epistemic from the normative, divorcing is from ought" (2010, 236). Much productive knowledge has come not only from planetary climate science but also from critical investigations involving grounded, embodied, place-based experiences. This is especially important for the field of planning, with its normative outlook. What, then, of critical knowledge beyond the grounded and place-based, particularly for planning thought and practice? I explore both the epistemological as well as the pragmatic problems of taking on this research, especially when the methods and knowledge frameworks we've been trained in are insufficient or not possible (see, e.g., Nightingale 2016; Roane 2022). Revisiting my own research fieldwork in sites in Rotterdam, Jakarta, New York, and the Inland Empire, I inquire into what is understood through such grounded, participatory experiences, and what is conceptualized in the in-between or beyond. I discuss the issues of grounded research when you can't be on the ground; the relationship between global data and embodied experience; the activities of abstract theory making and multiscalar research (Angelo and Goh 2021); and, in particular, the imperative to know the global and planetary for those who have built a capacity for knowledge production in very grounded ways (Goh forthcoming). I end the paper with a set of propositions for multiscalar climate knowledge – beyond place.

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Keywords: climate change, urban research, global-local interconnections, relational geographies, placed-based fieldwork

APPLYING WAVE THEORY TO GENTRIFICATION IN DOWNTOWN LOS ANGELES

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Individual Paper Presentation

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Recent scholarship on gentrification has returned to a theory of periodization in order to explain new dynamics of contemporary urban transformation as continuations of existing trajectories established in the field (Aalbers 2019). These efforts generally take as their starting point, the foundational theorization of the “changing state of gentrification” by Hackworth and Smith (2001) that describes three waves of gentrification beginning in the late 1960s and continuing into the early 2000s. The schematic “wave theory”—as it is generally referred to—has been useful for articulating temporal distinctions and the observable post-crisis transformations in actors, displacement patterns, and spatiality that have come to characterize gentrification as a “moving target” (Knieriem 2023). According to this view, the third wave of gentrification began in the mid-1990s following a recession early in the decade and is distinguished by an aggressive return of the state along with “large-scale capital” to significantly transform central and near-central urban spaces that became “difficult for individual gentrifiers to make profitable without state assistance” (Hackworth and Smith 2001: 469). Typical examples of state-led, third-wave gentrification that are often provided consequently include HOPE VI and post-industrial brownfield development.

Beginning with the work of Lees, Slater and Wyly (2008) however, successive fourth and fifth waves of gentrification have been identified by scholars seeking to extend the framework into the contemporary period. These extensions of wave-thinking continue to center state involvement in the process, but they also point to a departure from previous periods through the increased importance of financialization, the integration of local and global capital markets, and “the consolidation of pro-gentrification politics” in the process. The shift is notable because it opens many new and unanswered questions about the geography and temporality of gentrification as well as its form and, possibly, causality (Lees, Slater, Wyly 2008: 179).

This work interrogates the explanatory power of wave-theory by applying the framework to a complicated case of “exceptional” (Kahne 2018) or “weak-center” (Reese, DeVerteuil, Thatch 2010) gentrification in downtown Los Angeles. Through archival research and demographic analysis, the essay describes a surprisingly long and punctuated historical trajectory that not only reveals heavy state involvement at various stages of development, but also, and more importantly, questions some of the critical assumptions of wave theory about the successive layering of gentrification processes in situ and their centrifugal spatial developmental pattern. In this way, the work contributes to urban theory by drawing attention to the potential slippage into “over-determination” and assumptions of historical inevitability that suppress complexity. The essay argues that engagement with

heterogeneous gentrification processes, like that of downtown Los Angeles, is necessary for informing theorizations of gentrification in the contemporary context.

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Keywords: gentrification, wave theory, Los Angeles

ASSISTANCE OF PLANNING HISTORY RESEARCH IN CONSTRUCTION OF PLANNING THEORY

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Individual Paper Presentation

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The concepts of 'planning history' and 'planning theory' are often heard nowadays, while the term 'planning history and theory' is not. According to Elliott (2023), 'planning history' "provides insight into current planning practice as it evolved from past practice", while 'planning theories' "provide insight into the processes and practices that underlay our profession". Hence, 'planning history' is more to do with planning practice, while 'planning theory' is more focused on how planning practice is implemented. Elliott (2023) also argues that "theories learn from and inform practice", demonstrating there are close associations between these two concepts.

However, nowadays the field of 'planning history' and its academic research, including their significance, is not much elaborated in the planning discipline. For example, many people tend to see 'urban history' and 'planning history' as the same thing, whereas clearly they are two different concepts. It is said that the planning history field has existed since the 1970s (Hein, 2018). Academic research in this field not only enriches an understanding of the influence that urban planning exerts on places (e.g. urban areas, regions) that human beings live in, but also provides a basis and direction for future planning practice. Amongst the three types of theories (normative theories, disciplinary theories, procedural or process theories) that Elliott established in 2023, clearly a deep and broad understanding of 'planning history' contributes to the construction of procedural or process theories, which mainly examines the action of planners (Elliott, 2003).

This paper aims to examine the functional role of planning history research in constructing different types of planning theories, and provide a synopsis of the feasible approaches to integrating planning history research findings with planning theory construction. It uses the city of Sheffield in the UK as a case study to discuss these three research questions:

1. What is involved in planning history research?

2. How planning theories are formed and constructed?

3. How planning history research findings can be utilized or applied in the construction of planning theories?

Sheffield is a city that was built on seven hills, 61% of the entire area is green space; one-third of the city is located in the Peak District National Park. Because of its central location in the UK, it has excellent rail and road links. Sheffield's unique geographical location provides the city with excellent steelmaking conditions. Nowadays Sheffield is famous for the names 'the steel city' and 'the greenest city' in the UK. In the 1940s and 1950s, the post-war 'positive' planning by the public sector was swamped by private-sector redevelopment. Sheffield was replanned in 1945, then the city underwent another four major plans before 2000. In 1999, the Lord Rogers' Urban Task Force report promoted the urban renaissance in England, then the general quality of urban environments and the urban design dimension became the utmost important aspect of planning work. With the application of the place-making theory or approach, many places with high-quality designs were planned and delivered such as the seven public spaces on 'the Gold Route'. Now the city has transformed successfully from an industrial city in history to a liveable and vibrant city. It is noteworthy that the making of every development plan of Sheffield is based on a thorough analysis of the city's history, including its planning history.

This paper will first examine the composition of planning history research, and then discuss how planning theories are constructed and the factors that influence their construction. Through studying and reviewing the development planning process of Sheffield, this paper will finally conclude how planning history research findings assist in the construction of planning theories.

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Keywords: planning history research, planning theory, development planning, planning policy, planning history and theory

CITY LIMITS: REFUGEE CAMPS AS SITES OF EMERGENT URBANIZATION

Abstract ID: 1108.0.0.946.2024

Individual Paper Presentation

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The paper critically examines and draws on theoretical approaches related to the essence and formation of urban society to distill the ways by which everyday norms and practices emerge and are deployed from within and from without the refugee camp. Particularly relevant to this inquiry are four distinct, yet connected, insights into urbanization processes. Insights from the works of James Scott as well as of David Graeber and David Wengrow provide critical insights into the emergence of urban social relations and in particular as a function of external stresses (violence, scarcity), internal pressures (power, hierarchies), and the physical arrangements of human settlements (temporariness/permanence, scale). Oren Yiftachel's concept of "gray spaces" extends these dimensions into contemporary urban settings and processes. By situating urban processes within the context of new/old colonial relations, Yiftachel reveals practices and spaces of domination and resistance associated with an urban life under a state of 'permanent temporariness'. Giorgio Agamben's concepts of "state of exception" and "bare life" are contrasted with Achille Mbembe's "necropolitics" and Alain Badiou's "being and event" to frame everyday life in refugee camps in terms of relation to state power and authority, biopolitics and risk, and solidarity and agency. Finally, Silvia Federici brings us full circle and more by excavating possibilities for an emancipated future rooted in global solidarity.

These four theoretical pillars are applied to the physical built environment of refugee camps, and more specifically to norms and practices associated with the production, regulation, and control of the physical built environment within camps and of their common and public spaces. Two refugee camps in Greece were selected. The methods used for this investigation consist of establishing a network of informants followed by in-depth ethnographic research. Ethnographic observations were conducted in the two camps and were complemented by interviews with refugees as well as with volunteers and program coordinators from non-profit organizations.

Findings suggest that norms and practices associated with the built environment in refugee camps are subjected to tensions arising from the interplay among a) elements of solidarity and communitarian social ties developed during their migration journey, b) a tendency to reproduce (urban) social relations and practices defined by stratified privileges and hierarchies, and c) the relationship of life in camps with the surrounding urban environment of their host city. Findings also shed light on practices of everyday resistance and solidarity embedded in an interrupted and dislocated social life. Conclusions contribute to an understanding of the origins, essence, and limits of urban life while also reimagining alternative futures.

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Keywords: Refugee camps, Emergent urbanization, Necropolitics, Gray Spaces

CONSTRUCTING AND COUNTERING: COMMEMORATIVE PROCESSES IN MONUMENT SPATIALITY

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Individual Paper Presentation

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During the Reconstruction Era, monuments in the American South were erected to idolize Confederate heroes who fought in the Civil War, representing white southern culture and the Lost Cause narrative, symbolizing values and beliefs that upheld slavery and fueled systemic oppression of African Americans through legal frameworks such as Jim Crow laws. For over a hundred years, Monument Avenue in Richmond, Virginia was a focal point of Confederate statuary. In the wake of the Black Lives Matter Movement protests of 2020, the City of Richmond removed all Confederate statues on Monument Avenue, responding to the national and international racial reckoning which confronted symbols of white supremacy, systemic anti-Black racism, and police brutality. My dissertation research examines how the removal of Confederate statues on Monument Avenue reveals shifts in meaning and process surrounding commemoration and memorialization in Richmond's cultural landscape.

In Richmond's cultural landscape, grassroots community groups and local officials organized and erected counter-monuments to commemorate and memorialize people and places which symbolize the city's Black history (Stevens et. al, 2012). An example of this commemorative effort involves constructing a statue of Arthur Ashe, famous African American tennis player and civil rights activist, on Monument Avenue amongst the Confederate statues in the 1990s (Hodder, 1999). As historic monuments no longer represent the values and ideals of a community, the presence of counter-monuments offer a shift in meaning and symbolism in cultural landscapes of cities (Stevens et. al, 2012).

In this chapter of my dissertation research, I examine the presence of counter-monuments in Richmond's cultural landscape and the ways in which this commemorative process relates to removal of Confederate statues on Monument Avenue. Using content analysis, direct observations and interviews, this chapter examines the case study of Monument Avenue through the lens of key time periods beginning with shifts in meaning and process of commemoration and memorialization in Richmond leading to removal of Confederate statues along the avenue in 2021. The timely phenomenon of Richmond's Monument Avenue speaks to larger questions related to monument removal, in particular, Confederate statues in the contemporary American South. My dissertation research contributes to urban planning and historic preservation disciplines by building an understanding on the ways in which local governments, organizations, and museums engage communities in processes of monument removal as a means to repairing past injustices and harms caused by structures and tactics inculcated in white supremacy and the Lost Cause narrative.

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Keywords: Monuments, Commemoration, Memorialization, Cultural Landscape

DENIAL AT THE TAP:A HISTORICAL LOOK AT WATER ACCESS AND BOUNDED CITIZENSHIP

Abstract ID: 1108.0.0.651.2024

Individual Paper Presentation

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Examining water access in Sandbranch, a historically African American community near Dallas, Texas, this research explores "bounded citizenship." This concept argues residents are denied essential services due to marginalized status.The central question: How did Dallas water utilities contribute to this system in Sandbranch?A case-centric process tracing methodology analyzes historical evidence like plans, records, and meeting minutes. These sources shed light on decision-making processes that impacted Sandbranch's water access.Land-use policies by Dallas significantly impacted the community. The 1945 Master Plan prioritized expansion, bypassing Sandbranch and leaving it isolated without essential services. This decision exemplifies the power dynamics between the city and its unincorporated neighbors.Furthermore, the strategic placement of a wastewater treatment facility near Sandbranch highlights these dynamics. Additionally, the FEMA buyout in the 2000s designated the area a flood zone, hindering development and constraining the ability to invest in water infrastructure.This research offers new insights into environmental racism. It demonstrates how historical decisions regarding water infrastructure can create a system of bounded citizenship, effectively denying residents full political participation.These findings hold significant relevance for planning scholarship, practice, and education. By understanding how historical planning decisions contribute to inequalities in water access, planners can develop more inclusive and equitable infrastructure strategies. Integrating this knowledge into planning education allows future generations to critically examine the role of planning in shaping citizenship and environmental justice.

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Keywords: Bounded citizenship, Environmental racism, Water access, Planning history, Land-use policy

DEVELOPMENT DISMANTLED: SALVAGE, SUPPLY CHAINS, & DESTROYING ST. LOUIS CITY

Abstract ID: 1108.0.0.112.2024

Individual Paper Presentation

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In July 1978, The New York Times reported on the decline of St. Louis, MO (Reinhold, 1978). Under the provocative headline “In St. Louis Even the Old Bricks Are Leaving Town,” the reporter represented the city’s population loss through the burgeoning business of brick exporting. He writes, “Having taken so many of its people and jobs, the so-called Sunbelt is now even carting off St. Louis itself.” As the major source of salvaged brick in the US, St. Louis was supplying truckloads of material to regions of the country swelling with new residents and new housing. Despite the familiar optimism of local boosters and officials, St. Louis would close the decade losing 27% of its population.

Thirty-two years later, The New York Times returned to St. Louis, MO (Gay, 2010). Once again, the flow of brick was on the news-gathering agenda. This time, however, the historic adversary of decline that threatened the city in 1978 yielded to a modern criminal element: the brick thief. A local alderman pitied the condition of his neighborhood, “They’re stealing entire buildings, buildings that belong to the city. Where else in the world do you steal an entire city building?” In 2010, the population of St. Louis City was 319,000. Today, the US Census estimates it is 286,000 (US Census Bureau, 2024).

The successive reporting on demolition and salvaged brick is not a coincidence. Like many declining cities, St Louis’ population loss and economic precarity are recorded and experienced through vacant and abandoned houses (Kinney, 2016). However, the ubiquity of brick places the city in the unique position of converting the physical remainder of its decline into a valuable commodity for housing development in growing regions. Today, flatbed trucks loaded with pallets of sui generis brick depart St. Louis for brickyards in Mississippi, Louisiana, and Texas (Rao, 2023). Thousands of bricks leave the city each week for use in new construction and home rehabilitation all across the Sunbelt. Millions of dollars change hands each year as St. Louis houses fall and new homes rise along the Mississippi Delta (Bogan, 2018). Through it all, regional wreckers, local bricktraders, city officials, and Sunbelt salvage dealers collaborate to sustain the market for reclaimed brick.

In this paper, I illustrate how the political economy of demolition and the supply chain for salvaged materials normalizes and reinforces the destruction of St. Louis’ built environment. These processes demonstrate the extension and rearticulation of the production of urban decline in the American city (Akers & Seymour, 2018). Wreckers skirt and violate local laws to maximize revenues. Regional bricktraders subsidize demolition to sustain their inventories and widen their profit margins. City officials champion artificially-low bids to maintain access to the wrecking industry. Sunbelt salvage dealers profit from a regional fascination with a plantation-style house redolent of the Antebellum era. The confluence of interests converts low-value properties into high-value building materials. Moreover, I demonstrate how policing and punishing “brick thieves” in St. Louis conceals the extensive official network that organizes and manages wrecking and salvage practices. Consequently, this focus compounds anti-poor rhetoric and policy to recapitulate the city’s decline as a product of culture and criminality. Ultimately, this paper challenges researchers to focus on the logistics and the multi-scale processes that destroy cities. By broadening and defamiliarizing planning’s relationship to demolition and salvage, scholars and practitioners can introduce a new assortment of interactions, contradictions, and geographies for understanding and halting the production of urban decline.

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Keywords: Decline, Demolition, St. Louis, Salvage, Supply chains

EMPTY CENTRE? PRESERVING CHINATOWN IN A CHANGING VANCOUVER, 1967-2001

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Individual Paper Presentation

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This paper, which is based on observations and interviews from my dissertation fieldwork in Vancouver, examines the transformation of Vancouver's Chinatown from a working-class residential and commercial hub for a people subject to intense discrimination into a deeply contested historic district. Chinatown is in a part of the city known as the Downtown Eastside, an area between the port lands and the railway terminals that observers have pathologized for almost as long as Vancouver has been a city. During much of the 20th century, portions of this area were materially and symbolically the centre of social, cultural, and economic life for the city's ethnic Cantonese Chinese. Some lived in tenements and dormitories on the commercial blocks west of Gore Avenue; others moved into the residential section to the east, now known as Strathcona. More than a residential enclave, Chinatown was a business and social district with intimate connections to the adjacent port and nearby railway terminals. Out of necessity, it borrowed dense urban social and spatial forms from other Chinese settlements in port cities ringing the Pacific—multistory society buildings that housed surname- and native-place associations, merchant and political clubs, and, not least, numerous small businesses, including stores, restaurants, and factories. Chinatown is where Vancouver was at its most urban.

Despite the social marginalization of the largely Cantonese community, their neighbourhood on the neck bracketing Burrard Inlet and False Creek was in many ways the crux of Vancouver's built environment. The paper argues that in the late 20th century, Chinatown was also the unacknowledged fulcrum of the city's (and, for that matter, the province's and the country's) emerging approach to the planning and preservation of historic neighbourhoods. Indeed, much of Chinatown's physical and institutional fabric has persisted, even as the broader city underwent a metamorphosis from an industrial harbour to a renowned centre of fine living and conspicuous consumption. Starting in the late 1960s, the question of what role, if any, the institutional and spatial remainders of Chinatown's past would play in the fast-emerging global city took on a distinct urgency, and the Chinatown area became a centre of urban planning activism led, in part, by Chinese-Canadians who had finally obtained civil rights.

In the 1970s, the city halted conventional freeway and urban renewal planning, and a brittle consensus formed in Chinatown: municipal staff, residents, and civic leaders would together use the emerging field of heritage conservation to rescue the city's historic built environment along with its social and economic relationships. But the consensus did not hold. Instead, the city was utterly transformed from the boundaries of Chinatown outward: the False Creek Basin and downtown were rebuilt, the port was containerized and hermetically isolated, and the

eastern neighbourhoods became genteel. By the 1990s Chinatown and the broader Downtown Eastside were an empty centre in the public imagination as the city remade itself everywhere else. The paper questions whether the famous revolt against freeways, and the city's embrace of it, really prevented the disinvestment and hollowing out of the core, or rather shifted the locus of disinvestment—ironically, to Chinatown, with results that reverberate today.

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Keywords: ethnic enclaves, Chinatown, Vancouver, urban renewal, historic preservation

FORESIGHT PLANNING, COMPARISONS, AND INTERNATIONAL PRACTICES.

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Individual Paper Presentation

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Planning for the future is the essence of urban planning and design to achieve the objectives of the community in a specific geographic location within a specific time frame. It all depends on the community's definition of the future expectations of the community beyond linear projections of historic and current trends to deal with uncertain conditions. Uncertainty and rapidly changing contextual conditions during the last decades required planners to expect a new-normal methodology that depends less on accurate future predictions ability to control plan implementation. The new normal in planning is to deal with emergencies, contingencies, and even disasters as indispensable components of the plan that need to be expected but cannot be predicted accurately. Foresight planning then anticipates contextual futures that require flexibility and adaptability in the process and the need for methodical, and continuous horizon and trend scanning.

Foresight might be performed on an overall city level or on the level of each city subsystem that has a foresight of its own where the future of transportation, land use distribution, community services, and other futures weave together into many alternate city futures. Foresight planning is an interactive process that considers urbanization as a system of urban systems, while the traditional planning process creates the city subsystems afterwards to serve the plan. Each city subsystem has its own future expectations and time frame, adding to the overall dynamism of the foresight plan. Foresight planning is a wider term than emergency planning, contingency planning, disaster planning, and scenario planning, considering an infinite number of futures, as different uncertainties and possible

contextual irregularities are predicted. Tokyo, Singapore, Dubai and Seoul are some of the cities that adopted foresight planning in different capacities.

To the contrary, vision Planning is only concerned with creating a final objective for the plan based on some theory, community aspirations, foresight direction, or some pre-set concepts that are to be achieved in the future. Visions always preceded urbanization in history where the king, priest or the community envisioned the final urban form in its physical format, social structure, economic functioning, political identity, environmental impact, etc. Vision planning was the preferred method of thinking for cities like Washington D.C., Canberra, and smaller projects like the utopian White City of the Colombian Exhibition. Vision planning anticipates the final output of the plan where cities were designed in the third dimension from the beginning, then the planning process comes to achieve it.

This research paper will discuss the evolution of foresight planning, tools and visualizations. It will discuss theoretical basis and its relation to vision planning, scenario planning for the creation of new cities and the regeneration of existing urban areas. Discussions will analyze plans of Washington D.C., Paris, London, Singapore, the new administrative capital in Egypt, Abuja, and other urban examples to demonstrate their planning approach. The research will discuss traditional planning approaches in contrast to foresight planning, where the concept of a singular master plan for the future is compared to foresight plans for multiple futures.

Output of the research is a discussion of the theoretical basis for future global urbanizations that can absorb the expected increase of the world population in the next few decades when uncertain conditions will be the new norm in planning. A good introduction and discussion of the theoretical aspects of foresight planning will be presented and analyzed.

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Keywords: foresight planning, Global Cities, vision planning, futures planning

FUERA SPACEX: LEARNING FROM ENVIRONMENTAL ACTIVIST MOVEMENTS IN SOUTH TEXAS

Abstract ID: 1108.0.0.1101.2024
Pre-Organized Paper Presentation

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How can planners contribute to processes of collective narrative and storytelling? To examine this question, I review the case of Boca Chica Beach in South Texas, deeply cherished open space at the crux of the Gulf of Mexico and the Río Grande. Over the past ten years, however, this preserved wetland and coastal zone now stands at the intersections of climate injustice and coloniality (Mahony & Endfield, 2018; Sultana, 2022) from new polluting developments like SpaceX's vertical launch site and Starbase, and four proposed liquified natural gas (LNG) facilities. These developments were rapidly sited and constructed through narratives of the site's "emptiness" (or the idea of terra nullius (Gilio-Whitaker, 2019)) despite the "fullness" and richness of local ecologies and histories contributing to the creation of a new sacrifice zone . Not remaining silent, local activists view SpaceX developments as forms of neocolonialism, instituted through the privatization of and restricted access to Boca Chica Beach. This research builds upon these insights to examine how oppressed peoples resist these climate colonialities through a "taking back" of the narratives regarding their collective presence, histories, and ecologies.

Through interviews with community activists and participant observations between 2014 to 2024, these narratives are shared with the permission of activists to explore how community-based planners can learn from these narratives. Vasedevan, et al. (2023) note the centrality of narrative and storytelling in the making of new theories within oppressed communities; here I follow the lead of Sletto, et al. (2023) in extending these conversations into planning theory and research through a discussion of narratives surrounding land control, the loopholes of environmental regulations, and the shortcomings of "participatory" processes. This case at Boca Chica represents a rare instance where narratives of humanity's ambitions of manifest destiny in the stars are in tension with the smallest of scales: the histories and ecologies of a small town in rural Texas. Ultimately, these narratives reveal the continuing role of planners in supporting the creation of sacrifice zones in places like the Río Grande Valley, despite our professional ethics.

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Keywords: storytelling, community-based research, environmental planning, climate justice, Texas

IN DEFENSE OF THE DUMB CITY

Abstract ID: 1108.0.0.965.2024
Individual Paper Presentation

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Planning has always been aligned with the scientific goal of reducing uncertainty. Recent years have seen a renewed enthusiasm for this project based on the application of new digital sensors, datasets, and analytics to familiar urban problems. Such "smart cities" promise to make the city speak in new ways and to provide greater certainty to decision-makers. While the critiques of smart cities are by now mature, the literature advancing an alternative is far less developed. What would it look like to embrace the city that does not or cannot speak? When might it be preferable to relate to the city without knowing all it has to say?

This paper argues for the dumb city not only as inescapable but as, at times, desirable. Dumbness in this sense refers both to muteness and to a proclivity to make mistakes. Borrowing a key tenet of critical disability studies, I position the dumbness of the city not as a failure of the city itself, but as a failure of the institutions of planning to recognize and accommodate the limits of the city's abilities. In addition, social theory and planning literature provides a frame for articulating the benefits of acting within relations of uncertainty. These include the creativity that emerges from wonder, the fostering of trust rather than control, and the development of capacities for situated learning.

This theoretical argument is built on empirical material from a study of the development and adoption of new transportation data systems. With the expansion of ride-hailing and micromobility services organized through smartphone apps, the expectations for vehicle monitoring and data sharing programs and have also increased. Using qualitative research on the development, regulation, and adoption of transportation data infrastructures, in particular the Mobility Data Specification, I examine where certain smart city visions fall short and illustrate what alternative intelligences the dumb city can allow.

The argument for dumbness has its limits, and this paper does not renounce all knowledge and certainty as detrimental to the goals of any given urban actor. Still, I suggest that following this argument to see where it leads can open planning to a different set of possibilities characterized by openness, action, and relations of care. Although the paper's focus is on digital smart city technologies, I point to implications for accommodating dumbness elsewhere, for example in land use politics or the climate crisis.

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Keywords: Smart cities, Uncertainty, Disability, Care ethic, Mobility data

INSURGENT TEMPORALITIES - DECOLONIZING TIME IN PLANNING WITH CLIMATE CHANGE

Abstract ID: 1108.0.0.1246.2024
Individual Paper Presentation

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The discourse of discontinuity, particularly in the context of climate change, presents a unique opportunity for the decolonization of the planning curriculum. As the planning field grapples with the urgency of addressing climate change, there has been an increasing focus on indigenous climate adaptation strategies. However, this emerging trend often bypasses the critical examination of the notion of time, instead jumping directly to solution-based tools and policy recommendations. This paper argues that by engaging with the concepts of rhythm and use-based temporalities, planning can open another avenue for decolonization of the curriculum.

By juxtaposing the temporalities of climate science and archeology with those commonly employed in planning, we can begin to question the fundamental assumptions that underpin the field's approach to time. This paper contends that planning can move beyond its colonial legacy by embracing insurgent temporalities and using new ways of thinking about spatial occupation.

Urban landscapes are stratified with environmental transformations, and accepting time as a progress-oriented linear vector creates a significant dissociation that fails to accommodate the notion of disruption. The temporal discursive plane shapes the spatialization of the environment, particularly in the context of time-dependent land use and zoning practices. By examining how dominant temporal frameworks inform these practices, this paper highlights the ways in which planning has perpetuated colonial modes of spatial organization and environmental management.

The conceptual draft of this paper was presented as research in progress in Chicago in 2023. However, this is the full paper developed further from that draft.

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Keywords: climate change, decolonization, multiple temporalities, environmental planning, time-dependent land use

MAKING BINATIONAL REGIONAL PLANNING WORK:50 YEARS OF "TEMPORARY PARADISE?"

Abstract ID: 1108.0.0.124.2024
Individual Paper Presentation

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It was September 15, 1974. On a backdrop of out-of-control suburban sprawl, rampant environmental destruction of our canyons and river valleys, and depressing urban decay, co-authors Donald Appleyard and Kevin Lynch presented “Temporary Paradise?” to the city of San Diego. Both warned in their transformative vision plan for the San Diego Tijuana region that unless leaders took steps to guide growth and conserve resources, it would be a “temporary paradise.” Sadly, both authors died within a few years of its publication, with Appleyard being killed by a speeding drunken driver in 1982.

Over its 50-plus years, “Temporary Paradise?” has served as a timeless and transcendent vision plan for the San Diego Tijuana transnational region, arguing that the border become a “zone of confluence” sharing its environment, its economy, and its cultures. For 50 years, it has served as a road map to communicate our best ideas through poetic voice and engaging imagery that can effectively move the region toward a future of sustainability, livability, and equity.

Donald Appleyard’s son, Dr. Bruce Appleyard, will discuss the reasons “Temporary Paradise?” has endured as we celebrate its 50th anniversary in coordination with the binational designation of San Diego Tijuana as the 2024 World Design Capital. Dr. Appleyard will also reflect on how “Temporary Paradise?” helps with his work as the US Lead for the World Design Capital’s Planning and Placemaking Team, which includes his work on the first binational International Geodesign Collaboration with his colleagues in Mexico.

Here are some learning outcomes for audience members:

Learning outcome 1

Gain an understanding of how to create an enduring and compelling planning document, including how to write in a poetic, passionate voice and provide compelling images that can engage people, garner support, and endure throughout the decades.

Learning outcome 2

Gain an understanding of how to incorporate the elements of a vision plan into actionable policies for your city and region and how they can lead to more sustainable, livable, and equitable community planning outcomes.

Learning outcome 3

Learn how to conduct a reconnaissance and capture the best planning ideas of a city and a region, and then convey them in a planning document that can endure throughout the years. Offering insight into cross-border planning in an increasingly globalizing world, Shedding light on San Diego-Tijuana’s experience as the 2024 World Design Capital.

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Keywords: Urban Design, Regional Planning, Binational Planning, Planning History, Sustainability Planning

MICKEY'S MISSION: REVISITING ALTERNATIVE VISIONS FOR HOMELESS POLICY

Abstract ID: 1108.0.0.221.2024
Individual Paper Presentation

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Austerity, privatization, and devolution of housing policy combined with welfare reform, the War on Drugs, and other late twentieth century policy initiatives have created durable homelessness that American communities continue to struggle with today (Beck & Twiss, 2018; Schwartz, 2021). This policy movement coincided with the emergence of "New Homelessness" following the economic depression of the late 1970s. Unlike other periods of homelessness in the United States, this has become a lasting and sadly normalized phenomenon, in part due to federal approaches that individualize its causes and manage the allocation of resources to a small portion of people experiencing housing deprivation (Beck & Twiss, 2018; Hopper, 2003; Willse, 2015).

The prospect of ending homelessness is now distant and local policy now focuses on developing a system that can manage the crisis rather than stem the tide. Far from the stable, supportive housing-oriented program that the name implies, Housing First provides a very limited number of vouchers, usually for market-rate housing operated by private landlords, often for a limited period of time. Up to one third of voucher holders with "permanent supportive housing" vouchers face formal eviction (Cusack & Montgomery, 2017; Montgomery et al., 2017; Taylor & Johnson, 2023) and households that receive "rapid rehousing" vouchers experience eviction at even higher rates (Byrne et al., 2023). By depending on private housing, Housing First also subjects people exiting homelessness to informal evictions, lease non-renewals, and relocations because of rising rents or tenant's health and safety concerns.

The near consensus around Housing First obscures what was a robust debate about national homeless policy in the mid-1980s. Representative Mickey Leland, a radical politician from Houston's Fifth Ward, whose ideology was forged in the struggle for civil rights and Black Power, developed a broad humanitarian agenda during his time in Washington DC (Talton, 2021). In 1986, Leland proposed the Homeless Person's Survival Act which included a national right to shelter, preservation of low-income housing, a housing entitlement for disabled individuals and people exiting institutions, expanded housing and shelter access for families and children, and eviction prevention and a national rent relief fund.

Leland's proposed legislation represented a very different theory of homelessness and its cure and vision for the role of government that was in stark contrast to the ascendent common-sense of the Reagan era. Very few of Leland's proposals were included in the landmark Stewart B McKinney Homeless Assistance Act of 1987 and, tragically, he was among 13 people who died in a plane crash 1989. In his eulogy, Jesse Jackson urged a commitment to Leland's fight against homelessness, hunger, and for social justice saying "Mickey is not in that box, just as Jesus was not in that tomb… and because Mickey is not in that box and because Jesus is not in that tomb, death has not freed us of the burden of Mickey's mission" (Simmon, 1989).

This paper revisits Mickey's Mission through original archival research at the Mickey Leland Center on World Hunger and Peace at Texas Southern University in Houston, Texas. This work reveals the robust debates that took place before and after the passage of the McKinney Act and rewrites Representative Leland into the story of national housing policy. Leland's vision for comprehensive government-led responses to homelessness, broadly defined, stands in stark contrast to the piecemeal, scarce, privatized, and often punitive systems that exist today. Research on the decisions made at this pivotal juncture in American political history also illuminates alternatives for planners, policy makers, activists, and communities that are unsatisfied with the hegemonic solutions available today and who want to imagine a more just future.

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Keywords: Representative Mickey Leland, Homelessness, Housing First, Housing Justice, Planning History

NEIGHBORHOOD CHANGE AND THE AFTERLIFE OF CHURCHES IN BUFFALO, NY

Abstract ID: 1108.0.0.190.2024
Individual Paper Presentation

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Cities across the US, especially rustbelt cities, continue to grapple with neighborhood changes within their communities. These changes have ranged from twentieth century suburbanization and its resulting urban blight to more recent gentrification and redevelopment, and everything in between like redlining and disinvestment of primarily minority-occupied neighborhoods (Hackworth, 2016). Some of the most prominent spaces that struggle to survive in this context are large historic churches that struggle to find an afterlife. Houses of worship were once a

centerpiece of community life and a focal point of a community's architectural landscape. Over the years, however, cultural changes have resulted in less emphasis on houses of worship as centralized pieces of the community, and economic and demographic changes have led to significant changes or loss of congregations. Consequently, today's urban cores have a plethora of abandoned or vacant houses of worship where demolition by neglect is often a significant threat. In this paper, we explore how neighborhood change impacts decisions about adaptively reusing vacant church properties in a rustbelt community like Buffalo, NY. The city of Buffalo, located at the nexus of Lake Erie and Lake Ontario, served as a very important link between the Midwest and New York City for decades, until its gradual decline in the middle of the twentieth century (Dreier, 2012, p. 100; Tumber, 2015, p. 131). While most of the city was hit hard by suburbanization and 'White Flight', the East Side of the city (a casual reference to census tracts and neighborhoods east of Main Street), saw extreme blight, with many communities losing as much as 89% of their 1950 population (Tumber, 2015, p. 133). In recent years, the West Side (census tracts west of Main Street) has seen higher levels of gentrification and re-emergence of mixed-use, in-demand walkable neighborhoods. The city has also had significant grassroots development efforts to address its housing crisis in neighborhoods on both sides of Main Street (Dreier, 2012). 'DIY preservationists' have also attempted to salvage the city's at-risk heritage landscape through various 'reclamation practices' (Campo, 2016). And, most significant for our study, the city has also had significant success in adapting various kinds of vacant churches. We use two churches within these two east-west contexts to highlight how neighborhood change impacts decisions about the future of churches within each community. Our research aims to show that adaptively reusing vacant churches, particularly historic ones, can be incredibly important decisions for a community, and should be driven by their specific context. The first case study, the Lafayette Avenue Presbyterian Church, is in the sought-after Elmwood Village in the West Side. It was a church with a declining congregation until it was converted into a church space that retained their worship space while becoming a vibrant center of community life with apartments, a community commercial kitchen, and an event space. The King Urban Life Center, on the other hand, was formerly the St. Mary of Sorrows Church, and is in the heart of the East Side. It was a church that was rescued from demolition and made into an educational center that serves the youth in the low-income neighborhood it is located in. In both cases, their adaptation was driven by their neighborhood change and significant community support and input. These adaptations in the use of the properties are distinct and separate from the sacred-to-secular and faith-to-faith conversions that have taken place in the city (Krishna & Hall, 2019), and can serve as a roadmap for other rustbelt communities struggling to find a use for their vacant historic churches.

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Keywords: rustbelt cities, adaptive reuse, historic preservation, churches, community

OUGHT FROM IS:THE HIDDEN ASSUMPTIONS AND STATUS QUO BIAS OF POLICY RESEARCH

Abstract ID: 1108.0.0.971.2024
Individual Paper Presentation

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Across a range of fields of study—including urban planning, public health, public policy, social work, criminology, and education—researchers aspire to derive policy implications from the findings of empirical research. Research in this tradition most frequently seeks to gauge associations between independent factors—notably, those that constitute or are closely connected to policy choices—and behavioral outcomes of interest, all with hopes of establishing a causal basis to inform policymaking. This linkage of science and policy is vital since the alternative would be a politics uninformed by scientific knowledge, in which one person's opinion about the workings of the social or natural world is as good as that of another. With populist politics and rhetoric about "fake news" apparently ascendant in the United States and elsewhere, the enterprise of (re)connecting policy and science seems more urgent than ever.

And yet, this enterprise was never straightforward. In seeking to link objective knowledge and public decision-making, policy analysis has aspired to an ideal pioneered by the natural and experimental sciences. Yet the route from empirical research findings to policy implications necessarily wends its way through a web of assumptions, many of which are invisible to the researcher and policymaker. Consider, for example, a policy decision regarding school closures during a pandemic, a situation that has led decision-makers to proclaim that they "follow the science" in setting policy. The assertion may amount to a cynical or manipulative deflection of responsibility. But even as an expression of a sincere aspiration for a science-respecting policy process, the claim articulates a standard that cannot be met in practice. For example, while epidemiology can assess the likelihood of transmission and the distribution of disease response by severity, the outcomes of school closures are the educational researcher's bailiwick, and the impact on households and neighborhoods, the sociologist's. This problem is knottier still considering the multiple constituent groups to a decision, each of which is affected differently by the various policy options under consideration.

The impossibility of unitary answers for multi-objective and multi-stakeholder issues was described by Rittel and Webber in 1973 and has become a central conundrum of planning theory and policy analysis in the decades since. Less studied is the structure of the implicit assumptions that are made, and the nature of the bias they introduce, as scientific findings are interpreted for policy. This paper develops a typology of implicit assumptions that can enter in the policy-research process. These include: the construction of a neutral default, which often reflexively accords the status quo the benefit of the doubt); mechanistic assignment of burden of proof that follows textbook hypothesis testing; an inclination to isolate policies for evaluation, thereby neglecting the power of policy bundles; treatment of self-selection as inherently a source of bias rather than a potential route of policies' effectiveness; a tendency to evaluate policies in a space-and-time-constrained fashion; and an assumption that the analyst's job is to supply truths per se rather than to improve policy outcomes. Examples will be drawn from literatures of urban and regional planning and other policy-oriented fields.

The goal of the paper is to better connect science and policy by developing approaches that reveal and account for, rather than obscure, the assumptions that intervene between empirical findings and policy implications. Part of the solution is to open these assumptions for scrutiny and public debate. The paper will argue for additional structures as well, including more considered assignment of the burden and standard of proof and a portfolio view

of policies incorporating higher- and lower-risk interventions, as opposed to the implicit expectation that each policy will deliver results with scientific confidence.

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Keywords: policy research, status quo bias

PLANNING NOW TO OPEN DISTANT FUTURES

Abstract ID: 1108.0.0.290.2024
Individual Paper Presentation

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Planning's focus is urban, regional, and always spatial. Planning is also an inherently and uniquely temporal field. This paper argues that rethinking planning as primarily temporal and future-oriented opens up new possibilities for radical urban change, and explores the implications this paradigm shift may have on planning thought, education, methods, and practice.

Transitioning toward sustainable and climate-resilient cities, regions, and economies that can support the wellbeing of innumerable future generations requires that planning reclaim ideas, imaginaries, narratives, and decision-making processes about good long-term futures. Yet, in modern and post-modern societies, the future is being colonized to the benefit of the present, e.g., by smart cities narratives and technologies, net present value discount rates, and greed that prioritize speed and immediate gains.

This paper explores how planning thought, education, and practice can help reclaim good futures, and proposes a paradigm shift from "think global, act local" to "think far-futures, act present."

Planning education needs new tools to grow and develop students' future imaginaries and free their minds to explore what good urban futures might look like --and how their careers might contribute to opening those futures. Voltaire spoke through imagined alien visitors to denaturalize the ancient regime, with great effect. Historical empathy --imagining the present from the point of view of distant pasts-- can be used to not only contextualize the current state of things, but also to question and denaturalize the present. I explore how these might be useful didactic tools to open up distant futures with our students.

In practice, urban plans consider 5-10 year to 10-20 time horizons. Thinking and planning on 30-50 year horizons, i.e., plans for the 2060 or 2070s, is exceedingly rare. While thinking in 100, 200, 500 or 1000 increments may be considered futile in light of high uncertainties, thinking on very long timeframes (the proverbial 7 generations cover about 200 years) is necessary to find paths towards sustainable urban transitions. Recent experiments in Newcastle

and Reading show that participatory long-term visioning and backcasting can help co-construct aspirational, optimistic, inspiring, and feasible urban outlooks. Gaming may provide other useful and engaging tools, e.g., in the areas of world co-construction and alternative future worlds exploration (e.g., building Sim cities, exploring science fiction worlds, analyzing digital urban twins).

Planning thought and planning theory can assist practice and education and lead efforts to reclaim good futures by engaging with new materials and fields. I explore how very long-lasting (millennial) institutions are designed to last into unbounded futures. I also discuss useful contributions from political narratives about the future, from the field of future studies (surprisingly disconnected from the planning literature), from utopian science fiction and Afrofuturism (e.g., Mercier 1771, Bellamy 1888, Robinson 2017, Wakanda, Solar Punk). I also comment on lessons learnt from activist organizations that engage directly with radically challenging dominant temporalities, including the Long Now Foundation, Slow movements, and Improv Everywhere .

I conclude by arguing that positioning planning as a temporal field offers much more radical and interesting potentials than focusing on the spatiality of the field. I propose ways to integrate thinking about distant futures in the planning curriculum and in urban plans, and challenge planning theory and thought to engage with the fields of future studies and “serious” gaming and utopias.

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Keywords: Time, Future, Optimism, Sustainability, Planning education

PLANNING TO DO BETTER: SEARCHING FOR WISDOM AT THE POLICY/ACADEMIA NEXUS

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Individual Paper Presentation

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The general narrative is of a time that is perplexing, divisive and precarious, with such sentiments aligning with the lived experience of too many. The implications of inequality and the climate crisis prompt calls for something to be done, yet scepticism pervades as to whether governments have the will or capacity to take meaningful action. Planning and policy-making sits at the nexus of knowledge and action; a connecting point between academia and government. This paper explores this interface, questioning how far current research and teaching practices provide the ‘wisdom’ necessary to support effective action, and explores ideas for a radical evolution in university practices.

The general lack of trust in governmental institutions has been further undermined by growth of social media platforms and an abundance of mis-information, fake news and conspiracy theories. In this insecure and at times febrile environment, one source of policy inspiration might be expected to lie at the interface between the worlds of academia and politics, policy and practice; often characterised more grandly as the interplay between knowledge and action.

The relationship between knowledge and action is not linear nor determinative. Rather the meaning and pertinence of knowledge, such as the findings of formal academic studies, to the particularities of a decision-making situation is a matter of judgement, more precisely practical judgement (or wisdom). Universities and academics are not the only generators of knowledge, but knowledge generation of a standard endorsed through the external validation by peer review, is inherent to their raison d'etre, along with the arguably the more impactful purpose of disseminating what is known through teaching.

Gauged by a crude productivity measure of numbers of peer reviewed papers published and students receiving university credentials it might be expected that the capacity for knowledgeable, or at least informed, action had never been greater. The growth of the social sciences, since the mid twentieth century, provides seven decades of insight into policy-making processes and their outcomes. Yet analyses of the unrealised expectations of planning policy interventions from, for example, the 1960s and 1970s, highlight very similar issues to those of the last decade. This prompts the question, why: is it just politics, an unwillingness to learn, or something more fundamental? Why too does a gaping chasm so frequently seem to exist between the worlds of academia and policy-making, even with the recent greater focus on the achievement of 'impact' within the academy.

The purpose of this paper is to explore the nexus between academic knowledge and action, searching for what needs to change to enable greater traction on the challenges facing communities. Building on previous work by the author the argument highlights the disconnections between the knowledge resources and capabilities needed to support practical judgement, and the practices of planning research and education. The paper identifies possibilities for the radical evolution in research and teaching practices, as well as the supporting cultural infrastructure.

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Keywords: Knowledge, Practical judgement, Action, Change

POSTHUMANIST PLANNING: AN EXPANSION OF A FEMINIST EPISTEMOLOGICAL CRITIQUE

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Individual Paper Presentation

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While urban planning has evolved to include a wider array of human perspectives, and planning theorists have proposed ways to best include voices of urban residents from different backgrounds and identities, it remains predominantly anthropocentric. None of the other species that live, thrive, or die alongside humans in cities are granted consideration. Even as other divides are broken down, the human/nonhuman divide remains (Houston et al. 2017; Metzger 2019). While this has always resulted in the subordination of nonhumans in the urban landscape (Wolch 2002; Houston et al. 2017;), this condition has become increasingly untenable. The Anthropocene, and the environmental instability and hazards it brings with it, marks the end of our ability to ignore our interdependence on nonhuman systems and agents. Our ability to respect and respond to these agents, and our entanglements with them, is a matter of survival (Houston et al. 2017; Jon 2020). The time is ripe for a shift to posthumanist planning—planning that considers and includes the needs and perspectives of nonhuman species, such as animals, plants, fungi, etcetera, and sometimes even landscapes, environmental features, or natural processes (Wolch 2002; Houston et al. 2017; Metzger 2019; Jon 2020). As such, posthumanist planning seeks to reshape human identity by recognizing our entanglement with and dependence on nonhuman entities, and in recognizing their value and agency, incorporate them as actors in urban democracy and the planning process (Metzger 2019; Houston et al. 2017).

In this paper, I argue that posthumanist planning expands upon Snyder's (1995) feminist epistemological critique of planning. In fact, a truly emancipatory planning practice must include nonhuman perspectives. I ask, in what ways does integrating non-human perspectives redefine emancipatory planning practice? To address these questions, the paper first articulates the rationale for posthumanist planning as a necessary evolution of Snyder's critique, which calls for an emancipatory planning practice that acknowledges diverse ways of knowing and actively dismantles social hierarchies. I explain the rationale for and goals of posthumanist planning, describe how posthumanist planning builds on Snyder's (1995) critique of and implications for planning, and, finally, review some of the existing posthumanist concepts and strategies for urban design and planning, as well as discuss future directions. While Snyder (1995) advocates for breaking down dualities, diminishing the role of the expert, and making citizen participation more interactive, as long as the human/nonhuman dualism remains intact, there will still be subjugation and marginalization (Wolch 2002; Houston et al. 2017). Truly emancipatory planning practice must support the emancipation of nonhumans in cities, respect and become attuned to nonhuman knowledge, and allow them to participate in governance processes (Wolch 2002; Houston et al. 2017; Metzger 2019; Jon 2020).

While posthumanist concepts and strategies are starting to be explored in planning and other built environments fields, multispecies systems are inherently complex and that planning decisions may result in unforeseen consequences. Reflection must be an important part of this process (Metzger 2019). The paper calls for further development of frameworks and strategies that can operationalize posthumanist planning. It highlights the geographic imbalance in posthumanist literature and practice, advocating for a broader global engagement with posthumanist ideas, particularly in regions like North America where such perspectives are less recognized. Through this inquiry, the paper seeks to substantiate posthumanist planning as a logical and necessary expansion of emancipatory planning principles to include non-human agencies, thereby reshaping human identity in the age of the Anthropocene.

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Keywords: Posthuman, Post-anthropocentrism, More-than-human, Feminism, Environmental planning

PRECARIOUS HOUSING: A RESEARCH AGENDA

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Individual Paper Presentation

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This article delves into the concept of precarious housing to suggest a research agenda for planning theory and practice. It addresses the significant challenges posed by unaffordable or inadequate housing, as outlined in literature discussing the economic and political hardships faced by populations affected by housing insecurity. To this end, we draw upon a range of relevant literature, including works on informality, homelessness, financialization, and citizenship, to offer a decolonial perspective on precarious housing. Our objective is to contribute an analytical framework that will enrich ongoing debates in the field of planning.

In our article, we advance the term 'precarity' rather than the more common use of informality, which has been more common in urban studies, planning and geography. Our specification of precarious housing here refers to larger structures and inequalities shaping the lived experiences related to precarious processes surrounding housing, including different housing and labour conditions and identity and citizenship statuses. In such a view, this process may result from how societies are structured, including through post-Fordism, colonial dispossession, settler colonialist logics, structural racism and sexism, neoliberalism, or capitalism, ultimately exposing some to fragility. While our understanding of precarious housing is related to the global housing crisis in some ways, more specifically, it can be considered a permanent state of housing conditions in capitalist societies and related to broader systemic failures including housing commodification and broader challenges as structural conditions under inhumane and racial capitalism. Moreover, the notion of precarious housing also crosses divides — including North-South, East-West, among others — and establishing a research agenda capable of thinking beyond such divides is immensely valuable in this context.

Precarious housing conditions have been acknowledged around the world for years. However, the COVID-19 pandemic has brought to light the existing and growing challenges of inadequate housing access. As interest in precarious housing grows and the need for solutions to housing challenges increases, we propose revisiting this concept and utilizing it to advance planning theory and practice. Despite growing interest in the topic of precariousness, there has been little clarity on the concept, and considerably less focus on precarious housing

specifically. Traditionally, most literature on precariousness has been used concerning studies on labor markets. Therefore, together with a growing interest in the term precarious housing, combined with an increasing need to support multiple housing challenges, we suggest reengaging with this to advance an analytic approach to deepen debates in planning theory and practice.

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Keywords: housing crisis, precariousness, informality

RACE, RELIGION, AND RECKONING: CATHOLIC PLANNING IN 20TH CENTURY DETROIT

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Individual Paper Presentation

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This paper reinterprets Detroit's history by examining a powerful institution that mapped the city around parish neighborhoods: the Catholic Church. Using archival, oral history, and historical mapping methodologies, I investigate how twentieth-century Catholic parish neighborhoods in Detroit simultaneously served as both places of refuge for European Catholic immigrants against a hostile Protestant national landscape and tools for excluding Black migrants arriving from heavily-Protestant regions of the American South. This conundrum created an urban planning challenge: How does an established religious institution plan for a rapidly racially and religiously diversifying city? More generally, how do planners make decisions when there are multiple perceptions of space, particularly in relation to racial and religious identities?

I make three main arguments: First, the Catholic Church acted as an urban planner, particularly around creating parish neighborhoods, which were simultaneously places of refuge and often tools of exclusion (Tentler, 1990). Second, Catholics shaped space geographically compared to Protestants who created non-spatial communities. Third, the Catholic Church played a significant role in both neighborhood segregation and integration, revealing a powerful layer to Detroit's history. I argue that it is important for planners to look at processes in which the Catholic Church, an institution that is not often looked at from a planning perspective, was able to successfully integrate neighborhoods to learn from alternative ways of planning.

Through archival documents and historical mapping, I establish that the Catholic Archdiocese operated similarly to a municipal department of planning, using a parochial map as a central comprehensive plan to divide the region into different parish neighborhoods, which were anchored by a Catholic parish church, community centers, and, notably, parochial schools (Sugrue, 2014). While Catholics often centered their lives around a map of geographical

parish neighborhoods, Protestants often chose where they attended church based on denomination and preference, creating non-spatial community networks across the city. Still, many non-Catholics relied on Catholic infrastructure, particularly the schools, which, compared to public schools, were seen as the route to economic mobilization (McGreevy, 1996).

The difference between the Catholic geographical neighborhood and Protestant community network came to the forefront during the 1960s and 70s when the Archdiocese of Detroit, considered the most progressive in the country, followed Black Protestant leaders in calls to action and engaging directly in labor and fair housing movements (Dillard, 2007). Parish councils, consisting of parishioners elected to represent the parish, played a role akin to neighborhood associations in many neighborhoods and often consulted in decisions for or against integrating schools and other facilities. Despite the Archdiocese's call to racial justice, my analysis of archival documents and oral histories demonstrates how parish councils in many neighborhoods actively resisted the racial integration, citing fear of declining housing values, school quality, and racial change.

However, I also found that some parish councils created innovative plans that pursued racial integration through the physical design of shared space such as the strategic placement of community centers that created opportunities for interaction and the merging of resources. Additionally, the Catholic Archdiocese staged interventions by designating parishes as models of integration. These parishes participated with other religious groups in interfaith meetings to establish collective decision-making across different religious communities and combat exclusionary practices such as redlining and blockbusting. By incorporating varying definitions and perceptions of neighborhood boundaries, landmarks, accessibility, and belonging across racial and religious groups, this collective community organizing expanded where and how the Catholic Archdiocese provided community services and needs. Ultimately, by considering the Catholic Archdiocese of Detroit as an urban planner, this paper uncovers how planners can use multiple narratives across many communities to create a shared vision of a neighborhood.

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Keywords: Race, Religion, Segregation, Integration, Neighborhood

RADICAL PLANNING FOR RESTORATIVE METABOLIC RELATIONS

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Individual Paper Presentation

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Examining artifacts embedded into the fossil record through the lens of metabolic relations, this paper brings into focus the alienating logics, planning processes, and socio-environmental effects of the imperative for endless economic growth. Marked by “radiation from atomic bombs, plastics from the oil industry, and chicken bones” from industrial agriculture, the fossil record attests to ecological and social rifts whereby the relationship between human/nature is irreparably altered under global capitalism. I examine these artifacts as evidence of the metabolic rift in relation to industrialization and urbanization; further, I ask what radical planning theory and praxis offer to restore metabolic relations. First, I offer a reading of chicken bones as evidence of alienation between human and non-human nature alongside urbanization. Second, I situate the proliferation of radiation as confirmation of imperial, colonial, and nuclear projects of empire building and maintenance. Third, I chronicle the development of plastics and their transformation into techno-fossils as a material manifestation of environmental planning for capital accumulation. The emergence and permanence of these artifacts necessitate a critical reflection on the unalterable impacts of environmental and economic planning and the possibilities for reparative and restorative practices and planning for futures that are still unfolding. In closing, I explore what anti-oppressive worldviews and the politics of care offer for mending disordered social and ecological metabolisms.

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Keywords: Radical Planning, Metabolic Rift, Political Economy, Industrialization, Urbanization

REDEVELOPMENT, REBELLION, AND RACIAL REGIMES OF PROPERTY IN WATTS

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Individual Paper Presentation

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The neighborhood of Watts was once a center of black life in Los Angeles, holding 13 percent of the city’s black population in 1950 in its 2-square-mile footprint. However, its status as a black neighborhood has changed: in 2020, less than a quarter of its population was black. The story of Watts has often been narrated through the legacy of the uprisings in 1965, situated between the influx of black migrants to the region during the Great Migration and the purported demise of Black Los Angeles in the 1970s and 1980s attributed to rising concentrated poverty,

deindustrialization, and the crack cocaine epidemic. Less attention is given to the role of planning in Watts's transformation despite it being an important site of redevelopment activity.

This paper examines how redevelopment processes—from the construction of public housing to the implementation of comprehensive redevelopment plans—have contributed to the neighborhood's transformation. The paper uses the concept of racial regimes of property to illustrate how redevelopment's commitments to improving property can be directly at odds with the sustenance and futurities of racialized communities such as the black community in Watts. Highlighting the instability of notions of race and property, the paper lifts up black rebellion as a mode of black political engagement through which poor and working-class black communities contested and negotiated redevelopment processes. Ultimately, this paper not only aims to deepen understandings of the history of Watts, but also reanimates the history of redevelopment throughout the city and its impacts on racialized communities peripheral to downtown Los Angeles, especially as these processes continue in these communities today.

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Keywords: redevelopment, black geographies, property, planning history, rebellion

THE APPLIED HISTORY APPROACH TO CITY PLANNING: A GREENVILLE, SC CASE STUDY

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Individual Paper Presentation

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A half-century ago, Main Street in Greenville, South Carolina, was dead (Perry, 1977). Greenville's downtown was a deserted urban wasteland and the epicenter of drug deals, prostitution, and vagrancy. However, championed by Mayor Max Heller in the late 1970s, Greenville reinvented itself, radically changing the urban landscape. Main Street was narrowed. Trees were planted. Downtown became walkable and safe again. It rediscovered the only natural waterfall in a United States Downtown. And most importantly, people returned to Downtown Greenville.

Greenville's Main Street offers a rich city planning laboratory, and many city planning lessons emerge by studying the history of Greenville's revitalization. My research asks, what can be learned from Greenville to inform future decisions and policies in creating great cities? What can we learn from the wisdom of our past?

History matters. Stories are the foundation of a city's history. But before cities look forward, they must look back. They must understand the historical context and significance of past decisions. History is a great educator and is incredibly predictive of the future.

Many current city planners do not know or appreciate the history of their cities. The average Greenville city planner has lived there for less than two years. How can planners plan for cities they know little about?

Learning from a case study of Greenville, this research suggests a new theory of city planning, the Applied History Approach (AHA), proposing how knowing history is crucial in making better decisions. It proposes how planning and the city planner become more critical in decision-making. Using a mixed method research approach, it also suggests the frameworks, structures, and systems needed to make applied public histories accessible and applicable to everyday planning practice.

Planning is in an unimaginative, non-progressive lull and lives in an academic and practice vacuum. City planners often function as administrators and advisors, not visionaries. They are not key players at the table when planning for the future.

We are also experiencing the consultization of city planning. While outside consulting firms can add value and expertise to some planning projects, their extensive use can devalue the vital role of city planning departments. Unfortunately, most consultant engagements are “one and done,” involved in single projects without developing long-term relationships with cities. And, once a consultant leaves the engagement, what ensures the suggestions are implemented and success is evaluated? Cities have not discovered a balance between consultant expertise and local planners’ historical knowledge of their place.

Few cities have systematically applied planning history in creating new planning thought. Fewer use emerging digital technologies to analyze and understand our past. The Applied History Approach is a new history-informed theory of city planning.

Planning is one of the few professions that dreams about the future. However, a bright future cannot be achieved without understanding our past. We must create ways to capture and celebrate our history. We must give planners the tools and the freedom to utilize what we are trained to do, plan, and dream about the infinite possibilities for future generations.

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Keywords: History, Planning, Theory, Consultants

THE POTENTIAL OF NONREPRESENTATIONAL THEORIES FOR URBAN PLANNING

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Individual Paper Presentation

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Nonrepresentational theories have become highly acknowledged prisms through which the social sciences, and particularly the discipline of human geography, study socio-spatial engagements.

These theories emphasize scrutiny of pre-cognitive capacities and the background of our perceptions, thoughts, and interpretations. The Nonrepresentational scholarship argues that our socio-spatial reality is shaped by ". . . actions, interactions and bodily experience, rather than discourse, semiotics and representation" (Buser, 2014, p. 230). Attending to precognitive capacities rather than representations, nonrepresentational theories are highly inclusive toward diverse experiences of the urban environment, and thus have become an essential pillar in studying socio-spatial relations.

Similarly to human geography, urban planning has developed as a body of knowledge targeting to understand socio-spatial interactions and the experience of different urban settings. Urban planners have shown interest in the senses and the experiences they evoke in the urban environment since the 1990s (Sennett, 1996), particularly with regards to affects and affective atmospheres (see e.g., Thibaud 2011). More recently, amidst rapid urban transformations, planning scholars have emphasized the importance of drawing on nonrepresentational theories to examine present-day cities and socio-spatial phenomena (see e.g., Buser, 2014; Marotta & Cummings, 2019; Shilon & Eizenberg, 2020). However, to date, only a few works in urban planning literature closely engage with nonrepresentational theories.

The different evolution of nonrepresentational theories in human geography and urban planning raises broad epistemological questions as to how disciplines evolve. How do disciplines think and probe? How do theoretical ideas and approaches transform into research and practice? Driven by these questions, this paper asks what can nonrepresentational theories contribute to the theory and practice of urban planning?

The research draws on two qualitative research methods for investigation. First, 13 open-ended, in-depth interviews were conducted with leading urban planning and human geography journal editors and scholars questioning the scope of academic scholarship, disciplinary development, academic gatekeeping, and reception of new theories, methodologies, and academic trends. Second, content analysis was performed on five research articles from prominent urban planning journals. These articles were selected through a two-phase process. Initially, articles were identified based on search terms such as 'Nonrepresentational or Non-representational', 'Affect or Affective', and 'Atmosphere' in the title. Out of the 17 articles initially found, the second phase involved selecting the most relevant articles based on their utilization of nonrepresentational theories to derive direct implications for urban planning.

The paper discusses the contribution of nonrepresentational theories to the study of present and future cities, and to the production of more inclusive and flexible planning and planners. In particular, the paper argues that nonrepresentational theories offer three main shifts to urban planning: (1) an alternative outlook on politics and power dynamics, (2) attention to the abstractive and future-related aspects of cities and urban planning, and (3) adjustments to methodologies and methods for studying socio-spatial relations in today's cities. Drawing on the analysis and offered shifts, the paper proposes that the development of a solid nonrepresentational framework in urban planning can derive nuanced understandings of diverse urban experiences and contribute an analytical framework to urban planners who wish to become more attentive and flexible toward the diversity, multiplicity, transformations, and complexities of present and future cities in their planning.

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Keywords: Disciplinary Development, Nonrepresentational Theories, Planning Theory, Urban Transformations, Flexible Planning

TOWARDS INTERSECTIONAL EQUITY PLANNING

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Individual Paper Presentation

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Looking through the long and contentious history of planning theory, one could see the transformations in the terminology, scope, and roles of planning in relation to equity in Global North to address the wicked problems of achieving a just city (Reece 2018). Over time, we witness a gradual move from looking for solutions inside to seeking solutions and alternatives outside of the current racial-patriarchal-capitalist structures. In fact, contemporary equity planning theories which originated in the global north, stemmed from Marxist and feminist traditions. They begin with a focus on representation (advocacy planning by Daviduff in 1960s), and later on, shift to redistribution (equity planning by Krumholz in 1970s & again, in 2018), engagement and participation (communicative planning, Judith Innes in 1990s), addressing justice itself through the structure (The Just City, Fainstein and regional progressive equity, Banner in 2000s); creating a new structure all together (the right to the city, Harvey and Commons planning, Marcuse in 2000s); and most recently to acknowledge the pluriversal planning (Vasudevan & Novoa 2022) and move towards planning of care (Jon 2020).

These theories have all been a push toward more just urban future. Over the years, they have transformed the scope of equity planning and redefined and encompassed more actors in the practices of equity and redistribution. The decreasing federal support for traditional urban community development has resulted in equity planners pushing to learn to collaborate with other stakeholders and activists. Equity planning theory has been revisited by many global north scholars and the role of planner has expanded over time in these theories from “urban planners working “within the government” to working include with policy makers and community advocates; or even labor unions and national activist organizations outside the city hall. Currently, social equity is the main focus of many nonprofits, community planners, regional planners, and others such as public interest research groups, NGOs working on environmental issues, access to food, workforce development etc. During COVID-19 pandemic, when the government falls short in equitable redistribution of resources, we could also see that social equity is the concern for many mutual aid networks as well. It is important to note that the dynamics and the myriads of solidaristic practices emerging during the pandemic in global north has been long practiced by the communities

and studied by the scholars in the global south. Although there have been similar struggles for the marginalized people in the US, for the first time in recent history, these dynamics became more visible during the pandemic.

In this paper, using case studies in the context of peri-urban Iran, I argue that we should use the insights and strategies from the feminist literature on social reproduction theory (Winders & Smith, 2019), intersectionality (Crenshaw 2021), and lived experience (McIntosh & Wright, 2019) to help us in furthering the goals of contemporary equity planning. I formulate the main principles of intersectional equity planning as: (1) Rethinking the parameters of "expert" knowledge (valuing lived experience); (2) Recognizing systematic patterns of exclusion, disadvantages, and overlapping social injustices; (3) Acknowledging diverse levels of access and relationships with the state, the private, and the public sectors; (4) Locating intersectional crisis of production and reproduction at different scales and scopes; and (5) Taking into account the sensitivities and learning from the strategies used by the marginalized to frame, make claims, and address their need.

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Keywords: Equity Planning, Social Reproduction Theory, Intersectionality, Lived Experience, Planning Theory and Practice

VISUALIZING THE SUSTAINABLE CITY: PLANNING MEETS SCI-FI UTOPIAS/DYSTOPIAS

Abstract ID: 1108.0.0.810.2024
Individual Paper Presentation

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Both urbanists and speculative/science fiction assert mastery in foreseeing the future, but the two traditions offer starkly divergent urban scenarios. Planners readily claim their scenarios are based on rigorous, evidence-based scholarship, while the latter is merely mass entertainment. We should dismiss Sci-Fi as intentionally bleak, distorted, fanciful and even exploitative: unproductive, speculative gloom when society urgently needs upbeat, practical planning models of rational urban futures. After all, planners are pragmatic optimists, not fantasists or nihilists.

Yet we can turn this critique around and target urban planning's overly cautious, timid depictions of possible urban futures, which rely on a limited palette of scenarios that capture neither the thrill, complexity nor fear of urban living. The sustainability future, as created by planners, begins to seem a bit boring, earnest, repetitive.

This paper does not advocate that planners simply embrace science fiction as a direct source of urbanist futures. However, seriously engaging these fantastical visions will jolt our powers of imagination and expand our repertoire of urban possibilities. I begin this paper by comparing representations of urban futures (text and image) from various sources: speculative fiction (literature, movies); planning documents (sustainability, climate plans), and developer & tech firm visions (megaprojects, new towns). I pay particular attention to two scenarios: the "smart city" and the "sustainable city."

I pose three questions:

1. What are planning's recurring tropes of the sustainable city, and why do urbanists gravitate towards them? Examples: skyscrapers with vertical gardens; green roofs; "complete" streets replete with cyclists and pedestrians; mixed-use neighborhoods; geodesic domes; community gardens; automated EVs; wind turbines; solar panels; floating greenhouses. How do these visualizations both capture and constrain our imaginative thinking? Do fiction and film, rather than sustainability plans, better capture the dramatic transformations required for carbon-zero living? Are planners too incrementally cautious to imagine a wider, bolder range of possibilities?

2. Info Tech pervades images of future cities. How should we understand the relationship between the smart city and sustainable city movements? "Smart City" advocates reflexively preface this term with "sustainable." Is this conflation justified? What narrow, techno-optimist version of sustainability does the smart city promote? Here is a major divide in sustainable futures scenarios: the high-tech, highly-capitalized eco-city versus the indigenous, DIY, modestly-capitalized city. Do images of a sustainable society reveal nostalgia for a pre-industrial past or plunge us ahead into a green-tech/high-tech future?

3. What tacit societal assumptions do planners embed in their visions of future sustainable cities (e.g., about rationality, democracy, social cohesion, equality)? How do these planning visions contrast with those found in Sci-Fi? Yes, in the rare fictional ecotopias, lush forests and gardens represent abundance and harmony. Yet dystopias predominate. Ruling elites exploit scarce resources (water, food, land) for social intimidation and control in deserts or barren post-apocalyptic landscapes. Eugenics and pollution-driven crises in reproductive health feature prominently. Environmental refugees are common tropes, as is Malthusian overpopulation. Populations retreat to underground living.

Sometimes utopia and dystopia overlap, with signs of hope amidst the despair, depicting themes of redemption, resilience, resistance (the power of the "Oasis" metaphor). It is understandable that planners shy away from these unsettling visions and peddle upbeat, implementable sustainable scenarios. But we can learn from Sci-Fi's darker side to better engage not just the rational hopes but also the visceral fears of urban residents in crisis.

Planning's central stock-in-trade is to imagine, assess and promote alternative visions of better cities. In our era, this future vision is of the sustainable, just city. The contrast to fictional visions (print, film) should provoke us to be more creative and ambitious and generate compelling urban futures that capture the public imagination.

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Keywords: sustainability, smart cities, futurism, urban progress, intellectual history

WHITHER PEACE?: PLANNING AS, AMID, AND AFTER VIOLENCE

Abstract ID: 1108.0.0.994.2024
Pre-Organized Paper Presentation

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What do we learn about actually existing peace—about the causes and cycles of violence—when we attend to both its histories and lived experiences? In Rwanda today, the memories and legacies of the 1994 genocide and reprisal attacks continue to burden communities throughout the country. To respond to the scale and extent of that violence, the post-genocide government employed architecture and urban planning to "build" peace. Government villagisation, the relocation of scattered rural homes into planned settlements, was the first, most widespread, and enduring of those initiatives. It has progressively moved residents into tens of thousands of such sites. In my research in 36 villages throughout the country, resident perspectives reveal disconnects between how peace has been planned and experienced in the country. Mandatory cohabitation and the unequal distribution of new housing and infrastructure have produced uneven social effects: generally complicating distrust and conflicts and sometimes structuring coexistence and sociability. The epistemic lens afforded by rural villages locates the everyday conditions and challenges of peacebuilding in Rwanda. This talk explores the opportunities for planning—and peace processes—attentive to community engaged research and spatial relationships of belonging, power, and difference.

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Keywords: Peacebuilding, Conflict, Planning

Track 13 – Technology, Society and Analytical Methods

Track 13 Roundtables

ROUNDTABLE DISCUSSION: URBAN AI IN PLANNING

Abstract ID: 1109.0.0.674.2024
Roundtable Submission

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Urban Artificial Intelligence (UAI) deploys AI in urban contexts like energy management, environmental monitoring, and public safety. Urban research now thrives in a data-rich environment, integrating big data and computational algorithms into daily urban life, leading to a surge in digital twin research. Digital twins, virtual replicas of physical urban spaces, analyze and simulate urban phenomena using real-time data from sensors and cameras. UAI processes this data to predict or simulate urban element responses, optimizing urban operations. UAI, coupled with immersive technologies like virtual reality (VR) and augmented reality (AR), helps visualize how urban planning and infrastructure design impact the city, reflecting community perspectives and needs. Collaboration among disciplines and stakeholders is crucial for addressing complex urban issues. UAI can bridge gaps between design, social, and engineering sciences through citizen science, community-based, and participatory research. It transforms urban planning by automating tasks, allowing planners to focus on creativity and efficiently evaluate design options. UAI enhances understanding of urban conditions and boosts resilience. However, UAI must be used ethically to avoid widening socioeconomic disparities. It should promote knowledge co-production, involving diverse stakeholders in research design and implementation. This builds trust and ensures decisions reflect community needs. In data-scarce areas, UAI can augment data with public datasets or citizen science. UAI's effectiveness hinges on unbiased training data and algorithms to avoid unfair outcomes. Biases in training data and algorithms can lead to discriminatory results, impacting individuals and society. Planners should use representative data, document training processes transparently, and assess AI functions regularly to mitigate bias. Transparency in data sources and algorithms is crucial, along with awareness of data ethics in data collection, management, and use. Consent and responsible data use are paramount. AI methods should respect and protect individual privacy by de-identifying data and implementing access controls and data protection measures. While UAI innovations can be reproducible, they must be customized to fit each community's unique needs, values, and characteristics. In essence, UAI represents a collaborative effort spanning various disciplines and stakeholders, facilitating the urban shift from automation to autonomy. This transition involves responsibly and transparently applying AI to address urban challenges and mitigate bias risks. Ethical considerations are paramount, ensuring UAI's relevance and impact for researchers, policymakers, and communities. By uniting experts from diverse fields and involving local stakeholders, UAI can enhance urban and regional sustainability, equity, and resilience. Identifying inclusive interventions in a timely manner can improve urban service efficiency. UAI has the potential to drive a cohesive

scientific and policy agenda, fostering partnerships among academia, stakeholders, and industries to create equitable and sustainable smart cities, provided it is used ethically and responsibly.

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Key Words: Urban Artificial Intelligence, Digital Twins, Convergent Urban Research, Ethical AI in Urban Contexts, Urban Resilience

USING MACHINE LEARNING TO SCRUTINIZE NONLINEAR RELATIONSHIPS

Abstract ID: 1109.0.0.62.2024
Roundtable Submission

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In urban planning, data are often generated through an unknow and complex process. Two types of modeling approaches have been used to examine the relationship between variables (Breiman 2001). First, data modeling assumes that data are generated through a causal pathway with a known distribution, and then a statistical model (such as a generalized linear model) is selected based on the distribution. However, if this underlying assumption is wrong, the results produced by traditional statistical models are likely to yield flawed conclusions and irrelevant theories. Recently, algorithmic modeling (including machine learning approaches) has emerged as a powerful alternative to data modeling (Cao and Tao 2023). Instead of making a distribution assumption, it explores multiple functions and finds the best performing one.

One benefit of machine learning applications is to uncover nonlinear relationships between variables (Chen, Jiao,

and Farahi 2023, Sajjad Abdollahpour et al. 2024, Hu et al. 2023, Fan et al. 2022). Previous studies show that nonlinear relationships are prevalent in urban planning research, and that the patterns of nonlinearity vary by variable. The irregular nonlinearity renders traditional nonlinear models inefficient. Furthermore, some recent findings have challenged the conventional understanding and provided nuanced implications for planning practice.

As the number of machine learning applications has proliferated, it is time to summarize the progress that has been made and to consider future development of this niche area. In this roundtable, five scholars will discuss the pros and cons of different approaches in addressing the irregular nonlinearity, novel findings compared to traditional methods, planning implications of the new findings, and caveats related to the recent development. We expect that this roundtable will enable planning scholars to have a better understanding of the nonlinear issue and adopt machine learning approaches in their research.

Citations:

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Key Words: Nonlinear association, threshold effect, machine learning, urban planning, travel behavior

Track 13 Individual Paper Presentations

A GIS MODEL WITH COMPARATIVE APPROACH FOR LIVING SHORELINE IN DELAWARE

Abstract ID: 1108.0.0.1165.2024

Individual Paper Presentation

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Until the mid-2000s, shoreline hardening was a common method for coastal protection against erosion and sea-level rise. However, a shift towards natural and resilient approaches such as Nature-based Solutions (NBS), Marsh Vegetation (MV), and Living Shorelines (LS) has since been observed. Shoreline hardening methods have adverse effects on the coastal environment, including disrupting the connection between upland and water interfaces, worsening coastal erosion, and harming habitats. In contrast, natural approaches like LS offer numerous benefits, including improved water quality, biodiversity maintenance, and effective wave and storm energy absorption. These natural approaches also provide a natural uninterrupted connection between upland and water, effective erosion control, low-cost maintenance, and enhanced aesthetics and recreation, and are considered effective in low-energy environments.

This study develops a GIS shoreline suitability model to evaluate the shoreline segments that are suitable for shellfish-based living shorelines in the Delaware coast, DE. The GIS shoreline suitability model in ArcGIS Pro 3.2 utilizes a comparative approach based on the rule of possibilities and probabilities through Fuzzy multi-criteria Overlay (FMCO) and Weighted Linear Combination (WLC) methods respectively. A total of 11 model parameters were input in the model including 4 physical variables (slope, storm surge, presence of critical structures, shoreline sensitivity), 6 ecological variables (presence of high and low marsh vegetation, wetlands, tree canopy, Delaware ecological networks, oyster suitability for temperature, salinity, dissolved oxygen and temperature), and 1 social variable (social vulnerability index {DelDOT Equity Focus Area}). The spatial resolution of 30x30 m was used to spatialize all model parameters on a single scale with a uniform “NAD 1983 (2011) StatePlane Delaware FIPS 0700 (Meters)” projected system.

AHP (Analytic Hierarchy Process) and FAHP (Fuzzy Analytic Hierarchy Process) were used to compute the weights of the model parameters. AHP is used to assess the relative importance or priority of the model parameters through the eigenvector matrix method whereas FAHP extends AHP by incorporating the representation of uncertainty in the pairwise comparisons through fuzzy numbers instead of precise values. The process of “defuzzification” was applied later to convert to crisp weights. The concepts, methods, and execution of the two model methods were compared along with the final model output. Model validation was also computed through a confusion matrix in ArcGIS Pro 3.2 to assess the models' overall accuracy and performance along with selected segments analysis.

WLC is a simpler method that combines model parameters using weighted sums following a linear approach of probabilities. In contrast, FMCO relies on a more complex fuzzy membership and fuzzy overlay approach of possibilities. Though WLC is a straightforward spatial analysis tool to implement and interpret, it may not capture complex interactions between criteria or uncertainties (classification and measurement of phenomenon) in the decision-making process compared to FMCO. Hence, by incorporating a comparative approach based on two relatively different suitability spatial analysis methods, this study aims to generate model outcomes that can be compared and adopted based on their accuracy, performance, and conceptual approach to visualize distinct classification types. These outcomes will facilitate the decision-making process and allow for an evaluation of the merits, demerits, and overall accuracy and performance of classification provided by each method.

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Keywords: Shoreline Suitability Analysis, Living Shorelines & Nature-Based Solutions, Fuzzy-multi-criteria Overlay (FMCO), Weighted Linear Combination (WLC), AHP & FAHP

A SETTLEMENT-BASED APPROACH TO CONSTRUCTING TOWN-VILLAGE COMMUTING NETWORK

Abstract ID: 1108.0.0.108.2024
Individual Paper Presentation

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Constructing the commuting network between towns and villages can help us better understand the characteristics of the new urban-rural relationship and its evolution law. The significant improvement in the precision and accuracy of geospatial big data, such as cell phone signaling data , has effectively promotes the network research between towns and villages. However, the traditional approach of network construction, which relies on administrative divisions as network nodes, lacks objectivity and authenticity in representing town-village commuting networks due to its inherent top-down hierarchical structure. This limits us to understand the complexity of current urban-rural relationship evolution. Therefore, we attempt to jump out of the administrative boundary unit and integrate multi-source geospatial big data to construct the network, including settlement footprints, POI distribution, and street network distribution.The Highly accurate settlement footprints datasets is identified by deep learning. We use a novel quantitative approach to constructing the complex network: firstly,by integrating the above three datasets, we compute and get the raster data of the settlement developing index(SDI), and then finding the relatively high value area based on Locally Decaying Model (LDM) for SDI data to determine the nodes of the commuting network. In this step,we use LDM to identify different weights and types of the areas ,and then transform these areas into weighted nodes.Finally we construct the edges between nodes based on cell phone signaling data.In this step, we construct weight-based Tyson polygons centred on the nodes in the previous step to ensure that the coordinates of each mobile phone signalling data can be accurately located to the corresponding nodes.The constructed commuting network of town-village in Shanghai metropolis shows that: There are a total of eleven communities in Shanghai Metropolis that have a high geospatial correlation in their commuting interactions, and in further analyses, we argue that there are four different spatial patterns of town and village commuting in these eleven communities.Besides,we also prove that the administrative boundaries of towns and villages have low constraints on their commuting interaction; the commuting relationship between small towns and villages has broken the administrative system hierarchical structure and somehow presenting a network-like

flat relationship. The proposed approach make sure the completeness and diversity of the nodes in this complex network, rather than being divided or limited by administrative boundaries. The network based on geospatial big data ,not only reflects the accurate and objective commuting interaction between towns and villages, but also provides guidelines for urban-rural integration development from a bottom-up perspective.

Citations:

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Keywords: commuting network, town-village commuting, settlement footprints, complex network analysis, geospatial big data

A SPATIALLY EXPLICIT GNN FOR URBAN FUNCTION PREDICTION USING POI & RS DATA

Abstract ID: 1108.0.0.909.2024
Individual Paper Presentation

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This study aims to improve the efficiency of urban function mapping. Urban function distribution refers to the spatial allocation and configuration of both land use types and functional places. Currently, planning researchers primarily rely on land use and zoning maps to understand urban function distribution. However, standardizing and maintaining land use and zoning databases across jurisdictions require intensive human labor as zoning codes are specific to each jurisdiction. Therefore, it is challenging for all jurisdictions to update land use maps simultaneously. This limits planning researchers to obtaining the up-to-date urban function distribution across different study areas in the same zoning code for urban function distribution comparison. Moreover, there is always a difference between the land use map and the status quo caused by urban expansion, urban redevelopment, and rezoning. With the advancement of geospatial artificial intelligence models, planning researchers may use other frequently updated data sources to estimate urban functions for downstream urban applications such as sustainable land use planning. This study proposes a spatially explicit graph neural network (GNN) architecture that uses up-to-date

points of interest (POIs) data and remote sensing images to estimate urban function distribution. POI data is a point dataset obtained from Google Maps for functional places such as restaurants, hotels, and banks. The remote sensing data is the PlanetScope land observation images obtained with an approximate spatial resolution of 3m. The urban function classification is treated as a graph node classification problem. Each POI represents a node in the graph and POIs are linked to nearby POIs. For each node, the POI information and the colocated remote sensing data will be jointly used for land use and function prediction. The GNN uses the graph convolutional kernel that allows the model to learn the geographical context. This GNN is also flexible for cross-scale aggregation and allows model transferability to different study areas. To make the GNN model spatially explicit, both POI feature information, as well as its location information, are jointly considered by using a feature encoder and a location encoder. The city of Atlanta is used as the study area for model training, and the city of Seattle is identified as another study area for model transferability testing. This product of this study will allow planning researchers to 1) compare urban function distribution across different study areas in a standardized way, 2) compare urban function distribution across spatial scales, and 3) compare the land use map with the status quo of urban function distribution.

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Keywords: Urban function mapping, Graph neural network, Points of interest, Remote sensing

ANALYZING STREET QUALITY: NONLINEAR IMPACT OF BUILT ENVIRONMENT FACTORS

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Individual Paper Presentation

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Streets serve as critical spatial carriers of urban life. The quality of street spaces directly influences urban vitality, thereby engendering multiple socio-economic impacts.

However, due to its abstract nature, measuring spatial quality precisely can be challenging. Previous studies on street quality have largely focused on visual quality, lacking comprehensive measurements. Additionally, the exploration of the mechanisms and threshold effects of built environment factors on quality has not been deeply investigated. It is difficult to answer precise questions such as 'which built environment factors affect spatial quality to what extent.'

This study firstly establishes a comprehensive evaluation system for street space quality. By integrating various fine-grained built environment data and crowd behavior data, we conduct a comprehensive quality assessment of streets within the central area of Shanghai. Next, the study constructs a gradient boosting tree regression model to explore the complex nonlinear relationships between built environment factors and spatial quality. The measurement results highly correlate with positive examples in the Shanghai Street Design Guidelines, demonstrating the credibility of the comprehensive measurement system.

The study analyzes the model using machine learning interpretability techniques, including SHAP and ALE. Which enables the evaluation of the significance of various built environment factors on spatial quality, as well as the explanation of threshold effects. The result shows that factors such as green view ratio and road accessibility have significant positive impacts on spatial quality, while block size and sky view ratio have significant negative impacts. It is worth noting that built environment factors such as road density, building density, and sidewalk ratio demonstrate intricate nonlinear relationships with spatial quality. Threshold effects result in their positive impacts only existing within specific ranges.

The study introduces a new paradigm for urban analysis by integrating multi-sourced urban data and machine learning. The research results offer a deeper theoretical understanding of street quality, also providing support for more precise urban design practices.

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Keywords: street space quality, built environment factors, multi-sourced urban data, machine learning

ANALYZING VULNERABILITY AND RESILIENCE IN THE 2021 TEXAS WINTER STORM

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Individual Paper Presentation

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Urban areas are increasingly vulnerable to the damaging effects of climate change. The 2021 Texas winter storm highlights how the rise of climate change amplifies the incidence and magnitude of unprecedented weather conditions (Zhang et al., 2019; Chen et al., 2020). Extreme weather events (EWEs) are expected to continue to escalate, posing significant threats to human well-being due to their high uncertainty, massive scale, irreversibility, and destructiveness. These events can affect human mobility, extending beyond physical damage. Simultaneously, social equity is a crucial aspect of disaster management that necessitates attention to achieve efficient relief and recovery (Chen et al., 2023). By measuring how people's behaviors (before, during and after the disruptive events) differs based on their socio-economic background, we can reveal the heterogeneity in their responses, which is essential for planning and policymaking.

Despite previous efforts, limited research has been conducted on the impact of climate change-induced weather events on disparities in human mobility, raising critical questions, such as: (1) what is the variability in behavior and mobility patterns in response to the winter storm? and how does this vary spatially and temporally throughout the disruption? (2) What are the disparities in human mobility among different socioeconomic groups, including varying races/ethnicities, income levels, and other characteristics, and how can these be quantified? (3) How can resilience metrics be quantified and assessed by predicting changes in human flows?

This study aims to empirically assess the impact of climate change-induced weather events on disparities in human mobility, forecast the variation in human mobility patterns over time using the deep learning framework, and establish quantitative metrics to measure resilience. Specifically, the study examines the severe winter storm Harris, Texas, experienced in February 2021 and utilizes SafeGraph Data and American Community Survey data. First, the study analyzes the spatiotemporal heterogeneity in human mobility patterns during climate change-induced weather events, which provides insights into the inherent relationships and regularities between the impact of disruptions and human behavior. Secondly, the study introduces a vulnerability index, examining and quantifying human behavior disparities among different socioeconomic groups, including races/ethnicities, income levels, and other characteristics. This analysis highlights population group inequalities, pinpointing those more susceptible to vulnerabilities. Finally, the deep learning framework facilitates the prediction of temporal variations in human mobility, allowing for the computation of recovery duration and the assessment of resilience.

Our results demonstrate significant differences in mobility patterns among various social groups during the Texas Winterstorm Disaster, particularly with low-income and minority communities showing higher vulnerability. Furthermore, we explored the effectiveness of different deep learning models, namely Long Short-Term Memory (LSTM), Bidirectional Long Short-Term Memory (BiLSTM), and Convolutional Neural Network (CNN), within a framework designed to predict human movement in disaster scenarios. Our analysis primarily focused on comparing the models' abilities to handle temporal sequences, a critical factor in accurately forecasting human flow dynamics during emergencies.

The findings can inform more resilient infrastructure development, effective evacuation strategies, and equitable resource distribution, especially in areas prone to natural disasters. The insights gained from this study can inform planning and policy-making decisions for hazard mitigation and emergency response efforts, promoting more sustainable, resilient, and equitable communities for future climate events.

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Keywords: Climate Change, Extreme Weather Events, Human Mobility, Vulnerability, Resilience

ASSESSING PEDESTRIAN STRESS THROUGH BIOMETRIC SENSING

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Individual Paper Presentation

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Walking is a healthy and sustainable travel mode and many jurisdictions have integrated walkability into major urban development goals. In the United States, the adoption rate of walking is low, accounting for only 10.5% of daily trips (NHTS, 2017). Understanding what makes people comfortable to¬¬ walk and enhancing a low-stress walking environment is essential to promote walking.

Surveys and interviews are the common instruments to gather data on individuals' perceived stress levels. However, these methods are prone to biases, such as response bias, recall issues, among other constraints. Consequently, there is a growing interest in using biosensors as a method to capture perceived travel stress continuously and objectively. Furthermore, applying multiple biometric sensors, that monitor pedestrians' physiological and/or physical responses through different mechanisms, provides the opportunity to enhance the depth of our understanding of stress. This multimodal approach also bolsters the triangulation capabilities of biosensor data. While the existing literature has discussed strategies of the selection and analysis of biosensor metrics, it has seldom investigated the integration of multiple biosensors to evaluate the reliability and validity of the resultant biometric measurements.

This study aims to examine the efficacy of various metrics generated from three distinct biometric sensors in quantifying pedestrian stress, in comparison to data obtained from stated preference surveys. For this purpose, a cohort of thirty participants were recruited to walk along a 1.2-mile route on the Rutgers New Brunswick campus. The route covers six road segments with varying built environment features, including pedestrian-only blocks, traffic-heavy blocks, quiet residential blocks, unsignalized intersections, and greenery. During the field experiment, each participant was asked to wear three biosensors: eye-tracking glasses (Tobii Pro Glasses 3), a finger-worn

electrodermal sensor (Shimmer 3+), and a wrist-worn heart rate sensor (Garmin 955). After the field experiment, participants completed a survey to rate their walking experiences and comment on events of stress. These self-reported ratings were used as the "golden standard" to evaluate biometrics measurements. Collected survey comments and eye-tracking videos were used to validate biometrics recordings during moments of stress.

Based on an extended review of sensor measurements applied in the existing literature, we selected the following measurements as proxies of stress: five general gaze variables, including mean fixation duration and measurements of fixation dispersion; nine Heart Rate Variability (HRV) variables, including time-domain, frequency-domain, and non-linear measurements; and six Electrodermal Activities (EDA) variables, such as max phasic values and number of EDA peaks per minute. For inter-subject comparison, each variable is standardized by participant. We tested correlations between sensor measurements and built statistical models on survey ratings and sensor measurements. Our results show that HRV and EDA data are sensitive to physical movements and entails manual labeling to identify stress events. Standardized mean fixation duration is a significant and reliable variable correlated to survey risk ratings. We discuss the characteristics and the underpinning bio-physiological mechanism of each stress-identifying approach and recommend directions for future research.

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Keywords: pedestrian, stress, eye tracking, heart rate variability, electrodermal activity

ASSESSING THE IMPACTS OF INCORPORATING A SPATIAL TERM IN RANDOM FORESTS

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Individual Paper Presentation

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Parallel to advancements in computation technology and data availability, Machine Learning (ML) and Artificial Intelligence (AI) methods have recently gained attention across disciplines. These methods perform accurate

predictions due to their ability to extract complex patterns in data. ML and AI methods have been recently used in geographical studies, such as land use and land cover (LULC) change modeling (Kim et al., 2022; Soares-Filho et al., 2013; Talukdar et al., 2021; Tepe & Safikhani, 2023; Zhai et al., 2020), mapping infectious disease (Brownstein et al., 2008), predicting traffic movements (Boukerche & Wang, 2020; Zhang & Haghani, 2015). Working with spatially referenced data sets provides rich information about location and complex spatial dynamics while introducing particular methodological challenges.

Spatial autocorrelation is a typical data structure in many academic fields working with spatially-referenced data, such as urban and regional planning, regional science, environmental science, geography, and economy. In the presence of spatial autocorrelation in data, an observation depends on the value of its neighboring units, and such dynamic relationships violate the statistical independence of observations (LeSage & Pace, 2009). Therefore, controlling spatial autocorrelation is necessary for statistical modeling, and there are well-established methods to account for spatial autocorrelation in the existing statistical methods. ML methods provide opportunities to account for complex non-linear relationships. However, many of these methods require splitting the data into training and test data sets for validation purposes. Random selection is commonly used to ensure independence between training and test sets. However, this approach does not guarantee independence. Cross-validation (CV) methods applied to dependent sets can inflate the overall model estimation power. Alternatively, spatial CV methods are introduced to achieve the true model performance (Meyer et al., 2019; Ploton et al., 2020; Pohjankukka et al., 2017). However, methodological approaches to account for spatial autocorrelations using ML methods and their impacts on the true performance of ML algorithms should be further investigated.

In this paper, we explore the use of a spatial lag term in ML models to address spatial autocorrelation in data and improve the accuracy of ML algorithms. We applied a random forests (RF)-based hedonic pricing (HP) model to the Miami-Dade single-family residential (SFR) parcel sales data to evaluate its performance. ML models are evaluated using K-fold, blocking K-fold, and spatial leave-one-out CV methods. The data set contains the most recent sales on SFR parcels with a set of building- and site-specific variables. There are 354,952 valid sale records in the county's dataset. The earliest sale was in 1900, and the most recent sale occurred in 2020. In constructing spatial weight matrices, neighboring counties' (Broward, Collier, and Monroe) recent SFR house sales are also included to ensure parcels near the Miami-Dade County boundary have recent sale information of neighbors located beyond the county limits. The goodness-of-fit of the developed RF-based HP model is evaluated using coefficient of determination (R2) and mean square error (MSE) scores. Spatial autocorrelation patterns in RF residuals are also investigated using Moran’s I test. Our research indicates that failing to account for spatial autocorrelation in data can lead to unreliable and overly optimistic estimates. However, including a spatially lagged variable substantially reduces fluctuations in goodness-of-fit measures across different validation sets.

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Keywords: Two-stage least squares random forests, Moran's I test, Hedonic price modeling, Blocking K-fold, Spatial leave-one-out

ASSESSING THE POTENTIAL OF LLMS IN PLANNING: A CASE STUDY ON THE AICP EXAM

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Individual Paper Presentation

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The rapid advancements in Large Language Models (LLMs) like ChatGPT have sparked discussions about their potential applications in various professional fields, including urban planning (1). This paper investigates the capabilities of ChatGPT in the context of the American Institute of Certified Planners (AICP) certification exam, a rigorous assessment of domain-specific knowledge in urban planning (2). By evaluating ChatGPT's performance on the AICP exam and analyzing its strengths and weaknesses, we aim to shed light on the potential role of LLMs in urban planning education and professional practice.

The study employs a mixed-methods approach, combining quantitative metrics to assess ChatGPT's performance on the AICP exam with qualitative analyses of its responses to specific questions. We discuss the implications of our findings for the integration of AI tools in urban planning and the balance between domain-specific knowledge and general cognitive abilities in the effectiveness of LLMs.

Our research contributes to the growing body of literature on the applications of AI in professional settings and provides insights into the opportunities and challenges associated with the use of LLMs in urban planning (3). We argue that understanding the capabilities and limitations of models like ChatGPT is crucial for harnessing their potential to support decision-making, policy development, and education in the field. The paper concludes with recommendations for future research and development of domain-specific LLMs in urban planning and beyond.

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Keywords: Artificial intelligence (AI), Large language models (LLMs), AICP exam

BIG DATA ANALYSIS OF BIO-INSPIRED URBAN FORM IN QINBA'S SMALL TOWNS

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Individual Paper Presentation

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In this study , we utilized big data analytical approaches to conduct an in-depth exploration of the morphology of 89 small towns in the Qinba Mountains region of Southern Shaanxi. By applying methodologies inspired by biological cell morphometric analysis(Yu et al. 2013, Losa 2002, Lobo et al. 2016), we aim to gain a deeper insight into the complexities involved in measuring urban forms. The morphological features of these towns can be precisely quantified using 6 overarching indicators - dimensions, shape, spatial distribution, intensity, connectivity, and diversity - and their 15 sub-indicators(Fleischmann and Arribas-Bel 2022). This meticulous analysis enabled us to gain a comprehensive understanding of the spatial and functional configurations of small towns in this area . we employed advanced deep learning techniques and big data analysis methods, especially utilizing the U-Net3+ network model to precisely extract the architectural footprints of small towns in the Qinba Mountain area of southern Shaanxi from remote sensing data(Qin et al. 2022). The U-Net3+ network is widely applied in urban morphology analysis due to its excellent performance in image segmentation. By calculating urban morphology indicators through Python programming, we were able to quantify the morphological characteristics of cities on a large scale. This study also particularly focuses on the coupling relationship between small towns and rivers, as well as the impact of small watersheds on town morphology. Rivers are not only an important part of the natural terrain but also a crucial consideration in urban development and planning. The interactive relationship between rivers and towns reveals the impact of water bodies on urban form, expansion, and spatial layout, especially in mountainous small towns where rivers become natural boundaries and ecological corridors, playing a key role in maintaining ecological balance and promoting sustainable development. Using hierarchical clustering to analyze architectural form indicators, we unveiled the spatial and structural nuances of small towns. Further, we employed Grasshopper, a Rhino-based visual programming tool, to refine town planning efforts. The use of Grasshopper's C# scripting for plan adjustments enabled rapid urban design developments, crucial for harmonizing town-river relations and preserving areas of ecological significance(Naboni et al. 2019). In summary, this study innovatively, from the research perspective of biological cell morphology, through the comprehensive application of deep learning, hierarchical clustering, Python programming, and parametric design tools, conducted an in-depth analysis and study of the morphological characteristics of small towns in the Qinba Mountain area of southern Shaanxi, while exploring the complexity of the coupling relationship between small towns and rivers, providing a scientific basis and new perspectives for the planning and design of small towns and the protection of the ecological environment.

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Keywords: Urban morphology, Big data analytics, Small towns, Parametric design, Sustainable development

BRIDGING THE GAP: QUALITATIVE CODING, NLP, LLMS TO DISSECT PUBLIC COMMENTS

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Individual Paper Presentation

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Planners routinely engage with an extensive set of textual material, from comprehensive plans to written public feedback submitted about various planning initiatives. Planning agencies dedicate significant staff time and resources to sifting through and interpreting these often lengthy materials (Brinkley & Stahmer 2021). As new data processing techniques have emerged, previous research has examined how to leverage natural language processing (NLP) techniques to understand Plan quality and content (Brinkley & Stahmer 2021; Fu, Li & Zhai 2023). The recent emergence of large language models (LLMs), which use deep learning techniques to understand and generate textual data, presents new opportunities to consider how to leverage LLMs in an urban planning context. Indeed, an emerging body of scholarship has started to examine how to use LLMs, such as ChatGPT, to evaluate Plans (Fu, Wang & Li 2023) and public comments (Fu et al. 2024). However, minimal research has explored how these tools could be incorporated into planners' daily workflows and how they compare to traditional methods of analyzing and interpreting textual data.

Seeking to fill part of this gap in the literature, this research investigates how leveraging LLMs to understand public comments performs against previous techniques for processing textual data including human coding and NLP techniques. Specifically, we ask: How can LLMs assist planners in understanding sentiment and identifying topics contained in public comment data? And how do planners envision incorporating LLMs into their daily workflows? To answer these research questions, we leverage public comments submitted about the Minneapolis 2040 Plan, a jurisdiction-wide upzoning enabling triplexes to be built citywide in 2018 (Davis, Rong & Huennekens 2023). Using conventional content analysis techniques, we first qualitatively coded public comments about the Plan, identifying each comment's sentiment along a gradient of support or opposition, and then manually identified the main topics in the public comment corpus. Using NLP techniques, we then conducted text classification using artificial neural networks (ANN) and conducted Latent Dirichlet Allocation (LDA) to compare our results against the qualitative coding. We then use OpenAI's GPT4 to perform sentiment analysis and topic modeling and provide recommendations using a variety of prompt engineering techniques. We evaluated the performance of these three methods along various dimensions using a custom rubric, including accuracy, convergence and divergence, efficiency and scalability, interpretability and descriptiveness, and actionable recommendations. Last, we conducted semi-structured, in-depth interviews with practicing planners from both the private sector and public

sector to understand the utility of incorporating LLMs into planners' current workflows for processing and interpreting public comment data.

We find that LLMs offer some improvements over traditional NLP techniques, saving planners time and resources, enhancing interpretability, offering action-oriented solutions to planning challenges, and representing a lower barrier to entry compared to NLP techniques. However, we find that human qualitative coding still provides value, picking up on more fine-grained insights than those identified using the LLM. We also identify the specific ways that planners envision engaging with LLMs, providing insight for planners interested in making use of these evolving technologies.

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Keywords: Large Language Models (LLMs), Natural Language Processing (NLP), ChatGPT, Upzoning, Public Participation

BRIDGING THE SUBJECTIVE AND OBJECTIVE PERCEPTION IN STREET: A CASE OF PAIPA

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Individual Paper Presentation

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Background: Street view images (SVI) have become an important source to estimate urban visual features and human perception (Biljecki and Ito, 2021). When combined with merging technologies like computer vision (CV), SVI have shown great explanatory capability in terms of objective features analysis and subjective perception assessment. However, few researches were conducted to explore the intrinsic relations between subjective and objective connotations, especially in Global South where more irregularity in the formal character of the space(Yu et al., 2024). This research focuses on the following two questions. How does the objective visual composition of street space affect subjective human emotional perceptions? The suitability of small towns in developing regions for a data- and technology-driven spatial quality research paradigm?

Method: To assess the impact of objective visual compositions of street space on subjective human emotional perceptions, this study adopts a comprehensive methodology integrating both computer vision techniques and subjective perception analysis. Firstly, we employ Google Street View images from Paipa, Colombia, as our primary dataset for analysis. Subjective perceptions of these images are evaluated using a deep convolutional neural network (DCNN), specifically ResNet50 pre-trained on the Places2 database(Zhang et al., 2018), to tag images with perceptual words such as "safe," "beautiful," "depressing," "lively," "wealthy," and "boring." This approach allows for the modeling and prediction of human perceptions based on visual features. Objective features of the street views are then extracted through semantic segmentation using a ResNet18dilated + PPM_deepsup model trained on the MIT ADE20K dataset, segmenting images into identifiable fractions like roads, trees, and buildings, among others. This process classifies pixels within each street view image into 38 selected categories grouped into 13 street view features. Lastly, the study utilizes Pearson correlation coefficients to establish a matrix that correlates survey scores of subjective perceptions with the statistics of visual features extracted, enabling a nuanced understanding of how objective urban spaces influence human emotions and perceptions.

Results: The study revealed that the SVM model effectively tagged Street View Images (SVI) with subjective perceptions, showing high accuracy in both global and Paipa datasets, highlighting its applicability in the Global South. In Paipa, spaces perceived positively were notably scarce, indicating a lower quality of the built environment. Correlation analysis showed significant relationships between certain visual features and perception indicators: well-defined pedestrian facilities positively influenced all aspects of public open spaces except environmental quality, whereas areas perceived as mountains were associated with lower quality, except environmentally. Features like streetlights, seating, and buildings positively correlated with accessibility, amenities, safety, comfort, and usage, underscoring the importance of physical infrastructure in shaping perceptions of urban quality, particularly in developing regions' small towns.

Contribution: This study significantly advances the understanding of the interplay between the objective visual composition of urban environments and subjective human emotional perceptions, particularly within small towns in developing regions. By harnessing Google Street View images and deploying advanced deep learning techniques, it offers a pioneering methodological framework that blends subjective emotional responses with objective spatial features. This contribution is also crucial for understanding the unique challenges and opportunities of urban spaces in the Global South, offering a pathway for more inclusive and diverse urban studies research.

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Keywords: Human Perception, Street View Images, Comupter Vision, Deep Learning, Semantic Segmantation

CAMERA DATA AND DEEP LEARNING METHODS FOR URBAN VIBRANCY ANALYSIS

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Individual Paper Presentation

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This study introduces a new approach to evaluate and improve urban vibrancy through the examination of human interactions within urban street environments. Recognizing the limitations of traditional pedestrian traffic counts as indicators of urban vibrancy, which often overlook the essence of activities people engage in, we shift our focus to human interactions. The proposed methodology involves a two-step framework that utilizes camera data to detect when and where interactions occur. First, the process tracks the trajectory of each person appearing in camera video frames. Subsequently, a binary classification system is employed to assess each pair of trajectories on whether there is any communication between them. For this purpose, a customized 3-stream deep learning model with ResNet as backbone is developed and trained, which has proven effective with a validation accuracy of 87%. In addition, these technologies are integrated into a user-friendly graphical user interface (GUI) designed for intuitive human-computer interaction. This interface not only automates the analytical process but also permits manual corrections, thus combining efficiency with accuracy. To assess the practical impact of our approach, an empirical study was conducted in a traditional street within residential area in Shanghai, close to Tongji University. The university has taken some urban intervention measures to revitalize underused retails spaces by introducing innovative projects, such as various labs and events. Video data were collected by surveillance cameras along the street. The data analysis process respects privacy concerns by not using personal information. Pedestrian flow and density of human interactions were derived to measure the vibrancy of the urban street before and after the implementation of urban interventions. The findings of this study reveal a significant increase in the density of interactions post-intervention, contrasting with the low levels of engagement observed beforehand. This suggests that the interventions have successfully enhanced the area's vibrancy. By shifting the focus from mere pedestrian flow to human interactions, this research offers a new perspective on evaluating and fostering urban vibrancy.

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Keywords: urban vibrancy, human interactions, camera data, deep learning

CARBON METABOLISM-URBAN FORM CLASSIFICATION BY DEEP LEARNING TECHNIQUES

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Individual Paper Presentation

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Cities stand at the forefront of greenhouse gas emissions while also harboring significant potential for reducing these emissions. To achieve global carbon neutrality, a comprehensive transformation of urban sectors is crucial. In this context, urban planning is evolving to emphasize the role of sustainable urban designs in lowering emissions.

However, existing research often misses out on the functional dimensions of cities, concentrating instead on their structural attributes. The concept of urban metabolism, which examines the flow of materials and energy within urban settings, offers a lens to explore cities' functional aspects such as population dynamics, transportation systems, energy use, traffic flows, and the cycle of resources and waste.

This study proposes the development of a novel classification system that captures both the physical and functional characteristics of urban environments, building upon the Local Climate Zone (LCZ) framework introduced by Stewart and Oke. Focusing on the Seoul Metropolitan Area in South Korea, we aim to employ Artificial Neural Networks (ANNs) — a deep learning method renowned for its classification prowess — to dissect urban forms by assessing the interplay of urban metabolism features within a spatial grid of 1km x 1km (or 500m x 500m).

In a preliminary phase, we undertook a clustering analysis to evaluate two models: one predicated on physical characteristics alone, and the other incorporating elements of urban metabolism, notably Electricity Energy Use Intensity (EUI) per area. The analysis encompassed features like Floor Area Ratio (FAR), Coverage Ratio (CR), building height, and age. Through dimensionality reduction via PCA and cluster optimization with the elbow method, six clusters emerged as optimal for both models. An analysis of 46,396 plots revealed shifts in urban form classification for 2,803 plots when EUI was factored in, particularly affecting plots with low CR and FAR under 300%. This adjustment indicates a pronounced link between low-density horizontal expansion and EUI, spotlighting EUI as a pivotal classification parameter in these scenarios. On the contrary, urban forms characterized by tall structures and high FAR exhibited negligible classification shifts when factoring in EUI, suggesting a minor impact.

These insights underline the criticality of integrating urban metabolism attributes into the classification of urban forms, with a special emphasis on EUI's influence in areas of low-density horizontal expansion. Such an approach underscores the imperative for urban planning and management to factor in these dimensions for fostering more sustainable urban development. Moving forward, we intend to refine our analysis and classify urban forms using AI techniques, incorporating variables related to urban metabolism like energy, socio-economics, and transportation, thereby offering deeper insights into achieving carbon neutrality.

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Keywords: Urban form, Carbon metabolism, Deep learning, Classification, Spatial analysis

CLASSIFICATION AND CONTRIBUTION TRACING OF SUBWAY CONGESTION

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Individual Paper Presentation

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Introduction

With the rapid growth of passenger flow demand, peak passenger congestion has become a prominent problem faced by urban rail transit in large cities. The most widely adopted traffic demand management measure is entry flow restriction, but this method has obvious limitations, as whether passengers can board after entering the station actually depends on the remaining capacity in the carriage, which is determined by other passengers passing along the way. Therefore, this paper proposes a perspective of understanding and alleviating congestion from the process of congestion formation.

Approach and Methodology

This study used the smart card data of Shanghai, China in September 2016.

First, a standard travel model of urban rail transit is constructed, and the congestion distribution in the subway network is identified according to the left-behind behavior. The left-behind behavior refers to the platform detention behavior of waiting passengers who have to wait for subsequent trains because they cannot board the first train due to the crowded carriage. The “Number of LB passengers & Average extra waiting time of LB passengers” index is defined to identify the congestion level of each station every 10 minutes of the rail transit network.

Then, the composition of passengers at each platform at different times is identified, and the congestion type is divided by k-means clustering. Congestion is not simply caused by the aggregation of entry passenger flow, but is

affected by the joint influence of entry, passing, and transfer types of passengers at the station. Clarifying the dominant type of passengers at the station can more accurately understand the cause of congestion.

Finally, trace back the passengers who make the greatest contribution to systemic congestion and their source and destination. The individual congestion contribution index is defined as: the number of highly congested platforms that passengers pass through in a complete trip. The total individual congestion contribution is calculated by the departure station and the arrival station to obtain the station congestion contribution.

Results

The peak congestion period of Shanghai's rail transit network is 8:00-8:10, with about 1.4 million people left behind during this period, and the average left-behind time is about 220s. The passing type of congestion is the main type of congestion in the whole network, the entry type of congestion is mainly the starting station and the station near the large residential area, and the transfer type of congestion mainly occurs in the city center. About 25% of the stations made 75% of the congestion contribution to the whole network. The core departure congestion contribution stations are mostly stations near large residential areas in the suburbs, and the core arrival congestion contribution stations are mostly stations near concentrated employment areas in the city center and important transportation hub stations.

Discussion and Conclusion

Urban rail transit congestion has non-present causes of formation and complex conduction processes. Dividing congestion types, tracing back the source and destination of congestion, and calculating congestion contribution not only deepens the understanding of the causes of congestion, but also provides new ideas for alleviating congestion.

On the one hand, it can improve the efficiency and scientific nature of traditional congestion alleviation strategies, such as choosing high congestion contribution departure stations to implement entry flow restriction strategies; on the other hand, it can expand new demand management scenarios, such as implementing peak adjustment of working hours for high congestion contribution arrival stations near concentrated employment areas.

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Keywords: Urban Rail Transit Congestion, Spatio-Temporal Process Perspective, Left-behind Behavior, Congestion Type, Congestion Contribution

CLASSIFICATION OF URBAN PARKS THROUGH VISITATION PATTERNS USING MOBILE DATA

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Individual Paper Presentation

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Urban parks play a crucial role in enhancing the physical, mental, and environmental well-being of city dwellers, serving as fundamental components of green infrastructure planning. Urban park classifications, primarily based on their physical attributes such as size and location, often fail to account for the complex dynamics of park visitation patterns. This study proposed a novel approach to urban park classification using over 5.9 million records from approximately 330 thousand visitors across 300 Tokyo parks, comparing with size-based park categorizations. We employed a range of analytical tools, including principal component analysis, Isolation Forest algorithm, various clustering algorithms, and the Gini index.

Our findings first revealed four key visitation indicators, activity intensity, utilization efficiency, temporal occupancy, and revisit volume. These indicators uncovered parks with atypical visitation patterns within each size category, leading to three novel park classifications, everyday leisure parks, social destination parks, and seasonal activity parks. Everyday leisure parks exhibited consistent visitation throughout the year, with moderate activity intensity and high utilization efficiency. Social destination parks showed high activity intensity and revisit volume, particularly during weekends and holidays, suggesting their role as social gathering spaces. Seasonal activity parks displayed distinct seasonal visitation patterns, with high temporal occupancy during specific seasons.

Moreover, we discovered notable disparities in distances traveled to parks across both visitation-based and size-based park categories. The Gini coefficient and Lorenz curve analysis revealed varying levels of inequality in trip distances depending on park type and temporal factors. Seasonal activity parks exhibited the highest overall inequality, which peaked during nighttime, weekends, and holidays. Smaller parks, such as city block and neighborhood parks, also showed higher inequality, especially during holidays, while larger parks like national parks demonstrated less inequality in trip distances.

The proposed visitation-based classification system challenges the size-based categorization, offering a more nuanced understanding of urban park dynamics. By aligning park management strategies with observed visitor behaviors, urban planners and policymakers can optimize park offerings and enhance recreational experiences. The findings advocate for a targeted approach to park maintenance and amenity development, prioritizing improvements based on the specific needs of each park category. For instance, everyday leisure parks may benefit from the provision of diverse amenities catering to daily recreational activities, while social destination parks may require additional facilities to support social gatherings and events.

Furthermore, the insights into trip distance disparities underscore the importance of equitable park accessibility and distribution. The study highlights the need for urban planners to consider the spatial distribution of parks in relation to residential areas, ensuring that all communities have access to quality green spaces within a reasonable distance. The findings suggest that smaller parks and seasonal activity parks may require targeted interventions to

improve accessibility, such as enhancing public transportation networks or creating green corridors linking these parks to residential neighborhoods.

This research contributes to the advancement of urban park planning and management by demonstrating the value of data-driven approaches in uncovering intricate visitation dynamics. The novel classification system and analytical framework provide a foundation for future studies and policy initiatives aimed at creating more vibrant, inclusive, and sustainable urban park networks. By leveraging mobile phone data and spatiotemporal analytics, this study paves the way for evidence-based decision-making in urban park planning, ensuring that green infrastructure investments are strategically allocated to maximize their social, environmental, and health benefits for urban communities.

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Keywords: Urban parks, Mobile phone data, Visitation patterns, Clustering, Trip distance

COMPARING THE EFFECTIVENESS OF GOOGLE MAPS REVIEWS TO TRADITIONAL SURVEYS

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Individual Paper Presentation

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The advancement of technology has a significant impact on urban research methodologies, changing the landscape for both cities and their residents. This study leverages the rich data environment created by digital technologies, focusing on Google Maps Reviews for real-time public participation and comparison with traditional survey methods. It highlights the need for innovative approaches in urban planning that incorporate diverse data sources to gather comprehensive insights into public perceptions and visitor behaviors. Despite the rich data available, the

study acknowledges the limitations inherent in conventional survey methods, such as their intrusiveness, reactivity, oversimplification, inconsistency, and high labor and time costs (Cai, 2021).

Studies have demonstrated the utility of online platforms like Google Maps Reviews in capturing public opinions on urban services (Akkaya et al., 2024). The benefits and limitations of using Google Maps Reviews in urban planning are considered, suggesting the need for a holistic approach by combining social media analytics with traditional research methods to capture diverse urban space values and demands (Huang et al., 2022). The paper posits that blending traditional and digital data sources can lead to more responsive, inclusive, and innovative urban environments, concluding with the promise of technology and social media data integration in making cities more attuned to their residents' needs.

Focusing on four parks in Esenyurt, Istanbul, a district characterized by its dense population and diverse socioeconomic composition, the research compares a survey of 205 randomly selected residents to an analysis of 23,991 Google Maps Reviews. The study aims to harness technological advancements in information gathering to enhance urban planning and participatory processes, addressing the limitations of conventional surveys identified in the literature (Kitchin, 2019; Tang et al., 2023). Through analyzing feedback from digital and traditional sources, this research provides insights into factors influencing satisfaction with municipal services, such as parks. It also explores the potential biases and challenges of each method.

Key findings from the survey highlight amenities, open space, and safety as significant factors contributing to park satisfaction using statistical analysis. Leveraging machine learning techniques, we discerned a set of keywords, including "Syrian", "Great", "Stream", "Peace", and "Municipality" that notably influence ranking outcomes by reducing average impurity levels. Furthermore, the terms "Beautiful," "Person," "Syrian," "Full," and "Municipality" emerged as crucial due to their capacity to enhance model accuracy. Our comprehensive analysis of the twenty most impactful variables unveils the paramount significance of the "Beautiful" keyword in shaping ranking dynamics. The "Site" variable, which denotes the park under evaluation, stands out as the second most influential factor, closely followed by the prominence of the "Syrian" term. This refined analysis sheds light on the intricate ways in which specific keywords and attributes sway the hierarchical positioning of content, offering valuable insights into the algorithmic underpinnings of ranking systems. Concurrently, the analysis of Google Maps Reviews, utilizing the K-Means Clustering algorithm, identifies impactful keywords on user ratings, such as "Syrian," "great," "peace," and "crowded." The study found that certain amenities, such as picnic and sports facilities, safety, and open space, positively impact satisfaction levels. This was observed in both datasets studied. On the other hand, issues related to crime, overcrowding, and the presence of migrants were found to have a negative effect on user satisfaction.

Integrating digital data from social media platforms like Google Maps Reviews with traditional survey methods offers a novel approach to understanding public park experiences. This study demonstrates the value of combining diverse data sources to capture the complex dynamics of urban spaces and user satisfaction. Future research directions include longitudinal studies to track changes in user perceptions and expanding the scope to include comparative analyses of parks in different contexts. The integration of technology in urban planning presents an opportunity to create more inclusive, innovative, and user-centered cities.

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Keywords: Public participation, Google Maps Reviews, Survey study, Istanbul, K-Means Clustering

CONNECTIVITY FOR WHOM AND AT WHAT COST? A NETWORK DUALITY FRAMEWORK

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Individual Paper Presentation

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Our increasingly interconnected urban environment is characterized by networks of transportation and social infrastructure that facilitate movements and social connections. Yet, prevailing discourses on urban connectivity often fail to account for the complex and sometimes conflicting functions such infrastructure provides for different demographics and connection types. The assumption that increased connections inherently foster growth neglects the potential for network infrastructure to encode inequality and exclusion. For instance, barricaded highways, railways, and airports that support regional passengers can replace local social infrastructure and impose physical barriers to local mobility flows. Many urban development projects also assume that spatial integration (e.g., overhead highways to surface boulevards or new urban design that connects transits and amenities) will necessarily amend social fabrics, exemplified by the rhetoric to “reconnect communities” that have been left behind and divided by transportation infrastructure in the past. On the other hand, traditional research methodologies often focus on network infrastructure in its own locale (e.g., Aerotropolis) or abstract it into spatial social networks (e.g., air mobility network), represented as nodes and edges on maps. Such simplification overlooks how network infrastructure sustains and affects spatial and social connections in the built environment.

This paper introduces a “Network Duality Framework” that critically conceptualizes, analyzes, and contests issues around urban infrastructure through a network lens. It acknowledges that such infrastructure---be it transport or social---can simultaneously be inclusive and exclusive, offering connectivity and access for certain populations, places, or types of flows, while marginalizing or restricting others. The duality emerges as diverse urban network systems interact with each other and with the physical built environment.

By applying this framework to interpret dozens of case studies, the paper unveils dimensions of duality such as network type, speed, integration, topology, and scale, as well as infrastructure features such as size, accessibility, visibility, and governance. These dimensions provide a basis to critique and contest urban infrastructure issues

through a network lens and develop new metrics and visual representations that inform the debate on the trade-offs between different urban network systems.

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Keywords: network, connectivity, duality, transportation infrastructure, social infrastructure

CONSUMER TRAVEL DECAY PATTERNS IN THE CLICK-TO-BUY ERA: A BIG DATA APPROACH

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Individual Paper Presentation

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In the Click-to-Buy Era, the impact of online retail has thrust traditional brick-and-mortar retail commerce into unprecedented challenges, prompting their services to focus on experiential consumption in response to shifting consumer lifestyles. This trend is particularly pronounced in China, which has maintained its global dominance in e-commerce for eleven consecutive years. Consequently, commercial centers in Shanghai are undergoing a profound transformation, transcending their conventional roles as mere aggregations of department stores, retail outlets, and other shopping venues. They are evolving into coveted "consumer habitats," offering a plethora of leisure and entertainment amenities alongside experiential services.

This paper aims to investigate the spatial interaction characteristics among four urban physical commercial centers in Shanghai and various consumer travel purposes during the Click-to-Buy Era. The validation of disparities in spatial decay patterns among consumers with different consumption travel purposes is facilitated through big data approaches. Firstly, by leveraging internet-based location service data mining, we identify the two primary consumer travel purposes: purchasing goods and experiencing services. Subsequently, we compare the spatial characteristics of these two consumer travel purposes within commercial centers. Secondly, utilizing internet-based location service data, we estimate the probabilities of residents traveling to the four commercial centers for different consumption purposes and calculate the actual consumption travel times using Internet map APIs. Finally, the Ordinary Least Squares (OLS) method is employed to calculate the distance parameters of the two consumer travel purposes, comparing the calculated values with the actual consumption travel ranges based on the Huff model

In conclusion, the study reveals significant disparities in the decay patterns between the two consumer travel purposes. The decay associated with purchasing goods adheres to a spatial decay pattern consistent with a power function, while experiential consumer travel demonstrates a higher degree of randomness. Furthermore, the differing distance parameters for the two modes of consumer travel suggest variations in consumer sensitivity to time across different consumption purposes. The wider distribution range of distance parameters for experiential travel underscores a greater disparity in sensitivity to time, whereas the distribution of distance parameters for purchasing goods travel is more concentrated. Hence, there exists a notable divergence in sensitivity to time between the two types of travel. Lastly, the correlation between the mixture of business formats, serving as an attractiveness indicator, and the actual consumption travel range is stronger for experiential consumer travel. Conversely, indicators such as building area exhibit a more pronounced correlation with the actual consumption travel range for purchasing goods.

The aforementioned findings are attributed to the rise of the Click-to-Buy Era, where online retail has replaced some of the traditional in-store shopping practices. In light of this trend, consumers, after fulfilling their routine shopping needs online, tend to allocate more time to experiential consumption travels. They are drawn to the diverse range of services and goods available at commercial centers, resulting in a shift towards experiential consumption travels. Consequently, discernible differences arise in consumers' preferences for experiential consumption compared to goods purchasing, leading to variations in the decay patterns and distance parameters of these two consumption purposes. To effectively respond to the continuously evolving retail landscape, it is crucial to adapt commercial center planning to accommodate changes in consumer demands and shifts in physical retail formats. This requires a thorough understanding of the characteristic differences influencing consumers' travel purposes for both goods purchasing and experiential services, ensuring the efficacy and adaptability of commercial center system planning.

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Keywords: Physical Commercial Center, Spatial Interaction, Experiential Consumption, Internet location-based Service Data, Shanghai

DATABASES, NEEDS ASSESSMENTS, AND DEVELOPMENT PROBLEMATICS

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Individual Paper Presentation

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Comprehensive information is vital to making sensible and sustainable development decisions. In the initial stages of implementing development projects, desired information is identified, sought after, and organized in accordance with each donor's needs assessment of potential recipients. Data categorization, collection, and application shape development outcomes in interaction with other social institutions (Ferguson, 2017). Project selection and implementation face two challenges. First, needs assessments may be blind to relevant, if not critical, information. Second, available data may be incomplete. Thus, this paper explores both how needs assessment strategies define development problematics and how existing development databases distort development decision making in the needs assessment process through the provision of inchoate and incomplete information. These concerns are addressed through an overview of existing databases' content, systematic direct database inquiries, and interviews with donors. This research represents the outcomes of the first phase of a project sponsored by the UNDP Seoul Policy Centre to increase development database data quality and to employ artificial intelligence to improve the needs assessment process by extracting relevant and comprehensive information about both the development context and the past, present, and future development activities at the national, regional, and urban level. Findings indicate that needs assessments tend to be overly limited in scope, to back fill decisions made on other bases, and to require ongoing revision as programs are implemented. Further, the paper finds that existing databases remain incomplete due to inadequate reporting and that their user interfaces provide low quality and irrelevant information, thereby limiting their utility. In the future, these findings will serve to improve available data on urban-oriented aid projects and build a comprehensive view of urban aid.

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Keywords: development data, needs assessment, discourse, artificial intelligence

DEFINING URBAN VITALITY USING TEXT-BASED, IMAGE-BASED, AND GPS DATA

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Individual Paper Presentation

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Urban vitality, a crucial indicator of the quality of the built environment, reflects the liveliness and health of urban spaces (Liu et al., 2022). This study explores the efficiency of big data and specific machine learning (ML) technologies in evaluating urban vitality, surpassing traditional methods like on-ground observation and questionnaires. Despite the innovative approach, challenges such as bias in data representation, limited demographics, and privacy or ethical concerns inherent in social media and GPS technologies are acknowledged. Distinguishing from previous studies that often concentrated on single regions or datasets, this research aims to uncover a universal pattern in leveraging social media and smartphone-based GPS data to assess human behavior's spatial and temporal dynamics in urban settings (Dong et al., 2024; Abbiasov et al., 2024). We collected 194,860 image-based data from Flickr and 2,554,594 text-based reviews from Google Reviews. This study comprehensively analyses citizens' distribution, diversity, and preferences by combining computer vision (CV), natural language processing, and location service-based technologies (Salazar-Miranda et al., 2023; Chen et al., 2024). The comparative analysis, encompassing data from 2018 to 2023 across 10 North American cities, sheds light on the variations in urban vitality within different cultural, economic, and geographical contexts. The findings reveal that the validity of big data in evaluating urban vitality exhibits significant dynamics in temporal changes (weekday vs. weekend) and across cities with diverse socioeconomic backgrounds. It has also been observed that social media data from diverse sources exhibit varying degrees of explanatory power regarding urban vitality. By analyzing a variety of urban environments, this research provides invaluable insights for urban planning and policymaking, highlighting both the universality and uniqueness of urban dynamics and their implications for future urban development.

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Keywords: Human activity, Smartphone, Urban mobility, Google Reviews, Computer vision

EDUCATING STUDENTS TO WORK IN SMART CITIES

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Individual Paper Presentation

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Small and large cities are building communication infrastructure and implementing novel data architectures and algorithms. Some are also creating plans for this new technology. There are broadband master plans, plans for electric vehicles, plans to address digital equity and inclusion, responsible artificial intelligence strategies, draft policies and plans to protect digital privacy in the public realm, and smart city roadmaps. Shifting technology is introducing subjects to planning that the discipline has not focused on in the past, from data science to technology policy. Planning for and coordinating new technology adoption is leading to new city jobs, like smart city planner. Are planning curricula preparing students to work in today's cities, with their data and algorithms, related plans, and jobs?

The subjects of technology and quantitative research methods have been debated in planning pedagogy literature for over fifty years alongside past waves of technology. The 1960s marked the rise of the mainframe computer and optimism about applying systems analysis concepts to planning, famously followed by strong critiques of the rational model. In the 1990s, microcomputers became more pervasive, there was growing availability of Geographic Information Systems (GIS), and planning programs included GIS specializations. Today, the smart city and its decentralized computing technology, data, and algorithms present a new shift in planning technology and relevant methods.

Beyond quantitative methods, however, there are two essential consequences of the shift from the mainframe, to the microcomputer, to decentralized computing, that may have implications on how or what planning programs teach. The first is that decentralized computing introduces new dimensions to participation and representation, core concepts in planning education. A second is that the infrastructure of computing is steadily shifting from the private to the public realm. Now, there are plans and policies for digital infrastructure and social consequences of access to this infrastructure.

Through two surveys, this study compares the topics, skills, and tools taught in planning programs with those sought by smart city practitioners. With responses from 37 ACSP unique accredited planning masters programs and 69 smart city practitioners, we compare the results of the surveys, evaluate where teaching and practice are aligned and where there are gaps.

Results from the survey show that the skills and tools practitioners seek when hiring planning students are predominantly aligned with what educators teach. Yet, there are some mismatches between practitioner demand and educator supply that may indicate new directions for planning education. In particular, none of the top three qualitative topics taught by educators are the same as those sought by practitioners. Evaluating the under-supplied topics, skills, and tools may be especially helpful in indicating opportunities for new approaches to delivering quantitative education and new visions of the role of the planner in engaging with digital technology.

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Keywords: smart cities, pedagogy, information communication technology, quantitative research methods, technology policy

ENHANCING PUBLIC ENGAGEMENT THROUGH AUGMENTED REALITY (AR) IN PLANNING

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Individual Paper Presentation

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Augmented reality (AR) overlays digital information onto the real world and has the potential to be a valuable tool for planning, especially for use in public engagement. Drawing from Schön and Rein's (1994) frame reflection theory, this paper tests a creative use of AR that encourages users to reframe their attitudes towards – and ultimately, their acceptance of – higher density urban development projects in their neighborhoods. It seeks to understand: (1) In comparison to traditional 2-dimensional forms of public communication (e.g., project renderings and drawings), how does the 3-dimensional AR influence both the public's acceptance of high-density development and their perceptions of development impacts? (2) How does the public's technology proficiency affect the usability of AR, again, relative to traditional visualizations? (3) How are these perceptions of higher density urban development associated with variations in respondents' level of political engagement, as well as demographic factors, such as education, income, and race?

AR integration in urban planning faces obstacles such as financial constraints, learning curve challenges, and equitable access issues, hindering its widespread adoption (Kitchin, Young, and Dawkins, 2021). Limited empirical research on the effectiveness of AR in urban planning contexts has resulted in insufficient evidence for a comprehensive cost-benefit analysis. Consequently, efforts to address AR utilization drawbacks have been limited. The absence of prior research underscores the need for a rigorous examination of AR effectiveness, focusing on enhancing public acceptance of increased urban density. The study will evaluate scenarios reflecting the nationwide trend of transitioning to mixed-use and higher density developments, such as common '5-over-1' projects, using a national panel of respondents to test various densification scenarios among locally engaged residents.

In conducting a web survey of residents across the US, the study mirrors Whittemore and BenDor's (2019) investigation of cognitive re-framing and its impacts on public resistance to urban densification, employing a modification adapted to AR. Participants will be randomly assigned to one of three hypothetical scenarios. Each scenario will be presented using a two-dimensional photo and then a simulated AR representation of the plan

presented as a 3D photo with a scaled and rendered 3D model aligned to the panoramic view. The three density scenarios are: 1) a 5-over-1 building in an urban environment with its similar height and scale to other buildings, 2) a 5-over-1 building surrounded by single-family homes, and 3) a 5-over-1 building in an undeveloped area, lacking basic infrastructure.

As Fainstein (2000) argues, fostering transparency and community inclusion are crucial for achieving equity. AR can allow equitable access by enhancing public engagement in the planning process and effectively communicating planning information to decision-makers. AR could be used to create immersive and interactive visualizations of proposed developments, helping the public to better understand the scale and impact of these projects.

With many cities across the US pursuing high-density development to achieve a myriad of equity, housing, financial, and environmental sustainability outcomes, the study will have important implications for how these efforts move forward. Specifically, this research is invaluable for municipalities incorporating AR into urban densification planning. It offers valuable insights into the effectiveness of AR, the influence of demographics and technology on public opinion, and offers practical implementation guidelines. The crucial question for cities is: how much more effective must AR be than traditional visualizations to justify investment? Does AR have the potential to increase public support and thereby enhance the success of the plan? The findings from this study will help municipalities leveraging AR in planning make informed decisions to improve public engagement and communication with decision-makers—ultimately fostering more sustainable and equitable communities.

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Keywords: Augmented Reality (AR), Urban Densification, Public Acceptance, Visualization Tools, Public Engagement

ESTIMATING PEDESTRIAN HEAT EXPOSURE LEVELS WALKING TO PLAYGROUNDS

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Individual Paper Presentation

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The proliferation of impervious surfaces reduced green spaces and altered land use patterns in urban areas have led to the exacerbation of the urban heat island effect and thermal discomfort for urban dwellers. Excessive heat exposure can kill people, and it also can cause general discomfort, respiratory problems, heat cramps and exhaustion, non-fatal heat stroke, and dehydration, all of which lead to a loss of labor productivity and decreased

learning. Extreme heat has increasingly become a major public hazard in cities. Children, as a vulnerable demographic group, are particularly susceptible to the adverse effects of urban heat exposure, given their higher metabolic rates, increased surface area-to-volume ratio, and reliance on outdoor play for physical activity and social interaction (Wallenberg et al., 2023; Vanos et al, 2016).

As one of the major places that carry children's outdoor activities in cities, urban playground spaces are essential for children's recreation and development. The playground also provides a place for social activities for children, which is helpful for developing social activities and brain development, etc. However, in cities, situated within urban environments, playgrounds are thus subject to the heat island effect. Children are at risk of too much heat exposure while walking to and playing at playgrounds. There is proliferating work on examining the heat exposure level on the playgrounds and how children are exposed to heat on playgrounds. Most of the current studies on heat exposure tend to focus the heat exposure on the playgrounds. The heat exposure along the routes has never been evaluated and quantified. While the extreme heat turns the playground too hot and the heat exposure along the household to the playground would also impact the children's preference to walking to the playground. The proximity to the playground is usually only considered for placing the playground and guaranteeing the accessibility of the playgrounds. However, there are still few studies examining heat exposure along the routes to the playgrounds.

In this study, we examined the potential heat exposure along the routes from the household building blocks to the nearby playground for all residential buildings in Philadelphia using network analysis and microclimate modeling. This is the first of this kind of analysis at the city scale and provides building-level heat exposure information. Different from previous studies that tend to examine the spatial distribution of heat exposure at static places, this study combines the network analysis, with consideration of the potential walking routes from the perspective of young families with children in their daily behavior. The microclimate modeling based on high-resolution, three-dimensional urban geometrical models and local meteorological data were used to examine outdoor heat exposure at the hyperlocal level and down to the pedestrian level (Lindberg et al., 2008; Lindberg et al., 2008; Lindberg and Grimmond, 2011; Li, 2021; Li and Wang, 2021). This study generated a 1m resolution mean radiant temperature map in Philadelphia and conducted the network analysis of how children are exposed to heat while walking to and playing at the playground in Philadelphia. This study evaluated the potential heat exposure for each residential building block in Philadelphia and evaluated the proximity to nearby playgrounds and the heat exposure while walking to the nearby playground at different times of one day. This study provides a scalable framework to quantitatively evaluate heat exposure at the pedestrian level from the perspective of children, which would help to develop walkable cities and children-friendly neighborhoods to extreme heat in the context of climate change.

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Keywords: urban heat, playground, urban microclimate modeling, children heat exposure, walking

EVALUATING THE CRITICAL ROLE OF CITIZEN SCIENCE IN URBAN AI

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Individual Paper Presentation

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The emerging field of urban artificial intelligence (urban AI) refers to digital intelligence incorporating data derived from the urban environment and processed by algorithms. It involves designing, developing, deploying, and managing artificial intelligence solutions that holistically utilize big data, ubiquitous computing, social sensing, and machine learning to enhance, automate, or augment urban systems' planning, design, operation, and governance. Considering cities as complex systems-of-systems with various sociotechnical factors, planning researchers and practitioners must learn to utilize, guide, and regulate Urban AI to ensure its positive impact and social benefits. While extensive investigations explored this topic through data mining, machine learning algorithms, and AI applications, limited investigation of citizens' role in Urban AI constraining a holistic understanding of the future relationship between AI and human society.

This study evaluates the critical role of citizen science in Urban AI's development. Citizen science refers to scientific research that involves the participation and engagement of the public and local community without a technical background or subject-matter knowledge. We describe the definition and distinction of citizen science, especially compared to crowdsourcing and the conventional participatory planning approaches. Based on global experience and related research experiments, we identify three citizen science types with passive, active, and hybrid approaches, depending on data collection methods and participation levels. An analysis of foreseeable challenges and concerns reveals the bottlenecks of Urban AI and potential harm due to insufficient citizen engagement. More specifically, this study focuses on the relevant pilot projects in China and the United States, providing insights into the successes and challenges encountered in these projects. Such empirical evidence indicates that citizen science contributes to urban science and urban information technology deployment toward more democratic, sustainable, and equitable development.

Based on the theory of social-technical system science, the study further proposes a framework to conceptualize unique contributions of citizen science for Urban AI solutions and elaborate on social-technical specifications with specific real-world cases. The framework highlights the key role of citizen science through the AI value co-creation process with functions that include (1) providing reality check-ups, (2) ensuring human-in-the-loop, (3) evaluating social-technical feasibility, and (4) inspecting the local effects. In conclusion, we foresee potential future explorations in citizen science and recommend promoting citizen science for larger impacts on AI ethics, technology equity, innovative society, and citizen empowerment.

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Keywords: citizen science, artificial intelligence, urban informatics, urban AI

EXAMING INNOVATION-LED GENTRIFICATION IN SAN FRANCISCO

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Individual Paper Presentation

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Introduction:

The relationship between innovation and urban space is a critical area of research that offers insights into the future of city development and planning. This interactive relationship not only involves how urban places or spatial patterns influence cities' capability of innovation (Jacobs, 1969) but also how innovation activities in turn impact the urban space. The general reflection on the disparities caused by the growth policies, where innovation is an important goal (Jennings, 2004), also raises the equity concerns of innovation's side effects, especially regarding gentrification (eg. Maharawal, 2017; Stehlin, 2016 et al).

Exploring the relationship between innovation and gentrification is crucial for understanding how cities evolve in response to technological and economic changes. By delving into this topic, I hope to uncover insights that could guide policymakers, developers, and communities in balancing the benefits of innovation with the need to protect vulnerable populations, thereby contributing to the creation of more equitable and sustainable urban environments.

Problem statement:

This research aims to discover the gentrification influence of innovation, measured by changes in housing prices. While most existing research focuses on the demand side of gentrification, the focus on housing prices provides a supply-side perspective. Furthermore, as a supplement to and further exploration of qualitative studies, this article offers a quantitative measurement. The study will employ a combination of the hedonic price model and spatial regression methods, to test the following hypothesis: provided that other conditions remain invariant, housing prices in areas with higher densities of innovation activities experience larger increases than those with lower densities. The research will use San Francisco City as an example, focusing on the period between 2010 and 2020. The boom of innovation activities in San Francisco in this period makes it a suitable case city for this research.

Background/Literature Review:

In the context of the second tech boom, there is rising concern about the gentrification impact of innovation activities. Defined as the migration of middle and high-income families to existing low-income urban communities (Griffith, 1996), there are two main perspectives of the measurement of gentrification: the supply and demand sides (Finio, 2022). The former examines the demographic change while the latter focuses on the cost of housing. Under the theme of the impact of innovation on gentrification, most existing literature focuses on the demand side effects of innovation activities. Truong (2015) reveals how San Francisco's Black and Latino residents and those economically disadvantaged experienced displacement as a side effect of the tech-led speculation over the past few years. Allen (2019) and Maharawal (2017) also shed light on the tech-led eviction of low-income groups in the Bay Area. Though Chapple & Jeon (2021) and Wu et al. (2021) measure the influence of tech firms on the housing market, they only adopt a static perspective, with a focus on the premium that the innovation generates.

Though a multi-dimensional operationalization is usually applied to recognize the gentrification communities (Desmond & Gershenson, 2017), based on a review of the existing literature, Finio (2022) finds that when analyzing the factors for gentrification, it is more common to use a single variable as the research object. The growth rate of housing prices is an important criterion (Freeman, 2005). In addition to the hedonic model that serves as the basis for analyzing property prices, double difference models and time series methods are often used to analyze such changes (Finio, 2022). To appropriately simplify the analysis method, the research will take the changes in housing prices during the period as the measurement and adopt a combination of hedonic models and spatial regression as the research method.

Methodology plan:

This study hopes to measure the influence of innovation on gentrification by discovering how innovation activities will impact the change in property value. The study will use a combination of the hedonic price model and the spatial regression method. Three models will be applied in the research, including the OLS, SEM, and SLM models, and then a comparison will be made based on the main indicators of the regression result.

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Keywords: Gentrification, Innovation, Housing, Tech boom, Spatial Analysis

EXPLORING THE SOCIAL LIFE OF URBAN SPACES THROUGH A.I.
Abstract ID: 1108.0.0.85.2024
Individual Paper Presentation

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Public spaces catalyze urban success by fostering social interactions, economic activity, and local identity. Many of urbanism's greatest insights have come from closely observing public spaces--either with one's own eyes or, more recently, by recording videos. However, methodological constraints like manual video analysis and limited temporal coverage often hinder a comprehensive understanding. This study uses artificial intelligence (AI) to analyze archival and contemporary video footage from New York, Boston, and Philadelphia's public spaces. Using computer vision and deep learning, we build upon William H. Whyte's pioneering work and compare data from the late 1970s to the early 2000s. Our findings show that singles and dyads dominate public space usage, and suggest an increase in larger group gatherings and encounters have become more frequent. This study demonstrates that AI can enable detailed spatial-temporal analysis of social interactions in public spaces, providing valuable insights for urban planning and policy-making.

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Keywords: social interactions, public space, group behavior, computer vision

GREEN INFRASTRUCTURE'S IMPACT ON FINE DUST MITIGATION-INSIGHTS OF MICRODATA
Abstract ID: 1108.0.0.445.2024
Individual Paper Presentation

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The emergence of big data has reshaped our understanding of urban environments, transitioning from analyzing administrative units to micro units. Seoul, Korea, has responded to this trend by deploying over 1,100 IoT sensors across its streets, capturing microclimate data every 10 minutes to address real-time climate change. This paradigm shift and the availability of new data enable a more precise examination of green infrastructure's role in urban areas. While existing research generally suggests that green infrastructure alleviates pollution-related stress on urban environments and inhabitants (Hewitt et. al. (2020). Tomson et. al. (2021)), determining its effectiveness by type and specific location has been challenging due to cost and research duration constraints.

This study seeks to elucidate the relationship between green infrastructure and fine dust mitigation, utilizing microclimate data collected from IoT sensors. It encompasses data on hourly PM10, PM2.5 values, hourly traffic

volume (Villani et. al. (2021), Sheikh et. al. (2023)), annual land cover, road maps, and urban park maps spanning from 2020 to 2023. Prior to analysis, buffers of varying sizes (10m, 50m, 100m, 300m, and 500m) were established around the IoT sensors, and annual land use ratios within these buffers were computed. Additionally, distances from sensors to roads and road widths were determined. The fine dust values measured every 10 minutes were calculated as daily averages, and the difference between the daily average fine dust values in Seoul and the calculated values was computed. This was done to adjust for the influence of the presence of green infrastructure on fine dust values in Seoul. Among the collected data, traffic volume is expected to have the most significant impact on fine dust. Therefore, this study utilized various analyses to examine the impact of traffic volume on fine dust and the mitigation effects of green infrastructure. The first analysis independently confirmed the impact of the presence of green infrastructure (green space ratio in land use) on fine dust reduction, while the second analysis calculated the impact of traffic volume on fine dust reduction and compared the mediating effect using green infrastructure as a parameter. The third analysis examined the impact of the type of green infrastructure (linear, areal, point, etc.) on fine dust reduction.

The findings reveal that within a 50m radius, higher green space ratios in land use correlated with reduced fine dust levels. However, as buffer size increased, the dust reduction effect of green spaces diminished. Analysis substituting green space ratio with distance from parks also demonstrated a dust reduction effect closer to parks. This trend persisted even when considering traffic volume, with proximity to parks mitigating the increase in fine dust associated with high traffic volumes. While the statistical significance of green infrastructure types varied, the area of green spaces notably influenced fine dust reduction. This study underscores the importance of strategic green infrastructure planning in urban areas for fine dust mitigation. It highlights the potential of incorporating green spaces within close proximity to urban developments to effectively reduce fine dust levels, especially amidst high traffic volumes. Furthermore, it emphasizes the need for ongoing research to refine our understanding of how different types and sizes of green infrastructure contribute to mitigating fine dust pollution in urban environments.

Citations:

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Keywords: Microclimate Data, Green Infrastructure, Fine Dust Mitigation, Real-time Climate Monitoring, Urban Sustainability

GROUNDING THE DIGITAL: FOOD DELIVERY PLATFORMS IN NYC AND KOLKATA, INDIA

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Individual Paper Presentation

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While the Global North claims that digital platforms have led to the casualization of work and the informalization of labor practices (Ferreri & Sanyal, 2022), the Global South has welcomed digital platforms with hopes of solving the unemployment problem (MeitY, 2019). The differences in legal frameworks regulating digital practices in these two regions further complicate the role of digital platform companies in how we experience cities, as they actively introduce intersectional land and building use typologies. In this paper, I have attempted to 'make present' (Thatcher & Dalton, 2022) the on-ground infrastructures of digital food delivery platforms in New York City and Kolkata, India, and explore the similarities and differences in their impacts on these cities.

The aim of this study is to explore the on-ground infrastructures that make online food delivery possible in New York City and Kolkata, India. The 'dark stores' and 'ghost kitchens' scattered throughout cities today make quick delivery a dream, but what are the costs associated with it that are being paid by the people who live in the vicinity of such infrastructures? In this paper, I shed light on the legality of these facilities with respect to existing land use zoning, reveal how their locations are related to those of their user base, and investigate the shadows cast on the neighborhoods where they are located. The impact of the legal, socio-economic, and cultural contexts of these two cities on digital food ordering and delivery practices has also been investigated.

For the New York City study, retail food store data from data.ny.gov, zoning boundaries from the NYC Department of Planning, and American Community Survey data have been used, along with a digital survey of historical Google Street View data, media generated by these platforms, and field observations. Preliminary findings for New York City reveal that 'dark stores' are located in areas that make quick delivery possible, with a tendency to be close to both target consumer groups and target labor populations, with less than 20% of them being located in legal warehousing zones. For Kolkata, the locations of ghost kitchens have been mapped after scraping over 6000 restaurant profiles from a major food delivery platform. Census data is used to identify the socio-demographic composition of the neighborhood, and land use maps from the Kolkata Municipal Development Authority are used to identify the legality of these facilities in terms of zoning and explore the relationship between facility location and neighborhood characteristics. The findings of this paper are anticipated to reveal whether existing socio-economic divides are further accentuated by these services and if existing zoning regulations and frameworks are sufficient to deal with these new forms of usage cropping up with digitized urban processes.

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Keywords: Urban Platforms, Food Delivery, Zoning

HEALTH BEHAVIORS OF WORK-AT-HOME WOMEN IN EARLY MOTHERHOOD

Abstract ID: 1108.0.0.1082.2024
Individual Paper Presentation

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This study investigates the changes in health behaviors and their impacts on quality of life related to mental and physical health due to working at home (WAH) among working women in the early stages of motherhood, including those with young children or those who are pregnant. With the post-pandemic rise of WAH, this population group faces unique challenges that may affect their behaviors and quality of life. The literature has recorded that WAH workers may face higher risks of declining quality of life, with reported issues such as high distress, anxiety, exhaustion, fatigue, and physical pain. Also, WAH is likely to change people's behaviors regarding time-use patterns, physical activity, social participation, and out-of-home travel. However, little is known about how WAH affects health behaviors among working women in the early stages of motherhood. We also lack an understanding of the relationship between these behaviors and health outcomes related to quality of life.

This study aims to fill the research gap on the impact of WAH on time use, physical activity, social participation, travel behaviors, and their subsequent effects on quality of life related to mental and physical health. We address two research questions: (1) How does WAH affect the health behaviors of working women in the early stages of motherhood in terms of time use, physical activity, social participation, and out-of-home travel? (2) How do these behaviors dynamically impact the quality of life related to mental and physical health?

However, assessment of these behaviors in the context of WAH can be hindered by several challenges. Traditional methods, such as retrospective surveys and interviews, are unable to effectively capture real-time activities, experiences, and locations. Utilizing an Ecological Momentary Assessment (EMA) approach integrated with GPS location tracking via a smartphone app, our study collects real-time activity and location data, as well as self-reported quality of life, from 65 participants over a 7-day period within the University of Southern California community. We hypothesize that WAH can disrupt time-use patterns, reduce physical activities and social participation, and limit out-of-home travel, potentially harming mental and physical health. Using commuting to the office as a baseline for comparison, the specific hypotheses include:

H1: Compared to commuting to the office, the flexibility of WAH leads to a more irregular time-use pattern, such as segmented working hours, increasing time spent on caregiving and household duties, and decreased sleep time, for mothers with young children or pregnant women.

H2: WAH reduces the time available for health-promoting activities like exercise and relaxation for these women.

H3: WAH diminishes the need for interpersonal communications and social participation for these women.

H4: WAH reduces travel for out-of-home activities such as grocery shopping and recreation for these women.

H5: These health behavior patterns negatively affect self-reported quality of life and mental health.

To test these hypotheses, we analyze the EMA and location data through multilevel modeling and activity-based spatial analysis. Multilevel models examine the associations between the four dimensions of behavior patterns and self-reported quality of life. The activity-based spatial analysis assesses the impact of WAH on travel demand and accessibility and how these factors affect participants' quality of life. Our findings fill the aforementioned literature gap by contributing to the evidence base and theoretical understanding of the health impact of WAH on these vulnerable women. Furthermore, our study highlights the need for social support and health interventions for WAH women with young children or those who are pregnant. Finally, our findings will inform workforce policies and health intervention protocols aimed at promoting the health and quality of life of working women in the early stages of motherhood in the era of telework.

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Keywords: Work at home, Women, Early motherhood, Pregnancy, Ecological Momentary Assessment

IDENTIFYING URBAN FORM TYPOLOGIES USING STREET VIEW IMAGES FOR CLUSTERING

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Individual Paper Presentation

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Seoul, the capital city in South Korea, experienced rapid development resulting in dense city full of people, buildings, and infrastructures. The increase of population influx from rural to urban area led to diverse urban form patterns. Seoul is at the transitional stage between the economic growth and the sustainable growth. This study aims to identify urban form typologies at the block scale by analyzing the urban form features for the city's sustainable growth. Typology studies are still lacking for Korean cities, whereas the typology approach for urban analysis has done in other global cities to identify different patterns for better understanding of urban development. Urban blocks in Seoul were analyzed based on the urban form features such as building heights, floor area ratio, cover ratio, and open space area by using the Geographic Information System (GIS) format. The collected data were calculated and analyzed in the system for the clustering. To combine the numerical data and the empirical data for the in-depth study, Google Street View images were joined in GIS. By using the image segmentation of deep learning-based method, more detailed data of urban environments and physical form

features were able to analyze. Data of street view images considered the real condition and offered the detailed urban form features by capturing the objects in blocks. Besides numerical values such as heights and areas, empirical data from human perspectives were able to be extracted from street-view images. These features were analyzed using the principal component analysis to identify principal components, which are used for k-means clustering. With the Silhouette score and PCA(Principal Component Analysis) method, the proper number of clusters were offered. The results of clusters were interpreted as urban form typologies with the insights in the influences of regional characteristics, such as natural environment, culture, and of the planning patterns on urban form development patterns. The identified urban form typologies in diverse blocks show the similarities and differences of typologies according to their conditions. The new meaningful findings helped better understanding of diverse urban form patterns in different districts and their different local identities. This study can contribute to further compared urban form patterns across the cities and nations. It can also be utilized as references for urban and policy makers for sustainable planning and design.

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Keywords: Urban Form Typology, Urban Blocks, Clustering, Image Segmentation, Sustainable Design

INFREQUENT ACTIVITIES PREDICT ECONOMIC OUTCOMES IN MAJOR AMERICAN CITIES

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Individual Paper Presentation

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Many studies have revealed the predictive power of the most frequent, regular, and habitual mobility patterns. However, it remains unclear what components of mobility patterns contain most informative signals for predicting disparate economic development across urban areas. Here we use machine learning to predict economic outcomes by analyzing the heterogeneous mobility networks of 687 activities from more than 560,000 anonymized users in Boston, Chicago, and Miami. We find that mobility patterns are highly predictive of the current and future economic development in major American cities, but surprisingly, the high predictive power is concentrated on infrequent, irregular, and exploratory activities. These predictive activities account for only less than 2% of total visitations but successfully explain more than 50% of variation in economic outcomes. Future research should shift

more attention from regular visitations to irregular activities, and policymakers could leverage these infrequent while informative activities to manage urban economic development.

In this study, we seek to predict economic outcomes using mobility patterns by characterizing the diverse human activities. We first examine the activity frequency by fitting it to the truncated power law and Zipf's law [1]. We then employ two machine learning methods to predict economic outcomes, utilizing activity-specific visitations collected from phone trajectories and points-of-interests (POI) in three prominent metropolitan areas in the United States. After identifying the predictive activities, we examine their frequency and regularity. We find that the economic signals are concentrated on mobility patterns characterized by infrequent and irregular activities, although the frequent and regular ones also contain moderate predictive power. We further demonstrate the robustness of our findings by investigating model sensitivity to noises, missing values and outliers, testing the model transferability across six major US cities, and examining the impacts of changing the activity grouping strategy.

We find that the diverse human activities, which follow the power-law distribution in visitation frequency, can effectively predict socioeconomic status. The predictive activities are disproportionately concentrated in the infrequent and irregular ones, including the aspirational behavior, non-essential consumption, and latent socio-economic cues, but excluding the most frequent and regular displacements, such as visitations to jobs or residential areas. In other words, it is the infrequent, irregular, and exploratory activities, rather than the frequent, regular, and habitual ones, that are the most important socioeconomic signals in mobility patterns.

The findings have broad scientific and practical implications. It refines the existing theories of structural and social diversity through the lens of human activities [2]. Although structural diversity still matters, we find that only the long-tailed activities, such as the infrequent aspirational behaviors, are contributing positively to economic complexity and development [3].

The infrequent activities could be used to monitor economic inequality as well. When the non-essential consumption is concentrated in certain urban regions, this concentration could imply spatial segregation and inequality. Therefore, policymakers can detect sudden changes in socioeconomic indices by combining these predictive activities and machine learning models, and proactively design policies to manage economic development and mitigate economic inequality.

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Keywords: mobility network, economic activities, economic development, machine learning

INTEGRATING SOCIAL VULNERABILITY INTO CLIMATE-INFORMED CAPITAL PLANS

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Individual Paper Presentation

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This paper compares the methods available to local governments for integrating social vulnerability within climate-informed capital plans. City planners are increasingly concerned with the means to implement climate action in the routine budgeting process by producing climate-responsive plans for public investment in goods and services. Climate change is, however, a form of environmental injustice, exacerbating existing inequality and worsening conditions for marginalized groups in society. Existing research bears witness to impacts that fall disproportionately on exposed and vulnerable populations in the US and abroad. With this in mind, a key question for planners is how to achieve justice and/or social equity in tandem with climate-informed capital planning (Fitzgerald, 2022).

In the US, climate policies such as the Inflation Reduction Act and the Infrastructure Investment and Jobs Act incentivize the application of social equity measures in the implementation of projects primarily focused on greenhouse gas emissions reduction. Research suggests approaches to climate adaptation that involve procedural and distributive equity. There is room for improvement—one third of large US cities with climate action plans have measurable indicators for equity (Caggiano et al., 2023; Diezmartinez and Giamotti, 2022) and implementation lags behind policy. Capital investment plans often serve as the foundation on which comprehensive plans rest. Social equity is not regularly integrated into these plans. Such integration allows for more comprehensive handling of social equity.

A wide array of tools, methods, and curated datasets have emerged from planning, public administration, and related disciplines, such as public health, to implement and evaluate equity in climate action. This paper systematically reviews equity tools available for city climate action, compared for suitability to the technically complex and politically charged process of capital planning and budgeting. Within the framework of procedural and distributive equity, criteria assign compatibility with capital investment planning methods and datasets that facilitate the co-creation of just decisions and their ex post evaluation in qualitative and quantitative terms. Criteria are applied to compare a variety of checklists, socio-spatial indexes, as well as more complex instruments. CalEnviroScreen, for example, is incorporated into CalEEMod, to be applied in the screening of projects in the State of California. The US Environmental Protection Agency recently released EJScreen (2023). The Climate Health and Risk Tool (CHaRT), functions within the climate-smart capital investment planning system (Hess et al. 2023; Whittington and Lynch 2015; Whittington and Young 2013).

Our assessment of tools shows that some are more suited to the task of informing equitable capital investment plans than others. To improve the equitability of climate measures within the scope and process of capital planning and budgeting, tools should supply decision makers with the capacity to view the potential for projects that reduce greenhouse gas emissions to reduce the social burden and improve the economic prospects of communities. On adaptation, tools should show, at resolutions appropriate for project-level screening and scoping, the exposure of projects and associated communities to the impacts of climate exacerbated hazards over the lifespan of capital projects, the ability to discern associations between the sensitivity of communities to particular risks, and the potential for project investments to improve community adaptive capacity.

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Keywords: Social Equity, Capital Investment Planning, Climate Change

INTELLIGENT REDELINEATION AND FEATURE ANALYSIS OF URBAN HISTORICAL AREAS

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Individual Paper Presentation

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In recent years, the concept of holistic conservation has gained importance in preserving urban historical areas. While it theoretically emphasizes redefining the boundaries of these areas and advocating for design guidelines that complement the historical cityscape, practical implementation remains challenging. On one hand, current delineation of historical areas still primarily relies on the age of buildings and empirical judgment. On the other hand, codes and guidelines lack precise customization for varying cityscape features. The advent of geo-tagged big data, such as Street View Images (SVIs), coupled with advances in deep learning algorithms, offers new avenues to identify and interpret the features of urban historical areas in line with holistic conservation goals. Nevertheless, there is a notable absence of systematic methodologies for extracting cityscape features and identifying their extents in these areas. To address this, we have developed an intelligent analysis framework that leverages SVIs and deep learning models for high-precision, large-scale measurement of cityscape features within urban historical areas. This framework enables fine-grained redelineation of these areas, facilitating an in-depth analysis of the significance of various features within specific historical cityscapes. Our approach utilizes street scale, building color, facade material, architectural style, greenery, and urban signage as key cityscape features. We employ a Deeplab-v3-based model for semantic segmentation of SVIs, and to measure street scale and greenery. Additionally, we use a color histogram to capture the distribution characteristics of building colors, and a combination of ResNet-50, Vision Transformer, and YOLOv8 models to assess facade material, architectural style, and urban signage. Building on this, we construct an XGBoost-based classifier using labels of different urban historical areas and feature data for each dimension as inputs. This classifier is then applied on a larger urban scale to identify potential historical areas and distinguish those with stronger versus weaker historical features. The methodology was tested on urban historical areas in Beijing, Shanghai, and Guangzhou to validate its feasibility and generalizability. This intelligent framework effectively meets the requirements of holistic conservation by redefining the scope of urban historical areas based on cityscape characteristics. It identifies areas with discordant cityscapes

for targeted regeneration, while also enabling a nuanced understanding of the significance of different features across various historical areas. This, in turn, supports urban planning and design control by providing clear guidelines on maintaining consistency with historical features in future developments.

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Keywords: holistic conservation, urban historical area, cityscape, deep learning, street view images

INVISIBLE ENCLAVES: DESCRIBING ETHNIC PLACE-MAKING THROUGH COMPUTER VISION

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Individual Paper Presentation

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The formation of ethnic enclaves in the United States often followed larger patterns of urban development. Whereas early communities such as the coastal Chinatowns were often dense, legible neighborhoods, groups arriving in the late 20th and early 21st centuries followed patterns of suburbanization. These “ethnoburbs” embody similar complex social relationships as older or coastal enclaves but often lack clear spatial and territorial boundaries that make them legible. Despite containing businesses, community spaces, and resources for minoritized (sub)communities, these spatial enclaves may be rendered invisible due to the dispersive physical character of these suburbs.

This paper discusses efforts to use artificial intelligence to enumerate the degree to which ethnic communities have claimed and marked physical space. Specifically, this project attempts to use computational tools to analyze characteristics of text and signage in physical space in current and historic Google Street View to reveal patterns of ethnic place-making in southeastern Michigan, with a focus on the particularities of pan-Asian and newly-formed ethnic communities in the region over time. We discuss opportunities with this approach in mapping ethnic

communities and compare these efforts to the difficulties in using official records such as the US Census or business records and the challenges concerning the biases and difficulties in using such technologies.

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Keywords: Computer Vision, Street View, Ethnic Enclaves, Suburbs, Ethnoburbs

IOT FOR BUNDLED-2-UNBUNDLED PARKING; EMPIRICAL ANALYSIS OF PARKADE APP

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Bundled parking, where parking spaces are included as part of apartment rentals or office space leases, is increasingly out of step with the evolving needs of a population shifting towards remote work and shared mobility options. This incongruity exacerbates the scarcity of urban parking, contributing to congestion and inefficient space utilization. Unbundling parking fees was initially introduced to promote alternative transportation modes as a transit demand management tool (Manville & Pinski, 2020) in conjunction with aligning parking needs with the growing trend of shared mobility, however, further parking space management is required. The advent of IoT and smart cities is driving the proliferation of parking management applications (Celik et al., 2023), while cities and states are increasingly unbundling parking fees (Debnath & Dey, 2023; Litman, 2011). The central question is how effective parking management tools are in reducing residential parking usage, generating revenue, and influencing parking or travel behaviors. This study examines the shift from bundled to unbundled parking, utilizing technologies like Visual Recognition (VR) and Machine Learning (ML) alongside field observations and resident surveys. Additionally, it assesses the effectiveness of an advanced parking management app, "Parkade," in meeting the evolving needs of urban residents. Focused on two residential complexes in San Jose, CA, the study analyzes garage operational data, parking usage, and neighborhood impacts to understand current parking dynamics and the effects of bundled parking on urban spaces. The data collected through VR and ML allowed us to perform image data processing using visual data analysis on the data stream from cameras at parking spaces and also vehicle/object detection, to gauge the parking usage based on the garage imagery data recorded at different pick dates/times before and after the Parkade implementation. These analyses coupled with rigorous user surveys to

collect user/residents experience to gauge user preferences and experiences. Ultimately, we examined parking spot utilization based on vehicle size and dimensions to optimize space efficiency and user convenience. Our findings present a nuanced view of the transition to unbundled parking. After implementing Parkade at one of the case study buildings, the use of parking spots has increased by nearly 20% and the vacant/non-leased residential parking spots reduced by %52. The apartment management effectively optimized building space by accurately assessing the gap between parking demand and supply. This optimization resulted in an increase in the average revenue per parking spot, rising from $67.75 to $75.40. Consequently, the building's monthly revenue improved from $14,500 to $16,136, marking an approximately 11% increase and signaling profitability. However, resistance to adopting spot-sharing with mobile applications, as observed through user surveys, underscores the complexity of altering parking habits and the importance of addressing user concerns. Parking apps play a crucial role in facilitating unbundled parking, not only by managing parking space but also by providing real-time data on spot availability, locations, and pricing for reservations, which can further research efforts. Utilizing Parkade could alleviate parking uncertainty stemming from the shift towards unbundled parking. As this parking approach gains momentum, it's vital to consider equity, accessibility, and the integration of such solutions into urban development strategies and the construction of smart cities. Our research underscored the potential of parking apps in transforming urban parking landscapes by suggesting a future where parking is more adaptable, efficient, and aligned with the needs of contemporary urban life.

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Keywords: Parking Behavior, Internet of Things, Smart Cities, Technology, Unbundling

LEVERAGING THE TOOLS OF SOCIAL COMPUTING & AI TO COMPUTE SENSE OF COMMUNITY

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Individual Paper Presentation

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Studies show that with urbanization and affluence, people have less time to spend in the third spaces that allow healthy interaction with their community [1] Until the late 1980s and 1990s, people had time to communicate with their neighbors, family, or friends in third spaces, such as a laundromat or a neighborhood grocery store.

There was time for frequent community get-togethers that built trust, a Sense of Community (SoC), and a Sense of Place (SoP). In today's urban lifestyle, people hardly have dedicated time to spend dinner with their family, leading to an increased perception of stress in their day-to-day life [2]This maladaptation to process stress is called chronic stress, which, in turn, increases the risk of mental illness and other health disorders. Loneliness and lack of opportunity to engage in active or passive interaction with people, as well as increased mistrust, can cause a higher perception of stress. For similar reasons, more people are relying on online communication and showing an increased reliance on people-nearby applications (PNAs). PNAs are used to communicate efficiently with groups of people who choose to visit an event/place of matching interest. Platforms such as Instagram are used to explore locations where people meet or visit new places of interest. Gatti et al. indicate that Instagram enhances people's Sense of Place and consequently increases a Sense of Community in urban areas [3], [4], [5].

Research on how Instagram use affects users' experiences of their local communities is limited and ongoing. However, recent studies have suggested that looking at photos of social places and gatherings in one's local community on Instagram can connect to local social meanings. It can support social representations of local places and gatherings, 'strengthening' relationships with their local community [3]. Posting, sharing, or communicating on the Instagram platform can enhance a user's Sense of Community as well as a social entity and as a set of meaningful places. Overall, Instagram platforms open ways to engage citizens to experience and relate to their local communities.

To understand how the Sense of Community has evolved in this research's age of People Nearby Applications (PNA), we ask the following two questions:

1. Can location-based social computing platforms such as Instagram be used to understand the sense of place?

2. Can we quantify the abstract measures of sense of place using the image and text data?

In this research, we used publicly available geo-located Instagram posts to measure and map SoC in different parts of the city of Huntsville, Alabama. The research method to be explored here strives to enhance our power as urban planners to witness the city through the lens of publicly curated text and images, especially in a small metropolitan area such as Huntsville.

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Keywords: Social Computing, Instagram, Image Classification, Text Mining, Sense of Community

LOW-COST SENSOR DESERT AND EQUITY IN MAJOR AMERICA CITIES

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Individual Paper Presentation

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This paper explores the distribution and equity of low-cost air quality sensors in the context of urban smart cities, with a focus on America. The influx of data generated in recent years, primarily from urban settings, has not translated uniformly into enhanced urban decision-making, especially in smart cities, where expensive smart agendas have often led to the creation of sensor deserts (Nagaraj et al., 2020). These deserts represent areas lacking in sensor coverage, leading to gaps in data and knowledge about specific urban populations, potentially exacerbating existing social and environmental injustices (Brayne, 2017; Robinson & Franklin, 2020). This study aims to answer the following three questions: 1) where the indoor and outdoor sensor deserts for America cities are; 2) whether the environmentally vulnerable neighborhoods have more low-cost air sensors or not; and 3) whether there are racial or class differences in terms of the coverage and quality of low-cost sensors.

The study investigates the deployment of PurpleAir sensors as a remedy to the inequality presented by expensive, high-maintenance sensors like those used by the EPA. These low-cost sensors provide extensive spatial coverage and offer an affordable solution for monitoring air quality at a fine scale. However, the distribution and effectiveness of these sensors in addressing urban environmental challenges, such as air pollution and heat islands, remain questionable, particularly in terms of equity and coverage across different urban neighborhoods.

Analysis of sensor locations in 393 major U.S. cities revealed a significant disparity, with west coast cities, particularly in California, having a higher number of sensors. This disparity suggests a potential mismatch between sensor supply and environmental demand, with sensor-rich cities often having lower levels of pollution and heat compared to sensor-poor cities. The study further delves into the social equity of sensor distribution, finding that nonpoor white neighborhoods tend to have a higher density of sensors and better sensor quality, while poor neighborhoods, despite having newer sensors, face challenges in sensor validity and quality.

The paper argues for a more equitable distribution of low-cost sensors, emphasizing that all urban residents, regardless of socio-economic status or race, should have equal access to environmental monitoring and data. It concludes that addressing the disparities in sensor coverage and quality is crucial for creating more inclusive, informed, and sustainable urban environments.

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Keywords: Low-cost sensor, Sensor desert, Social equity, Air pollution, Urban heat island

MAPPING RESILIENCE: HOW FACEBOOK PROMOTES MUTUAL AID DURING BLIZZARDS

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Individual Paper Presentation

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This study looks into the intersection between urban resilience and crisis informatics through a case study of the 2022 Buffalo blizzard. The rationale for this work comes from the notion that cities are facing unprecedented environmental and social challenges from the increasing frequency of extreme weather events and climate change. In the face of these challenges, the concept of resilience has attracted much attention. Urban resilience can be defined as the systems' capacity to maintain or rapidly return to a steady state, or towards a better state (Meerow et al., 2016).

Over the last decade, social media has become an effective communication platform during all phases of crises (i.e., preparation, response, recovery, and mitigation). At the same time, the emergent connections fostered by social media have the potential to be converted into long-term relationships and improve community resilience (Procopio & Procopio, 2007).

We would argue that despite the recognition of social media's role during crises, the mechanism of how individuals' activities on social media affect community resilience at a large scale is underexplored (e.g., Yin et al., 2024). This causal effect loop is difficult to capture in complex systems where resilience at the macro level not just emerges from individual behaviors, but also from their interactions with each other and with the environment (Crooks & Wise, 2013). Furthermore, individuals' heterogeneity, autonomy, and adaptation during crises make resilience outcomes difficult to explain. To fill this gap, this research examines the connections between individuals' usage of social media and resilience through a case study of the Buffalo blizzard.

In terms of background, in December 2022, Buffalo (NY) experienced the most devastating storm in its recorded history. The four-day blizzard driven by lake-effect snow knocked out power, paralyzed travel, and left at least 47 dead. While people were isolated at home during the blizzard, they used social media to remain connected. Over 80,000 Buffalonians joined Facebook groups that later became important communication hubs. Online interactions were not limited to information sharing but also stimulated on-ground behaviors where people exchange resources like food and medicine. Even though the blizzard has passed, the Facebook groups remain active and demonstrate value in reconnecting residents in future shocks.

The research question that we aim to understand is "Under what circumstances can online interactions translate into on-ground mutual aids and affect community resilience". To answer this question, we collected Facebook posts and comments sent out during the blizzard. We combine topic modeling, named entity recognition techniques, and manual labeling to analyze the textual data. Next, we explored the social networks in Facebook groups and how they evolved.

A preliminary research finding is that online social media platforms (e.g., Facebook groups) improve community resilience during Buffalo blizzards through the creation of "weak ties" where the platforms greatly facilitate

information exchange and resource allocations among strangers. This finding further promotes Granovetter's (1973) weak ties theory in the digital age. Additionally, this research maps mutual-aid networks in a spatially explicit way, helps to understand the mechanism behind online communications and offline community resilience and prepares local communities for future blizzards and hazards more broadly.

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Keywords: crisis informatics, urban resilience, disaster management, social network, blizzard

MEASURING RESIDENTIAL MOBILITY USING CONSUMER REFERENCE DATASETS

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Individual Paper Presentation

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The study of residential mobility and neighborhood change has traditionally been constrained by a lack of sufficiently detailed longitudinal data. Data for research on residential mobility has historically been limited to small-scale longitudinal surveys such as the Panel Study for Income Dynamics (PSID), the New York City Housing Vacancy Survey (NYCHVS), or administrative datasets (e.g. Freeman 2005). While these surveys each have important strengths, they have traditionally limited in both scale and scope, and limit the ability of researchers to detect robust patterns of mobility at the scale of entire populations. Several recent studies have sought to address these limitations by employing novel consumer reference datasets intended to contain longitudinal observations for a near-census of the population (Greenlee 2019; Diamond et al. 2018; Chapple et al. 2022).

Despite their increasing popularity as a research tool, the representativeness of these consumer reference datasets for residential mobility research remains to be assessed. This paper seeks to address this gap in the literature through an analysis of two consumer reference datasets that are increasingly employed in various academic research contexts. In comparing these two datasets with American Community Survey (ACS) estimates at the county- and tract-levels for a single large county, we use econometric and machine learning techniques to answer

the following questions: First, to what extent do each of these datasets under- or over-represent particular social groups, as defined by race, socioeconomic status, tenure, and marital status? Second, are there any systematic biases in the spatial representativeness of these two datasets across neighborhoods defined by differing demographic characteristics? Finally, how might these datasets be employed to reliably measure the residential mobility patterns of specific social groups?

In order to analyze the representativeness of these datasets and their imputed demographic variables, we examine individual and household records between 2015 and 2019 within a single county, King County, Washington. We select King County as a case study for multiple reasons. With a total population over 2 million, King County is one of the largest counties by population in the United States. The county is also relatively diverse geographically, racially, and economically.

Residential mobility has long been a focus for planners and policymakers. Residential moves have implications for individuals and households as well as neighborhoods, cities, regions, and society: life outcomes are shaped by neighborhoods and residential location, and in turn residential moves shape communities and regions (Clark 2005). This paper provides important insights into the use of consumer reference datasets to analyze residential mobility.

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Keywords: Residential mobility, displacement, Data measurement, Big data

MEASURING SPATIAL NETWORK RESILIENCE OF SHANGHAI USING SUPPLY-DEMAND FLOW

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Individual Paper Presentation

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Background: The evaluation of network resilience has always been a significant focus in the field of complexity science. In the context of network science, the development of a framework for evaluating the resilience of urban spatial networks has emerged as a crucial approach in urban science for addressing future uncertainties. Previous studies have revealed that conventional network structure and resilience indicators are inadequate in explaining spatial interactions within urban spatial networks because they rely on the assumption of a homogeneous distribution of supply and demand. In fact, urban networks driven by supply and demand relationships display diverse flow patterns, emphasizing the heterogeneity of the network structure. However, there is currently limited understanding of how this phenomenon influences the evolution of network resilience.

Methods: We utilize commuter Origin-Destination (OD) data from mobile signaling data as proxies for supply and demand. By employing a dual-model approach to the street network, we effectively integrate supply and demand elements along with spatial paths in the street segment model. Additionally, we incorporate two reallocation effects, namely OD reallocation and flow reallocation, into the modeling process to better capture the supply and demand variations inherent in actual human behaviors. These effects illustrate the self-adaptability of supply and demand distribution as well as flow patterns. The inclusion of these reallocation effects not only enhances the realism of the simulation but also allows for the alignment with diverse planning intervention strategies through parameter adjustments. Ultimately, three key evaluation metrics for evaluating supply-demand resilience are introduced to describe supply-demand resilience from different perspectives: supply-demand loss, supply-demand match, and supply-demand efficiency. These metrics can be effectively visualized on a street map by dual modeling.

Results: The dynamic deliberate attack scenario is introduced as the benchmark to assess the supply-demand resilience in Shanghai's commuting. Our empirical analysis of Shanghai's results indicates that the previous network scale and efficiency indicators overestimated the actual supply-demand resilience. This points to a significant difference in Shanghai's supply and demand structure from its topological structure, emphasizing the value of this work. Additionally, we compared the impact of different redistribution strategies on the results. OD reallocation and flow reallocation, considering the city's self-organization effect, yielded superior results compared to no reallocation. Nevertheless, continuously increasing the intensity of planning interventions (increasing the OD reallocation distance threshold) had a boundary effect on resilience improvement. Furthermore, further analysis of supply-demand flow simulation results revealed that the attack led to the collapse of network connected components at critical time points, displaying different flow distribution structures. The changes in these structures underscore the necessity to examine heterogeneous flow. Lastly, the study summarized the spatial-temporal zoning of the three major metrics to provide resilience results for various regions in Shanghai, offering a resilience enhancement framework for planning intervention and presenting a new perspective for the integration of network science and urban planning.

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Keywords: Network resilience, Urban science, Supply and demand, Flow, Simulation

MULTISCALE ASSESSMENT OF ENVIRONMENTAL AND SOCIO-ECONOMIC ON MENTAL HEALTH

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Individual Paper Presentation

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In the context of accelerated global urbanization, where mental health issues are becoming increasingly prevalent, the role of built environments and socioeconomic determinants in mental health research has garnered increasing attention(Sen, 2012)(Moore et al., 2018). Previous studies have posited a pronounced correlation and influence of the urban milieu and inherent socio-economic factors on the mental well-being of inhabitants, subtly and overtly shaping their psychological states. With escalating mental disorders in cities leading to higher healthcare expenses and self-harm incidents, it's crucial to address urban influences on mental well-being and advocate for healthier urban living.

Despite the rapid advancements in computer vision, machine learning, big data, and online media platforms offering an abundance of data and analytical methods, prior investigations predominantly favored linear models. These models often lacked extensive exploration into non-linear counterparts, and insufficiently quantified the significance and interrelationships of these determinants. Notably, there's a scarcity of research leveraging state-of-the-art machine learning and computer vision techniques to extract and analyze environmental data. This deficiency has not only curtailed the predictive and interpretative precision but has also overlooked the multi-scalar impacts of urban environments and socio-economic elements.

Our research seeks to comprehend the intricate interplay of urban built environments and socio-economic factors and their collective impact on mental well-being. Focusing on cities like New York, Chicago, and San Francisco, we delved deep into how the urban milieu and inherent socio-economic structures could subtly or overtly influence the psychological states of its inhabitants. The study utilized Google Street View for urban environmental data, leveraging semantic segmentation models (PSPNet and MaskRCNN) to dissect and assess environmental attributes. Socio-economic data was drawn from the CDC and Census, with GIS technology streamlining data gathering and initial processing. Psychological insights were extracted from google map review, using an NLP model to determine sentiment scores.Using these datasets, 35 variables were distilled. The physical built environment was chiefly assessed via the Pyramid Scene Parsing Network (PSPNet) model, predicated on the ADE20K dataset, extracting streetscape pixels. This extraction, guided by visual index values and pixel percentages, was categorized into physical features, further amalgamated with insights from the 2021 version 3.0 Smart Location Database and urban open-data platforms. For socio-economic considerations, the study principally hinged on CDC and Census data, with geographical information system (GIS) technology facilitating data collection and preliminary processing.

The research juxtaposed the performance and accuracy of linear Ordinary Least Squares (OLS) models against non-linear counterparts. To delve deeper into these impacts, this study employed XGBoost and SHAPley Additive exPlanations (SHAP) to quantitatively evaluate the effects of built environmental variables (comprising both natural and man-made entities) and socio-economic determinants on mental health

The model evaluations revealed XGBoost's superior predictive capabilities in mapping mental health outcomes. Using this as a foundation, we constructed an evaluative framework. Our results provide a clear blueprint that delineates the roles of various determinants in mental health. This comprehensive understanding not only furnishes urban planners and decision-makers with critical insights, enhancing urban planning, landscape design, and environmental stewardship decisions but also paves the way for significant improvements in the mental well-being of city residents.

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Keywords: Public Mental Health, Social Media Sentiment, XGBoost, Nolinear Model

NEW JERSEY SOLAR PHOTOVOLTAICS OWNERSHIP AND HOUSE PRICE IMPACT

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Individual Paper Presentation

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In New Jersey, the push for renewable energy sources has led to a significant increase in residential solar photovoltaic installations. This surge is supported by state policies, incentives, and a growing awareness among homeowners about the benefits of solar energy, not only for the environment but also for reducing energy costs. Ownership of solar panels in New Jersey comes in two forms: direct ownership by the homeowner and third-party ownership (TPO) through leasing agreements or power purchase agreements. TPO is more frequently adopted in vulnerable communities, given that it doesn’t require a large upfront investment but may complicate future housing property transactions. Existing studies, however, have primarily explored the housing price premium of solar photovoltaics without considering the impact of panel ownership. To fill the research gap, this study developed a hedonic model leveraging data from New Jersey to explore the housing price premium of solar photovoltaic installation after controlling for ownership.

We used a longitudinal New Jersey residential solar installation dataset (2009-2021), property sale records from the NJ property tax system (MOD-IV) office, as well as open data accessed via Redfin and American Community Survey Application Programming Interfaces (APIs) to develop a hedonic model to explore the impact of solar photovoltaics installations and ownership types on residential property price. After controlling for characteristics of properties (e.g., square feet, year built, number of bedrooms and bathrooms) and neighborhoods (e.g., median income,

population and employment density, proximity to rail stations), as well as the year of the sale record, we found that owning solar panels will positively increase property values and the increase is significantly correlated with the installed solar panel size. Model results suggest that the housing price may increase by 0.89% per installed kW. In NJ, the average installed capacity for owned solar panels is 7.8 kW. Therefore, for properties with directly owned solar panels, the property value is likely to increase by 6.9%. This can be translated into a housing price premium of approximately $30,000 per directly owned solar photovoltaics (with average size), which is similar to the gross price premiums found in recent studies from Hawaii ($35,000, Wee 2016) and Arizona ($28,000). Meanwhile, TPO solar photovoltaics installations tend to depreciate the housing price by 12.1% which is likely caused by increased transaction costs, such as complications in mortgage applications and longer closing time due to lease transfers.

These findings underscore the financial benefits of investing in solar energy for homeowners, while also highlighting the potential drawbacks associated with TPO installations. Policymakers should consider these insights when developing regulations and incentives for solar energy adoption, ensuring that programs not only support renewable energy goals but also equitably enhance property values and homeowner investment returns.

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Keywords: Solar Photovoltaics, Ownership, Housing Price Premium, Hedonic Model, New Jersey

OPTIMIZING CAMPUS-CITY SERVICE FAIRNESS: SMART CARD DATA AND TIME INSIGHTS

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Individual Paper Presentation

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Introduction

Increasing attention has been paid to accessibility and equity of public service spaces(Zhang Y et al., 2022). Special time-sensitive urban areas like university campuses, industrial parks, and CBDs, where internal activities of the populace are heavily scheduled and exhibit regularity and habituality, are more prone to short-term concentrated surges in the utilization of public service spaces. This leads to the emergence of waiting time, resulting in time wastage, potential health and safety hazards, and increased management costs . Traditional methods of evaluating and optimizing the fairness and accessibility of public service space utilization based on location and supply-demand balance are mostly static and macroscopic(Wang Y et al., 2018). Few recognize the importance of accurate individual public service usage waiting time information from a temporal perspective in reducing waiting anxiety, optimizing service usage fairness, and adjusting usage plans rationally.

This paper takes the example of 7 public cafeterias within the Tongji University area in Shanghai, China. It develops a model to calculate individual waiting time at these cafeterias using big data from card transactions. The study further employs logistic regression models to demonstrate that waiting time significantly influences the cafeteria choices of faculty and students. An experimental intervention providing information on waiting times before meals confirms its effectiveness in reducing wait times and enhancing the fairness of space utilization in university cafeterias. This approach supports the refined and intelligent management of university areas.

Approach and Methodology

The study uses card swiping data of May 2023 and March 2024 from multiple campuses of Tongji University in Shanghai, China, personal information, and manually measured waiting time data for cafeteria counters in April 2024. This includes card swiping or spending records at multiple public cafeterias, dormitories, campus gates, and personal information such as semester course schedules, university IDs.

Firstly, waiting time from 93,700 card swipes data and 650 manually surveyed data at cafeteria counters were combined. Dividing the data into training and test sets and using frequency distribution and regression, a model to calculate individual waiting times was created.To further assess the spatial utilization fairness, crowded periods and their duration for each cafeteria are identified based on the standard that more than two-thirds of the waiting time is equal to or exceeds 5 minutes.

Furthermore, logistic regression models were developed to explore the factors influencing cafeteria choices among faculty and students, with waiting time, distance to cafeterias, and spending amounts as independent variables. The significance of waiting times was confirmed through these models.

Lastly, an experiment in March 2024 provided 900 randomly selected faculty and students with historical waiting time information during the current period before dining. Using cafeteria card swipe data, the effectiveness of this strategy was validated by comparing the changes in waiting time and congestion periods before and after the provision of information.

Results

The results of the waiting time calculation model from the test set achieved mean and standard error rate deviations of 0.9% and 4.2%. The logistic model accounted for 51% of the factors influencing cafeteria choices, with waiting time being significant and having an impact coefficient of -0.44. Analysis of card swipe data showed that after providing historical waiting time information for the same period, the average individual waiting time was reduced by 4.8 minutes, and the total congested duration for all cafeterias decreased by 13.4 minutes.

Discussion and Conclusion

This paper confirms waiting time's critical role in university dining choice, proving providing wait-time info significantly enhances fairness. Offers valuable insights for future refining public space resource equity assessments and management in time-sensitive urban areas using smart card data analysis.

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Keywords: Smart card data analysis, Waiting time, Fairness in public services, Time-sensitive urban areas, Spatio-temporal analysis

OVERCROWDING IS AFFECTING SUBJECTIVE WELL-BEING OF RESIDENTS IN SHANGHAI

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Individual Paper Presentation

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The densification of urban areas has been linked to increased depression rates, posing a threat to the subjective well-being (SWB) of urban residents. Few studies have explored how neighborhood-level living environment exposure and socioeconomic factors influence SWB across and post pandemic phases, leaving a gap in guidance for public health and urban planning interventions. To address this, we developed a data-driven approach to examine the non-linear effects of neighborhood-level socioeconomic and built environment factors on SWB using explainable AI and real-time social sensing. We measured SWB variations using expressed sentiment from over one million geotagged social media posts. These posts spanned 11,038 residential neighborhoods in Shanghai across six distinct phases during and post COVID-19 outbreak from January 2021 to May 2023. For each phase, we analyzed the associations between SWB and socioeconomic and built environment factors at the neighborhood scale using a fully connected neural network (FCN) model. To demystify the 'black box' nature of deep learning algorithms, we employed the Shapley additive explanations (SHAP) framework for model interpretation. Our findings reveal that overcrowding negatively impacts residents' SWB, with this effect varying across spatial and temporal dimensions. Temporally, the enforced restrictions during lockdowns confined people to their homes, intensifying overcrowding's adverse effects on SWB. Spatially, residents of densely populated areas in urban villages or suburban neighborhoods exhibited more negative sentiments compared to those living in newly built high-rise communities in city centers. Additionally, our analysis identified a moderating effect of other variables on the relationship between densification and SWB. Notably, communities with better access to open spaces or higher average incomes demonstrated a resilience to the adverse effects of overcrowding.

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Keywords: Social media data, overcrowding, Explainable machine learning, SHAP, built environment

PEDESTRIAN FLOW PREDICTION USING VIDEO AND AUDIO SENSING TECHNIQUES

Abstract ID: 1108.0.0.596.2024
Individual Paper Presentation

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Growing interest in walkability has prompted cities to explore pedestrian sensing and flow prediction techniques. While vehicular movement has long been a key focus of traffic planning, the dynamics of pedestrian movement, especially in U.S. cities, have received comparatively less attention. A deeper understanding of pedestrian flows could create more equitable and effectively designed walkable spaces. Predicting pedestrian traffic in public areas can significantly enhance transportation planning, disaster response management, public safety assessments, business location decisions, and overall urban planning strategies (Yabe et al., 2023; Ratti et al., 2006).

Pedestrian volume assessment has traditionally relied on video data analysis (Li et al., 2016) or infrared cameras (Yang et al., 2010, 2011), methods that often involve costly equipment and substantial data storage needs. Video cameras are less effective in low light and when pedestrians are occluded by other objects. In contrast, microphone-based sensors present numerous advantages, including affordability, low power consumption, and the ability to cover wide areas up to 360 degrees. Moreover, since sound can travel around obstacles, microphones are capable of capturing data that would remain undetected by other means. However, these benefits come with significant challenges, such as the need for sophisticated algorithms to parse overlapping sound signals without clear directional cues and concerns related to privacy, anonymity, and data sanitization.

In this context, this study explores the effectiveness of audio sensing in detecting pedestrians and enhancing the prediction of pedestrian flows. Utilizing the ASPED dataset (Seshadri et al., 2024), which includes both video and audio data collected on the Georgia Tech campus, we trained machine learning models to detect pedestrians through audio recordings. Then, to assess the capability of pedestrian flow prediction, we employed a Convolutional Neural Network (CNN) model based solely on video data as our baseline and compared its performance with that of other models, including those utilizing Graph Convolutional Networks (GCN) and incorporating audio data. Our goal is to determine whether audio sensor data complements video sensors, allowing audio sensing to be applied in real-world scenarios where video coverage is impractical. Our preliminary analysis

underscores the potential of audio sensors in predicting pedestrian flow, though further algorithmic and technological refinements are necessary to make these sensors practically usable. Additionally, our study discusses the potential applications and scenarios where audio-based pedestrian detection could significantly benefit urban and transportation planning.

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Keywords: Urban Sensing, Audio Sensing, Pedestrian Detection, Pedestrian Flow Prediction

PLACELESSNESS & ITS CONTRIBUTING FACTORS ACROSS CA HIGH-TECH ZONES

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Individual Paper Presentation

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The swift ascent of the high-tech economy and the deepening integration of global economic networks have prompted widespread apprehension regarding the phenomenon of placelessness in cities worldwide (Flecker & Schönauer, 2016; Wang, 2020). A significant catalyst for this concern is the rapid proliferation of remote working or teleworking, facilitated by ongoing technological advancements, particularly within knowledge-based or high-tech sectors (Ozimek, 2020). High-tech occupations, notably within the information and communication technology (ICT) industry, exhibit reduced reliance on physical presence within conventional office settings, thus enabling the recruitment and accommodation of remote employees to varying extents (Yang et al., 2022). The COVID-19 pandemic further exacerbated this trend, with approximately half of the American workforce now engaged in

remote work for at least part of the week (Brynjolfsson et al., 2020), and the pandemic doubling or even tripling the number of remote workers across various job levels (Ozimek, 2020, p. 2).

Conversely, in the wake of the knowledge economy's ascendance, urban economic development strategies have shifted towards place-centric approaches aimed at cultivating a highly skilled and educated labor force to attract high-tech enterprises and catalyze the formation of high-tech clusters (Feldman & Kogler, 2010; Katz & Wagner, 2014). Strategies such as innovation districts, creative cities, knowledge clusters, and knowledge-based urban developments emphasize the utilization of mixed-use, transit-accessible, dense, walkable, and amenity-rich urban areas to foster social interaction and cultivate vibrant urban hubs conducive to both work and leisure (Katz & Wagner, 2014, p. 1).

However, a notable unresolved ambiguity pertains to the contrasting dynamics between the remote nature of high-tech employment and the place-centric objectives of economic development initiatives aimed at fostering high-tech clusters (Flecker & Schönauer, 2016). This study aims to address these critical inquiries through a longitudinal analysis of job dynamics within California's high-tech zones. Building upon Zandiatashbar's (2023) research, which delineated the geographic and industrial landscape of U.S. high-tech entities, this investigation utilizes advanced geospatial data-driven methodologies and disaggregated firm-level data from 2016 to examine the transformation of job compositions within California's high-tech zones. Employing a Hierarchical Linear Model, this research analyzes changes in art, recreation, and entertainment job categories—serving as proxies for placelessness—across California's high-tech zones from 2016 to 2021, accounting for factors such as the built environment, housing costs, industrial diversity, job-population balance, and the presence of AI-distributed jobs.

The findings reveal significant variations in placelessness across different high-tech zones in California, with mixed-use dense urban areas exhibiting a slower pace of placelessness compared to other high-tech zones. Notably, biopharmaceutical and Information Technology manufacturing high-tech zones demonstrate resilience against placelessness, potentially due to the continued necessity of in-person presence in these sectors, despite their susceptibility to AI disruption. However, high-tech zones characterized by a blend of diverse high-tech industries experience heightened levels of placelessness, indicating the imperative for strategic interventions in regions where high-tech zones are heterogeneously composed.

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Keywords: Placelessness, High-tech zones, Knowledge economy, Remote working

PREDICTING SALINIZATION OF GROUNDWATER WITH MACHINE LEARNING

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Individual Paper Presentation

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As sea levels rise, high tides will encroach inland, potentially leading to increased salinity in coastal surface water and groundwater sources. This rising salinity poses potential implications for the drinking water supplies of municipalities reliant on freshwater from these coastal sources. Our objective is to identify influential factors affecting salinity levels using machine learning algorithms, understand the trend of groundwater salinization under a projected 3-ft sea level rise scenario, and assess the risks of saltwater intrusion in coastal regions.

In this study, we collected and analyzed fourteen thousand observations of chloride data from monitoring wells located within 100 miles of the South Atlantic coast and Gulf of Mexico. These data were sourced from the Water Quality Portal, National Ground-Water Monitoring Network, and state-level agencies. Salinity levels were categorized as freshwater or salty water based on the WHO drinking water standard with a chloride concentration threshold of 250 mg/L. We assessed the salinization status of groundwater using multiple machine learning algorithms, including Decision Tree, Random Forest, XGBoost, Artificial Neural Network, and Support Vector Machine. By using the optimized Random Forest Classifier algorithm, our model achieved a true positive rate of 90% for freshwater and over 70% for salty water in the test set, which converge to similar value to the training and validation set and indicate good performance.

Our findings reveal five influential factors: well depth, surface elevation, distance to shoreline, tide level, and precipitation. While the model demonstrates good generalization across 13 states, regional variations exist, with higher accuracy observed in states with higher concentrations of salty samples, such as Georgia, South Carolina, North Carolina, Florida, and Louisiana. Conversely, states with predominantly freshwater observations, including New Jersey, Pennsylvania, Delaware, and Alabama, demonstrate lower model accuracy. Most groundwater resources can be accessed within 300 meters of depth from the surface elevation, and salinization patterns vary with distance from the coast, ranging from 7 km in South Carolina to 80 km in Florida. Wells closer to the coast and with shallower depths are at higher risk of salinization.

Using the best model and considering incremental mean sea level rise and distance to the coast, we simulated a future 3-ft sea level rise scenario to project salinization trends. Initial findings indicate that approximately 2% of existing freshwater wells are at high risk of becoming salty along the South Atlantic, with severe impacts expected in regions like Florida. This enables us to identify areas at high risk of saltwater intrusion and inform government to respond with appropriate policies.

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Keywords: sea level rise, groundwater salinization, Machine Learning, risk assessment, climate change adaptation

RESEARCH ON DIVERSIFIED URBAN REGENERATION MODELS INFLENCED BY INTERNET

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Individual Paper Presentation

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In today's digital age, internet media is intricately intertwined with physical spaces and urban regeneration. However, conventional approaches often overlook their influence. This paper presents diversified urban regeneration models influenced by internet media, and explores their mechanism and outcomes.

Firstly, literatures review. Expanding from Lefebvre's "right to the city", we ought to embrace "the right to networked cities" [2,3] in our understanding of urban regeneration. The media geography ternary cognitive system proposed by Falkheimer offers a theoretical framework for analyzing the mechanisms of internet media on urban regeneration. Existing research on this topic is limited, with single empirical case models and insufficient data mining and utilization [5].

Next, data collection and analysis. (1) Analysis of network vitality. We chose Redbook app as our platform, using "Internet celebrity tourism spot/destination+Nanjing City" as keywords, Python for data capture and analysis, and AMap API for location of 1040 network interest point entries. The Network Vitality Index was calculated for every community based on indicators like entry frequency and popularity. (2) Measuring demand for physical space updates. Objective factors like old residential areas, old industrial areas, and historical sites were used to calculate the regeneration demand index. (3) Superposition of the two indices. The "Update Demand Index" and "Network Vitality Index" were categorized high, medium, and low, spotlighting dual high communities for special attention. (4) Pattern partition. The overlapping between network points and regeneration objects led to identification of three types of urban regeneration areas: residential area, historical area, and industrial area. Three stages of online media intervention in urban regeneration – early, mid, and late stages – were identified through the comparison of note popularity trends with urban regeneration actions' timing.

Finally, case studies. Three typical communities were chosen for analysis – the Yujiaxiang community in the residential area (early intervention), the Xiaoxihu community in the historical area (mid-term intervention), and the Laifengjie community in the industrial area (late intervention). Conclusions was drawn that (1) physical space is

reshaped while digital space is continually created and edited, allowing for media technology and regeneration interactions. (2) Urban regeneration reshapes spatial representations through update planning and institutional reshaping, which tend to abstract physical space into symbolic forms like text and images. (3) Online media interventions contribute to urban regeneration's construction of virtual senses of place and further enrich the mixed space experience.

This study identified various patterns of urban regeneration influenced by internet media, suggesting that trend of "spatial production" in urban regeneration towards "virtual real synergy" . It proposes a novel theory and methodology, providing valuable insights for urban regeneration potential evaluation and strategic planning.

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Keywords: urban regeneration, online media, social platform, spatial production, text analysis

RESEARCH ON SMART ALLOCATION OF SERVICE FACILITIES IN URBAN RENEWAL DESIGN

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Individual Paper Presentation

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China's urbanization rate has reached 66.16% in 2023, and the focus of urban construction has shifted from mere expansion to enhancing quality. Urban renewal has emerged as a pivotal strategy for fostering urban development, garnering increasing attention. This process encompasses a multitude of factors including spatial transformation, environmental improvement, functional upgrades, and population dynamics, among which the revitalization of urban service facilities is crucial, underlining the potential to enhance the quality of citizen's life by augmenting missing functions and introducing new ones within existing areas. Although designers have realized the importance of mixed-use development, traditional design approaches with simplified understanding often fall short in comprehensively addressing the intricate interplay among various urban functions. This limitation hinders the accurate allocation of urban service facilities, resulting in functional shortages and resource inefficiencies.

Therefore, This paper aims to address this gap by proposing a pragmatic approach that leverages machine learning to achieve rational allocation of urban service facilities within the context of urban renewal design. Through the integration of a practical case study, this paper seeks to elucidate the efficacy of such a method in optimizing urban environments and promoting sustainable urban development.

Firstly, the paper illustrates the challenge of allocating service facilities in urban renewal design, emphasizing the need to address shortages and enhance effective service delivery. Drawing insights from the evolution and features of generative artificial intelligence, this paper presents a novel perspective on integrating AI-assisted technology into urban renewal design. As algorithms and computing capabilities continue to advance, there has been a surge in research exploring the application of model-based urban planning methods to tackle the complexities of urban elements, thereby enhancing the scientific rigor of planning and design processes. AI tools have shown notable strengths in forecasting complex urban problems, conducting multi-scenario prediction, generating design schemes, evaluating urban performance, and optimizing outcomes, thereby offering comprehensive support to planners in decision-making processes. The integration of urban renewal scenarios with AI approaches promises to assist urban planners with more potent tools, facilitating more informed decisions and fostering the sustainable development of urban areas.

Furthermore, the paper illustrated an experimental workflow employing machine learning methods and urban models to dynamically allocate ten types of urban service facilities, represented by classified point of interests. This framework contains model design, location-based data collection and processing, learning and allocating procedure, and results, and is described through a case of urban central urban renewal design in southern China. The result reveals the efficiency of machine learning based allocation approaches in facilitating rational urban functional layouts, meeting citizens' work and living demands, fostering regional industrial innovation, and enhancing overall quality of life. The findings involve four key features of this approach, including: (1) Leveraging machine learning algorithms to derive knowledges and rules from given datasets for more efficient generative results; (2) Ensuring output reliability through careful selection of input data; (3) Adaptive generation process to effectively reduce the cost of manual work; (4) Offering user customization for personalized content, transcending limitations of traditional model. This study elucidates a dynamic allocation process for urban service facilities, promoting the generation of precise and realistic solutions for urban renewal areas, thus enhancing design efficiency and program quality.

Finally, future research directions are proposed, including the construction of a multi-objective oriented evaluation system for urban service facilities, the optimization of decision-making mechanism, and the integration of generative tools. From the aspects of evaluation system, decision-making mechanism, and method integration, suggestions on introducing new technologies into urban renewal design practice are provided to improve the rationality and sustainability of urban renewal work.

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Keywords: urban renewal design, point of interests, facility allocation, design approach, generative model

REVEALING DRIVERS OF AUTOMATED VEHICLE (AV) TEST PILOT GROWTH IN US CITIES

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Individual Paper Presentation

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The proliferation of Automated Vehicle (AV) test pilots across U.S. cities signifies a critical juncture in urban transportation dynamics, spotlighting issues of city readiness and equitable involvement in the planning of this significant technological shift. This study investigates the factors influencing the presence of AV test pilots in U.S. cities, aiming to identify strategies and contexts that foster these urban experiments and also to identify communities leading in trying to integrate AVs into their transportation networks.

Historical transportation policies have had both intended and unintended social and environmental consequences such as the promotion of the automobile and land use changes that follow (e.g., freeways). With the advent of AVs, there exists an opportune moment to reimagine our relationship with transportation in the built environment and also implement equitable transportation planning strategies. Furthermore, the courting of these AV firms to help deploy pilot projects may also provide a boon for local economic development.

Employing quantitative multilevel modeling, this research analyzes a comprehensive dataset of socio-economic, geographical, policy-related, and urban infrastructure variables. Targeted matching techniques such as the Mahalanobis distance method refine the analysis to a manageable subset of cities, contrasting those with AV initiatives against those without between 2020-2023. Multilevel modeling is applied to account for nested influence of AV policies across levels of government. For example, AV test pilots cannot happen at a municipal level if they are illegal at the state level. This methodology allows for a robust identification of patterns influencing cities' propensity to host AV test pilots.

More specifically, observed policy factors include but are not limited to policies such as special-land use privileges (e.g., innovation zones) and other policies reducing red tape. Economic factors such as sector share come from economic development literature insights of agglomeration strategies. Geographic factors include climate where AV firms have stated it is better to test in sunnier climates that is less harsh on the vehicle's sensors. The directional strength of this relationship, however, remains unclear as AV firms have also stated wanting to test in harsher climates in later phases of testing. Following the contradictory desire to participate in both simple and difficult environments to train AV technology include traffic complexity such as the diversity of mode types on the road and intersection density. Socio-economic factors such as race, political party affiliation, and educational attainment help identify which groups are more likely to be exposed to AV test pilot projects.

Contrary to the literature’s reliance on more qualitative survey-based explanations, this approach expands on such findings by confirming statistically significant factors affecting AV test pilot presence, offering a more objective, generalizable insight across U.S. cities. This research stands out by moving beyond case-specific instances and helps

mitigate biases that may arise from interviewees facing political pressures who may withhold information or push misleading narratives.

By identifying factors influencing AV test pilot adoption, this study provides insights for cities to develop effective AV integration strategies, enhancing inclusion and reducing unwanted experimentation. Cities concerned about AVs affecting public safety, public transit, and alternative transportation might adopt alternate strategies. Regardless of a city's viewpoints on AV technology, this research uncovers nationwide trends that enable cities to better strategize their response to these urban experiments. In essence, this work emphasizes the imperative of integrating transformative emerging technologies like AVs into urban planning processes, advocating for proactive engagement to achieve equitable and inclusive transportation futures.

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Keywords: automated vehicle technology, autonomous vehicle, pilot project, urban experimentation, multilevel model

SENTIMENT DYNAMICS IN PUBLIC SPACES DURING THE PANDEMIC IN NEW YORK CITY

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Individual Paper Presentation

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In response to COVID-19 outbreak that began in late 2019, the unprecedented shutdown orders and restrictions posed significant hazards to public health and wellness. Not only does the pandemic situation directly cause people’s respiratory, cardiovascular, and other severe health-related symptoms, but the lockdown restrictions also lead to several deleterious health outcomes from limited physical activity and mobility. Stemming from infection fears, social isolation, and loneliness, people have also experienced negative mental and psychological health impacts, including heightened levels of stress, anxiety, and depressive symptoms (Rousseau & Deschacht, 2020).

As people accordingly sought safe places for outdoor activities and gatherings to mitigate the risk of virus transmission in indoor settings, many cities including New York City responded by introducing or amending policies and regulations to provide urban dwellers with sufficient public space for social interactions and recreational opportunities (Honey-Rosés et al., 2020). For example, as part of its Phase 2 reopening plan, New York City allowed for the reopening of parks and playgrounds, which had been closed for several months by the shutdown orders, as of June 22, 2020. Additionally, as of June 27, 2020, the city mandated the opening of all outdoor privately owned public spaces (POPS) to the public, facilitating temporary uses for outdoor dining, entertainment, retail, and queuing spaces in a socially distant manner.

The importance and influences of public spaces on human health and well-being have been of interest in recent pandemic studies. While a growing body of research has used social media and online platform data to broaden the understanding of how individuals react and interact with urban public spaces during the pandemic, most of the current research has mainly focused on urban parks and green spaces (Lopez et al., 2021; Marchi et al., 2022). This study thus aims to examine how people's behavioral and emotional experiences, as expressed in tweets within POPS in Manhattan, New York City, changed following the onset of the COVID-19 pandemic, using a regression discontinuity in time design combined with social media analytics. The primary datasets used in the study include 1) maps and records of POPS in Manhattan obtained from the New York City Department of City Planning, and 2) geolocated Twitter data collected via the Twitter API v2. The study period encompasses both pre- (from January 2019 to December 2019) and post-pandemic period (from July 2020 to June 2021).

Leveraging location-aware technologies and natural language processing, this study can provide significant implications for policymakers and urban planners seeking to adopt a more context-sensitive, human-centered application in planning processes for creating healthy urban built environments that are more responsive to people's needs and behaviors, particularly in the face of unprecedented challenges such as the COVID-19 pandemic.

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Keywords: Public space, Coronavirus pandemic, Natural language processing, Sentiment analysis

SOCIAL INTERACTION RECOVERY FOLLOWING COVID-19: INSIGHTS FROM SOCIAL MEDIA

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Individual Paper Presentation

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In recent years, the global public health crisis has prompted many cities to adopt isolation and protection policies, impacting public mental health and causing social isolation. Urban parks have emerged as crucial green buffers during the COVID-19 pandemic, playing a pivotal role in mitigating this phenomenon. However, current research on social interactions in urban parks has two main limitations: first, most studies utilize small-scale datasets, such as those collected through questionnaires or interviews, limiting the understanding of a broader and more diverse population's behavior. Second, there is a notable lack of research on social interactions in urban parks during public health crises, especially during epidemics. Although extensive literature explores parks' impact on mental health, these studies often overlook the potential effects of health crises on social interaction patterns within parks.

To address these gaps, this study aims to uncover the evolution of social interaction in Shanghai’s urban parks during the COVID-19 pandemic and identify specific factors influencing the recovery of park-based social interaction activities. The research utilizes Dianping review data from 160 parks in Shanghai, spanning from January 2019 to January 2021, with a total of 142,053 entries. By implementing a machine learning-based keyword analysis method, we first determined the percentage of social interaction-related posts. Our analysis reveals that social interaction-related posts constitute 81% of the total, with the highest and lowest percentages within individual parks being 96% and 54%, respectively. These figures indicate considerable variability in the social functions served by different parks. Time series analysis was then used to examine the resilience of social interactions post-crisis, showing that while 65 parks did not return to their original levels of social interaction, 95 parks exceeded their pre-crisis interaction levels. Regression analysis further investigated the primary factors affecting the recovery of social functions, including park size, presence of water bodies, recreational facilities, POI density, and road network density, considering both the parks' inherent characteristics and their surrounding environments.

This paper makes several notable contributions. Firstly, it leverages social media data to enrich our understanding of the dynamics, shifts, and demands associated with social interactions within Shanghai's urban parks. Secondly, it delves into the repercussions of the public health crisis on park-based social interactions, assessing both the community's needs during lockdown periods and the subsequent recovery of social functions as parks reopened. Thirdly, through detailed regression analysis, the study pinpoints the determinants influencing the rejuvenation of social interactions in parks following the epidemic. These insights afford urban planners and park managers valuable empirical evidence, guiding them in the post-pandemic era to enhance and tailor the social interaction capabilities of urban parks more effectively.

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Keywords: Public health crisis, urban parks, social interaction, social media data

SPATIAL ANALYSIS ON URBAN SPRAWL PARADOXES IN PHILADELPHIA AND LOS ANGELES

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Individual Paper Presentation

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Urban sprawl, marked by low-density, discontinuous development and dependence on automobiles, poses a significant challenge in US urban studies due to its impacts on environmental, economic, and transportation sustainability (Brueckner, 2000). Within this context, Philadelphia and Los Angeles are notable, each presenting unique sprawl paradoxes that challenge established norms. Philadelphia, known for its historic, compact downtown and well-defined Central Business District (CBD), has reversed post-industrial decline, witnessing a 39% increase in downtown population over two decades, achieving a high live-work ratio of 43% (Philadelphia State of Center City 2023). Despite its flourishing downtown, its edge cities (Ding et al., 2000) continue to experience rapid sprawl. In contrast, Los Angeles, propelled by the entertainment industry and growth reliant on automobiles without a dominant CBD, is often typified as sprawling. Yet, its high density and even population distribution introduce a 'dense sprawl' paradox, defying typical sprawl characterizations (Eidlin, 2005).

This paper explores the mechanisms, magnitudes, and types of urban sprawl within the Philadelphia and Los Angeles Metropolitan Statistical Areas (MSAs) from 2001 to 2019. It seeks to address two principal questions: 1) What types of sprawl patterns are observed in the Philadelphia and Los Angeles MSAs in the last two decades, and how pronounced are these sprawls? 2) How have historical contexts and policy factors influenced the disparities in sprawl patterns between these MSAs?

This study adopted a mixed-methods approach, combining quantitative analysis with the Urban Sprawl Metrics (USM) toolset and qualitative policy assessments. It utilized the USM toolset's Weighted Urban Proliferation method (Jaeger & Schwick, 2014) to measure urban sprawl levels. Furthermore, the study employed the Urban Expansion Index (Liu et al., 2010) to categorize growth patterns into infilling, edge, and outlying expansions. This study used data from the National Land Cover Database (NLCD) and the American Community Survey (ACS) for 2001, 2011, and 2019.

The results reveal contrasting sprawl patterns in the Philadelphia and LA MSAs in terms of the sprawl index and sprawl type. The Philadelphia MSA has witnessed an increasing trend in sprawl, especially around edge cities, linked to the decentralization of employment. However, Philadelphia has notably shifted towards a higher ratio of infill expansion, indicative of effective smart growth strategies aligning with the city's efforts to stabilize vacant land and issue new construction permits since 2003. Conversely, the Los Angeles MSA experienced a reduction in sprawl between 2011 and 2019, largely due to decreased built-up density. Meanwhile, Los Angeles has experienced an increase in its outlying expansion ratio from 2001 to 2019, suggesting a disordered, typical leapfrog sprawl pattern according to zoning regulations.

The findings underscore the evolving nature of sprawl and the mechanisms shaping these patterns in Philadelphia and Los Angeles MSAs. This paper contributes to the urban sprawl discourse by linking quantitative sprawl measurements with their driving mechanisms across different metropolitan contexts, offering insights for urban planners and policymakers in devising strategies to navigate urban growth and mitigate sprawl's negative impacts.

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Keywords: Urban sprawl, Urban expansion, Weighted urban proliferation, Landcape expansion index, Metropolitan statistics area

THE IMPACT OF SOCIAL MEDIA ON TRAVEL BEHAVIOR: MOBILE PHONE DATA INSIGHTS

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Individual Paper Presentation

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With the development of mobile internet, social media has become a crucial platform for users to obtain travel information and share their travel experiences. Users can access a wealth of travel information through social media, including introductions to destinations, dining recommendations, and accommodation experiences, all of which serve as important references for travel planning. Evaluating the impact of social media on travel decision-making has emerged as a hot topic in tourism research. Current studies find that the use of social media fosters travel and influences the choice of destinations. However, these studies mainly rely on qualitative methods or subjective scoring by respondents. Empirical research based on objective, large-sample data to investigate the influence of social media on travel behavior is still relatively rare.

Mobile phone signaling data, recording daily mobility and social media usage, offers a new perspective for studying the impact of social media on travel behavior. This study utilizes mobile phone signaling data from China Unicom, one of the three major mobile operators in China, from 2020 to 2022. Taking Xiaohongshu as an example, a comprehensive social media platform in China, this study explores the effect of social media usage on daily travel behavior, aiming to answer to what extent Xiaohongshu usage affects users' daily trip frequency, and how it alters their preferences for destinations.

The study's findings reveal that first, the proportion of users on Xiaohongshu is higher among young people, women, and residents of urban central areas. Second, based on a difference-in-differences model, it was found that after using Xiaohongshu, the frequency of users' daily travels increased significantly, with longer usage durations correlating with more frequent travels. Third, by adding online attractiveness to physical spaces, Xiaohongshu has influenced users' preferences for daily travel destinations. The study employs a logit model to investigate the online attractiveness of different regions to Xiaohongshu users, showing that central urban areas have a higher attraction for these users. Lastly, based on the geodetector, it was found that the density of Xiaohongshu points of interest (POIs) and the density of subway station can explain the spatial differences in the online attractiveness to some extent.

This research provides a new perspective and empirical support for understanding the influence of social media on the travel behavior, and offers valuable references for future related studies.

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Keywords: Social Media, Travel Behavior, Mobile Phone Signaling Data, difference-in-difference model, logit model

THE INTERNET-INDUCED RESTRUCTURING OF URBAN-RURAL SPATIAL RELATIONSHIPS

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Individual Paper Presentation

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The rapid development of the digital economy has instigated significant transformations in the conventional production and living relationships between urban and rural areas. This has led to shifts away from traditional modes of production and daily life, affecting the functions of villages, towns, and county-level cities. Previous studies related to the impact of the Internet on restructuring urban-rural relationships mainly focus on how villages integrate into regional production and consumption systems through the Internet(Luo & He, 2013), the evolution of society and production from agriculture-based villages into online industry-driven ones(Zhang et al., 2018; Xie et al., 2023), and the mechanisms of economic growth, spatial expansion, and urbanisation in towns and villages(Yuan et al., 2022). These studies have identified characteristics such as the expansion of construction land, three-

dimensional land use, and the compression of living space (Zhang et al., 2019). However, most prior research examines the impact of the Internet on urban and rural areas separately, without a detailed exploration of the restructuring of the urban-rural relationship. Taking Q Town, located in Shaanxi Province, China, as an example, this study investigates the impact of the Internet on the production and living space usage among rural residents. The research methods and materials include face-to-face interviews, in-depth surveys, and sales orders of agricultural productions. This study aims to explore emerging patterns of urban-rural relationships due to the Internet. We found that: (1) There are significant obstacles to the digitalization of rural production processes, which have not yet had a notable impact on the general urban-rural relationship. (2) The sales process for agricultural products has a high degree of digitalization, which promotes cooperative relationships between urban and rural areas and expands the marketing spatial scope of product sales. (3) There is a high degree of restructuring in the rural spaces used for living and leisure activities: Shopping spaces for goods with high purchase frequency and low value, such as food and daily necessities, are still following a 'town-dispersed' pattern, while spaces for purchasing items with lower purchase frequency and higher value, such as clothing, footwear, digital products, and home appliances, have shifted from being 'county-centered' to 'Internet-centered'. (4) Leisure activities migrating to mobile Internet show a clear trend, but without significantly affecting residents' use of traditional leisure and social spaces. This research promotes the theoretical basis in this field on urban-rural relationship transformation in the digital economy era, particularly in how the Internet affects traditional urban-rural production, lifestyles, and spatial structures. Moreover, it provides policymakers with empirical evidence to improve rural informatization and promote online agricultural sales, advancing integrated urban-rural development. Additionally, for enterprises, it also gives insights into shifts in consumer shopping patterns and changes in leisure habits. Ultimately, this study contributes to realising rural revitalisation strategies of China, promoting a more balanced urban-rural development.

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Keywords: Digital Economy, Urban-Rural Relationships, Spatial Restructuring, Rural Revitalization, Sustainable Development

THE MECHANISM OF COMMERCIAL AREA CHANGE IN SOUTH KOREA'S DECLINING CITIES

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Individual Paper Presentation

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Urban change characterized by patterns of growth and decline is a fundamental aspect of urban development worldwide. Urban shrinkage is a longstanding phenomenon that has been recognized for quite some time. The evolution and decline of cities and city centers have been perceived as a natural progression, wherein urban transformation occurs through a lifecycle that ultimately culminates in inevitable decline (Cristina Martinez-Fernandez et al., 2012). The factors driving urban shrinkage, often intertwined with the scale of the city, contribute to the diverse trajectories of shrinking cities (Ma et al., 2024).

Concurrently, Delage et al. (2020) assert that retail changes exert a significant influence on urban centers, particularly in smaller cities where the decline in retailing is more pronounced. This decline manifests in increased shop vacancies, particularly noticeable in small and medium-sized cities compared to larger cities. According to that, it is evident that urban change not only impacts the overall landscape of a city but also significantly affects its commercial areas. Furthermore, the decline in retail activity can have cascading effects on urban centers, leading to increased shop vacancies and further transformations in the commercial fabric.

This study aims to understand the mechanisms of commercial change in declining cities in South Korea by answering the research question: how do processes of commercial change occur at various urban scales? This study applies a path analysis model, which involves measuring the regression coefficient for the structural link between variables. The hypothetical path model consists of two variables reflecting the commercial performance: floating population and store sales. Additionally, the five variables corresponding to the consequences of commercial change are the opening and closing of stores, number of rentals, new construction activity, and vacancy rates. By employing a path analysis model, this study is expected to explain the complex dynamics of commercial change in declining cities. Understanding the mechanisms of commercial change in declining cities specifically in South Korea will provide valuable insight for policymakers and urban planners in the country to decide which policies could be enacted to support the commercial vitality plan in declining cities.

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Keywords: urban change, declining cities, path model, commercial change, commercial vitality

THE PATHWAY OF URBAN PLANNING AI: FROM PLANNING SUPPORT TO PLAN-MAKING

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Individual Paper Presentation

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Artificial intelligence (AI) is rapidly gaining prominence as a crucial technology to transform and reshape the field of urban planning. However, several unanswered questions persist regarding the potential impacts of AI on urban and regional planning research and practice, as well as the issues involved and the appropriate responses and plans. This paper aims to address these concerns in the AI-enabled planning process and accordingly create a typology of urban planning AI to categorize and outline the progression of AI in urban planning, ranging from AI-assisted and AI-augmented planning to AI-automated and eventually AI-autonomized planning, based on a scoping literature review.

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Keywords: Urban Planning Artificial Intelligence, Planning process, plan-making, plan support, planning automation

THE VARIEGATED HINTERLANDS OF THE DIGITAL GROWTH MACHINE

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Individual Paper Presentation

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This paper relies on theories of the hinterlands to question how, and to what end, the rise of digital technologies reshapes urbanization patterns and socio-spatial outcomes. We argue that digital capitalism operates to reorganize and differentiate land outside of urban areas into a variegated, novel set of hinterlands: spaces primed for urban-oriented extraction, for the specific needs of digital technology sector-related activities and associated urban growth. As the digital technology sector has come to dominate economic and social activity in capitalist economies, the sector's growth has necessitated an expansive global production network to support its unique needs. These needs include intensified computing activity and complex, global, and variegated supply chains that enable activities that range from creating digital technology products, to the movement of goods at unprecedented speed, to user activity on digital platforms. This economic shift has produced new operational landscapes, or far-reaching geographies that support the sector's functioning and growth, altering the networked geographies and spatial structure of both cities and the non-city spaces upon which they depend. As cities have become primary vehicles for capital accumulation under digital capitalism, these shifts reinforce and transform the extractive hinterland dynamics that have long supported urban growth and urban dynamics, while also expanding the functions of potential hinterlands beyond sites of natural resource extraction and production.

In this paper, we trace the variegated, novel hinterlands produced by the digital technology sector, linking these hinterlands to the sector's global production network, while showing how this spatial pattern both reinscribes and transforms the metropolis-hinterlands relations that have long characterized urban growth. We identify four distinct hinterlands types that have emerged, which relate to the various stages of the global production network that underpins the digital technology sector. First, materials hinterlands provide the rare earth minerals necessary for digital products. Second, computational hinterlands generate the data storage and energy infrastructure necessary for sustaining intensive global computational activity. Third, fulfillment hinterlands enable the product storage and transportation services necessary for just-in-time delivery and global supply chains. Fourth, signaling hinterlands create opportunities to develop the cultural, social, and economic capital necessary for users and firms to produce and extract value on digital social network platforms (authors, 2023). Altogether, these variegated hinterlands lend new insights into the way that digital technologies and related actors rely on areas outside of urban cores to sustain activities throughout the production process through to consumption, driving uneven development and generating important sociospatial impacts in the process.

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Keywords: Digital geographies, Hinterlands, Urbanization, Rural geographies, Digital Growth Machine

TIME FOR AI'S TURN? HUMAN AND MACHINE-ASSISTED PLAN QUALITY EVALUATION

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Individual Paper Presentation

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Latest developments in artificial intelligence (AI) have allowed for fast and effective evaluations of large amounts of text (Eisele et al., 2023). There exist multiple ways of utilizing these new technologies for stronger efficiency in extracting information from long and complex texts such as planning documents (Fu et al., 2023). Planning as a field has been slow in adopting these new technologies, which shows the scant amount of research using AI or computer-assisted analysis in evaluating planning documents. Literature shows only several studies have employed machine learning, an application of AI, in reading planning documents. For example, Fu et al. (2023) assessed the effectiveness of using topic modeling, an unsupervised machine learning technique, to read resilience plans from 100 cities across the U.S. and compared it against conventional content analysis.

The emergence of ChatGPT and other large language models has opened avenues for exploring different approaches to analyzing plan documents (Fe et al., 2024). However, questions still exist on how effective and reliable the new approaches are, which may have discouraged planning scholars from adopting these technologies. In this study, our overarching question asks if AI-assisted analysis is comparable with human-conducted analysis, and what strengths and weaknesses of several computer-assisted analysis approaches.

To address these questions, we focus on hazard mitigation plans from 105 counties across the Southeastern and Midwestern regions. This study considers multi-level (i.e., county, state, and region) and multi-method approaches (i.e., human- and machine-assisted analysis methods).

We use tested results from human annotations of 46 policy items in hazard mitigation plans by Lyles and colleagues (2023) as the benchmark and combine supervised machine learning for comparison. We focus on four policy domains including innovative public engagement, plan integration, sustainable land use, and property protection measures. Specific computer-assisted approaches that are compared include a dictionary-based approach, topic modeling – an unsupervised machine learning technique, and chat-box using a large language model particularly finetuned to analyze texts for this project.

For the dictionary approach, we develop four wordlists (dictionaries) that represent the four policy areas (Haselmayer & Jenny, 2017). We generate a wordlist from the corpus. Human assessment of the wordlist and the plan documents is employed to finalize the dictionaries. These dictionaries help detect the presence of the four policy domains in the corpus. For unsupervised machine learning, we adopt the keyword-assisted topic modeling to generate topics from the corpus. Lastly, a large language model in the ChatGPT repository is selected and finetuned to analyze the plan documents based on the prompts provided. The results of these analyses are compared with those from human-annotation combined with supervised machine learning.

Preliminary findings indicate that there are large variations between different approaches with the large language model reaching closest to the results of human annotations and supervised machine learning. Findings provide insights for planning scholars for massive plan policy analysis moving forward.

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Keywords: Artificial Intelligence, Natural Language Processing, Plan Quality Evaluation, Hazard Mitigation Planning

UNCONGESTED TRAVEL TIME PREDICTION FROM SPARSE OPEN DATA

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Individual Paper Presentation

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Travel time prediction underpins many transport planning and research problems. It is key to understanding urban accessibility, transport choices, and location decisions. Predicting congested travel times requires extensive real-time data on traffic conditions. Such data are proprietary, expensive, and beyond the reach of many planning practitioners and scholars. But even uncongested travel time prediction requires a detailed model of the street network, speed limits, turn penalties, and traffic signals and stop signs. Though imperfect under congested conditions, such predictions offer far more accurate travel times than the more-common alternatives like minimizing distance traveled or minimizing edge traversal time at max speed. Recent studies have estimated travel speeds using commercial routing services, sensors, or geotagged social media. Using these extensive or expensive inputs, these studies have predicted uncongested travel times with approximately 92% accuracy. Our study develops a simple, accurate, free, and generalizable method of uncongested travel time prediction using only sparse, open-source, and widely-available street network information.

We model the street network of Los Angeles County from OpenStreetMap and sample >40,000 empirical real-world trips as origin-destination (OD) pairs, all from open data. Using open-source software, we solve each OD pair's shortest path minimizing edge traversal time at max speed, on both simplified (without non-intersection traffic control nodes) and unsimplified (with non-intersection traffic control nodes) graphs, then count the number of traffic controls and turns along the path. This provides an initial "naïve travel time" prediction. Next we solve uncongested travel times via the Google Routes API at 03:00 when traffic congestion is minimal, as the empirical gold standard (this represents a one-off, free, but proprietary data collection). Then we train 3 models to predict Google travel times using our naïve times, turn counts, and traffic control counts as features. Models I and II use a novel recursive ordinary least squares (ROLS) algorithm to predict the difference between Google times and our naïve times then re-solve shortest paths using iteratively refined turn penalty and traffic control coefficient estimates. Model III uses random forest regression to predict Google times from our naïve times plus the counts of traffic controls and turns along the path.

Our results show a substantial improvement over naïve methods of travel time prediction from free open data. For example, our preferred technique's (Model III) predicted times and the Google times have a difference-in-means of

just 0.26 seconds (p=0.75), explaining 93.4% of the variance in the latter. In comparison, the initial naïve times and the Google times have a difference-in-means of 179.4 seconds (p<0.01), and only explain 73.9% of the variance in the latter. Even simplistic Models I and II performed relatively well, with their predicted times and the Google times having differences-in-means of 13.7 seconds (p<0.01) and 12.7 seconds (p<0.01), respectively.

In sum, our model performs comparably to the existing state of the art techniques, but without their extensive and expensive input data requirements. This study contributes a free method of accurate uncongested travel time prediction using open data and open-source software. It improves on naïve predictions by incorporating a one-off collection of free but proprietary Google data on empirical real-world travel times. Also of note is the sparseness of our data. Only around 28.2% of the intersections in our study area have traffic control information in OpenStreetMap, yet our random forest regression still predicts Google travel times with high accuracy. This offers planning practitioners and scholars a new opportunity to predict travel times for free with much better accuracy than traditional methods offered.

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Keywords: machine learning, openstreetmap, street networks, transportation, travel time

UNCOVERING RAPID CHANGES IN URBAN SPATIAL STRUCTURE WITHIN BUILT-UP AREAS

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Individual Paper Presentation

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Understanding the dynamic changes in urban spatial structure is essential for sustainability-oriented spatial policymaking(Giffinger and Suitner, 2015). In the context of reurbanization, both planned urban regeneration and unexpected large events may trigger significant changes in urban spatial structure within a continuous built-up area in a relatively short time(Huang et al., 2021). Employment centers provide a crucial perspective for understanding urban spatial structure, but traditional methods based on population censuses or transportation surveys can only detect long-term changes in employment centers at a relatively coarse spatial granularity.

Mobile phone signaling data presents an opportunity to identify employment distribution with short cycles, broad coverage, and high precision. Nevertheless, it simultaneously poses challenges to methods for measuring the evolution of employment centers. On the one hand, this novel data source allows for the capture of small-scale and progressive changes in employment distribution within continuous built-up areas, raising the question of how to extract changes in structural features at a global level. On the other hand, the inherent noise in big data brings forth the challenge of how to filter out incidental errors at each time cross-section, particularly when referring to comparisons across multiple time cross-sections. Some attempts involve aggregating mobile phone signaling data into larger spatial analysis units and employing traditional methods for spatial statistics and analysis, however, this approach may not fully exploit the potential advantages of the new dataset in spatial granularity(Yan et al., 2023).

This study proposes a method using mobile phone signaling data to identify the spatiotemporal dynamics of employment centers with a spatial accuracy of 1 km by 1 km grid cells and enable longitudinal comparisons of their spatial location and extent over multiple consecutive years. By capturing the urban dynamics within a short timeframe with high precision, this method contributes to anticipating future development trends and supporting refined spatial governance.

This method, inspired by the relative threshold approach(Muñiz et al., 2008), originally designed for larger spatial units like TAZ or administrative districts, is adapted for grid cells. Spatial relationships are considered to ensure the identified employment centers have both global significance and local impact. The process involves: (1) selecting grid cells with employment densities higher than the average within the study area and job-to-housing ratios greater than 1 as candidate employment center grids; (2) filtering candidate employment center grids based on neighborhood employment exceeding 1% of total employment, with the neighborhood defined by the grid cell and its edge-corner-adjacent cells; and (3) grouping corner-adjacent grids into the same employment center and eliminating isolated grids. This method can not only recognize the evolution types of emerging, persistent, and declining employment centers within the continuously built-up area, but also allow for the comparison of consecutive changes in the actual spatial extent of the same employment center.

The empirical application in the Shanghai metropolitan area, utilizing mobile phone signaling data from 2017 to 2023, reveals a stable and progressive increase in the number of employment centers. And we apply the persistence score (Sun, 2020) to measure the dynamic alterations in their spatial boundaries. The robustness and efficacy of the proposed method are rigorously validated through a comprehensive comparison with traditional threshold methods, spatial statistics, and both parametric and non-parametric approaches. Future research could explore the generalizability of this method to diverse urban contexts. Additionally, investigating methods for gauging polycentric evolution with heightened spatial and temporal precision could contribute valuable insights to urban studies and spatial governance.

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Keywords: Urban Spatial Structure, Employment Center, Spatiotemporal Dynamics, Identification Method, Mobile Phone Signaling Data

UNDERSTAND PERCEPTUAL DIFFERENCES IN PUBLIC SPACES THROUGH ONLINE REVIEWS

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Individual Paper Presentation

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It is commonplace to use the private sector to provide publicly accessible spaces. Although there is evidence that observable qualitative differences exist between public and private spaces, it is unclear if public perceptions of these spaces differ. Natural Language Processing (NLP) of online reviews allows us to analyze differences in user perceptions between public and private spaces, and the features that contribute to or explain these differences.

This research aims to 1) introduce NLP techniques as an efficient and generalizable method for evaluating the perceived quality of public spaces, and 2) provide insights that can aid policymakers and property owners in enhancing the management of these areas. We collected 1900 reviews over 10 years of 23 public neighborhood plazas and 171 privately owned public spaces (POPS) in New York City. Employing a combination of statistical methods (topic modeling and sentiment analysis) and Large Language Models (LLMs), our findings align with those of manual coding, validating the reliability of NLP-based, automated analytical methods.

We find that public plazas are perceived as more welcoming and inclusive but criticized for their safety and maintenance. POPS are viewed as more uninviting due to inappropriate physical design and an overreliance on security personnel and features. Both space types received positive comments for their visual appeal and amenities, suggesting that physical design, facilities, and views are crucial for positive public reception. However, limited access, hostile design, arbitrary regulations, and over-reliance on security personnel are often associated with negative emotions and perceptions of inaccessibility and unwelcomingness in POPS. These findings suggest that public perceptions of public space could be improved through adjustment to management policies, particularly in terms of creating better access and oversight. While this research proposed several usages of automated social media analysis methods with satisfactory results and lowered time/labor input, further improvements in accuracy still require additional skill and data input.

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Keywords: Natural Language Processing, Privately Owned Public Space, Public Space, Public Perceptions

UNDERSTANDING SEOUL NEIGHBORHOOD TRAJECTORIES USING UNSUPERVISED LEARNING

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Individual Paper Presentation

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Recent rapid transformations in urban development across metropolitan areas have necessitated a reassessment of neighborhood trajectories, with a particular focus on socioeconomic factors. Although existing studies have employed various data analytic methods, their empirical analyses are often constrained by narrow time frames or a limited number of data points, and they frequently fail to adapt to diverse urban contexts. This study investigates the spatio-temporal trajectories of socioeconomic neighborhoods, aiming to observe changes at the neighborhood level within the city by applying unsupervised learning methods, self-organizing maps and k-means clustering algorithm. The case study area is Metropolitan Seoul, analyzed through data spanning from 2000 to 2020, with five-year intervals. It utilizes neighborhood-level data, including socioeconomic, demographic, housing, and aging index indicators, to conduct a comparative analysis using the methodologies of self-organizing maps and k-means algorithm. Our findings identify socioeconomic clusters within Seoul, each showcasing characteristics that allow for a deeper understanding of the city's development and evolution since the 2000s. Moreover, by conducting a comparative analysis of Seoul's master plan and local neighborhood unit plans, the results were interpreted and validated. The neighborhood-level results, reflecting social, economic, and demographic factors, provide a foundation for a tailored urban planning approach in Seoul, promoting coexistence among diverse resident groups.

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Keywords: neighborhood trajectories, unsupervised learning, self-organizing map, k-means clustering, spatio-temporal changes

URBAN DIGITAL TWINS: REFLECTING ON CURRENT PROJECTS AND FUTURE PROSPECTS

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Individual Paper Presentation

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Urban Digital Twins (UDT) could be used to simulate possible city scenarios (Allam et al., 2022). Simulations and models based on previously gathered data and potential changes in land use, floods, fires, energy needs, urban population, traffic, changing infrastructure, climate change, resource management, and more could aid urban planners in detecting or mitigating future issues before they occur (White, et. Al., 2021). Using this information, urban planners can predict and mitigate complex urban problems and guide decision-making towards creating a healthier and smarter city (Bujari, et. Al., 2021).

The main purpose of this paper is to provide a theoretical framework for the potential applications and challenges facing Urban Digital Twin (UDT) implementation by reviewing ten cases across the globe. This literature review discusses ten case studies of digital twin projects representing substantial progress in developing a city-wide UDT. The case studies considered in this review describe digital twins that were either in progress, completed as prototypes, or achieved a fully actualized and published platform. Importantly, all the chosen cases provided evidence of the scalability of their models, representing the potential of the projects to eventually reach a city-wide scale.

The ten chosen case studies used in this review are listed as follows:

1. Smart City Digital Twin – Dublin, Ireland (White et al., 2021)
2. Digital Twin of the City of Zurich – Zurich, Switzerland (Schrotter & Hürzeler, 2020)
3. Smart City Digital Twin – Helsinki, Finland (Ruohomäki, et. Al., 2018)
4. West Cambridge Digital Twin Demonstrator – Cambridge University, England (Lu, et. Al. ,2020)
5. Virtual Singapore – Singapore (Soon & Khoo, 2017)
6. Geographical Digital Twin – Ålesund, Norway (Major, et. Al., 2021)
7. GIS-Enabled Digital Twin – Jeonju, South Korea (Park & Yang, 2020)
8. Digital Twin – Herrenberg, Germany (Dembski et al., 2019)
9. City-Scale Digital Twin – Cambridge, England (Nochta, et al., 2021)
10. Digital Twin Victoria – Victoria, Australia (Barzegar et al.; 2021)

We start the article by defining Digital Twin. We discuss a framework for the categorical hierarchy of Urban Digital Twin models. Then according to the proposed framework, we evaluate the UDT projects and display the common and uncommon aspects of UDT projects. We conclude our article by presenting the challenges in the implementation process of UDTs.

Within the ten digital twin case studies, a total number of 46 different planning application projects were identified and categorized into four main categories: (1) visualization, (2) monitoring, (3) prediction, and (4) intervention. More than half of the 46 projects were categorized under visualization (56%), followed by monitoring (28%), predictive (8%), and intervention (8%). These frequencies may provide insight on the current technological limitations still challenging fully actualized digital twins while highlighting current possibilities that have driven cities further towards success.

All cases presented successes and limitations. There continues to be well-suited debate for the extent of which UDTs can simulate changing conditions in cities and develop strategies that will benefit all stakeholders, including government leaders, researchers, industries, and citizens. Top considerations outlined in this study are data sourcing, data storage and processing, ethic and social considerations, and the lack of comprehensive real-time data. It is recommended that researchers continue to develop frameworks for further analysis of UDTs as they continue to progress and take up space in the urban planning sector.

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Keywords: Urban Digital Twin, Urban technology, Real-time analytics

URBAN PLANNING METRICS OPPORTUNITIES AND CHALLENGES

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Individual Paper Presentation

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Big data, artificial intelligence (AI), and metric and data-based solution thinking are rapidly progressing from theoretical concepts to actionable implementation in urban environments. These technologies aim to offer planners, decision-makers, and citizens a promising future in comprehending the emergent properties of cities, addressing the climate crisis, and critically evaluating historic and systemic inequalities. However, critics have

extensively highlighted planning's use of data and metrics potential to perpetuate existing power structures, embed biases, facilitate corporate greenwashing, and apply a one-size-fits-all approach from a predominantly Global North perspective.

This dynamic reflects the intrinsic tension within urban planning, a field at the intersection of technical practice creation and maintenance, the organization and advocacy of political and social power structures, and ecological and multispecies design. This work addresses three primary questions: (1) How are data, metrics, and data-driven concepts (such as smart cities, algorithmic governance, AI, etc.) defined within urban planning? (2) What critiques exist regarding data application in planning, and how can these methods, if improperly applied, undermine their intended purposes? (3) What synthesis is required for the accountable and critical application of data and metrics in planning?

A scoping literature review is employed to navigate the varied definitions, conceptualizations, and applications of data within planning alongside its critiques. Despite a significant body of literature on big data, algorithmic governance, and planning metrics their terms often carry a diverse set of meanings based on authorship or context. While the overarching aim of these methodologies is to foster better cities through improving decision-making, environmental management, and increase democratization these objectives are neither neutral nor universal. Similarly, criticism of these methods emerge from a broad spectrum of perspectives and voices including indigenous, feminist, black, gendered, and others who are most vulnerable to exacerbation or increased marginalization through these technologies.

By mapping out the landscape and giving shape to this nebulous space, we aim to clarify the current state of big data and AI in urban planning, both theoretically and practically. This understanding is crucial for addressing the challenges and opportunities created by emerging technologies, some of which are already in use (e.g. police surveillance equipment, smart meters, augmented reality, etc.) or under active development (e.g. autonomous vehicles, extensive data collection, virtual reality, etc.). With external and internal interests pushing for these techniques beyond the planning profession it is imperative to be equipped to navigate, advocate, and influence these developments in both practice and scholarship. Urban planning is inherently non-neutral, necessitating a shift from theoretical debates to practical implications. This may involve developing data privacy plans, incorporating citizen feedback on technology adoption, earlier inclusion of citizens in problem identification and discussions, and reassessing the metrics planning utilizes. The findings of our study seeks to assist planners in tackling the challenges of this complex domain and contending with issues that are not only imminent but already in effect.

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Keywords: Smart cities, Big Data, Planning metrics, Planning theory, Digital equity

USING NASA'S NIGHTTIME LIGHT DATA TO ESTIMATE POWER RESTORATION RATES

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Individual Paper Presentation

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The devastating impact of tropical cyclones can be profound, manifesting through erosion, debris accumulation, and extensive infrastructure damage. In the aftermath of a disaster, storm surges and floods sweep away buildings, leaving behind debris and sedimentation (Davis et al. 2019). Hurricane-force winds and inundation can wreak havoc on electrical and cell tower infrastructure, causing widespread power outages and communications disruption (Mitsova et al. 2018, Ganz et al. 2023). Restoring normalcy in such scenarios can be a protracted process, stretching over days or even weeks, contingent upon the severity of the destruction, access to the hardest hit areas, and availability of resources (Mitsova et al. 2020, Stanikovski et al. 2023). Meanwhile, communities grappling with the loss of electricity may encounter obstacles in accessing vital services, including food, fuel, and healthcare (Mitsova et al. 2018, Mitsova et al. 2020, Ganz et al. 2023).

Public access to data regarding power outages lacks consistency, posing challenges for emergency managers and local authorities in swiftly evaluating damage, prioritizing recovery efforts, and establishing restoration priorities (Mitsova et al. 2018). While sporadic availability from various public or private sources exists, the absence of standardized formats and regular updates complicates these tasks. Typically, when accessible, such data are provided at a county level, offering valuable insights for developing restoration strategies and conducting high-resolution (3 to 6 hours) temporal analyses. However, the lack of spatial granularity limits their utility in assessing neighborhood-level impacts and disparities, particularly concerning racially diverse and economically disadvantaged communities.

This research assessed the impact of Hurricane Michael on electric service disruption in the fifteen most affected counties in the Florida Panhandle by integrating county-level power outage data with NASA's Visible Infrared Imaging Radiometer Suite (VIIRS) Day/Night Band (DNB). Two types of remote sensing data were utilized: (i) Suomi National Polar-orbiting Partnership Visible Infrared Imaging Radiometer Suite (NPP VIIRS), and (ii) multispectral Landsat Imagery from NOAA's Emergency Response database. The percent loss of electrical service and the recovery rates were averaged at the block group level using the 2013-2017 American Community Survey (ACS) data. Nighttime light imagery provided near real-time tracking of damage and restoration progress, offering a rapid and cost-effective means for estimating the scope and duration of disrupted electric infrastructure at the block group level. The results indicated that urbanized areas, except Mexico City in Bay County, recovered much faster than the surrounding rural areas. Diagnostic tests such as the Lagrange multiplier confirmed that autoregressive spatial models fit the data well. Two spatial lag models were fitted to investigate the relationship between socioeconomic factors and the extent of infrastructure disruptions. The findings revealed that block groups with higher percentages of minorities, multi-family housing units, rural locales, and households receiving public

assistance experienced slower power restoration than urban and more affluent neighborhoods. These results carry implications for disaster preparedness and recovery planning efforts.

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Keywords: NASA VIIRS Nighttime light data, power outages, power restoration rates, socio-economic disparities, spatial autoregressive models

USING SOCIAL MEDIA DATA AND DEEP LEARNING TO ANALYZE THE USE OF GREEN SPACE

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Individual Paper Presentation

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Green spaces are essential public spaces and play important in urban living environments. It has been proved in many studies that access to green spaces can directly benefit physical and mental health and have various positive effects on eco-system services, such as air quality, urban heat land and community identity (Wolch et al., 2014). Investigating the human activities within the green spaces, the functionality of green spaces, and the impact factors for visiting popularity is valuable for supporting green space design and guiding land use development around public green spaces. This study utilizes deep learning techniques to mine text and image data from multiple social media platforms to extract multi-perspective information on urban green space popularity, activities, and functionality. The coupling of the two types of data enables the extraction of a rich and comprehensive analytical frame for understanding how green spaces are used and how they might be improved.

Conventional methods used to extract popularity and functionality information on green spaces have typically relied on questionnaires and in-site observations, both resource and time-consuming processes (Lim et al., 2018). These approaches can also be context-dependent and produce less transferable data across regions. Some academic researchers have realized the gap and attempted to apply data-based analysis (usually using geo-located

social media check-in or review data) in information collection for green spaces (Hamstead et al., 2018; Kovacs-Györi et al., 2018). Nevertheless, these studies typically focused on single perspective of green space information and single type of social media data. Other perspectives of information, and the geolocated social media images, which have the potential to deepen our insights into green spaces, were not frequently analyzed.

This study aims to propose an information extraction framework to extract richer, more professional, and multi-perspective information (popularity, functionality, and activities) for green spaces through the deep learning-based analysis of multi-source social media data. The proposed green information extraction framework loosely couples natural language processing techniques and image processing techniques to investigate the green space popularity, activity functionality information from multi-source social media text and image data. The City of Chicago is chosen as an application case to test the framework. Geo-located green space images collected from social media have the potential to provide comprehensive information but are seldom used because of the difficulty in collecting and parsing data. To address the challenges of the general problems in green space image datasets, including sparse dataset and high similarity between different green spaces, we use deep transfer learning and image augmentation approaches. Through pretraining on external datasets to convey generic knowledge to local context and expand the local dataset, we were able to alleviate the requirement of deep learning-based models for large number of varied training images, and at the same time provide robust and powerful classifications. The extracted green space popularity is also modeled based on green space design features, provided services, locational attributes, and socio-economic features to indicate the planning and design principles for green spaces.

The proposed information extraction framework has the potential to be used beyond green spaces, to extract all types of geolocations using images and texts to provide better analytic information for many fields. Its low requirement for new context's data size and variation for running the proposed framework also allows it to be generally replicable and reproducible to various urban contexts.

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Keywords: Social media data, Green space, Deep learning, Image processing, Natural language processing

VIRTUAL AND AUGMENTED REALITY TECHNOLOGIES FOR FLOOD RISK AWARENESS

Abstract ID: 1108.0.0.850.2024

Individual Paper Presentation

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Maps are often an integral part of emergency management and planning at the local level. Flood maps, particularly the flood risk maps produced by Federal Emergency Management Agency (FEMA) are widely used for flood risk communication in the US. However, it is usually difficult for non-expert audience to readily perceive the risk of flooding by observing a flood risk map. Mapping scale of flood hazard maps sometime reduce the details and generalize the information conveyed. 3D immersive visualization of flood scenarios through Augmented Reality (AR) and Virtual Reality (VR) technology promises to provide higher level of risk perception and thereby motivate people more to take protective measures (e.g., relocation, insurance, in-situ flood protection, etc.) However, technological gap across regions may limit opportunities for technology-led community participation and risk management. Through this study we explore the effectiveness of AR and VR as tools for disaster risk communication for flood risk management and resilience planning, especially with comparison between urban and rural communities, where potential gaps might exist.

In this study, we developed AR- and VR-based immersive flood hazard risk visualizations for a residential neighborhood and tested those visuals through an online survey to evaluate how AR and VR visuals perform compared to traditional 2D flood maps for risk communication. We applied a 2 X 2 factorial to understand the effects of two independent variables (AR vs VR and urban vs rural settings) focusing on residents from hazard-prone communities in Kansas. Prior studies have shown how the effectiveness of flood risk communication depends on many factors including the risk perception of people that can vary by age, education, cultural norms, household structures and role obligations. We tested these factors through our survey for AR and VR visuals, and how they influence risk perception and intent to take protective measures. Our results show that visualization through AR performs better in influencing risk perception due to its capability to visualize flood risk within the real-world setting. VR also has a significant positive impact on risk perception compared to 2D map due to its capability to create an immersive 360-degree experience. Prior flood experience, homeownership, education, and household structure are some of the factors influenced risk perception using both AR and VR. Finding from this study can help with the usage of AR and VR technologies for resiliency planning process.

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Keywords: Virtual Reality, Augmented Reality, Flood, Risk Communication, Risk Perception

Track 13 Research in Motion (RiM)

ANALYSIS OF SOCIO-ECONOMIC AND ENVIRONMENTAL FACTORS FOR INTERNAL MIGRATION

Abstract ID: 1110.0.0.662.2024
Research-in-Motion (RiM)

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Following the global COVID-19 pandemic, cities worldwide are recovering at different rates. This study examines how socioeconomic and environmental factors influence recovery trajectories across regions within the US. This research aims to pinpoint areas with varying rates of recovery and understand the factors behind these differences. Using a mixed-methods approach, this study aims to answer several questions by analyzing demographic patterns, particularly internal migration trends, to understand how populations are changing over time. This research investigates the demographic patterns of regions considering the aspect of internal migration over the past few years to track the trends, consequences, and future projections by capturing its in-flow, out-flow, etc.

The methodology involves geospatial analysis of county-level population in-flow and out-flow data to understand the spatial trends using geographically weighted regression (Jiang et al. 2018) and other spatial methods. As environmental stress (Niva et al. 2021) is considered one of the major drivers of migration, the understanding of their interaction at different levels is of great importance. Employing these modeling techniques would help gain valuable insights into its correlation, thereby creating a deep understanding of the impact of climate change (Ghosh & Orchiston 2022) on human mobility. The concept of climate migration (Nabong et al. 2023) involves the understanding of how changing environmental conditions with extreme weather events drive people to move from one place to another.

The study's findings offer important theoretical, methodological, and practical insights. By examining how socioeconomic and environmental factors interact in post-pandemic recovery, the research helps enhance the understanding of urban dynamics during a crisis and after it. Additionally, identifying regions with different recovery rates and factors influencing them can guide policymakers and urban planners in allocating resources efficiently (Sutradhar et al. 2024). It also emphasizes the importance of comprehensive urban planning approaches at the regional level. In conclusion, this research examines post-pandemic recovery dynamics, studying how

socioeconomic and environmental factors interact. Firstly, the correlation between environmental phenomena such as extreme heat, flooding, and hurricanes and the pattern of internal migration. Secondly, the relationship between socio-economic factors such as tax benefits, job opportunities, and access to essential services that influence a person's decision to relocate.

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Key Words: Urban recovery, Internal migration, Socioeconomic factors, Environmental dynamics, Geographically weighted regression

BEYOND THE FLOODS: ANALYZING RESILIENCE AFTER TROPICAL STORM IMELDA

Abstract ID: 1110.0.0.304.2024
Research-in-Motion (RiM)

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In light of the increasing frequency and intensity of tropical storms due to climate change, understanding their impact on urban areas (Hettiarachchi, 2018), particularly on socially vulnerable communities, has become imperative (Gran Castro, 2019; Smiley, 2022). This research delves into the aftermath of Tropical Storm Imelda, scrutinizing its effects on the cities of Beaumont and Port Arthur, with a focus on local businesses' recovery trajectories. The central inquiry addresses whether socially vulnerable communities bear a disproportionate burden in terms of impact severity, recovery duration, and the post-recovery status of local businesses.

To methodically approach these questions, the study employs a multi-faceted methodology. Initially, descriptive data analysis provides insights into the foot traffic of local businesses, including retails, and restaurants and drinks, serving as a proxy for economic activity and vitality post-Imelda. This preliminary step establishes a baseline for

understanding the broader economic repercussions of the storm. Subsequently, a comparative analysis using the Student's t-test assesses differences in recovery outcomes between socially vulnerable communities and their counterparts, quantitatively evaluating the disparity in impact and recovery rates. Further, hotspot analysis identifies geographic concentrations of businesses that were most affected, showcasing spatial patterns of flood risks, recovery and adaptation (Khajehei, 2020).

The findings reveal a stark reality: socially vulnerable communities not only endure more severe immediate impacts but also face prolonged recovery periods and diminished post-recovery statuses. This evidence highlights a critical gap in urban resilience and disaster preparedness strategies, underlining the necessity for targeted interventions that specifically support these communities (Ribeiro, 2019). The implications of these findings are profound, offering both a call to action for urban planners and policymakers and a foundation for future research.

By providing concrete evidence of the disparities in recovery outcomes, it underscores the urgency of integrating social vulnerability into the planning and implementation of urban resilience strategies. Moreover, the study advocates for a deeper investigation into the mechanisms underlying flood adaptability among different communities, aiming to uncover actionable insights for enhancing climate resilience at the local level. By shedding light on the disproportionate impact of tropical storms on socially vulnerable communities, it calls for a reevaluation of current practices and emphasizes the importance of inclusive, equitable approaches to disaster recovery and resilience planning.

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Key Words: Urban resilience, Social vulnerability, Environmental justice, Spatial analysis

DETECTING AND DECODING URBAN PHYSICAL CHANGES FROM TIME SERIES STREET VIEW IMAGE

Abstract ID: 1110.0.0.303.2024
Research-in-Motion (RiM)

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1 Central Theme

This research examines the physical transformations in New York City's urban areas and their broad impacts on social, economic, and ecological aspects. The urban transformation, while intended to improve living experiences, may unintentionally promote gentrification, uprooting locals and altering neighborhood dynamics. A deeper exploration into the complex effects of urban transformations on environmental quality and resident wellbeing, especially regarding gentrification and social exclusion, is crucial. This forms our study's basis, addressing two main questions: Which urban areas undergo the most significant physical changes and their scale, and whether these changes positively or negatively influence human perceptions of their environment.

2 Methodology

SVI plays a vital role for urban physical change detection because it provides detailed information from a human perspective, making it well-suited for social sensing compared to satellite imagery. This study leverages the time series street view image dataset in New York City from 2007 to 2023 taken along the city's street networks. The dataset was divided into four periods, 2007- 2013, 2013-2016, 2016-2018, 2018-2023. The Semantic-SAM model was utilized for image semantic segmentation, identifying and excluding temporary elements to focus on changes in buildings and roads. 2000 images were annotated for model training and validation. The change detection model, integrating feature extraction with VGG16 and classification with SVM through a Siamese network structure, precisely compared image pairs to capture urban changes. Furthermore, the study used a deep convolutional neural network, Resnet, trained on the Place Pulse 2.0 dataset, to reflect human perception scores in aspects such as Beauty, Safety, Liveliness, and Wealth within detected urban physical change areas. By comparing human perception scores changes, we are able to quantify the perceptual impact of physical changes on environmental quality.

3 Findings

Between 2007 and 2013, NYC experienced widespread urban physical changes and population movements due to economic recovery and large-scale urban development projects, especially in areas close to water bodies and transportation hubs, such as the southern part of the Bronx near Manhattan, the northern part of Brooklyn, and the northeastern part of Queens. In these areas, the new construction of residential and commercial developments, and public spaces significantly enhanced residents' perception of the aesthetics and safety of their surroundings but also resulted in gentrification. However, as urban development entered a more mature and refined stage from 2018 to 2023, the scale of urban changes relatively decreased, with a focus on specific renovation and optimization projects. During this period, although the overall scale of changes diminished, small scale physical urban changes still had a significant impact on residents' perceptions. Particularly in central Manhattan, temporary structures brought by construction projects, such as safety sheds, not only affected the aesthetic appeal of the city but also reduced residents' perception of safety in public spaces. This decline in perception could have had a negative impact on residents' daily living experience, reducing the frequency and enjoyment of outdoor activities for many.

4 Implictions

Overall, our study provides a methodology for tracking urban physical changes using Street View imagery and machine learning, emphasizing the subtle consequences of identified urban physical changes on community perceptions. It alerts planners about the risk of gentrification and emphasizes the significance of retaining diversity

in urban regeneration projects. Using these ideas, academic planners may create neighborhoods that promote pleasant human experiences and community well-being, assuring that development initiatives are both equitable and sustainable.

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Key Words: Urban Transformation, GeoAI, Deep Learning, Perception, Gentrification

EMOTIONAL MAPPING TECHNIQUES FOR EVALUATING RESTORATIVE URBAN ENVIRONMENTS

Abstract ID: 1110.0.0.294.2024
Research-in-Motion (RiM)

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This research addresses two fundamental questions: (1) How can we objectively construct maps from subjective data, particularly focusing on people's emotional attachments to urban places and spaces? (2) How can emotional maps enhance our comprehension of restorative city elements and influence interventions at the community level to address built environment challenges? This work is rooted in the theoretical framework of Restorative Urbanism. By addressing mental health and well-being in urban settings, Restorative Urbanism embodies a holistic approach to city planning, prioritizing psychological renewal and community connectivity. Given the escalating mental health challenges in contemporary urban landscapes, its significance cannot be overstated. Restorative Urbanism aims to leverage the urban environment to bolster resilience and well-being by addressing cognitive, emotional, and practical demands. Restorative Urbanism incorporates seven pivotal elements into urban planning. The Green City integrates vegetation in various forms, including parks and gardens, fostering environmental sustainability and aesthetic appeal. The Blue City strategically incorporates water features, such as rivers and fountains, enhancing accessibility and visual aesthetics while providing psychological benefits. The Sensory City focuses on engaging inhabitants' senses to cultivate meaningful connections within the urban fabric. The Neighborly City emphasizes community interaction, mitigating feelings of isolation and fostering social cohesion. The Active City advocates for physical activity as an integral aspect of daily life, promoting health and well-being. The Playable City prioritizes spaces and infrastructure for playful activities and interaction, enhancing the quality of life. Finally, the Inclusive

City ensures accessibility for all residents, irrespective of age, ability, or economic status, fostering social equity and inclusion.

During this presentation, we will unveil findings from four ongoing or completed studies investigating the intersection of emotional mapping and restorative city elements. These studies harnessed data from community residents invested in or concerned about built environment features in their urban locales. Data were collected from diverse locations including Philadelphia, PA, Camden, NJ, Dhaka, Bangladesh, and Dunedin, New Zealand, utilizing an array of methodologies such as surveys, focus groups, community workshops, participatory mapping, and photovoice. Thorough analysis using content analysis, coding, and mapping techniques enabled us to map community sentiments, both positive and negative, regarding built environment features using tools like ArcGIS Pro and Story Maps. By visualizing various emotional nuances associated with urban spaces, these maps offer invaluable insights for city planners and policymakers, aiding in the design or enhancement of urban environments that resonate with residents' needs and aspirations. Moreover, these methodologies serve as invaluable learning tools for planning students, equipping them with the skills to translate qualitative data into actionable insights in the digital realm. Finally, these maps empower community residents by providing accessible tools and methods to collectively address built environment issues or advocate for change, fostering civic engagement and empowerment.

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Key Words: Emotional Mapping, Restorative Urbanism, Restorative City Elements, GIS, Qualitative and Mixed-Methods

IDENTIFYING MANUFACTURED HOME COMMUNITIES USING DEEP LEARNING

Abstract ID: 1110.0.0.826.2024
Research-in-Motion (RiM)

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Manufactured Housing Communities (MHCs) provide a source of naturally occurring affordable housing through more affordable manufactured buildings and by splitting the ownership of the structure from the underlying

property. While a potential solution to our ongoing housing affordability crisis, MHCs are disappearing from the landscape due to a combination of private equity buying communities and evicting residents, as well as, local hostility in the face of sprawl. Additionally, while affordable, the residents of MHCs remain vulnerable due to low income and the limited opportunities for building wealth due to the land-lease arrangement that makes up the MHC ownership structure. This makes MHCs, and the people who reside in them, vulnerable to displacement and loss. Unfortunately, this is exactly what is happening. There is a significant loss of MHCs across the country, but the extent of the loss remains an open question in many regions due to a lack of adequate data. In order to better understand the change in the distribution of MHCs across the landscape, we employ satellite imagery and parcel data to train a series of machine learning and deep learning models for identifying existing MHCs in the state of Pennsylvania. This study provides one approach for public agencies to better track MHCs as well as to demonstrate the potential utility of machine and deep learning for questions of policy import.

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Key Words: housing affordability, machine learning, deep learning, manufactured homes, land use

IMPACT OF URBAN REDEVELOPMENT ON DAYTIME POPULATION DYNAMICS IN SEOUL

Abstract ID: 1110.0.0.107.2024
Research-in-Motion (RiM)

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This study aims to investigate the effects of urban redevelopment projects on the daytime population dynamics in Seoul, South Korea. Urban redevelopment in Seoul has led to significant transformations, with a shift from diverse, small-scale urban spaces to homogenized, high-rise apartment complexes. While these transformations have facilitated stable and affordable housing, they have also resulted in the loss of varied urban paths and spaces, which are essential to the city's vitality and liveability.

Given the scarcity of urban big data and the lack of quantitative methodologies, the impact of such redevelopment projects on urban life has been rarely explored. This research seeks to fill this gap by examining how these projects influence the daytime population in redeveloped areas, utilizing a natural experimental design. This method is particularly suited for analyzing real-world interventions that cannot be manipulated in a controlled setting. Traditional experimental designs, including random sampling and case-control studies, are often impractical for studying naturally occurring social phenomena. Therefore, this study employs a repeat cross-sectional pre-post non-experimental design, comparing pre- and post-intervention outcomes using cross-sectional data to understand the impact of urban redevelopment.

The research will specifically focus on changes in the daytime population to elucidate the effects of neighborhood transformation. To achieve this, it will leverage de facto population data, which counts individuals based on their presence in a specific area at a given time, as opposed to traditional census data based on residency. This data, provided by the Seoul government's urban big data platform, offers real-time, hourly population figures down to micro spatial units, matching the scale of our project sites. By analyzing data during working hours, we endeavor to accurately estimate the volume of the daytime population before and after redevelopment interventions. Additionally, the mobile signal-based nature of this data includes aggregated cohort information regarding age and sex, allowing for a qualitative analysis of population diversity using the entropy index.

Furthermore, this study will employ betweenness index of urban network analysis (UNA) to assess changes in daytime population flows. This tool was developed by the City Form Lab at MIT. This approach goes beyond conventional betweenness analysis by allowing for the allocation of specific origin and destination nodes, incorporating place-based parameters and a distance decay function. Such advancements enable a more realistic simulation of travel patterns, which will be corroborated with observed population data. Real-time bike rental data from Seoul, reflecting urban activity and travel patterns, will be used to validate the UNA findings.

The investigation will focus on two redeveloped apartment complexes([37.579998, 127.028516], [37.572128, 127.029754]), selected based on the availability of data and their completion year. Sites completed since 2017 were chosen, coinciding with the period when the quality of data became more robust. This study made an 800m buffer surrounding each site, which has been established as the study area.

This proposal presents a detailed plan for exploring the implications of urban redevelopment on Seoul's daytime population. Through a combination of de facto population analysis and urban network analysis, complemented by real-time urban data, the study aims to offer insights into the transformative effects of redevelopment on urban life. These findings are anticipated to contribute valuable perspectives to urban planning and policy decision-making, enhancing the sustainability and liveability of redeveloped neighborhoods.

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Key Words: Urban redevelopment project, Natural experiment, Daytime population dynamics, Urban network analysis

UNDERSTANDING PERCEIVED PHYSICAL DISORDER USING SUBJECTIVE MEASUREMENT

Abstract ID: 1110.0.0.1070.2024
Research-in-Motion (RiM)

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Physical disorder refers to an environmental characteristic marked by high levels of decay and disorderliness (Sampson & Raudenbush, 1999), which can detrimentally impact mental health, disease rates, crime levels, and the socioeconomic status of neighborhoods (Hill et al., 2005). Due to its significance and direct relevance to the built environment, the concept has been measured both objectively and subjectively in the related urban planning and geography literature. On the one hand, many scholars have adopted objective measurements to assess physical disorder (e.g., presence of litter and abandoned buildings) using virtual street audit. More recently, with the advancement of big data, researchers constructed assessment scales using five categories (e.g., architecture, commerce), proposing a scalable method for identifying Street View Imagery (SVI) using Deep Learning (DL) models (Chen et al., 2023).On the other hand, some scholars argue perceived disorder differs from objective assessments (Franzini et al., 2008), which could lead to potential bias as they can not reflect subtle subjective experiences. However, limited research has measured physical disorders subjectively on a large scale due to time constraints and labor costs with conventional questionnaires. Therefore, this study aims to bridge this gap by proposing a subjective evaluation method using Machine Learning (ML) models, computer vision (CV) algorithms integrated with SVI data for assessing physical disorder to seek empirical evidence for urban studies.

Due to limited subjective perception data, this research proposes to collect designers' perceptions on five major categories of physical disorder (i.e., architecture, commerce, road, greenery, and infrastructure disorder) following the theoretical framework from pairwise SVIs rankings using Shanghai as a case study site with an online visual survey. We invite 50 designers to rank SVI pairs from 300 randomly sampled locations for higher perceived disorder and score them through algorithms. This approach has been applied in studies that measure subjective psychological perceptions in a similar fashion (Zhang et al., 2018) and was deemed credible. Then, we utilize CV and DL algorithms to extract high-level street features (e.g., tree, plant) and low-level image features (e.g., saturation) as explanatory variables to train the ML model. Utilizing the best predictive ML models, we can further predict the citywide subjective physical disorder spatial patterns. Lastly, we regress 5 subjectively measured physical disorder scores separately with housing price data to compare its explanatory performance and its impacts empirically, uncovering several insights. For instance, the OLS regression result has substantiated those subjective perceptions of physical disorder significantly affect housing prices, demonstrating the broad applicability of this automated approach to measuring subjective physical disorder. Notably, negative correlations are found between commercial, greenery, and infrastructure disorder and housing prices, indicating the necessity for urban design to enhance environmental and economic value.

To conclude, this article makes several meaningful contributions to the existing literature. Firstly, our research

offers a novel method using computer algorithms and big data to subjectively measure an under-addressed concept, physical disorder, which could be used as a training set to predict other urban scenes in the future. Secondly, our approach provides a complementary perspective for studying urban decay, capturing nuances often neglected by solely relying on objective measures. Finally, it has the potential to clarify what street physical characteristics may heavily influence physical disorder and further deduce its adverse effects on public health and safety. This empowers urban designers to devise targeted strategies, fostering healthier and more pleasant urban environments conducive to an equitable society.

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Key Words: physical disorder, subjective perception, street view images, environmental audit, deep learning

Track 14 – Transportation and Infrastructure Planning

Track 14 Pre-Organized Session Summaries and Abstracts for the Sessions

INCREMENTAL CHANGE OR BURN IT DOWN? HOW TRANSIT PLANNERS CONFRONT INJUSTICE
Abstract ID: 1112.0.0.159.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.641.2024, 1108.0.0.1194.2024, 1108.0.0.863.2024, 1108.0.0.394.2024, 1108.0.0.929.2024

Robert Pfaff [Cleveland State University] r.w.pfaff@csuohio.edu, organizer

We know about redlining. We know highways are racist. We know fights for transit are race and class coded struggles over the right to the city. We know that there are transportation disparities, and we know that each new journal issue brings us yet another 'novel metric' with which to measure said disparities. But admitting we have a problem is only step one. What we lack are clear pathways to ameliorating injustices while simultaneously building community power and capacity despite polarized political conditions. The federal government proposes addressing historical harms through Justice40 and Reconnecting Communities. Yet underlying local and regional transportation planning, administration, and grant awarding are highly technical, complex, inaccessible and prone to domination by historically privileged interests. What role do planners have in facilitating the dismantling of the racist transportation planning? How can researchers contribute to the fight? Can academics collaborate with institutions responsible for past harm, from state DOTs to the federal government, support change? This pre-organized panel will focus on how scholars and practitioners can contribute to efforts to overcome transportation injustices within existing transportation systems and planning process. This session will explore the current research on transportation inequality, and propose strategies that seek to ultimately dismantle the institutional systems of inequality that constrain transit, and envision what true transit justice might look like for cities and communities. This panel uses a broad definition of transportation to include the physical (bikeways, sidewalks, etc.), the social (riding clubs, rider education), the political (advocacy organizations, the auto lobby), and the cultural (representations of modes and travel). We invite abstracts that engage communities on topics of transportation justice, and seek stories about organizing that celebrate, uplift, or instruct future practitioners.
The enormity of the problem of injustice in transportation access, and strategies for how it might be overcome by scholars and practitioners is the central focal point of this pre-organized panel. This session will explore the current research in transportation inequality, and propose strategies that seek to ultimately dismantle the institutional systems of inequality that constrain transit, and envision what the end of transit justice might look like for cities and communities. This panel uses a broad definition of transportation to include infrastructure such as rails, bikeways, and roads and multiple modes of conveyance such as bicycles, automobiles, ride hailing, and public vehicles.

Learning Objective(s):

- Understanding the intersection of physical, political, social, financial, and racial barriers to transportation proposals in cities that are normatively geared towards justice.

RACIAL NEGLIGENCE IN TRANSPORTATION PLANNING

Abstract ID: 1108.0.0.641.2024
Pre-Organized Paper Presentation

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Transportation infrastructure is a core component of the built environment that significantly impacts how residents access services, amenities, jobs, education, and recreation. While other facets of urban studies have begun to reckon with the wicked legacy of racialized infrastructure as it pertains to schools, suburbs, and housing, the relationship between public transportation planning and race has been relatively absent from the literature. Recent scholarship has drawn attention to the neglected role that race plays in the practice of public transportation planning (Barajas, 2021; Brand et al., 2020). To join the ranks of other critical anti-racist initiatives that dismantle systems of inequality in cities, we argue that transportation planning needs to explicitly consider how infrastructure investments, particularly when promoted for their economic development benefits, may influence the demographic composition of transit-adjacent neighborhoods.

The concept of reparative planning (Williams, 2020) argues that planning professionals need to confront the historical legacies that have perpetuated structural inequity. We propose the idea of racial negligence to categorize existing transportation planning practices that fail to consider racialized consequences. While planning departments signal their commitments to equitable, community-focused planning, competing development imperatives frequently produce 'colorblind' decision-making that effectively renders Black and Brown community welfare invisible (Golub et al., 2013). Racially negligent outcomes commonly result, with disparate impacts that are often predictable, partially avoidable, and readily measurable in the aftermath of development. In the absence of planning processes that explicitly factor potentially harmful impacts into initial decision-making, however, these outcomes are destined to be reproduced. This is readily evident in urban transit projects whose construction produces significant economic benefits for development districts and the city, but which can exacerbate affordability issues for longtime residents to the point of displacement.

This paper examines contemporary streetcar projects to analyze how large, central city transit infrastructure investments impacts neighborhood segregation and change. Billed as modern projects for economic development and placemaking (King and Fischer 2016), streetcars have not been critically evaluated for their impact on existing racial dynamics or how they shape demographic transitions in different growth contexts. Using census block data from eight cities that built new streetcar lines in their downtown business districts over the last decade. Our findings indicate that census tracts with significant streetcar construction saw a decrease in percent Black residents, and an increase in percent White residents. Our analysis of planning documents for the projects indicates that neighborhood change of race composition was not considered in the planning or investment process, suggesting that reforms to transportation planning practice are needed.

Citations:

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Keywords: Reparative Planning, Transit, Racial Equity, Neighborhood Change

THE ROLE OF DIRECT DEMOCRACY IN UNDERMINING REGIONAL TRANSIT

Abstract ID: 1108.0.0.1194.2024
Pre-Organized Paper Presentation

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The production of public goods in pluralistic societies like the United States frequently presents numerous challenges due to several factors: the diversity of competing interests, difficulties coordinating between governmental entities, and providing reliable funding mechanisms, among other reasons. All of these factors can present even larger hurdles in low-trust environments, which is typical of historically segregated metro regions. Decades of racial hostility, weak or thwarted communication between urban and suburban local governments, and perceptions of divergent interests among voters have historically dampened the prospect of meaningful cross-jurisdictional development: cities such as Detroit and St. Louis continue to struggle to implement race-relevant, progressive policies in ways that more socially and racially homogeneous or well-integrated regions such as Portland or Salt Lake City rarely do. Direct democratic processes such as ballot measures and referenda can serve as vital tools to bypass entrenched political interests and institutional inertia, giving a strong voice directly to the public when it comes to important issues such as funding schools or developing regional transit. However, what are the implications of amplifying the political voice of a majority that feels no obligation to safeguard the needs and values of a historically underserved minority?

While direct democracy can be a tool for rapid and transformative policy change, it ultimately serves as a reflection of the values, priorities, and biases of a voting majority. This has historically resulted in the denial of expanded rights for minority citizens and, in some instances, the clawing back of rights that were gained in the past. For this reason, social equity-based reforms often face an uphill battle. As an issue with regional social, economic, and political implications, public transit has been racialized in ways that obscure its broad utility to metropolitan populations. For generations, it has served as contentious yet familiar terrain for political skirmishes between majority Black cities and their predominantly White suburban communities, the latter of which have historically

equated transit expansion with black population encroachment and consequent sociopolitical change. The use of ballot measures, therefore, presents a public policy solution that undermines the promotion of equity-based, progressive policies but still has the legitimacy of democratic process.

This paper discusses the question of if direct democracy inherently makes the passage of regional transit expansion, as a frequently racialized policy, less likely to succeed in highly segregated metropolitan regions. Despite ballot measures and referenda being common processes through which to make significant regional development decisions, the implications of their potential for impeding policies or new development with equity implications is greatly underexplored in the urban studies and planning literatures. Using spatial and regression analysis of demographic and electoral data, this paper examines how voter sentiment towards regional transit varies depending on racial diversity at both the local and regional scales, and how much of an influence local social context has on voting behavior. This census tract-level analysis observes portions of metro region counties that display high levels of racial homogeneity (among Black, White, and Latino groups), moderate levels of diversity, and, when available, meaningfully integrated and diverse groupings of census tracts. Samples from urban and suburban counties in six metro regions across the US are selected to identify any role that regional or partisan bias may play in transit ballot measure outcomes. Proximity to proposed transit infrastructure, area median income, and candidate election outcomes will serve as additional variables of interest. Findings indicate that metro regions that experienced extreme racial segregation (dissimilarity index ≥ 0.75) in the past fifty years display a high frequency of transit ballot measure failure, even with highly publicized bipartisan support.

Citations:

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Keywords: Direct Democracy, Regional Transit, Demographics, Public Goods, Regional Segregation

SIDEWALK POLITICS: PLANNING AT THE PACE OF COMMUNITY

Abstract ID: 1108.0.0.863.2024
Pre-Organized Paper Presentation

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Grassroots community organizations are driving innovation in transportation equity in the United States through the development of new methods and forms of advocacy based outside of state sanctioned processes (Karner et al., 2020). As these efforts unfold, researchers have started arguing for a reconceptualization of community members' lived experience as a form of expertise that must be treated as such to ensure epistemic justice (Lowe et

al., 2023). The notion of lived experience as expertise expands on prior conceptualizations of local knowledge in transportation planning, offering insights that technical knowledge cannot provide (Vigar, 2017). We report on community engagement and planning taking place beyond the state in two historically Black communities in Durham, North Carolina, USA, paying close attention to the role of lived experience and grassroots organizing in shaping both community demands and strategies for achieving them.

Durham is a fast-growing and gentrifying mid-sized city in the American south. The city has recently 'abolished' parking minimums and curtailed single-family zoning to promote affordability and sustainability amid rapid change. This has intensified development and traffic, particularly in and around historically Black and Latino communities with long-standing infrastructure needs unaddressed by state-led planning processes. New development threatens to both exacerbate the existing needs and disrupt the tenure of these communities. Community members organize to protect vulnerable road users in their neighborhoods and call attention to government failures to deliver essential traffic infrastructure, like sidewalks and traffic safety mechanisms.

We draw on field notes from six community meetings co-created with a graduate workshop course in which students are working for community organizations as clients. These notes are contextualized through secondary planning data, newspaper records, and primary data collection on road conditions in the impacted neighbourhoods.

We find that community members from historically marginalized neighborhoods advocate for equitable development without displacement. Rather than being fueled by opposition to change or growth, they often come to resist elements of 'smart growth' due to mistrust of local planning processes, fear of displacement, and planners' unwillingness to acknowledge or address the unanticipated impacts. We argue that equitable planning in historically marginalized communities is not possible without addressing the longstanding unmet needs of those communities. We further illuminate how lived experience provides the local expertise required to advance equitable planning. We conclude by highlighting funding and policy mechanisms for providing these benefits, including roles for senior levels of government to directly address community need.

Citations:

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Keywords: transportation justice, mobility justice, sidewalks, pedestrians, gentrification

WAITING FOR MINUTES AND DECADES: PUBLIC TRANSIT AND CHICAGO'S SOUTH SIDE

Abstract ID: 1108.0.0.394.2024

Pre-Organized Paper Presentation

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After being promised for 60 years, a heavy rail extension is finally poised for implementation on Chicago's far South Side, a majority Black area of the city. This project–the Red Line Extension (RLE)–will save 30 minutes per trip for some public transit riders who today face extremely long trips due to decades of disinvestment and discrimination. By reducing travel time disparities, and potentially catalyzing community development as promoted by civic leaders, the RLE is a transformative step towards equity planning in public transit.

In this study, we sought to understand transit rider and resident perspectives of the Red Line Extension and current public transit. To interpret the results, we draw from Song and Mizrahi (Song & Mizrahi, 2023) to distinguish equity planning from reparative planning. They explain that equity planning has "a focus on expanding choices and opportunities for those who have had the least" while the goal of reparative planning is "Stopping the systems, institutions, and practices causing harm; changing them to ensure they are not repeated; and making amends for committed harms" (2).

We interviewed 132 far South Side transit users and residents at the current rail terminus at 95th/Dan Ryan (focused on connecting bus riders) and at community partner site, as well as by telephone. Many interviewees were unfamiliar with RLE, while most who were familiar with the project saw it as an important improvement. However, responses about the project's long delay and comments about long wait times suggest time as an important analytic lens for thinking both about equity and reparative planning in public transit. We assert a reparative planning lens shows how future operations—while important—do not address the decades-long wait during which residents had and have excessive time burden. Time burden is critical for employment and well-being; in fact time availability is important for understanding health and disparities (Bó, 2022). Understanding how passengers experience long wait times is a first step toward making amends for related harms.

Attention to waiting for implementation historically and waiting for transit vehicles currently could generate reparative ways to discuss cumulative historic and current time inequities. We acknowledge that some local officials have enacted one element of reparative planning identified by Williams and Steil (Williams & Steil, 2023)—public recognition—and that the future might include another element of reparative planning—spatial transformation. Nonetheless, a reparative planning lens highlights additional opportunities to address past harms and change inequitable systems.

Citations:

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Keywords: public transit, equity

THE EFFECTS OF NIXING PARKING MINIMUMS NEAR TRANSIT ACROSS CALIFORNIA

Abstract ID: 1108.0.0.929.2024
Pre-Organized Paper Presentation

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A vast literature shows that minimum parking requirements increase housing costs (Shoup 2014, Gabbe & Pierce 2017), dampen construction of affordable housing (Jia & Wachs 1999), hinder adaptive reuse of existing or historic buildings (Manville 2013), increase auto ownership and use (Millard-Ball et al. 2022), and entrench an auto-oriented built environment (Manville et al. 2013). Various cities around the country have reduced and removed minimum parking requirements, either in their entire jurisdiction (e.g., San Francisco and Buffalo, NY) or in specific areas (e.g., downtown Sacramento, Los Angeles, Champaign, IL). In 2022 the California legislature enacted unprecedented policy by eliminating minimum parking requirements in areas near transit throughout the entire state (California AB 2097, 2022). Parking reform at this scale and extent had not yet occurred in the United States: previous parking reform had occurred in cities that had self-selected to change their minimum parking requirements. This reform affects all cities that have some amount of transit service regardless of their local politics, urban form, and likelihood to eliminate parking minimums themselves. AB 2097 offers a natural experiment to evaluate the effects of removing parking requirements and analyze how local implementation of state parking policy differs across contexts.

What are the effects of such a sweeping policy change? This research investigates how cities and developers are responding to and implementing this state mandate. I analyze primary documents, city policies and guidelines, and conduct key informant interviews for 6 case study cities across California to investigate how implementation varies across jurisdictions. This study looks at how cities use AB 2097 as an opportunity to go beyond the letter of the law, differences and disagreements in interpretation of the law, as well as cities that may attempt to evade the spirit of the law. This study also evaluates the results of AB 2097 and the effects it has had on parking provision, housing development, and housing affordability. It investigates the extent to which cities have made use of an exemption that was written into AB 2097 to continue to require parking. Further, a key concern of advocates was about unintended consequences of this bill for affordable housing development, so this study investigates the degree to which eliminating parking minimums has changed the number of affordable units that developers provide, developers' use of density bonus programs, as well as how cities bargain with developers to encourage more affordable housing units.

Citations:

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Keywords: Parking, Policy, Housing, Affordable housing

THE EQUITY OF MOBILITY-RELATED INVESTMENTS AND PROJECTS

Abstract ID: 1112.0.0.135.2024

Pre-Organized Session Summary

Session Includes: 1108.0.0.742.2024, 1108.0.0.992.2024, 1108.0.0.416.2024, 1108.0.0.392.2024, 1108.0.0.871.2024

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This panel investigates equity challenges associated with mobility and transit-related investments and projects. Investments in mobility and transit projects help provide safe and affordable mobility options for residents, increase access to economic opportunities; and decrease carbon emissions. Yet, these kinds of investments and projects can also encourage, for example, gentrification and displacement around transit stations, exacerbate affordable housing problems, and, through the uneven geography of investments, create inequity across regions and cities. By taking a scaler approach, we come together in this panel around several key objectives. First, we start with a broad and detailed assessment of transportation-related investments across the nation to highlight the extent of its (in)equitable distribution. Second, we utilize both quantitative and qualitative techniques to examine the displacement and housing affordability impacts of light rail projects across a variety of metropolitan areas in the U.S. Third, we delve deeper into particular cases to evaluate specific types of mobility investment projects that focus on community level concerns.

Learning Objective(s):

- Addressing equity challenges in transportation-related investments; for example its impact on housing affordability and demographic changes of neighborhoods.

ARE INVESTMENTS IN TRANSIT INFRASTRUCTURE DURING THE PAST DECADE EQUITABLE?

Abstract ID: 1108.0.0.742.2024

Pre-Organized Paper Presentation

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Over 180 new transit infrastructure projects have opened to the public since 2010, from which more than one-third have been inaugurated in the US in the past five years (Freeman & Vance, 2024). This transit infrastructure landscape, funded by a new era of federal programs designed to promote equity, may constitute a departure from an era of discrimination in public transportation planning, as demonstrated in the LA Bus Rider Union VS Los Angeles County Metropolitan Transportation Authority case in which the BRU argued that LACMTA was using disproportionately more of its federal funds to fund rail infrastructure projects serving exclusively wealthier and whiter suburban populations (Garcia & Rubin, 2004).

While the transportation funding policy landscape has significantly shifted to prioritize transportation equity goals during planning processes, there is surprisingly little research that systematically assesses whether transit investments made during the past decade have benefited historically marginalized lower-income groups and people of color, which, according to urban planning and geography scholars, continue to relocate to suburban areas (Cooke & Denton, 2015; Howell & Timberlake, 2014). This research contributes to transportation planning scholarship and practice by addressing the following three fundamental questions:

- Do major transit infrastructure projects in the US continue to disproportionally benefit White suburban households?
- How does the changing landscape in suburban demographic compositions contribute to explaining how equitable public transportation infrastructure dollars have been spent during the past decade?
- What other urban form attributes explain variation in the progressiveness of public transit planning?

This research draws upon three data sources: the Transit Explorer database, which provides comprehensive spatial data on all existing, under-construction, and planned transit projects in the US; the American Community Survey, which offers demographic and economic data; and access-related information for each census tract served by each project obtained from the EPA Smart Location database. Combining these data sources ensures the reliability and validity of the research's findings.

This research employs statistical inference and spatial analytics methods to answer the three research questions. Each transit project is first mapped, overlaying stations with census block group-level data to enable a spatial visualization of small-scale changes in demographics near a transit project. This analysis is further enhanced by data visualizations depicting how the distribution of population by race and ethnicity served by the new projects changes over time and across states. These descriptive analyses are then followed by regression analyses that estimate which urban form factors contribute to the changes in the composition of residents served while accounting for time- and place-fixed effects.

Findings from this research are expected to reveal a significant positive trend in public transit planning in the United States. This trend indicates that transit infrastructure projects are increasingly benefiting historically marginalized groups, with fewer cases depicting otherwise. The anticipated results underscore the importance of the increased concentration of low-income communities of color in suburban areas, the concentration of immigrant minorities, and the state where projects are implemented as critical factors in explaining the progressive nature of public transit planning.

Citations:

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Keywords: Transportation and Land Use, Suburbanization of Poverty, Public Transit Planning, Transportation Equity, Social Justice

UNCOVERING DRIVERS OF GENTRIFICATION IN NEW LIGHT RAIL TRANSIT CITIES

Abstract ID: 1108.0.0.992.2024
Pre-Organized Paper Presentation

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Light rail transit (LRT) is an affordable mobility option that can benefit low-income residents. Yet, the development of LRT stations may also trigger gentrification-induced displacement that negatively impacts low-income residents living close to these projects(Baker & Lee, 2019; Delmelle & Nilsson, 2020; Zuk et al., 2018). This study examines whether the opening of light rail transit stations encourages gentrification in neighborhoods where new LRT stations opened during the time period 2000 to 2017. We focus this study on neighborhoods in five U.S. cities, Dallas, TX; Seattle, WA; Houston, TX; Phoenix, AZ; and Charlotte, NC. Specifically, we ask two research questions: Does access to LRT stations induce gentrification in nearby neighborhoods? And what factors drive gentrification in the neighborhoods of the different LRT cities?

To begin this study, we first determine the gentrification status of individual neighborhoods from 2000 to 2017. We compute a “socioeconomic status index” at the tract level at both the beginning and ending years of the study period (Baum-Snow & Hartley, 2020). Using the principal component analysis, we calculate a composite index using specific neighborhood variables (e.g., % non-Hispanic White, % college graduates, and median household income) and use the percentile values for the index at the beginning and ending years to identify those neighborhoods that gentrified. Census tracts at the bottom two quintiles in the beginning year, but with an increase of more than 20 percentile values by the ending year, are classified as gentrifying, while similar census tracts without such an increase are labeled as non-gentrifying.

We next employ a two-step process for a statistical analysis aimed at determining the relationship between gentrification and LRT. During the first step, two groups of neighborhoods are identified, separately for each city. Both groups of neighborhoods are comparable in various aspects in the beginning year of the study period and equally likely to have new LRT investments in later years; however, only one group gained access to new LRT stations, but the other did not by the end of a study period. The latter neighborhoods are understood as “control

cases"; the former are considered "treated cases; and the opening of new LRT stations works as if it takes place "randomly" among the two groups of neighborhoods. Since treated cases are known, but control cases are not, propensity score matching (PSM) is employed for the identification of the latter.

At the second step, using a working sample consisting only of the treated and control neighborhoods, we estimate regression models to determine whether the LRT opening is associated with the gentrification of treated neighborhoods during the study period. Our proposed two-step approach eliminates (to the extent possible) systematic differences in the beginning year between those neighborhoods that would get LRT stations later and those that would not (i.e., remove endogeneity bias). Our outcome of interest is the gentrifying/non-gentrifying variable estimated using the composite index. We employ a wide range of confounding variables as controls in the model.

We find a clear positive relationship between gentrification and the establishment of LRT stations across the five cities. Our findings suggest that LRT can induce gentrification around station neighborhoods. Mobility planners ought to account for expected impacts that can harm vulnerable low-income residents of LRT neighborhoods.

Citations:

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Keywords: Light Rail Transit, Gentrification, Displacement

LONG-TERM HOUSING AFFORDABILITY IN LIGHT RAIL STATION

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Pre-Organized Paper Presentation

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Transit-induced gentrification studies have generally examined housing affordability immediately before, during, or soon after the opening of a new transit station (Huang, et al., 2024; Kim, et al., 2021). Such studies can indeed address exclusion and potential affordability issues in the years surrounding the opening of a new transit station. However, rail-based transit, especially in the form of light rail (LRT), has long-lasting impacts on city form. As such, a gap exists in transit-induced gentrification and overall transit neighborhood affordability studies, that is, the long-term affordability impacts remain under-examined. Addressing this gap is important because considering that while gentrification is a dynamic and disruptive process and can displace existing households (i.e., those present before

transit upgrades), ensuring that transit is attainable for those that need it the most is imperative in maintaining public transit systems.

This study thus examines long-term housing affordability in light rail transit (LRT) station areas. Particularly, I ask, Is LRT station area housing affordable over the long-term? Specifically, I explore whether transit causes long-term unaffordability excluding, primarily low- and middle-income households, from moving into LRT transit station areas. I answer this question using difference-in-difference models to explore whether and how LRT causes changes in LRT station area housing prices. With long-term housing price changes, I specifically target established LRT stations in the United States – that is, LRT stations that opened between 1980 and 2000. As such, I explore housing affordability over at least 20 years across twelve (12) different U.S. urban areas: San Diego (initial station openings in 1981); Buffalo (1984), Portland (1986), Sacramento (1987), San Jose (1987), Los Angeles (1990), Baltimore (1992), St. Louis (1993), Denver (1994), Dallas (1996), Salt Lake City (1999), and Jersey City (2000). I employ a difference-in-difference (DID) research design to explore the causal effects of LRT station openings on housing prices.

Preliminary investigation of census data shows that LRT has caused housing price increases above area averages in just a few cities: San Diego, Portland, and San Jose, while LRT has caused no substantial change in housing prices for Buffalo, Baltimore, and St. Louis. However, next steps include incorporating policy and planning documents such as Transit-oriented Development plans into the analyses to understand how targeted planning efforts influence housing affordability. This study contributes to transit neighborhood affordability studies by identifying the long-term impacts LRT has on housing prices. While research has largely examined the long-term, negative impacts on low-income and Black residents (Chava & Renne, 2021), the present study cans add to such studies by showing if living in transit-rich neighborhoods is unattainable for households who need transit the most.

Citations:

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Keywords: Light Rail Transit, Housing Affordability

BREAKING THROUGH ASPHALT: RETROFITTING FOR SUBURBAN LIGHT RAIL

Abstract ID: 1108.0.0.392.2024
Pre-Organized Paper Presentation

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The Purple Line, Maryland's largest investment in public transportation in decades, is a light rail project which runs through the inner suburbs of Washington, DC. Scheduled to open in late 2027, the transit system will mostly run at-grade on arterial roads which are managed by the State Highway Administration, and these roads were designed to accommodate suburban automobile traffic. However, the built environment – developed primarily in the post-war period - around many station areas is unfriendly to non-motorized travel. Obstacles to safe car-free transit include small or nonexistent sidewalks, unsafe crossings, channelized turns, high speed limits, new shade and long blocks.

At the same time, many of these station areas are home to low-income, transit-dependent populations without access to automobiles. Indeed, these communities represent a relatively high transit dependency relative to their suburban neighbors outside of the corridor. The Purple Line Corridor Coalition (PLCC), a multi-sectoral coalition based at UMD College Park advocating for safe, healthy, and equitable communities around the Purple Line, has been advocating for improvements to the transportation system around the Purple Line that enable safe car-free travel. However, they have had limited success as state transportation argue for the flow of traffic over pedestrian safety.

Recently, through a USDOT FTA grant, the PLCC has been conducting community-led walks with residents of neighborhoods to build community advocacy around safe access to stations. These community-led walks will allow local residents to speak directly to political leadership on their concerns about future plans for accessing stations. Although community outreach activities related to transportation are typically part of any public project, research suggests that these are dominated by high-income, white homeowners due to the dual challenges of work and access to the locations. Further, these gaps also impact the ability to organize low-income residents in suburban locations like the Purple Line Corridor.

Using observation, interview and geographic data from the Purple Line Corridor Coalition, this paper engages three “sticky” challenges to better understand the challenges and opportunities of retrofitting suburban communities for equitable transit-oriented development. These challenges: the design of the built environment, the persistent car-centered paradigm of suburban planning, and the challenge of mobilization and organizing in suburban communities. We ask how can transportation planners better engage residents at multiple scales to reimagine space in suburban communities? What are the barriers to implementation of human-scaled, community-responsive transportation interventions in car-centric communities?

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Keywords: Walkability, Equity, Community Engagement, Transit Oriented Development

ADVANCING EQUITABLE COMMUNITY-BASED TRANSPORTATION PLANNING

Abstract ID: 1108.0.0.871.2024
Pre-Organized Paper Presentation

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Mobility justice calls for community ownership of planning processes to prioritize transportation investments and provide access to opportunities for those who have been historically marginalized from these efforts (Karner et al. 2020; Karner et al. 2019; Hananel and Berechman 2016). With increased investment in clean transportation options in disadvantaged communities because of the federal Justice40 initiative and state-level policy goals, evaluating program implementation is crucial to ensure that meaningful opportunities exist for the public to shape projects funded under affiliated programs. This research assesses two related state-level grant programs that fund community transportation needs assessments, planning, and implementation for clean mobility and sustainable transportation projects in disadvantaged communities. These programs require the full participation of community-based organizations to plan and execute the grants. The evaluation is based on a review of grant documents, participant observation during technical assistance with grantees, and interviews with 55 stakeholders, including state agency staff, grant awardees, grant applicants who were not awarded funding, and transportation equity advocates and leaders. The methods and findings were influenced by a community accountability process. The evaluation identified program successes, including meaningful steps to incorporate equity into transportation planning and implementation, and opportunities for innovative transportation solutions not typically funded through conventional channels. The evaluation also identified several challenges, including a legacy of distrust between state government and equity-seeking communities, limited organizational capacity to apply for grants and meet grant program requirements, perceived inequitable selection processes, and bureaucratic hurdles to paying for community engagement events. The programs were limited in addressing basic infrastructure needs in disadvantaged communities, which are prerequisites for deploying innovative transportation solutions. The research provides recommendations to address programmatic issues, equity concerns, and to enhance institutional and community capacities for equitable transportation. Recommendations also include establishing an accountability plan that communicates programmatic changes, or limitations to those changes, and responds to community equity concerns.

Citations:

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Keywords: program evaluation, transportation equity, community-based planning, sustainable transportation

CAN THERE BE A JUST UBER? SURVEILLANCE, AUTOMATION AND URBAN TRANSPORTATION

Abstract ID: 1109.0.0.702.2024
Roundtable Submission

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Established theories on transportation equity emphasize transportation's role in providing access to destinations (Wachs and Kumagai, 1973), and view transportation justice in terms of ensuring a sufficient level of accessibility for all urban residents (Martens, 2017). However, emerging technologies, such as app-based ride-hailing, are changing how people actually achieve accessibility, and new perspectives focusing on environmental justice and state-centric planning methods highlight shortcomings which stress transportation's influence in the maintenance of societal injustices (Karner et al., 2020). Furthermore, app-based platforms, EVs, and AVs facilitate business models centered around data extraction and surveillance. Embedding the digital economy into connected vehicles has prompted questions over how to regulate privacy (Alvarez León, 2019; DeNardis, 2020), while raising concerns over sustainability and the potential distribution of benefits.

In this roundtable, we bring together a range of noteworthy viewpoints to explore with the audience how new technologies modify definitions of transportation justice. Specifically, we ask: Which definitions of transportation justice are useful in a world shaped by growing inequality across class and geographies? Does the rise of platform economies in transportation change how we should view privacy? How do surveillance processes reorient analyses of mobility and accessibility? Do these processes hold possibilities for more just transport, or do they re-inscribe inequalities? Has the role of transit changed with rise of the digital economy? As planners, how can we leverage new technologies to advance goals centered around equity and justice?

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Key Words: Transportation, Technology, Equity, Justice

QUALITATIVE RESEARCH IN TRANSPORTATION: PAST, PRESENT, AND POTENTIAL

Abstract ID: 1109.0.0.271.2024
Roundtable Submission

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Transportation research has long emphasized quantitative methods and positivist epistemology with strong influences from the fields of economics and engineering (Kębłowski & Bassens, 2018). In contrast, qualitative research can generate important theories and insights for transportation research (Kent, 2022), but tends to be underutilized (Lowe, 2021) and perhaps undervalued in the field. While there is growing interest and acceptance of qualitative methods for transportation research, the vast majority of peer-reviewed articles rely on quantitative methods.

This panel will focus on the potential of qualitative methods for generating meaningful contributions in transportation and how scholars can individually and collectively navigate and shape a field that still has a strong methodological orientation towards quantitative methods. While acknowledging the growing acceptance of qualitative methods in the field, we will examine the persistent challenges to professional success for those relying on qualitative methods. Participants will share their experiences and strategies for addressing challenges, and reflect on the implications for transportation planning research and practice more broadly.

The event aims to both reflect on the state of the field and generate actionable strategies for individual scholars (who are researchers as well as journal reviewers and editors) and collectively as a field. Potential audience members will have the opportunity to submit questions anonymously and pre-tenure audience members will have the opportunity to share questions first. The aim of the panel is to foster a conversation about qualitative contributions, build community, and craft and disseminate strategies for a field that still emphasizes quantitative approaches even with some promising signs of increased methodological openness.

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Key Words: Transportation, Qualitative methods

Track 14 Individual Paper Presentations

A LONGITUDINAL ANALYSIS OF RIDEHAILING USE AND CAR-LIGHT LIFESTYLE

Abstract ID: 1108.0.0.426.2024
Individual Paper Presentation

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Since its first introduction to large, dense cities in the United States, ride-hailing has substantially disrupted travel behavior and demand in numerous ways (1). Ride-hailing has improved mobility for (mostly) urban travelers, especially those in underserved or marginalized communities (2); however, it has done so with serious problems: additional miles necessary to serve passengers but without them (3), and associated congestion, air pollution, and greenhouse gas emissions. In addition, travelers appear to substitute public transit rather than using ride-hailing for first/last mile connections to/from transit facilities (4-5), and a non-trivial portion of ride-hailing trips would have been canceled without the availability of the service (i.e., "induced" demand). Apparently, while enhancing urban mobility, ride-hailing generates negative impacts more than it materializes potential benefits to sustainable transportation, e.g., supporting a car-light lifestyle in cities. However, to date, the literature about the latter has been lacking.

This research attempts to determine whether and to what extent ride-hailing use is associated with, and more importantly, contributes to less car-dependent travel behavior from a longitudinal perspective. In doing so, we analyze longitudinal-panel responses from the California Mobility Panel, built from rich transportation surveys administered to various parts of California annually from 2018 to 2023. These surveys contain similar structures and questions with some modifications in each wave in response to important emerging topics. At the end of each wave, respondents were asked to be recontacted for a future survey of similar nature. Thus, previous respondents who "returned" to later surveys form a longitudinal panel, for which the surveys have consistently collected key information.

With the California Mobility Panel, we first build a working sample consisting only of two groups of individuals, each of which works as either "treated" or control cases. The former group includes individuals who used ride-hailing to meet their routine travel demand at one time point, and the latter contains their counterparts, who were equally likely to use ride-hailing but happened not to. To identify the latter, we employ propensity score matching (PSM), which takes two steps: first, estimate a binary logit model regressing ride-hailing use on a wide range of factors including socioeconomics, demographics, built-environment attributes, and perceptions and preferences, and second, match the most comparable non-user(s) to each of the ride-hailing users, based on the probability from the first step and some modeling options (e.g., the maximum difference allowed in probabilities between a user and a deemed-as-equivalent non-user(s)). To date, only a few papers have employed PSM to compare ride-hailing users and non-users, with cross-sectional data.

Next, with the "matched" sample of users and otherwise-comparable non-users, we examine any differences in later time points regarding the frequency of using various travel means for commuting and leisure trips. We start by running bivariate statistical tests to identify the association between ride-hailing use and mode-use frequencies. With insights from these tests, we estimate regression models to determine whether ride-hailing use at earlier time points (or continued use over time) is linked to less car-dependent travel behavior at later time points, with confounding factors controlled for. In doing so, we estimate a series of ordered logit models with categories for typical frequencies as the dependent variable, ranging from not available, available but not used, less than once a month up to 5 or more times a week.

In brief, this research addresses an important literature gap regarding whether and to what extent ride-hailing facilitates car-light lifestyles in cities over time. Its results will enable us to identify unique personal characteristics and circumstances that greatly increase the potential positive effects of ride-hailing and inform planning and policymaking efforts to maximize such effects.

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Keywords: ride-hailing, car-light lifestyle, longitudinal panel, propensity score matching, pseudo-experimental design

A MULTI-JURISDICTION APPROACH TO VALIDATE AUTOMATED TRAIL TRAFFIC COUNTERS

Abstract ID: 1108.0.0.1221.2024
Individual Paper Presentation

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There is growing interest in investing in bicycling and pedestrian infrastructure at various levels of government with a goal to limit carbon emissions, reduce vehicle miles traveled, and improve public health (Hankey, et al. 2012, Le, Buehler and Hankey 2019). While monitoring motorized traffic is common across the USA, non-motorized travel lacks a robust monitoring network to inform decisions, investment prioritization, safety analyses, health benefit assessments, etc. (Lu, et al. 2017). Most agencies rely on short duration manual counting for pedestrian and bicyclist volume estimation making it difficult to accurately estimate non-motorized traffic volumes (Johnstone, Nordback and Lowry 2017). Developing consistent and scalable pedestrian and bicyclist count programs is needed to inform policy decisions and to elevate bicycle and pedestrian infrastructure in funding decisions. Automated counters for bicycle and pedestrian require validation and regular maintenance to be reliable. This paper describes results from a multi-stakeholder team to validate a large automated bicycle and pedestrian counter (n=150) network in a large urban region. We focus on developing a validation approach (e.g., determining the minimum number of validation hours needed, best seasons to perform validation, etc.) which is an important question brought up by our multi-jurisdiction partners.

The validation process includes three major steps: equipment setup, data collection, and analysis. Equipment setup included onsite pre-validation and counter configuration. We then collected daytime video recordings of 30-52 hours and manually counted bicyclists and pedestrians based on the video feed to provide ground truth data. For the last step, we validated the count data and calculated the automated to manual count ratio, the Mean Absolute Percentage Error (MAPE), and estimated a correction factor. The validation results based on 52 counters showed a Mean Absolute Percentage error (MAPE) of <62% for pedestrian counters and <25% for bicycle counters. Pedestrian counters that passed the validation process had a lower MAPE (<35%) as we identified counters generating higher error requiring troubleshooting. The high error rate was generally due to poor counter installation, site selection, passive infrared sensitivity, or counter bypassing issues, etc.

We further developed an analysis to identify the minimum hours needed for accurate pedestrian and bicycle counts. To identify the minimum number of hours, we used k-fold cross-validation where each recorded day was selected as the subset. We randomly selected 2-40 one-hour time bins from the training-day-dataset and calculated the correction factor. Applying the correction factor to the test day, we calculated the MAPE for every selection hour separately for pedestrians and bicyclists. To ensure we investigated the most feasible combinations of time bin selection, we iterated the process 1,000 times. We found that the average of the maximum MAPE decreased significantly with the inclusion of an increasing number of hours between 2-hours (~45%) and 10-hours of validation (~27%) for bicycle counters. The average maximum MAPE reduced to ~18% after 15 hours of validation.

The average of the maximum MAPE for pedestrians was about 92% when we calculated the correction factor based on 2 hours. It continued to decrease as we increased the number of hours to validate to ~47% and ~40% for 10-hour and 15-hour validation, respectively. We also observed that the average maximum MAPE is different for high, moderate, and low-volume counter locations, where the average maximum MAPE was lower for high-volume sites than moderate and low-volume sites for both pedestrian and bicycle counters.

The validation results show the importance of automated counter validation for accurate non-motorized traffic volume estimation. The findings of the minimum number of hours to validate a counter can play a pivotal role in streamlining the counter validation process that can benefit the jurisdictions with resource restrictions for counter validation.

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Keywords: Non-motorized traffic monitoring programs, Trail traffic counter validation, Bicycle and pedestrian planning

A PANEL STUDY ON THE GENDER GAP IN INTENTION AND USE OF A NEW LRT SYSTEM

Abstract ID: 1108.0.0.282.2024
Individual Paper Presentation

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Large transport infrastructure projects such as light-rail transit (LRT) are expected to deliver significant social, economic, and environmental benefits. However, the distribution of benefits from these types of interventions is often not gender neutral (Uteng & Cresswell, 2016). Major gaps still exist in terms of how transit investments serve the wants and needs of different societal groups, particularly when it comes to LRT and gender (Creemers et al., 2012; Mandhani et al., 2021).

The Réseau Express Métropolitain (REM), a newly introduced 67-km automated LRT system in Montréal, Canada, is an opportunity to study the gender equity of new LRT infrastructure in the North American context. Before the

opening of the REM, a significant gender gap in intention to use the new LRT was found (Villafuerte-Diaz et al., 2023). As the first stage of the REM opened in September 2023, it is now possible to revisit this question and compare the changes in travel brought by this new system from a gender equity perspective. This study inquires further into the gender gap around this newly opened LRT by analyzing gendered differences in people's switch from intention to actual use.

This work uses data from a four-wave panel survey administered to the same participants within the service area of the first stage of the REM (n = 173). The first three waves of the survey; applied during the fall of 2019, 2021, and 2022; measured intentions to use the REM before its opening. The fourth wave, collected in fall 2024, measured the same respondents' actual use of the newly opened first stage of the REM.

Descriptive results from this survey corroborate previous findings that men were more likely to have a positive intention to use the REM, with a 12.8% gender gap in intention to use the REM before its opening. When measuring actual use, this gender gap considerably decreased to 4.6%. Most of this decrease in the gender gap results from men switching from a positive intention before implementation to not using the REM once it opened. Using a set of binomial logistic regressions, this work inquires into the factors that affect the likelihood of changing stated intention to use the REM in women and men. The main explanatory factors for this switch include age, income, and latest intention to use the REM. Preliminary results show that men are more likely to change their intention to use the new LRT than women. Age showed to be the most relevant factor in affecting the gender gap. Men above the age of 60 were 81% less likely to switch from negative intention to using the REM, and twice more likely to switch from positive intention to not using the REM. The findings from this research raise questions regarding the reliability of stated preference of men compared to women, when it comes to using a new LRT system. Prospective surveys measuring intention to use a new LRT service may experience a significant gender difference bias, especially among older adults. This could wrongly lead to the adoption of policies that might not be needed to close a gender gap that won't exist when the LRT is in operation. Results from this study may contribute to future survey design calling for the inclusion of more nuanced questions that can minimize gendered intention bias.

Citations:

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Keywords: Travel behavior, Intention, Light-rail transit, Panel analysis, Gender

A SPATIAL EQUITY ANALYSIS OF CYCLING INFRASTRUCTURE DEVELOPMENTS IN CANADA

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Individual Paper Presentation

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The transformation into cycling-friendly streets in Canadian cities marks a significant shift towards planning and policies that support sustainable and active transportation, especially during the COVID-19 pandemic. However, it has unveiled disparities in the distribution of cycling infrastructure, with certain neighbourhoods benefiting less than others. This research examines the impacts of cycling infrastructure developments on transportation equity in Vancouver, Toronto, and Montréal since year 2020.

Transportation equity ensures fair distribution of transportation resources and benefits, particularly to marginalized groups. It aims to rectify social inequities and caters to the diverse needs of different communities (Golub, 2016; Litman, 2022; Pereira & Karner, 2021). Employing spatial equity and quantitative analysis methods, the study investigates both horizontal and vertical equity over time, guided by the two research questions: 1) How cycling infrastructure was developed in the three Canadian cities before and after the pandemic, and what was the associated equity in terms of the cycling infrastructure accessibility for the general population? And 2) How has the accessibility of cycling infrastructure changed since year 2020, and what are the spatial associations between the changes and neighbourhood marginalization in the three Canadian cities?

The study leverages two datasets: cycling infrastructure inventory retrieved from the three cities' open data portals and the Canadian Index of Multiple Deprivation (CIMD) developed by Statistics Canada based on 2021 Census data, which assesses deprivations at the dissemination area (DA) level across four dimensions: residential instability, economic dependency, ethno-cultural composition, and situational vulnerability.

The study employs two analytical methods: horizontal equity analysis using the Gini Index and Lorenz Curve, and vertical equity analysis with spatial autoregressive (SAR) models. The Gini Index will measure the distributive justice of access to cycling infrastructure (Delbosc & Currie, 2011; Lucas et al., 2016), considering each DA's total infrastructure accessibility within a 1km network buffer from the centroid. The Lorenz Curve will visualize the Index and provide further information on the distribution. The analysis aims to compare the equity of infrastructure accessibility in two timestamps – before the pandemic and nowadays. Vertical equity analysis will use SAR models to examine the spatial and temporal associations between cycling infrastructure accessibility and various covariates, including population density and CIMD scores, across years.

As for the results, horizontal equity analysis positions Vancouver as a frontrunner in accessibility and justice, with the city offering over 5km of cycling infrastructure access per DA and boasting the lowest Gini Index (nowadays, non-weighted: 0.3068) indicating a fair distribution. Toronto, in contrast, presents a stark disparity, with the lowest access and the highest Gini Index (nowadays, non-weighted: 0.5605), alongside nearly 20% of its population lacking access to cycling infrastructure. While Vancouver and Toronto saw improvements in equity, Montréal's equity slightly declined (weighted, from 0.4072 to 0.4236). The analysis also highlights the impact of infrastructure quality, with Toronto and Montréal's emphasis on upgrading areas with existing infrastructure potentially exacerbating inequity.

For vertical equity, the analysis indicates a preference for developing infrastructure in high-density areas. Apart from that, access to infrastructure is less associated with residential instability, economic dependency, and ethno-cultural composition in Vancouver. Toronto and Montreal focus on areas with higher residential instability and lower economic dependency. Montreal uniquely prioritizes areas with higher situational vulnerability, setting it apart from Vancouver and Toronto. This reflects distinct strategic differences across the cities, with Toronto and Montreal showing more planning similarities.

By illuminating the broader impacts of infrastructure development on transportation equity, the study offers valuable contributions to the discourse on active transportation planning and policymaking in Canada and beyond the border, championing equitable access to cycling infrastructure, sustainable transportation, and social justice in the post-pandemic era.

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Keywords: Transportation planning, transport justice, cycling equity, accessibility, quantitative analysis

A STANDARDIZED APPROACH TO IDENTIFY & UNDERSTAND THE HIGH-INJURY NETWORK

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Individual Paper Presentation

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Many Vision Zero cities have developed their own version of a high-injury network analysis. The resulting maps characteristically show that 50% of their road fatalities take place on only 5% of streets. Or that 60% of fatalities take place on 6% of lane miles. Whatever the specifics, the underlying thinking has been beneficial for cities to identify their most deadly locations. However, the ad-hoc and individualized nature of the underlying processes lacks consistency. This has made it difficult to compare results from different cities or to systematically examine the defining characteristics of our most dangerous streets.

This first half of this paper develops a generalizable approach to defining a high-injury network. We do so using existing data sources that will make this methodology replicable for other cities. The second half of this paper runs this analysis for the primary city of each of the 100 largest metropolitan areas in the United States. We then delve into the defining street and network design qualities that comprise these dangerous streets.

By creating a standardized approach to defining high-injury networks, this paper will help enable more consistent analysis across Vision Zero cities. By utilizing existing data and a replicable methodology, it will facilitate scalability and adoption by other municipalities. This combination will allow for a better comparison of dangerous street characteristics and design features in order to help inform evidence-based strategies to improve road safety, leading to safer streets and saved lives.

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Keywords: Vision Zero, Road Safety, High-Injury Network, Pedestrian, Bicyclist

ADAPTING LEGACY INSTITUTIONS TO NEW CHALLENGES IN PUBLIC TRANSPORT

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Individual Paper Presentation

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Transport providers are looking for creative solutions to recover after the pandemic and encourage use of low carbon transportation. Now is a time of great interest in ways to adapt to changing work and land use patterns in many cities. Yet institutions change slowly, and the literature on transport institutions is sparse compared to other policy spheres. The current conversations about service adaptation are shining a light on long-standing institutional challenges in public transit like fragmentation, inconsistent fare structures & financing and lack of coverage. In many cities, there are multiple operators, private and public, multiple cities, counties, tendering agreements and funding systems in place. Governance shapes the frequency of transfers and their difficulty, affecting ridership (Miller et al., 2005; Walker, 2012). This includes the existence and ease of cross-operator ticketing (Buehler et al., 2017), schedule coordination, terminal and app sharing, and data coordination (Rivasplata, 2012).

This paper conducts an in-depth qualitative analysis using in-person interviews and document analysis in order to identify how transit agencies under different legacy institutional structures are adapting (or not). For each case, we interview staff responsible for service planning to understand the extent of coordination with neighboring transit providers, or lack thereof, and the governance challenges that might need to be overcome to make integration possible. We also examine a combination of annual reports, policy documents, tax collection information, fare policies and interagency agreements/ MOUs, in order to understand the link between governance and service outcomes like coverage and trip time to work.

This paper looks at two metro regions in Europe and two in the US, with one region on each continent being locally governed & funded and one region governed and funded at a higher level (e.g. regional, federal state, or national). The interviews highlight the challenges of integrating services under each condition. This paper focuses on the role played by local versus higher level governments, how funding sources supporting public transport affect decision making, and various institutional structures governing coordination, such as interagency agreements; the study also considers informal coordination structures like regular meetings between agency CEOs or service planners. This work adds detail to the literature of transport governance, building off of previous literature documenting the range of regional transport governing structures (Weinreich & Skuzinski, 2021), measuring levels of fragmention (Skuzinski et al., 2022 & 2023), and studying how governing structures developed over time (Weinreich & Bonakdar, 2020).

This paper focuses on how different legacy structures translate into policy making, particularly when that policy making requires transit operators to work outside the jurisdictional boundaries under which they were designed to provide services. How the operators adapt the transit network to new needs under different institutional circumstances is a pressing issue for academics and practitioners alike.

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Keywords: Fragmentation, Governance, Transportation, Institutional Adaptation, Collaboration

ADDRESSING TRANSPORTATION BARRIERS TO LOW VISION CARE IN NEBRASKA

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Individual Paper Presentation

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Transportation is a fundamental aspect of accessing health care, yet it is frequently cited as a major obstacle to getting care, resulting in missed, rescheduled, or delayed appointments (Syed, Gerber, and Sharp 2013). Addressing transportation barriers is essential for access to health care because patients confronting such barriers bear a heavier burden of illness—in addition to managing their illness, they must navigate concerns related to transportation accessibility and affordability that can exacerbate stress, delay care, and otherwise influence their health (Cochran et al. 2022).

In the United States, approximately one out of every four adults lives with a disability; 4.8% of adults are specifically affected by visual impairments (CDC 2023). Disability rates are notably higher in rural areas, and rural residents often encounter more obstacles to accessing health care and other essential services, including transportation-related challenges.

Transportation is crucially important for those seeking care in low density rural areas located farther from major medical facilities, such as hospitals and rural health clinics. Transportation barriers are especially pronounced among those who do not own or cannot drive a personal vehicle, or who cannot rely on transportation assistance from family or friends. Public transportation is also less available in rural areas, exacerbating difficulties for individuals lacking car access (Arcury et al. 2005). As the U.S. population is aging more rapidly in rural areas, providing reliable transportation options for older adults and individuals with disabilities living in rural settings has become increasingly important.

In this study, drawing on in-depth, semi-structured interviews with adults living with visual impairments and their caregivers, we investigated the nature and consequences of transportation barriers to care experienced by Nebraska residents with vision disabilities. Through flexible coding of interview data, we identified common transportation barriers and explored their impacts, paying particular attention to how these barriers affected people's ability to access low vision rehabilitation and other health care services (Deterding and Waters 2018). Our findings revealed variations in how barriers were experienced across different demographic, household, and spatial characteristics. Notably, respondents belonging to certain groups, such as older adults (over age 65), individuals with low incomes, people living in rural areas, and individuals who cannot drive themselves or who do not own a personal vehicle, frequently reported experiencing transportation barriers that affected their ability to access timely care. Given the profound impact of visual impairment on one's ability to drive, most respondents reported a cessation of driving; following cessation, they emphasized feelings of diminished autonomy and independence.

Employing thematic analysis enabled us to categorize and characterize identified barriers, offering deeper insights into individuals' experiences with transportation and enriching our understanding of the challenges they face in accessing health care. We propose recommendations for transportation and health care professionals to address transportation barriers to care, enhance access conditions for people with vision disabilities, and improve accessibility in transportation planning, particularly in rural settings.

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Keywords: disability, health care access, qualitative research, transportation barriers, rural transportation

AESTHETIC PLACES AND TRAVEL DESTINATION CHOICES

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Individual Paper Presentation

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Visual appeal significantly influences people's travel destination choices. Building on recent advancements, this study applies new metrics to measure the attractiveness of streets by incorporating the quality of streetscapes (Koo et al., 2023) and indoor service environments, termed "servicescapes" (Bitner, 1992; Miles et al., 2012), which are pivotal in shaping non-work-related travel decisions. This research also considers how neighborhood factors, such as crime rates and distance to the city center, affect the frequency of visits to Points-of-Interest (POIs). Crucially, it examines how these influences vary with the predominant transportation modes used by individuals, an area not extensively explored previously.

Our investigation seeks to understand how individual’s level of car dependency moderates the appeal of streetscapes and servicescapes and influences where they choose to go. We predict POI visit frequencies based on

these visual and neighborhood factors, comparing outcomes across cities with different transportation mode preference profiles. We anticipate that in car-dependent cities, the relationship between destination choice and streetscape appeal might be weaker due to drivers' reduced sensitivity to the aesthetics and safety of their surroundings. For example, while pedestrians often appreciate the greenness of streetscapes for their aesthetic and environmental benefits, drivers might perceive extensive vegetation as a hindrance, potentially obscuring visibility and creating a sense of confinement that impacts their driving experience (Anciaes, 2022).

The result of this study can have several implications for urban planning. First, this research could enhance understanding of factors that decide the attractiveness of POIs. These findings could inform why certain places of cities are frequently visited while some are not despite advanced street design. Additionally, the findings could guide policy development related to transportation and public space utilization to better align with the mobility patterns and preferences of residents, especially concerning their choice of travel modes. Furthermore, by identifying POIs and streets that are well-utilized or underutilized, the study can help cities plan and enhance the use of their street networks more effectively. For cities looking to reduce car dependency, this might involve investing in public transit systems and enhancing street infrastructures that connect key POIs with residential areas efficiently.

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Keywords: Walkability, Streetscape, Servicescape, Point-of-Interests, Computer Vision

AFFORDABLE HOUSING IN TRANSIT-ORIENTED COMMUNITY IN NORTH HOLLYWOOD

Abstract ID: 1108.0.0.472.2024
Individual Paper Presentation

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Many recent studies have shown that land use development near transit stations introduced increases in housing prices and reduced housing affordability (Padeiro et al., 2019; Zuk et al., 2018). However, few small number of articles have examined the interactions of transit agencies, private developers, and multi-level governments in

affordable housing development near transit stations (Lung-Amam et al., 2019). This study joins a small number of qualitative transportation studies (Fischer, 2022; Lowe & Grengs, 2020) to understand the dynamics of affordable housing development near the North Hollywood subway station in Los Angeles, California. By analyzing documents related to this project from 2015 to 2023 and interviewing players working for Metro Los Angeles, City of Los Angeles, and two non-profit organizations, this study demonstrates the mismatch of the vision of equitable transit-oriented development and the difficulty of providing sufficient affordable housing in practice. Metro Los Angeles has an ambitious goal of promoting Transit-oriented Communities (TOC) countywide. As one of the 15 Demonstration Projects, the initial goal of affordable housing units near North Hollywood is to make 35 % of housing units affordable to those who made 60 % of Area Median Income. Led by the Trammell Crow Company, this project experienced several changes in allocation to income-restricted housing units. However, the affordable housing allocation in this project ended up with around 25% of restricted-income housing units, lower than the previous 35% goal. Based on our analysis, many reasons including divergent goals of providing affordable housing units by various stakeholders, a failure to secure affordable housing grants for this project, and the increasing unaffordability of housing units in Los Angeles all increased challenges of delivering affordable housing units near transit stations. This study contributes to the current literature by a deep understanding of dynamics of affordable housing development near the transit stations and show the necessity of maintaining a stable affordable housing development goal and securing affordable housing funding and through public-private partnership.

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Keywords: affordable housing, transit-oriented development, Hispanic, transportation

AFFORDABLE SHARED MICROMOBILITY: DISCOUNTED RIDE PROGRAMS IN THE US

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Individual Paper Presentation

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Shared micromobility services including bikeshare and shared e-scooters are often touted as ways to bridge existing gaps in the transportation system. Yet previous research documents inequitable access to shared micromobility

across demographic groups and space (Dill & McNeil, 2021), which means shared micromobility may actually serve to widen rather than shrink existing transportation divides. To rectify inequitable access, many cities have implemented shared micromobility equity requirements, such as discounted prices, geographic coverage requirements, or providing adaptive vehicles. While far from universal, previous research shows that 62% of US micromobility programs have implemented at least one equity requirement (Brown & Howell 2024). City data shows that that people enrolled in discount rides programs make a disproportionate share of trips (see for example City of Portland, 2024), suggesting high demand for micromobility travel among qualifying travelers. Other research finds that people enrolled in discount rides program use micromobility disproportionately for utilitarian trips and report experiencing greater benefits compared to non-discount ride users (Delbosc & Thigpen, 2024). Yet while discount ride participants demonstrate clear benefits from riding, they constitute a disproportionately small share of all riders relative to income distributions citywide. Understanding why this gap in participation exists and how to overcome it is critical to ensuring that micromobility travel benefits extend to those who could most benefit from additional mobility.

In this research, we ask and answer four related research questions:

1. How does the share of riders qualified for discounted rides programs compare to the share of people actually enrolled?

2. How do people learn about discounted rides programs?

3. How do discounted rides programs shape travel behaviors?

4. How can cities and operators expand access to discounted rides programs?

To answer these questions, we conducted online surveys of 277 American adults and 408 Lime riders in Fall 2023. Findings suggest that the primary barrier to people accessing discount ride programs is lack of knowledge: only about one-quarter of people who qualified for discount ride programs know these programs exist. Survey results suggest that tackling the knowledge barrier is the surest way to increase enrollment in discount ride programs: most people who qualify for and know about discounted rides programs are enrolled. Survey data also suggests that expanding access to discount rides programs can achieve citywide goals of boosting mobility among travelers with fewer resources: most people report both wanting to ride more and that discounted rides do or would increase their micromobility use. Results suggest that improved marketing, advertising discounts at benefits centers or auto-enrolling people during public benefits sign-up process could expand affordable access to micromobility to people earning lower incomes.

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Keywords: equity, shared micromobility, discounted fares, e-scooters

AGE INEQUALITY IN THE RECOVERY OF SUBWAY USE DURING THE POST-PANDEMIC

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Individual Paper Presentation

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Public transport ridership reduced dramatically by over 80% in various countries or cities during the peak of the pandemic. Understanding the age inequality in subway usage after the pandemic is crucial for urban social equality, as it could help address the transportation needs of older individuals and create a fair and just mobility society. While many studies have explored the shift in transportation modes and the recovery of public transport after the pandemic, few have focused on the age differences in the recovery of public transportation, particularly whether the elderly are at a disadvantage.

This study investigates the difference in the impact of COVID-19 on subway use between old and young people during different stages in Shenzhen, China, with a focus on the role of digital internet access. We trace the changes in subway use of old people from pre- and post-pandemic for a long time series from December 2019 to May 2020, and 2023 in Shenzhen, China, using anonymized mobile phone trajectory data with fine-grained resolution in space and time. Specifically, we address two main questions: (1) What dynamic process does the elderly population's subway travel recovery undergo after the unexpected event, and when does it return to pre-pandemic levels? (2) Is there a significant difference in the recovery of the elderly compared to younger groups, and how does the elderly's access to the Internet impact their subway usage?

Our preliminary findings reveal significant age-related disparities in the recovery of metro usage during the different phases of the pandemic. Using the proportion of pre-pandemic metro travel frequency as a baseline, we discovered significant age-related disparities in the recovery of metro usage. During the initial recovery phase, young people's daily metro trips recovered to 62.38% of the pre-pandemic level, while the elderly population only reached 43.76%. As the city entered the stable recovery phase, young people's metro usage recovered to 84.55%, whereas the elderly's recovery was slower, reaching 70.35%. Interestingly, by 2023, the proportion of daily metro trips made by the elderly (0.455) surpassed the pre-pandemic average (0.425), achieving a recovery of 107%, while young people's post-pandemic proportion (0.514) relative to the pre-pandemic level (0.505) showed a recovery of 102%. Furthermore, our initial analysis suggests that internet access levels played a crucial role in shaping metro usage patterns, particularly among the elderly, throughout the pandemic. Prior to the outbreak, higher internet access was positively associated with metro travel distance for both age groups, with a more pronounced effect on the elderly. However, during the outbreak and initial recovery phases, higher internet access levels led to a more substantial reduction in metro travel among the elderly, possibly due to increased exposure to risk-related information. In contrast, young people with higher internet access experienced a faster recovery in metro travel during the initial and stable recovery phases. This research aims to investigate the recovery of subway use among

the elderly after the pandemic and to identify age-related inequalities in the public transportation system, ultimately fostering more resilient and inclusive urban transportation systems.

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Keywords: age inequalities, subway usage, post-pandemic, internet access, old people

AI'S ROLE IN U.S. SENIOR TRANSPORTATION: POLICIES AND PRACTICES

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Individual Paper Presentation

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[Objective] With the population aging in the U.S., mobility can be a serious concern for older adults. Fortunately, artificial intelligence (AI) is revolutionizing senior transportation. Examples of AI applications in transportation abound, such as Autonomous vehicles, AI-powered public transit, intelligent journey-planning tools, and others. They are providing seniors with safer, more accessible ways to navigate their communities, ensuring they stay connected and independent. This paper intends to examine the role of AI in U.S. Senior Transportation with a focus on its policies and practices. [Method] Through an extensive literature review, data collection, and case studies, the paper will probe into this issue from three perspectives: policies, technological applications, and barriers. First, on the policy side, this paper will review and summarize the existing U.S. laws and regulations about AI technologies. In particular, the paper will give an in-depth introduction to the U.S. Department of Transportation (DOT) AI activities. Second, regarding AI technological applications, the paper will primarily dig into Five application areas: Assistive Technologies, Ride-sharing Technologies, Autonomous vehicles, AI-powered public transit, and intelligent journey-planning tools. Other related applications might be touched on as well. Finally, concerning barriers, the paper will examine some obstacles that might be encountered by older adults down the road in their utilization of AI technologies, such as cost, technological unfamiliarity, health issues, etc. [Results] Shortly, AI-led smart mobility technologies will help older adults or senior citizens travel more safely and independently, thus leading a more dignified life. However, the deployment of these technologies takes a relatively long time, depending on political, economic, technological, and human constraints. In addition, education, communication, and training must take place between service providers and older adults to find their best match. [Conclusions] AI will play an important

and increasing role in U.S. Senior Transportation in the years to come. Both the public sector (government, public transit agencies) and private sector (software vendors, technological firms, and private individuals) will be involved in this process. While the future is promising, some obstacles need to be overcome beforehand.

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Keywords: Artificial Intelligence (AI), Senior Transportation, Autonomous Vehicles, Public Transit, U.S.

AIR QUALITY ON ELECTRIC VEHICLE ADOPTION USING REAL WORLD DATA

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Individual Paper Presentation

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Electric vehicles (EVs) are recognized as a feasible solution for improving the environment, and environmental factors may also affect the adoption of EVs.

However, there is a limited body of literature exploring the impact of environmental factors on the actual sales of EVs based on real-world air quality data. Previous research, primarily conducted through surveys, indicates that environmental awareness promotes the intention to adopt EVs (Jesus et al., 2023; Okada et al., 2019; White and Sintov, 2017). These survey-based research tend to focus on the intention to adopt EVs rather than actual purchase behavior. It is worth pointing out that previous studies found that when surveying people's views on environmental topics, respondents often exhibit a pronounced inclination to overstate their engagement in environmentally responsible actions (She et al., 2017). This emphasizes the importance of exploring the effect of actual air quality on the actual sale volumes of EVs. In addition, the promotion of EVs would improve air quality, leading to an apparent issue of reverse causality in their relationship. However, previous studies have focused on the correlation of their relationship rather than causality.

Hence, compiling a panel dataset encompassing 271 Chinese cities from 2014 to 2020, this study employs an instrumental variables approach and a two-way fixed effects panel model to investigate the causal effects of air quality on EV sales. Thermal inversion is employed as an instrumental variable to address endogeneity arising from the obvious reverse causality in their relationship.

Several valuable findings are as follows: (1) Each one percent deterioration in air quality, represented by a one percent increase in air quality index, results in a 9.15 percent increase in EV sales; (2) Heterogeneity analysis suggests that the positive effect of air quality on EV sales is more pronounced in cities with higher per capita disposable incomes, higher per capita vehicle ownership, and larger size; (3) Mechanism analysis shows that the positive effect of air pollution on the sales of EVs is mediated by two factors: individual environmental awareness and government policy-induced behavior.

Our findings contribute to a more comprehensive understanding of the role that environmental factors play in the growth of the EV market and provide valuable insights for further advancing the promotion of EVs in different types of cities.

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Keywords: Electric vehicles, air quality, environmental factors, Chinese cities

AN EVALUATION OF FACTORS INFLUENCING WILLINGNESS TO PAY FOR PUBLIC-TRANSIT

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Individual Paper Presentation

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Public-transit fares play an important role in shaping public-transit usage. On one hand, increased fares can lead to the exclusion of certain social groups (Lubitow et al., 2017) or reduction in the frequency of public-transit use but it can also generate much needed revenues to support operating costs. Conversely, reducing fares can generate increases in ridership and in who is able to financially access public-transit, but at the expense of reduced revenues (Kębłowski, 2020). Public-transit pricing is under increased scrutiny with the growing post-pandemic budget deficits faced by several public-transit agencies which might push for fare hikes. Conversely, pressure has been growing over the last decade to make public-transit more affordable – if not completely free – to facilitate a modal shift away from motor vehicles and towards sustainable modes of transportation. While the effects of changes in public-transit pricing on ridership are well understood at a system-level (Hensher, 2008), there is still a gap in the literature on understanding what socio-demographic, attitudinal and built-environment characteristics influence individual's

willingness to pay for public transit. As such, this work aims to analyze willingness to pay for public-transit at the individual level to unearth potential differences and inequities relevant to inform public-transit pricing practices.

This study employs data from the 2024 Montreal Mobility Survey. The subsample for analysis after data cleaning and data filtering, is of 4092 respondents, including 3552 public-transit users. The survey collected self-reported maximum willingness to pay (WTP) for a single public-transit ticket. Respondents' sociodemographic, economic and attitudinal characteristics, their travel behaviours and attitudes towards public transit as well as their residential choice factors, which allow us to control for residential self-selection, were all collected as well. Weighted linear regression models were employed with WTP as the dependent variable as a function of the aforementioned independent variables. The pricing zones in which respondents' homes are located, heir current average cost per public-transit trip, which was calculated base on their reported travel behaviour and pass types, were also added as control variables to isolate the impacts of socio-demographic and attitudinal characteristics.

The statistical modelling for all respondent notwithstanding their use of public-transit (n= 4092) revealed that individuals born in Canada were $0.16 more for a single public-transit trip than immigrants ($p = 0.003$). A clear gradient was also observed between income groups with willingness to pay increasing as household income increases ($p < 0.001$). Older adults (65 years old and older) were also willing to pay $0.92 less than other age groups for a single trip ($p < 0.001$) while students were willing to pay $0.24 more for a single trip than other employment categories ($p < 0.001$).

When separating the models between men (n = 1971) and women (n = 2066), differences regarding the impact of independent variables on willingness to pay were observed. While a significant difference of $0.22 remained between non-immigrant men and immigrant men, there were no significant differences for women. Conversely, a statistically significant $0.39 difference in maximum willingness to pay was observed between student women and non-student women, but no statistical significance remains for men. Lower household income and being above 65 years old were associated with statistically significant lower willingness to pay for both men and women. Employing sensitivity analyses, we further test the effects of independent variables on maximum willingness to pay for a single public-transit trip.

This research provides insights into the individual characteristics influencing willingness to pay for public-transit. These results are currently of interest to policymakers and practitioners working to adapt pricing mechanisms to promote ridership recovery and growth while allowing for revenues to support public-transit operations.

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Keywords: willingness to pay, public transit, fare, pricing, equity

AN EXAMINATION OF INDUCED RIDE-HAILING TRIPS AND THE PEOPLE WHO MAKE THEM

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Individual Paper Presentation

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Ride-hailing services, such as those offered by Uber and Lyft, have the potential to produce both benefits and negative externalities. For example, ride-hailing can improve mobility and accessibility by providing users with on-demand access to both a driver and a vehicle (1). However, these services can also attract demand from more sustainable modes and contribute to vehicle-miles travelled (VMT), which contribute to increases in congestion and emissions (2,3). Additionally, survey-based studies have consistently found that the availability of ride-hailing has induced additional travel.

Induced ride-hailing trips (i.e., trips that would not have been made if ride-hailing was not available) represent an interesting middle ground between benefits and negative externalities. On the one hand, the existence of induced trips suggests that ride-hailing allows certain users to make trips that they either could not or would not make otherwise. Given the potential for accessibility to positively contribute to well-being (4), induced trips could be evidence of the benefits of ride-hailing. On the other hand, induced ride-hailing trips increase VMT and can contribute to increases in congestion and emissions. Despite the significant effort that has been dedicated to understanding the use and potential impacts of ride-hailing, relatively little is known about induced ride-hailing trips or the people who make them. Most studies on ride-hailing use simply report the percentage of ride-hailing trips that have been classified as induced. Consequently, additional work is needed to develop a more comprehensive understanding of induced ride-hailing trips. This understanding can help identify shortcomings in public transit and paratransit services and inform efforts to improve the mobility and accessibility of members of communities that have traditionally experienced transportation disadvantage.

This study uses data collected through a smartphone-based travel survey conducted in three metropolitan regions in California to gain insights into induced ride-hailing trips. The survey was conducted from November 2018 to November 2019 and includes information from respondents who recorded trips over the course of six to seven consecutive days. Descriptive analysis and hypothesis testing are applied to examine and compare the attributes of induced ride-hailing trips to those of non-induced trips, and the attributes of those who recorded at least one induced ride-hailing trip during the survey period to those who did not record an induced trip. Additionally, a binary logistic regression model was estimated to examine the factors influencing whether a respondent recorded an induced ride-hailing trip during the survey period. Overall, the results shed light on the types of trips that tend to be induced and the attributes of users that are more likely to have made an induced trip. To the authors' knowledge, this is the first study to examine the attributes of induced ride-hailing trips and the people who make them.

The results suggest that members of communities that have traditionally experienced transportation disadvantage were more likely to have recorded an induced ride-hailing trip. Specifically, individuals with a disability and individuals from lower-income households and households that did not own a vehicle were more likely to have recorded an induced trip. This suggests that ride-hailing may have improved the mobility and accessibility of these individuals, and that on-demand transit services could have a similar impact. This result could also suggest that certain paratransit users benefitted from the on-demand nature of ride-hailing (which does not require trips to be

booked in advance). Moreover, trips corresponding to maintenance and discretionary activities were more likely to be induced compared to trips corresponding to other activities. Given that these activities help people meet their basic needs, this result underscores the potential benefits of expanding on-demand transit services, improving paratransit services, and reducing barriers to accessing ride-hailing services.

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Keywords: ride-hailing, accessibility, transportation network company, induced travel demand

AN INTEGRATED CONCEPTUAL FRAMEWORK FOR JUST TRANSITION TO ELECTRIC VEHICLES

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Individual Paper Presentation

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Electric vehicle (EV) deployment is widely perceived as a critical solution to climate change. However, there has been a disparity in their adoption across socioeconomic and ethnic groups. Research shows that a disproportionately low number of EVs have been adopted in low-income communities of color and disadvantaged communities (Canepa et al., 2019; Hardman et al., 2021). The barriers to EV adoption in these communities include higher upfront purchase prices, lack of access to home and public charging in marginalized neighborhoods, and pre-existing energy poverty (Liu & Kontou, 2022; Roy & Law, 2022). While EVs provide a lot of benefits, such as tax incentives, and a reduction in the percentage of household income spent on transportation and energy, these benefits accrue mostly to wealthier consumers. For example, early adopters of EVs tend to be homeowners, educated, male, wealthy, white, and have the ability to install charging infrastructure at home (Canepa et al., 2019). This disparity is even more stark in the context of emerging EV technologies such as solar-powered EVs and EVs with bi-directional charging features such as vehicle-to-grid (V2G) and vehicle-to-home (V2H) (Dean & Kockelman, 2024).

The existing literature frames transportation, energy, and climate justice considerations as three separate concerns. However, EV adoption intersects with pervasive transportation and energy poverty, and disproportionate environmental burdens exacerbated by climate change among low-income households. For instance, while

transportation justice focuses on the social disparities in EV adoption, electrification of conventional vehicles is expected to impact carless households and fewer low-income ICE owners in energy poverty who have contributed the least to greenhouse gas (GHG) emissions. This siloed approach ignores the interconnections between transportation poverty, energy poverty, and the climate impacts of mobility. To develop an integrated conceptual framework for a just transition from internal combustion engine (ICE) vehicles to electric vehicles (EVs), we ask: what are the injustices embedded in EV adoption?

To answer this question, we conducted 26 semi-structured interviews with the members of low-income and underserved communities in Columbus, Ohio to explore (1) their lived experiences of transportation and mobility needs, energy services, distributional environmental outcomes and climate change, and (2) their perceptions and barriers towards EV adoption. We adopted an inductive research approach to identify overarching themes of injustices in the EV transition from the bottom up and then developed an integrative framework that consolidates justice concerns across transportation, energy, and climate dimensions.

Our preliminary analysis resulted in four main themes: transportation poverty, energy poverty, climate change concerns, and interest in and skepticism towards new EV technologies. The perceptions towards EV adoption were further categorized into three subthemes: solution to climate concerns, affordable energy support, and health benefits. These preliminary themes, which encapsulate multidimensional justice considerations were used to build a conceptual framework for a just transition to EVs. The findings show that while low-income communities recognize the climate, energy, and mobility benefits of EV transition, they face systemic barriers including pre-existing transportation and energy poverty, with most of them already making sacrifices like forgoing opportunities in other necessities to pay for transportation and energy services. Our findings are important for addressing systemic barriers that perpetuate existing transportation and energy injustices and the lived experiences of low-income communities when designing inclusive EV transition policies that leave no one, including the poorest, behind.

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Keywords: Transportation justice, energy justice, climate justice, electric vehicles, EV transition

ANALYZING IMPACT OF FARE STRUCTURE ON TRAVEL COST AND SUBSIDY BENEFIT

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Individual Paper Presentation

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This paper analyzes the impact of transit fare structures on the distribution of public transportation cost burdens and subsidy benefits by residential area and income bracket. Busan Metropolitan City, South Korea's second most populous city, is selected as the study area for this study.

Transit agencies in Korea cover operating expenses through fare revenue, business income, and government subsidies. In most transit trips in Busan, travelers do not fully cover their travel cost by fare. Usually, the fare level is lower than the travel cost, therefore, the rest of the travel cost is supported by subsidies from central and local governments - It was examined in the 2023 ACSP presentation (Who gets the benefit from transit subsidy policy? – case study: Busan, South Korea, Hyemin Ju & Sungsoo Kim). The previous paper revealed the benefit distribution under the current transit fare system. This study expands the previous study by examining both travel cost distribution and transit subsidy distribution under various transit fare types that are common in big cities all over the world.

In the first stage, travel types are categorized by commuters' residential areas, income levels, and travel distances. Travel cost, the fare coverage portion, and the subsidy extent will be analyzed based on the travel type. In the next step, how the distribution of travel cost burdens and subsidy benefits shifts under various fare structures is analyzed under four different fare systems: 1) single-level fare, 2) 100% distance-based fare, 3) a mix of basic fare and distance-based fare, and 4) monthly or annual distance fee passes for peak-time travelers. In the last step, how the distribution of travel cost burdens and subsidy benefits across income brackets under the current and tested fare systems using the Gini coefficient.

Findings reveal that fare structure significantly influences the distribution of travel burdens and subsidy benefits. These results are specific to the study area's urban structure, travel distances, and frequencies, indicating that outcomes may vary in different contexts. This research aims to demonstrate how fare setting affects the distribution of travel cost burdens and subsidy benefits across regions and income brackets. The insights gained would inform considerations for future fare adjustments, particularly in terms of equity in subsidy and travel cost distribution.

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Keywords: Transit, Transit Fare, Transit Sbusidy, Equity

ASSESSING THE IMPACT OF BUS RAPID TRANSIT ON HOME VALUES IN CLEVELAND

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Individual Paper Presentation

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The introduction of BRT improves congestion and promotes efficient mobility through dedicated lanes, traffic signal prioritization, and streamlined boarding processes. BRT systems utilize existing road infrastructure, fostering environments favorable to residential growth and urban revitalization. These systems offer a cost-effective and efficient alternative to private car use and conventional public transport, impacting the value of adjacent properties.

This research studies the effects of the RTA Bus Rapid Transit (BRT) system on residential property values in Cleveland, Ohio, focusing on the period from 1998 to 2018. The study analyzes how the BRT adoption affects property values across different neighborhoods by analyzing single-family home sale transactions in low-, middle-, and high-income neighborhoods. The study will employ spatial hedonic modelling in a longitudinal setting, a series of a year or 2-year period analysis. The sales price will be adjusted using FHFA House Price Index and the sales prices of properties will be transformed using a natural logarithm to better compare between periods. The study period is divided into one year or two year periods, allowing for a detailed examination of changes over time, particularly before and after the BRT's introduction in 2008.

This study is expected to find increase in property values near the BRT stations. Areas close to BRT stations will experience the most increase due to improved accessibility and reduced commute times. This effect is expected to be substantial in periods right before and after the opening, which is 2008. Also, the impact of BRT on property values is anticipated to differ across neighborhoods. Areas with lower income levels are expected to experience a more substantial increase in property values. On the other hand, the impact in higher-income neighborhoods is expected to be less pronounced, indicating independence from public transit.

In addition to spatial heterogeneity, the study is expected to find temporal heterogeneity in BRT's impact. Over time, as the BRT system integrates into residents' everyday lives, a gradual increase in property values is expected, especially for the properties in proximity to the stations. Spatial analysis may reveal a gradient of impact, with the most significant property value increases occurring closest to BRT stations.

The findings will inform policymakers about constructing transportation plans and urban development with social equity. Also, there should be a discussion regarding the property value increase in planning implications. An increase in property values near BRT stations might lead to higher rents, taxes, and higher living costs. It entails further discussion regarding strategies to mitigate the potential displacement lower-income population and ensure inclusive growth.

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Keywords: hedonic model, spatial analysis, bus rapid transit, public transportation, property value

ASSESSING THE IMPACT OF URBAN RAIL TRANSIT ON URBAN VITALITY

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Individual Paper Presentation

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Transit-Oriented Development (TOD) aims to guide urban development through rail transit, with rail transit stations serving as pivotal urban nodes for the concentration of people and urban activities. The opening of new rail transit lines can increase the attractiveness of the station areas by improving accessibility and fostering changes in land use and amenities, thereby enhancing urban vitality. While numerous studies have shown the impact of rail transit stations on travel behavior and property values, few have provided empirical evidence on the vitality changes in the station areas.

Employing a difference-in-differences (DID) modeling framework, we assess the impact of rail transit on the urban vitality of the station areas, using the opening of Shanghai Metro Line 15 as a natural experiment. The urban vitality is measured by the number of residents, workers, and visitors clustered in the station areas, along with the visiting frequency, duration of stay, and distances from the stations to the homes of visitors, using a large mobile signaling dataset from 2017 to 2021 in Shanghai. We define the treatment group as areas close to the metro stations (within 500 meters of the station) and the control group as areas further away from the stations (beyond 500 meters), ensuring that the closest station for both the treatment and control groups is a Line 15 station. We find that the opening of a new metro station can increase the overall population clustered, number of visitors, and their visiting frequency in the treatment areas, relative to the control areas. Despite an increase in the number of visits, the duration of stay of visitors per person in the treatment areas has decreased. Additionally, the visitors reside in areas more distant from the metro stations after the openning, suggesting a broader influence radius of the stations.

The rail transit effects on urban vitality show significant spatial and temporal heterogeneity. We adopt a Difference-in-Difference-in-Differences (DDD) model to investigate the spatial heterogeneity of the effects between interchange and non-interchange stations, as well as stations inside and outside the outer ring road of Shanghai. The results show that the interchange stations have significantly higher attractiveness to visitors and higher visiting frequency increase compared with normal stations. Compared to stations within the outer ring road, stations located outside the outer ring road attracted more residents and visitors from further distances. To explore temporal heterogeneity, we divided the study period into weekdays and weekends, conducting DID regression for

both groups separately. The results revealed that, the rail transit effect in attracting more people, especially more visitors, is higher on weekdays than on weekends.

This study combines big data and DID analysis to assess the treatment effect of rail transit on urban vitality and uses several years of panel data to capture the dynamic changes in vitality. The research findings have significant policy implications for TOD and initiatives to enhance the overall livability and attractiveness of urban spaces.

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Keywords: Rail transit, Urban Vitality, Mobile phone data, Difference-in-differences

BEING AT THE TABLE & ON THE MENU AS BLACK TRANSPORTATION PRACTITIONERS

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Individual Paper Presentation

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A “seat at the table” is not a new phrase; it is often used amongst Black folks to refer to the power to make influential changes in their communities and their workplaces. At the same time, Black practitioners are underrepresented in transportation, and Black communities continue to be at risk of gentrification and displacement in the face of infrastructure improvements. This paper is a qualitative study following the evolution of transportation equity and justice through the eyes of Black transportation practitioners by asking three questions: How and when do transportation equity and justice diverge in scholarship? What do Black transportation planners and advocates feel about transportation equity and justice, in their workplace and their community? How have their perceptions of transportation equity and justice evolved, over time? And how do they envision the role of transportation equity and justice in the 2020s and beyond?

To answer these questions, I conducted 15 in-depth interviews with Black American practitioners who possess at least ten years of experience in the fields of transportation planning, policy, advocacy, or engineering. I chose to focus on mid-level to senior interviewees to establish a depth of knowledge and intimacy with transportation equity and justice and a historical overview of these terminologies. Through these interviews, I explore language by understanding how practitioners define equity and justice. Then, I dive into the importance of place to the transportation practitioners’ identities, for programs and policies proposed in the board room may directly impact

the communities where they reside. Data collection is through an interview protocol, and all interviews are conducted through videoconferencing. The study was open to practitioners across the United States.

The results reveal preferences for terminology rooted in racial justice, with grassroots practitioners aligning with mobility justice and grasstops and state government practitioners preferring transportation equity. Practitioners largely spoke of connections between community-led and work-led activism, with just one who strongly cautioned against mixing the two. All were conscious of representation in the workplace and expressed wanting more Black folks in their fields. Finally, all interviewees expressed cautious optimism toward the future of transportation justice and equity.

This study adds to emergent categories of literature first, on the experiences of transportation practitioners and their attempts to integrate social justice in their workplaces (Wellman, 2016). However, the voices of Black transportation planners and advocates have largely not been included until recently, leading to a second strain of literature on the experiences of, specifically, BIPOC transportation practitioners, diversity, equity, and inclusion, and anti-racism (García et al., 2021). Finally, my study contributes to literature on "lived expertise", which challenges knowledge creation in transportation by reframing marginalized groups' lived experiences to be as important as technical expertise (Lowe et al., 2023). I argue that to ensure an empathic and effective approach to building with transportation justice, it will behoove fellow planners and advocates to learn from the personal experiences of our racialized co-workers who occupy a seat at the table and whose communities are the menu.

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Keywords: Transportation, Black practitioners, Organizations, Attitudes, Perceptions

BEYOND THE NEIGHBORHOOD TRIP: COGNITIVE MAPS AND TRIP DISTRIBUTION IN DELHI

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Individual Paper Presentation

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In Beyond the Neighborhood Unit, Banerjee and Baer demonstrate that the traditional conceptualization of "neighborhood" does not fully represent the dimensions of daily life (1984). They find that the perceived and behavioral extent of a residential area varies significantly among individuals and groups, and those variations are observable across social groups, defined by income and race. Since the book's publication, the geography of daily

life and mobility has continued to become more complex. Despite this, transportation planners' conceptualization of trip distribution, or how access and destination choice are arrayed around a given location, remains underexamined, primarily utilizing a "gravity model" that replies on distance and time to model where activities will occur (Hu & Downs, 2019). In this study, I examine whether and how destination preferences vary within the cognitive maps of survey respondents in Delhi, India. I ask whether those distributions vary among individuals and groups. I hypothesize that the cognitive and perceptual dimensions of accessibility are significantly associated with socio-economic differences and consequent travel behavior, cognitively reinforcing unequal accessibility within the region.

As a megaregion with rapidly transforming development patterns and infrastructure, Delhi is moving from an urban structure of discrete "villages within a city" to a much more interconnected urban fabric (Dasgupta, 2015). The populations of the two neighborhoods, Bhalswa Dairy and Batla House, engage in high levels of walking but also connect to the rest of Delhi via bus, Metro, bike, autorickshaw and cars. Both neighborhoods have high levels of informal settlement and infrastructure, and mental representations of destinations within and outside the neighborhoods may be significantly differentiated. The survey, of one thousand adults, extracts destination preferences from respondents' regional cognitive maps, as well as travel behavior and demographic information. Rather than rely on demanding sketch mapping methods, respondents verbally provide preferred locations for a set of everyday activities that could be undertaken either nearby or at a distance. Proximity to home and work, as well as location type, are extracted from these data using GIS. Distributions of preferred trip destinations demonstrate substantial variability across groups. A structural equations model further examines how mental representations of the region reinforce relationships between demographic characteristics and travel choices.

The study contributes to transportation planning through its conceptual, methodological, and practical findings. The findings support a body research integrating cognition and mental representation into travel behavior models (Arentze et al., 2015). By investigating trip distribution preferences, it also contributes to further understanding of the relationship between cognitive mapping and accessibility (Mondschein et al., 2010). The study develops methods to extract destination preference information from surveys without requiring sketch mapping. In addition to contributing to generalized understanding of cognitive mapping, accessibility, and travel, these methods can be deployed effectively by planners seeking to understand preferences and accessibility in their cities.

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Keywords: Cognitive mapping, trip distribution, accessibility, mode choice, Delhi India

BLOWING THEIR LID: TRANSIT AGENCIES AND LOW-INCOME DISCOUNTS FOR RIDERS

Abstract ID: 1108.0.0.974.2024
Individual Paper Presentation

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Public transit is an important social service. It provides mobility to many people who would otherwise be unable to afford to travel. Even so, there are some low-income people for whom transit fares constitute a significant financial hardship. In recognition of this, many transit agencies offer fare discounts for low-income riders. However, at present scholars have published little on the prevalence of these low-income discounts and their effects on transit agency finances and service performance. Most existing studies on fare policies are focused on the ridership and financial impacts of general fare policy changes rather than specifically examining low-income discounts (Wang et al., 2023). Existing research on low-income people and transit use tends to focus on the extent to which transit does or does not effectively serve the travel needs of low-income people rather than examining the impacts of fare discounts for low-income riders (Giuliano, 2005). And a flurry of research in recent years has focused on different types of "fare-free" ($0 base fare) programs (Mashrur et al., 2023), but these programs tend not to be limited to only low-income transit riders. At present, our understanding of how widespread the use of low-income discounts is, the characteristics of the discounts that are offered, and the effects of those discounts on the financial and service performance of the agencies that implement them is limited.

In this paper, I use fare policy data from the American Public Transportation Association to analyze the presence of low-income discounts among US transit agencies. I first construct a series of regression models predicting the presence of a low-income discount as a function of agency and service area characteristics. I then construct a series of models examining the association of low-income discounts with agency service and financial performance measures. I find that low-income discounts are significantly less widespread than other kinds of fare policy discounts, such as those many agencies provide to seniors. I find that low-income discounts are more likely to be offered by agencies serving higher-income riders and providing larger amounts of service. I also find that agencies that offer low-income discounts tend to have higher base fares and collect more in fare revenues than agencies that do not. I build on existing literature on low-income fare discounts by empirically examining the determinants and effects of a transit agency choosing to offer a low-income discount. My sample size for this analysis is considerably larger than most similar studies, which tend to focus on specific case studies. For this reason, my results should be more generalizable than those more limited analyses. I also contribute to the literature by examining the effects of service area characteristics on fare policy. The characteristics of the area served by different transit agencies shape the challenges and opportunities facing those agencies. Overall, I find that larger agencies have greater financial resources that allow them to better bear the financial and managerial opportunity costs of providing low-income discounts. Larger agencies are also more likely to offer higher base fares that make low-income discounts more necessary. In other words, when it comes to low-income discounts, (agency) size matters.

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Keywords: Transit, Fares, Equity

BRUSHING SHOULDERS: IN-TRANSIT SOCIAL INTERACTIONS IN LOS ANGELES & DETROIT

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Individual Paper Presentation

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Public transit is meant to provide basic mobility for the disadvantaged and to serve broader social and environmental goals in the metropolitan areas of the United States. It is thus a means to achieve the objectives of the community and urban planners, alike. Public transit is also often considered to have external or hard to quantify benefits that add value beyond the service provided and the passengers attracted—for example, functioning and benefiting in a way that is like public space.

William H. Whyte presented us with details of the way public space in New York City functioned, as he described the social interactions that occurred between people in space. He witnessed that individuals' behavior will often follow the form of peers (Whyte, 1980). Further, the concepts of 'copresence' and 'unfocused interactions' describe the types of social interactions in public space outside of those involving physical touch and conversation (Goffman, 2008). It is argued that the concept of "everyday space" can function as a connective tissue that binds the daily lives of people together by fostering new forms of social interaction and potentially taking society closer to physical and social equality (Bravo & Crawford, 2012) through an increased social capital. Social capital, with core elements of trust and cooperation between intersecting identities, can be developed over time by repeated interactions in public space (Putnam, 2000), yet few examples have attempted to theorize that public transit also acts as public space.

The purpose of this research is to show how the functions of and interactions within public space may also occur on public transit, and thus, that public transit functions like a public space. Further, I examine how the interactions happening within transit vehicles, and my own vehicle while driving Lyft, may provide a social value leading to an increase in social capital. The nature of the way public transit operates, "with people from diverse backgrounds," riders are "bound to come into visual or physical contact with others… The transit vehicle, then, presents people with a unique space for practicing being a stranger (Ocejo & Tonnelat, 2012)." With this research, I seek to understand the value of social interactions in transit vehicles and answer the research question—does public transit act as a mechanism or tool for social mixing?

A mixed methods approach is used which includes participant observation (ethnography), the use of a diversity index to identify key transit routes for study, and the collection of field data using a predetermined list of interaction typologies. Building from previous examples of ethnography that investigated interactions within public space, I consider the unobtrusive moments and social interactions that occur while riding transit routes and if these

social interactions could act as a 'connective tissue' as part of the wider goals of reconnection, desegregation, and equity and justice in our cities and regions.

This research is presented in a completed dissertation titled, "Brushing Shoulders: In-Transit Social Interactions and Intersecting Identities in Los Angeles & Detroit." The findings include observations and counts of interactions along transit routes in LA Metro's system and in the city and suburban bus systems in Detroit. There are common 'typologies' of the interactions that happen between riders and between the riders and the participant observer, myself—categorized as Conversation Starters, Sharing Space, and Solitary Tools, and further into fourteen sub-typologies. A discussion of the relationship between public space, public transit, and the social interactions within them, key descriptive results of route observations, model results considering the demographic groups who engage in more social interactions, and key reflections and conclusions of these observations will be included in the final paper.

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Keywords: Transit, Social Interactions, Social Capital, Intersectionality, Ethnography

BUILT ENVIRONMENT AND TRAFFIC SAFETY FOR SENIOR PEDESTRIANS AND CYCLISTS

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Individual Paper Presentation

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Road safety for older people has become a critical urban planning concern in part due to the increasingly ageing population living in cities. Elderly pedestrians and cyclists are particularly at risk. Between 2018 and 2022 in Chicago, Illinois, 24% of pedestrian and cyclist fatalities were 65 years old and above, even though the age group only makes up 13% of the population. This study investigates how the built environments - transportation infrastructures and land use - affects crashes involving senior pedestrians and cyclists in Chicago. The transportation factors are pedestrian pathways, public transit facilities, and annual average daily traffic. The land use variables include proportions of residential, retail, entertainment, medical, and open space areas where senior citizens are likely to frequently visit. To understand the relationship of these factors and age, two groups are compared, those over 65 and younger people between 15 and 59. A spatial econometric model is estimated to analyze not only the direct effect of the built environments, but their spillover effect on the surrounding areas. The findings suggest that areas with higher pedestrian paths - sidewalks and off-streets - to roads ratio have more senior pedestrian and cyclist crashes, but fewer for non-seniors, holding daily traffic constant. Public transportation

also plays a role as an increase in the density of bus stops and metro stations results in more crashes involving all pedestrians and cyclists. Moreover, types of land use also matter for senior safety. As the percentage of residential land increases, the senior pedestrian and cyclist crashes are reduced. On the other hand, a growth of commercial – retail and entertainment – land share increases senior crashes directly in the area, even though the higher percent of entertainment use, the fewer the crashes in the neighboring areas. The high proportion of medical land brings a positive spillover effect on senior safety- fewer senior crashes- in surrounding areas. Combined, the results imply that senior citizens are more vulnerable to vehicle crashes than their younger counterparts when they cross streets to walk between pedestrian pathways and to use public transit. The results suggest that cities should consider effective ways to enhance traffic safety such as tighter speed limits in busy streets, especially near transit stops. Increasing law enforcement presence is essential to improve safety, especially in commercial districts where senior citizens can make frequent visits. This research adds valuable insights into senior traffic safety using detailed crash and demographic data. The spatial econometric model provides a detailed and realistic view of how built environments may affect traffic safety by including spillover effects to neighboring areas.

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Keywords: Traffic safety, Senior crashes, Pedestrians and cyclists, Transportation infrastructure, Land use

CAN CONGESTION PRICING WORK IN THE DEVELOPING WORLD? INSIGHTS FROM MUMBAI

Abstract ID: 1108.0.0.479.2024
Individual Paper Presentation

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Congestion pricing is widely recognized as an effective market-based travel demand management strategy (Yang et al., 2020). Literature suggests that congestion pricing reduces peak-period traffic congestion, increases person throughput, and, under certain conditions, promotes low-carbon transportation and location choices of both individuals and firms (FHWA, 2008). Prudent use of revenues can additionally help support sustainable transportation infrastructure investments and offer affordable accessibility to the transportation-disadvantaged.

The potential of using congestion pricing – in the form of zonal pricing or as express tolled roadways or lanes – to promote healthy, livable, and equitable cities is significant.

Although congestion pricing is theoretically effective, the adoption of this strategy has historically been relatively low. Cities like London, Singapore and Stockholm continue to be the global champions in the extensive use of downtown pricing (Lehe, 2019). Several North American and European cities have successfully implemented tolled highways and lanes, and some US cities like New York and Los Angeles have recently launched ambitious programs to implement various forms of congestion pricing. The idea of congestion pricing, however, remains largely outside urban transportation policy discussions in cities across low- and medium-income countries that are rapidly growing in terms of both population and average incomes and are experiencing unprecedented congestion and automobile ownership growth rates. The determinants of congestion pricing acceptability and strategies to increase public support have been analyzed in the literature (Milenković et al., 2019; Börjesson et al., 2016).

In this study, we use Mumbai, one of the world's largest and most congested cities, as the case study context. We use a mixed-methods analysis approach to systematically examine the acceptability of value pricing in general and alternative congestion pricing arrangements among diverse stakeholders. We also investigate significant concerns regarding pricing and explore conditions under which implementation of pricing solutions may be feasible. Moreover, we explore who would likely pay for congestion relief in what contexts, and estimate willingness-to-pay for congestion delay reduction.

Using semi-structured interviews, we first elicit perspectives of planners, traffic managers, taxicab and paratransit drivers/operators, car owners, and transit users. Most stakeholders strongly believe that the social costs of peak-period congestion are incredibly high, and therefore, a large number of motorists with high value of travel time savings and reliability would be willing to pay out of congestion, particularly during peak periods. They, however, underscore the importance of investing in viable alternative modes, such as an accessible and affordable metro rail network in the city, before implementing any form of congestion pricing so that equity concerns are effectively addressed. The newly constructed and planned intercity highways/expressways, along with the ongoing metro rail expansion efforts, are identified as opportunities for implementing full- or partial-facility congestion pricing in Mumbai. Moreover, the concentration of jobs in historic and emerging employment clusters is also recognized as an opportunity for considering zonal/downtown pricing. Next, our structured survey of car users in the city helps explore sociodemographic, attitudinal and other environmental/contextual factors associated with support for pricing as a congestion management/avoidance tool. The survey also helps estimate drivers' willingness-to-pay for avoiding congestion delay along their most frequently travelled OD pair using a hypothetical priced facility. This analysis helps conduct car user market segmentation based on congestion pricing acceptability and willingness-to-pay.

Our study offers new insights into the feasibility of using congestion pricing as an efficient, effective, and fair tool to address traffic congestion and manage travel demand in fast-growing economies across the developing world. By adopting a stakeholder perspective, we also offer strategic advice on garnering broader public support for congestion pricing programs in highly complex urban settings.

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Keywords: Congestion pricing, Travel demand management, Value of travel time savings, Transport policy, Urban mobility

CAPABILITIES OF TRAVEL DEMAND MODELS IN INFORMED DECISION-MAKING

Abstract ID: 1108.0.0.1016.2024
Individual Paper Presentation

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Transportation agencies, like Caltrans in California, have developed and used travel demand models (TDMs) to predict the consequences of transportation system alterations. These forecasts play a role in evaluating proposed projects, such as highway expansions, within the environmental review processes mandated by the California Environmental Quality Act (CEQA) and the National Environmental Protection Act (NEPA). Federal policy mandates the assessment of outcomes outlined in long-range transportation plans, which are required by the State Department of Transportation (DOTs) and Metropolitan Planning Organizations (MPOs). In California, Senate Bills 375 (SB375) and 743 (SB743) necessitate the examination of plans and projects' impacts on vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions. More accurate forecasts of these outcomes are fundamental for informed decision-making in the planning and project selection processes, ensuring that benefits outweigh environmental and societal costs.

Although there have been advancements in the applicability of TDMs to transportation policymaking, limitations still exist in terms of fulfilling their objectives and meeting some of transportation policy goals. One limitation is their inability to analyze certain project types, such as bicycle and pedestrian facilities, while failing to provide forecasts for critical outcomes like safety. Consequently, TDMs offer only partial information required by agencies. Concerns also arise regarding forecast accuracy and sensitivity to various transportation projects, attributable to inherent biases in model construction and calibration or the influence of decisions regarding input data and parameter values. An increasing body of research indicates the potential for inaccurate forecasts produced by TDMs. For instance, Volker et al. (2020) revealed a significant underestimation of increased vehicle miles of travel induced by highway capacity expansions by TDMs. Studies—such as Marshall (2018)—have highlighted structural deficiencies within TDMs, underscoring their significant implications and challenges.

To address these challenges in TDM forecasts, this study aims to evaluate the abilities and limitations of TDMs in identifying the factors and relationships needed to forecast induced vehicle miles traveled (VMT) with reasonable

accuracy for the purpose of project-level environmental impact assessment. Specifically, this study implements a wide range of literature reviews on the applications and capabilities of TDMs in accounting for induced travel effects and sensitivity of the model's components to network travel times and travel costs by mode and trip purposes. Methodologically, this study conducts comparative content analysis using travel demand model technical documents and regional transportation plans (RTPs) among 18 MPOs in California. It seeks to identify the specific types of evaluations for which TDMs yield valid and reliable forecasts that can facilitate informed decision-making processes. Through addressing these research inquiries, this study seeks to inform policymakers about the opportunities and constraints associated with relying on TDMs as regulatory instruments and further discuss improving the estimation of induced VMT effects led by various roadway expansion projects for better transportation project decision-making processes.

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Keywords: travel demand models, induced travel, metropolitan planning organizations, transportation policymaking, travel demand forecasts

CLOSING THE GAP: TRANSPORTATION ACCESSIBILITY FOR ADULTS WITH DISABILITIES

Abstract ID: 1108.0.0.1045.2024
Individual Paper Presentation

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This research addresses the critical issue of transportation accessibility for individuals with disabilities in both urban and rural settings, with a focus on Los Angeles County and Tulare County in California. Approximately 25.5 million Americans with disabilities face significant barriers to travel outside their homes, impacting essential aspects of life such as healthcare, employment, housing, and social interactions. Despite the prevalence of disabilities, there is little research on the challenges faced by these individuals, particularly in considering the difference in accessibility in urban and rural settings.

The purpose of this research is to understand the constraints on travel of those with disabilities and its consequences. People with disabilities – those who have hearing, visual, cognitive, or physical limitations – make fewer trips and travel fewer miles than the general population (Brumbaugh, 2018). We will address the following questions: 1) what is the accessibility gap for populations with disabilities relative to the general population, 2) how do individuals navigate the transportation system, and what needs and challenges do they face, and 3) what are the impacts on social exclusion and well-being?

The proposed research will have two parts. The first part will generate accessibility measures to compare the accessibility of those with disabilities with those who do not have mobility constraints. The second part will conduct small group interviews to explore and understand the lived experiences and transportation challenges of those with disabilities, including impacts on social exclusion and well-being. The research will be conducted in two California counties, Los Angeles and Tulare, in order to include a broad range of populations, local geographies, and support services.

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Keywords: disability, accessibility, transportation

COMPARING INJURIES BETWEEN E-SCOOTERS, E-BIKES, AND BICYCLES IN THE US

Abstract ID: 1108.0.0.572.2024
Individual Paper Presentation

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Micromobility can provide a pathway to a sustainable low-carbon future, and has documented health and economic benefits. Nonetheless, there is a growing perception that e-scooters are more dangerous than bicycles and e-bikes, with towns implementing measures to ban their usage. There is, however, not much evidence from large scale surveys to substantiate this claim. I analyze nearly 14,000 micromobility injuries that led to emergency care in the United States in 2021 and 2022. The following questions are addressed: What are the characteristics of injured micromobility users? Are e-scooter users more likely to suffer severe or fatal injuries than other injured micromobility users? What is the relationship between motor-vehicles and micromobility-related injuries?

Injury data was retrieved from the National Electronic Injury Surveillance System (NEISS), which is administered by the U.S. Consumer Product Safety Commission (CPSC). In 2021, the CPSC updated their codebook to differentiate e-scooter injuries from skateboard and hoverboard injuries, which allows researchers to effectively compare e-scooter injuries with bicycle and e-bike injuries. Statistical methods, including binomial logistic modeling were

employed to determine the factors influencing micromobility injuries. I also used cross tabulations and summary statistics to compare injury characteristics between different micromobility devices.

First, I note that my data analysis is on the severity of injury, not the risk of injury. However, the extant literature has shown that the risk of injury, at least from shared e-scooters, varies between 1.5 and 180 injuries per million e-scooter miles, while the risk of injury for cyclists during special cyclist events varies between 11 and 36 injuries per million cyclist miles. Overall, it is gathered that injuries are rare events, and the wide ranges (particularly for e-scooter use) show that other characteristics are at play. The remainder of my study focuses on differences in injuries between micromobility modes.

Around 15% of injured micromobility users presenting to an emergency department were admitted to the hospital. Injured e-scooter users were not more likely to suffer severe injuries than bicyclists and e-bike users. Factors influencing micromobility injury severity included: older age, being male, involvement of a motor-vehicle, and alcohol/substance use. E-bike injuries were more likely to (33%) involve a motor-vehicle than bicycle (26%) and e-scooter injuries (23%). Injured e-scooter users were more diverse (e.g., a higher proportion of women and minorities) and tended to be younger than bicyclists and e-bike users, indicating a potential wider diversity of users. Fire-related injuries from battery explosions were extremely rare and occurred in three, or 0.2%, of e-micromobility injuries.

Restrictions on low-carbon e-micromobility can have undesirable implications on the environment and on equity. Many low-income individuals rely on e-micromobility for travel, and proposed laws have been aimed at preventing people from owning or using e-micromobility rather than preventing fires. Proper steps must be taken in order to promote safety in micromobility and prevent severe and fatal injuries. Following Vision Zero and Safe System Approach initiatives, micromobility safety must include: (1) proper e-micromobility infrastructure, including separated paths and charging facilities, (2) measures to calm motor-vehicle traffic, such as reducing speed limits, narrowing lanes, and raising intersections, (3) ensuring good post-crash care in the case of an injury. As micromobility becomes a growing mode of sustainable transportation, we must ensure that conditions are safe for all users.

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Keywords: micromobility, injury, motor-vehicles, public health, bicycles

CRACKS IN THE SIDEWALK: WHAT DOES WALKABILITY MEAN FOR MARGINALIZED GROUPS?

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Individual Paper Presentation

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Central Planning Issue

Pedestrian fatalities in the U.S. reached record highs in 2022, increasing by 77% since 2010 and representing the largest single-year total in four decades (Governors Highway Safety Association, 2023). Fatality rates are disproportionately high among marginalized groups (Governors Highway Safety Association, 2021), leading the American Association of State Highway and Transportation Officials to consider safety disparities by race and socioeconomic status as one of the highest-priority research needs for active transportation in the U.S. (AASHTO, 2021).

The built environment is a useful focus for this research, given its associations with walking behavior and safety. Within the vast body of literature that has examined these associations, however, relatively few quantitative studies have centered sociodemographic characteristics (vs. treating them as control variables) in ways that bring equity to the forefront. Among those that have, findings suggest that the built environment may be a weaker predictor of walking for marginalized groups (Adkins et al., 2017) and that these groups face disproportionate environmental barriers to walking (Whitfield et al., 2018). I add to this evidence base with nationally representative U.S. data, asking two questions:

1. Do associations between the built environment and walking vary across sociodemographic groups?
2. What are the likely explanations for these variations, including environmental barriers?

Methods

I addressed these questions using data from 219,139 adult participants in the 2017 National Household Travel Survey (NHTS). Respondents reported the number of walking trips they took in the past week, and those who took at least one trip reported any infrastructure barriers (lack of quality sidewalks) or safety barriers (unsafe crossings, heavy traffic, insufficient lighting) that kept them from walking more frequently. I linked the geocoded NHTS data with spatial data from the Environmental Protection Agency Smart Location Database, which contains a national walkability index derived from measures of density, connectivity, transit access, vehicle use, and employment mix.

For the first research question, I used logistic and Poisson regression models to assess how the walkability index was associated with self-reported walking for transportation. I then added interaction terms to test whether these associations were moderated by indicators of race and socioeconomic status. For the second question, I explored potential explanations for the main findings by (1) using the residuals from these models to describe participants whose behavior departed from expectations and (2) estimating regression models to examine the sociodemographic distribution of infrastructure- and safety-related barriers to walking.

Findings

Across all models, walkability was positively associated with the likelihood and amount of walking for transportation. These associations, however, were significantly weaker for Black and Hispanic participants, members of low-income households, and those without a college degree. Weaker associations could arise from (a) less walking in areas of high walkability or (b) more walking in areas of low walkability. Model residuals suggested that in this sample, (a) is the more likely explanation—that is, respondents from marginalized groups tended to walk less even when living in walkable locations. This tendency likely reflects environmental barriers not captured in the walkability index, as Black, Hispanic, and low-income pedestrians were also significantly more likely to report infrastructure- and safety-related barriers to walking.

Conclusions and Implications

Associations between the built environment and walking behavior may be significantly weaker for marginalized groups, who are disproportionately burdened by unsafe and inadequate infrastructure. This analysis demonstrates the value of examining sociodemographic heterogeneity in research on the built environment and travel behavior, which can offer equity-oriented insights into environmental exposures. The findings also highlight the importance of resolving infrastructure- and safety-related barriers to walking faced by marginalized groups, which is critical if disparities in pedestrian safety are to be reduced.

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Keywords: Walking, Equity, Safety, Barriers, Built environment

CRASH DATA AVAILABILITY AND BEST PRACTICES ACROSS THE UNITED STATES

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Individual Paper Presentation

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Motor-vehicle crashes continue to be a leading cause of death in the United States. Crash data is a vital part of reducing and preventing future fatal crashes. While fatal crashes are recorded through the Fatality Analysis Reporting System (FARS) and are readily available to the public, many states normally do not make their complete crash data easily accessible for the public and research community. The public has an interest in knowing when and

where crashes occur, partly so they can demand that authorities improve safety. Researchers have an interest in being able to download data and conduct analyses to better understand mechanisms that lead to crashes.

The objective of our study is to determine the best practices for crash data management and procedures and methods for making data open and accessible, and particularly for pedestrian- and bicyclist-involved crashes. We have a quantitative and a qualitative component to our methods. Quantitatively, we compiled a comprehensive nationwide dataset of open crash data characteristics for states and cities that provide such data. Qualitatively, we then interviewed crash data experts across the country to provide insights on challenges and solutions to make crash data accessible. We have interviewed over 25 people from 16 states.

There are 18 states plus the District of Columbia which provide open-source data statewide for several years with geocoded information. Nine more states provide some limited open-source data for download. The remaining 23 states may have some open data for analysis through a dashboard, aggregated reports, limited spatial extents (such as a single city), and data downloads upon written request, but their data is not open-source state-wide. In an effort to push for data transparency, we have documented all open data and dashboards available and plan to make this available in an easy-to-use interface. We did find that in most cases, including those without open-source data downloads, relevant stakeholders, such as advocates, consultants, and researchers, can have access to the data.

Crash data experts were recruited by two main means: volunteers signed up through the Association of Transportation Safety Information Professionals (ATSIP) newsletter, and through a snowball recruiting method during interviews. We interviewed people from State Departments of Transportation/Highway Safety, State Troopers, State Departments of Public Heath, and University Researchers. Themes from conversations with crash data experts include: (1) the importance of linking crash data with other datasets (e.g., hospital data), (2) the need for partnerships and collaborations between universities, advocates, and agencies, and (3) challenges with data ownership and quality control.

In nearly all cases, experts cited electronic records as a solution for data quality control and timeliness. On the other hand, most crash data are not currently linked to other datasets, aside from roadway data. There is evidence that police reported severity is undercounted when compared to medical reported severity. Yet, funding decisions are made based on police reported injury severity, not on medical professional reported severity. States who had limited open data either faced legislative/financial hurdles, or simply were worried about misuse. States who had open data acknowledged that misuse is a possibility—although rare—but that it allows advocacy groups to really have a voice, and that crash data is indisputable. While the quality and usability of crash data remain paramount, there is a need for the data to be analyzed/used effectively and the political will of decision makers to act on that data. In several states, people did not have jobs devoted to crash data analysis. We present the results of our quantitative and qualitative work to offer best practices and Vision Zero guidance for state policy makers and traffic crash data experts.

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Keywords: crash data, open data, best practices

DEATH ZONES: THE ROLE OF LAND USE ON PEDESTRIAN DEATH AND INJURY

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Individual Paper Presentation

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Arterial corridors are often problematic for pedestrians and bicyclists, particularly when traveling through lower-income and minority areas. This study examined the safety performance of more than 200 miles of surface arterials in the state of Florida to understand the relative effects of street design and development configuration on the production of high crash-locations along arterial corridors and at major intersections. While wider rights-of-way (and thus longer crossing distances) proved problematic at intersections, cash predictions models found that street geometry had little effect pedestrian and bicyclist crash incidence. Instead, pedestrian and bicyclist crash incidence provide to be principally a function of adjacent land uses. This study proceeds to identify the "high-risk" land uses that explain the majority of the variation in pedestrian and bicyclist crash incidence—specifically grocery stores, gas stations, convenience stores, community shopping centers, and fast-food restaurants. Safety audits of high-crash locations revealed that the majority of crashes can be attributed to specific developmental configurations. For intersections, nearly all of the high-crash intersections have a nearby grocery store or big box store serving as an anchor for other "high-risk" uses. Hazardous corridors typically took one of two forms. The first were commercial arterials traveling through gridded street networks that employ two-way stop control on the minor street, resulting in unprotected crossing locations. The second were corridors characterized as "transitional highways," where the broader urbanization of the region resulted in high risk uses located along formerly rural arterials. This study concludes by recommending that suburban commercial arterial thoroughfares, currently classified as C3C under FDOT's "context classification" framework, be reclassified as "problematic," consistent with European practice. Where high-risk uses are present, these streets should be redesigned into more urban configurations that support the street's embedded access functions. Over the longer term, local land use codes need to be modified to prevent these high risk uses from locating along suburban arterial corridors.

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Keywords: Transportation, Urban Design, Road Safety, Pedestrians

DECONSTRUCTING THE "15-MINUTE CITY": THE U.S. CASE

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Individual Paper Presentation

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The “15-minute city” is a planning concept that has gained significant traction since the mayor of Paris adopted the motto as an urban agenda. A 15-minute city is one where people living in any neighborhood can access health care, supermarkets, their workplace, schools, and parks on foot within a 15-minute walk.

An extensive literature on the effect of built environment upon travel patterns suggests that a densely-developed, mixed-use, pedestrian-oriented environment can increase alternative mode use and decrease driving; that a regional scale and combinations of built environment factors are highly influential; that off-street parking availability may be the strongest single influence on reducing driving and consequently on increasing walking; and that transit access is usually found to be less important than other built environment factors.

What does this literature mean for the likely efficacy of the 15-minute city approach in the US context? On the positive side of the ledger, it is empirically true that activity accessibility measured in 15-min walksheds is highly predictive of local trip making (though not only of walk trips). In the United States, as well, the share of trips carried out on foot is much higher than the other alternative modes, suggesting that a planning paradigm premised on walking might just work. And in comparison to other transportation infrastructure, sidewalks and other amenities for convenient and safe walking are relatively inexpensive. But the literature also suggests that multiple built environment characteristics in combination, measured regionally, and accounting particularly for parking availability, are most influential--not activity accessibility on its own.

There is also reason to question whether providing a 15-minute city will significantly reduce driving and increase walking based on existing travel and land use patterns in the U.S., which are our inevitable starting point. In this paper I use data from the most recent National Household Travel Survey of 2017 and from supplementary data on land use, transportation infrastructure, and accessibility, to explore how and under what circumstances activity accessibility is predictive of walking when accounting for other potentially more important built environment factors. I find that these patterns imply many significant challenges in successfully following a 15-minute city approach in US cities, even the densest.

Based on these results I argue a different policy approach is needed to the conventional understanding of the 15-minute city. First, the small scale of the walkshed is an impediment to needed change. Interventions need to be at the scale of the city across multiple market-provided built environment characteristics. Second, zoning impedes housing markets, and if anything the balance is a need for more housing; but the 15-minute city is myopically focused on the nonresidential side of the equation, particularly on retail, which is an increasingly losing proposition in the world of development. Third, policies to improve the public realm, particularly the safety and convenience of walking, are more immediately effective than development policies anyway, as I illustrate with examples.

I conclude by arguing that the 15-minute city has been portrayed as a way to improve one’s own life, rather than as a pursuit of improved sustainability and of improving conditions for people who do not rely on cars. This is a characteristic of a political, somewhat cynical approach to transportation planning that emphasizes convenience and choice, rather than the necessary steps of, first, making auto use more difficult to reflect its true social costs, and second, focusing on improving access for the most disadvantaged urban residents.

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Keywords: walking, equity, transportation, land use, accessibility

DETERMINANTS OF THE MOBILITY OF OLDER ADULTS IN THE USA & GERMANY 2001-2017

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Individual Paper Presentation

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Using the 2001 and 2017 National Household Travel Surveys (NHTS) for the USA and the 2002 and 2017 Mobility in Germany Surveys (MiD) for Germany, this paper examines differences between the two countries in the travel behavior of older adults and to what extent it has changed between 2001/2002 and 2017. We use five mobility indicators to portray the travel behavior of older adults: whether or not a trip is made at all on the survey day (i.e., mobile or not); number of trips per day for mobile individuals; km of travel per day for mobile individuals; modal distribution of trips; and trip purpose. In analyzing the travel behavior of older adults, we disaggregate them into 5-year age categories from 60-64 to 75-79, and then 80+ years. In addition to a descriptive analysis, we employ multi-level multiple regression analysis to examine factors that may affect the mobility of older adults.

Mobility levels generally declined with increasing age in both countries in both years, but the declines were gradual, except for a steep drop for the 80+ age group. Mobility levels in 2001 were generally higher for all age groups in the USA than in Germany, especially for older adults. By 2017, however, the gap between the two countries diminished because mobility increased more for all age groups in Germany than in the USA from 2001/2002 to 2017. Indeed, Germans of all age groups in 2017 were more likely than Americans to make at least one trip during their travel day. The largest increases in mobility in both countries were for the oldest age categories (75-79 and 80+). From 2002 to 2017, the share of car trips among older adults in Germany rose considerably, while it fell slightly in the USA from 2001 to 2017. Nevertheless, car dependence among the oldest adults in 2017 was still twice as high in the USA as in Germany. One reason for Germany's lower modal share of driving is that the transport system in Germany offers far more attractive alternatives to car use than in the USA, while policies at every government level make car ownership, parking and use more expensive and more difficult than in the USA.

We used multi-level multiple regression analysis to examine three mobility indicators for older adults in the year 2017: (1) making a trip at all, and for mobile individuals, (2) number of trips and (3) daily travel distance. Explanatory variables included age, car ownership and having a driver's license, employment, income, gender, living alone, and density. In general, the estimated coefficients for the explanatory variables had the same sign and were statistically significant for both countries. However, the sizes of the coefficients for income and car ownership/driver licensing were larger in the USA than in Germany; while the coefficients for gender and age were larger for Germany. In both countries, population density was positively related to making a trip at all, but had no significant relationship with the number of daily trips.

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Keywords: Older adults, mobility, travel beahvior, Germany, USA

DETERMINING EQUITABLE AREAS FOR EV CHARGING STATIONS WITHIN BEXAR COUNTY

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Individual Paper Presentation

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In recent years, the federal government has been providing strong incentives for drivers to switch to low or zero-emission vehicles to combat climate change and adverse health effects stemming from heightened air pollution. As a result, the emergence of Electric Vehicles (EV) and Plug-in-Hybrid Vehicles (PHEV) continues to grow daily, which has in turn increased the implementation of variable renewable energy (VRE) sources, such as wind and solar, within power distribution services. While VREs can reduce the need for reliance on combustion-based generation, grid operators have less control over VREs, and satisfying demand has typically been managed through building excess capacity coupled with a reduction in output known as curtailment.

To accommodate for this estimated increase in EV and PHEV drivers, as well as to avoid curtailment of clean energy, many metropolitan areas around the U.S. are planning on expanding existing EV charging infrastructure, while

encouraging charging at times when wind and solar resources are at its peak. However, and as happens with all new technological adoptions, issues of equity have also become a major cause for concern when distributing charging stations. Research has found that the expansion of the EV market has led to inexpensive new and used vehicle options, allowing lower-income households to adopt EVs more affordably. Unfortunately, in many cities, there is a sizable lack of EV charging infrastructure, especially within socially vulnerable communities which would rely more on publicly available charging options. A study in New York City, for example, has found an inequitable distribution of EV charging stations that disproportionately disadvantages low-income and non-white neighborhoods.

This study will use Bexar County (TX), home of the City of San Antonio (SATX), as a case of study to determine optimal and equitable locations for new EV charging infrastructure. Balancing both equity and energy usage optimization are two crucial goals that many cities are facing in the US, especially those facing higher energy costs and energy grids that are susceptible to extreme weather events. The case of SATX is relevant to the rest of the country as it has been highlighted for its solar production, contains a significant vulnerable Black and Hispanic population, and is expected to increase in EV adoption with an estimated 45,000 vehicles by 2030. To enhance electric mobility within the region, SATX has outlined its need to expand its charging infrastructure to improve access and adoption of EVs.

This paper answers the research question by leveraging a multifaceted spatial analytical approach using big data and various publicly available data sources. First, we utilize longitudinal SafeGraph mobility data to establish census block groups and places of interest (POI) by detecting high visitation patterns during forecasted curtailment periods. Second, American Community Survey data was collected for demographic and economic information to determine areas for equitable charger placement. Third, we use data on EV registration within SATX collected by the NCTCOG and data on existing EV infrastructure sourced from the NREL. All these data sets are combined to gauge current EV adoption trends and existing disproportionate dispersion of EV infrastructure to determine equitable charger placement amongst vulnerable areas.

Implications stemming from this research will prove to be useful in both the planning profession and academia as it can enhance our understanding of the socioeconomic and demographic factors within EV adoption, promote transportation and energy justice, and serve as a template for using large mobility data sets within similar studies in other metropolitan regions.

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Keywords: Electric vehicles, Electric vehicle charging infrastructure, Social equity access, Transportation justice, Energy curtailment

DO DELIVERY SERVICES REDUCE PERSONAL TRIP MAKING MORE FOR WOMEN THAN MEN?

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Individual Paper Presentation

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Internet-enabled home delivery has mainstreamed and transformed how we shop for goods and services, especially since COVID-19 (Matson et al., 2022). These options offer convenience and efficiency to our personal lives by reducing the need for physical travel, thus, generating time savings. Traditionally, women have taken on a larger share of household maintenance and caregiving responsibilities, including grocery shopping, childcare, and home management (Shirgaokar et al. 2020; Ravensbergen et al., 2022). In this study, we hypothesize that home delivery services can potentially reduce the need for women to make additional or chained trips, thereby altering their work travel behavior (Dissanayake, 2017; Kwon and Akar, 2021). Applying a gender lens to the 2022 US National Household Travel Survey (NHTS) data, we investigate how the frequency of using online home delivery for food, goods, groceries, and services impacts the number of personal trips made by individuals. We rely on bivariate and multivariate regression analysis to extract insights. The investigation accounts for both the purchase as well as return of online purchase orders. Our analysis includes a comparison of men's and women's trip making segregated by those who use home delivery services versus those who do not. Additionally, our aim is to understand how different groups leverage home delivery services. Hence, we explore whether the impact of home delivery services on trip generation differs by individuals' socioeconomic status, especially life stage, ethnic background, mobility issues and disability, and individual preferences. Internet-enabled home delivery can increase access to different services without the need for physical travel. For women, it can play a positive role in time savings, thus, opening more time for recreational, social, and personal care activities.

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Keywords: gender, home delivery, NHTS, online purchases, work trip

DO PARKING REQUIREMENTS REFLECT ANTI-MUSLIM BIAS?

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Individual Paper Presentation

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The negative impacts of minimum parking requirements are well established. More parking leads people to buy more cars and drive them more, which contributes to air pollution, climate change, and road injuries and deaths. Parking requirements also constrain densities and make it difficult to adaptively reuse historic buildings. More recent studies have highlighted the equity consequences of minimum parking requirements, such as increasing rents and constraining the supply of affordable housing.

This paper considers another injustice that may stem from parking requirements – the facilitation of religious discrimination. We explore whether and how cities and local residents use parking requirements to impose barriers to the establishment of mosques in the United States. Specifically, we ask:

- To what extent do parking requirements hinder the development of mosques in the US, especially when compared to Christian places of worship?
- What parking-related strategies do elected officials, local residents, and other actors use to hamper, delay, or prevent mosque construction?
- How are mosques responding to demands for additional parking?

By parking requirements, we mean both the de jure parking requirements specified in city code, and the de facto requirements imposed on projects through the development review process. For example, project proponents may accede to the demands of local residents or elected officials to increase parking provision above the code-specified minimum, rather than risk the project being delayed or rejected altogether.

We use a mixed-methods approach. Our project proceeded in three parts. First, we used Google Street View and databases of mosque construction to identify about 120 mosques that have been constructed in the past ten years. Second, we chose fifteen of these mosques, based on a specific set of sampling criteria, for intensive qualitative analysis. We conducted interviews with imams and local planning officials, as well as coded news reports, planning staff reports, meeting minutes, and court filings in any related lawsuits. Third, we gathered quantitative data on actual and code-required parking for a paired subsample of mosques and nearby churches constructed around the

same time. By examining whether parking ratios are similar between mosques and churches, this paired comparison helps us isolate the contribution of implicit or explicit anti-Muslim bias.

Our initial findings suggest that, at least in some places, city staff, elected officials, and residents have demanded that mosques provide more parking than codes require. Mosques are also less likely to receive the parking variances routinely provided to churches. This results in slower permitting processes and higher development costs for places of worship for Muslims. Moreover, comments by members of the public and even occasionally elected officials indicate how anti-Muslim hate surfaces through the permitting process. Most public comments focus on the perceived lack of parking and related planning issues, but others infuse their statements with coded language such as “aggressive young men” and “people from outside the community.”

The planning literature already demonstrates how parking can be weaponized by opponents of affordable housing developments. Our preliminary conclusions highlight how planning approval processes can also provide a venue for both implicit and explicit religious discrimination. In a few cases, Islamophobia emerges explicitly through public comments. But more commonly, opponents of mosques were using parking provision as a technocratic shield to mask anti-religious discrimination. By framing those arguments in terms of inadequate parking, the planning system gives an entry point to delay new mosques or increase their development costs to the point that they are abandoned altogether.

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Keywords: parking requirements, religious discrimination, Islamophobia

DOES CAR DEPENDENCE MAKE PEOPLE UNSATISFIED WITH LIFE?

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Individual Paper Presentation

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In recent years, transportation scholars have been increasingly interested in how travel behaviors converge with wellbeing. Beyond transportation’s utilitarian function, the way individuals move around to access goods, services,

social networks, and recreational activities may have implications for wellbeing, leading to higher or lower levels of life satisfaction.

Central to the discussion about transportation and wellbeing is the prevalence of car use and its implication for people's quality of life. In the US, cars have become deeply ingrained in people's culture and lifestyles, leading to high rates of car ownership and extensive reliance on cars for daily travel (Handy, 2020; Litman & Laube, 2002; Newman & Kenworthy, 1989; Urry, 1999). The majority of Americans use their car due to the benefits car-based travel provides, including access, convenience, reliability, comfort, and flexibility (Moody et al., 2021). Evidence shows that these benefits are associated with enjoyable travel experiences and positive emotions. However, could car use that reaches the dependence level come at a cost to people's life satisfaction?

Prior studies have largely examined the effect of car use on travel satisfaction and people's emotions while traveling. Yet, the relationship between car use and life satisfaction received limited attention. This study addresses this gap by exploring how car dependence relates to people's evaluation of their lives as a whole in a car-dependent society.

Our data come from a national survey with a representative sample (n=2,155) of US adults living in urban and suburban areas. Using descriptive statistics and multivariate regression models, we find that there is a threshold effect of car dependence on life satisfaction. Our results show that moderate levels of car dependence are positively associated with life satisfaction. Yet, beyond an optimal point, further increases in car dependence yield a decrease in people's satisfaction with life. These findings suggest that the relationship between car dependence and subjective wellbeing (SWB) is more nuanced than previously documented in existing studies. In addition, given the detrimental effect of high levels of car dependence on life satisfaction, planners and decision-makers should promote multimodality and land use patterns that may help to reduce car dependence and its potential negative effect on SWB.

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Keywords: Travel behavior, Car use, Mobility, Subjective wellbeing, Life satisfaction

DOES TRANSPORTATION PLANNING CONTRIBUTE ANYTHING UNIQUE? TOWARDS YES

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Individual Paper Presentation

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This paper makes two arguments. First, it argues that transportation planning, as a practice and as an academic discipline, has not sufficiently engaged with theory. This makes it unclear whether transportation planners are just connectors or whether they have something unique to contribute. Second, this paper proposes embedding a unified theory for transportation planning within the Capabilities Approach (Sen, 1995; Nussbaum, 2011) – as initially applied to transportation by Vecchio and Martens (2021). More fully embedding transportation planning within the Capabilities Approach shows promise to establish a unique contextual planning-oriented vocabulary of spatial ethics through which to do transportation planning.

It appears that insofar that transportation planning has a coherent theory, its theory may lie in two possible spaces. As a first alternative, it may occupy a connecting/mediating/moderating space between other more theoretically robust transportation-related disciplines (e.g. engineering, economics, policy, geography, design, etc.). This alternative leaves transportation planning in a polyrational space which navigates tensions between universality and relativism in an increasingly politicized world, and which must reconcile the asymmetrical problems and solutions embedded in modernism. In other words: transportation planning fundamentally relies on being an inclusive and prescriptive.

As a second alternative, transportation planning may offer its own unique perspective - perhaps related to "accessibility," "multimodalism," a focus on "users", etc. This version of transportation planning leans on a universalist (as opposed to relativist) approach and it is unabashedly political (rather than reactive), making it more normative. These two visions are not always mutually exclusive, but the future of transportation planners ultimately relies on what transportation planning has to offer. Is the answer anything better than 'not much'?

This manuscript proposes answers to these questions in four steps. First, key planning theory issues are discussed with a view towards establishing a "planning–oriented" understanding of transportation planning. Those issues include the roots of planning in modernism, the legacy of the enlightenment, and the politicization of knowledge.

Second, transportation planning's history is interpreted considering its root orientations. Orientations include pre-industrial transportation activities, transportation as embedded within early industrial-era planning, transportation planning as a quasi-science, demand management, transportation as 'everything-to-everybody,' and alternative normative conceptions.

Third, the case is made that transportation planning remains highly atheoretical and that the discipline should engage more explicitly and robustly with theory. In particular, several challenges exist which are unique to transportation. For one, is travel good or bad? For another, should transportation planners focus on opportunities or outcomes? Third, how can transportation deliver value in a polyrational world? Finally, and relatedly, "who" decides all these things, "how", and "where"?

Fourth, a unifying theory of transportation planning is proposed which builds from the Capabilities Approach (Sen, 1995; Nussbaum, 2011). Vecchio and Martens (2021) foundationally argue that "accessibility" should be interpreted as a Capability, but there are compelling features of the Capabilities Approach which warrant additional refinement and integration. The approach proposed in this manuscript centers locally produced understandings of accessibility as one of many capabilities necessary to live a life of dignity. Secondly, it embraces the necessary linkages between accessibility (a capability) and transportation system use (a functioning). Thereby, travel is a necessary functioning to realize other capabilities (e.g. accessing education, health care, meaningful work, etc.) – like the construct of travel as a derived demand. The constructs of fertile functioning, corrosive disadvantage, and tragic choice (Nussbaum, 2011) enable transportation planners to uniquely co-produce interpretations linking

accessibility-as-a-capability with transportation system use-as-functioning. This approach would reframe public involvement from project-specific initiatives towards a community-centered (spatial ethics) and domain-specific (transportation) planning which engages with revisiting the changing meaning of accessibility over longer time horizons.

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Keywords: transportation planning theory, accessibility, Capabilities Approach

E-MICROMOBILITY'S TRAFFIC STRESS ACROSS EIGHT URBAN STREET TYPES IN SEOUL

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Individual Paper Presentation

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E-bikes and e-scooters must run on bike infrastructure, or on roadways if unavailable, under the South Korean Road Traffic Act, passed in 2020. On urban streets, however, even riding on a legally supported route, traffic stress from conflicts with other road users, especially pedestrians and motor vehicles, remains a serious issue, as shown in rapidly increasing accident rates (20.4 times increased between 2017 and 2022).

Urban routes allowing Micro-mobility use under the South Korean Bicycle Lanes Guidelines and the Road Traffic Act could be classified into eight types, based on separation variations, distinguishing six bike lane and roadways with and without sidewalks. These encompass mixed traffic to complete streets, mostly functioning as shared streets. Despite the worldwide separation rule on the road right-of-way for various users' comfort, urban streets lack space with competing needs from pedestrians, motor vehicles, and others [Furth, 2021, NACTO, 2014]. However, considering micro-mobility's increasing trips and convenience as a transportation mode, strategic investment and sensible designing in given conditions are desperately needed. To do so, accurate assessments and understanding of micro-mobility use on permitted micro-mobility routes must precede.

While the Level of Traffic Stress (LTS) has been largely studied in the bike network planning field, distinguishing low-stress streets based on road environment [Furth et al., 2016], but rarely done from the view of riders' behaviors. Existing behavior-based studies focusing on individual segments have also left gaps in understanding micro-mobility's use throughout journeys [Zhang et al., 2023].

This study aims to measure traffic stress experienced by micro-mobility across eight route types in urban street networks of Seoul and draw accordingly tailored design implications with the following research questions:

1) What is the distribution of the eight street types for micro-mobility, and how does their temporal usage volume vary?

2) What is the micro-mobility's traffic stress level on each street type, and which is the most stressful for micro-mobility?

3) How do micro-mobility users combine different street types during their journeys, and how does this affect traffic stress?

Using dockless shared e-bike and e-scooter movement data from June to October 2023, provided by the data owner for research purposes and complying with the institution's data protocols, this study encompasses the entire urban street network in Seoul, South Korea. Utilizing high-resolution trajectories and government geospatial data, a three-step approach across street types using Multiple Comparison are conducted: 1) travel volume, 2) traffic stress, and 3) tour-based analysis. Track points are allocated to road segments using the 'Closest Segment With Context' method, and traffic stress is measured by factors - speed, acceleration-deceleration, and trajectory tortuosity, along with the volume and combination of street types during users' journeys.

Significant variations in micro-mobility's stress across street types, revealed by Exploratory Data Analysis, inform strategic street planning. Expected results indicate heavy use of Roadways without sidewalks and Ped-bike shared lanes (non-separated), while Cycle tracks (road-level) and Ped-bike shared lanes (separated) show higher usage rates considering length. Traffic stress is critical in Ped-bike shared lanes (non-separated) and Roadways without sidewalks, followed by Bike Priority Roadways, with Cycle tracks (road-level) experiencing the least stress. This implies prioritizing cycle track expansion, with conversion of non-separated ped-bike shared lanes to separated lanes taking precedence if space is limited. Typically, multiple street types are used during a journey (averaging 1.4 km), with stress primarily correlated with non-separated lanes, rather than the number of types used, implying varying stresses based on separation quality.

For enhancing low-stress micro-mobility use and safety for all, this paper highlights acknowledging urban streets as spaces shared by diverse road users, and ultimately aims to provide empirically substantial design implications, suited to local urban conditions.

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Keywords: Micromobility, Bike Infrastructure Design, Urban Street Design, Traffic Stress, Trajectories

EFFECTS OF INCENTIVE AND HEAT ON RISKY DRIVING OF GIG FOOD-DELIVERY WORKERS

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Individual Paper Presentation

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The gig economy, characterized by short-term and task-based work facilitated via digital platforms, has raised various occupational safety concerns, including road safety risks and heat exposure faced by on-demand food delivery (ODFD) workers. Often using open modes of transportation such as motorcycles and bicycles, these workers have minimal physical protection while working long hours on the road interacting with larger vehicles. Prior work has suggested that their road risks result from prevalent risky driving incentivized by the platform-established business model, but quantitative evidence is lacking. Further, while their prolonged heat exposure may contribute to increased risky driving, our understanding of this relationship is limited. This study aims to investigate the impact of dual exposures to incentive structures and heat conditions on risky driving among on-demand food delivery (ODFD) motorcyclists in Kaohsiung, Taiwan. Implementing a wearable sensing scheme, we tracked a cohort of 40 ODFD workers in real-time, collecting data on their speed, acceleration patterns, incentive issuances, and heat conditions. Through a case-crossover approach, we employed generalized linear crossed-level mixed-effects models to demonstrate the significant impact of incentive issuance on elevating risky driving behaviors among ODFD workers, including higher driving speeds, more frequent speeding, harsher acceleration, and more erratic acceleration patterns. Additionally, our study reveals heat exposure, characterized by higher temperatures and humidity levels, exacerbating these risky driving behaviors. These findings significantly contribute to advancing our understanding of causal mechanisms in two vital areas of literature: firstly, the road safety risks faced by ODFD gig workers, and secondly, the broader relationship between heat exposure and risky driving. Our research offers insights for policymakers seeking to mitigate risky driving behaviors among ODFD workers, which is particularly crucial in the context of climate change, where such urban economic dynamics can amplify climate-related inequalities within the rapidly evolving gig economy.

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Keywords: Gig economy, Risky driving, Incentive structure, Heat exposure, Food-delivery workers

ELECTED OFFICIALS AND PLANNING FOR TRANSPORTATION EQUITY

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Individual Paper Presentation

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Arguably, elected officials are instrumental in framing the goals and priorities of transportation investments and mediating the distribution of transportation benefits (Hay & Trinder, 1991; Taylor, Kim, & Gahbauer, 2009). Despite this, scholars note that as a field rooted in a technical-rational model, research on transportation often treats politicians as "exogenous to the decision-making process" (Marsden & Reardon, 2017, p. 245). While planners are increasingly seeking to increase equity in transportation systems, there is limited research that addresses this in the context of political decision-making. Yet, it is critical for planners to proactively engage in transportation issues that address equity, particularly when they may be politically contentious (Weinstein & Sciara, 2006).

This research draws on in-depth interviews with councillors and mayors (n = 38) in Canadian cities to better understand: (1) what elected officials perceive as the barriers and opportunities to increasing transportation equity, and (2) how planners can work within political constraints to address equity issues. We find that while some areas identified as barriers to increasing equity are likely beyond the scope of many planners, such as lack of financial resources or existing political structures, other issues have important implications for planning practice. Elected officials feel that a lack of understanding about how communities are impacted by transportation barriers is a limitation in supporting more equitable outcomes. A lack of political will and polarization over transportation priorities were also noted as hindering equity goals. Critically, elected officials identify key opportunities for planners to better communicate with both politicians and the public, particularly in helping shape a shared understanding of public needs. Notably, elected officials discuss support for planners in taking the initiative to promote more equitable alternatives. These findings point to the need for planners to consider both political and public audiences in advocating for more equitable investments, as well as to adopt strategies to encourage participation in democratic processes from diverse communities.

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Keywords: transportation equity, elected officials, transportation planning, professional practice

ELECTRIC VEHICLE ADOPTION IN CHINA: THE ROLES OF THE BUILT ENVIRONMENT
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Individual Paper Presentation

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Electrification of vehicles is considered a promising strategy to mitigate the increasing environmental and energy challenges caused by the growing demand for vehicular travel. Across the world, numerous countries are adopting various policy initiatives to enhance the attractiveness of electric vehicles (EVs) for a broader population. Among the policy instruments, land use control policy invites special interest due to the extensively stuided relationship between the built environment (BE) and car ownership. While there has been an increase in studies exploring the relationship between EV adoption and BE (Chen et al., 2015; Dimatulac et al., 2017; Chakraborty et al., 2022; Pan, Uddin, & Lim, 2024), research in this topic remains relatively limited, with notable gaps existing in the literature.

Firstly, previous studies on the impact of the BE on EV adoption have mainly focused on European or North American cities. Although China has emerged as the largest EV market and producer in the world, studies on EV adoption in China are still scarce. The EV-BE relationship in the high-density, transit-friendly urban context of China could differ significantly from that in the low-density, car-friendly environment of western countries. Secondly, due to the relatively low penetration rate of EVs, data on EV adoption are still limited, imposing challenges for researchers in understanding the role of the BE in EV adoption and its variation across space and EV types.

In this study, we take advantage of a unique big dataset of EVs to empirically investigate the impact of the BE on EV adoption in China. The dataset consists of global positioning system (GPS) data from a 5% random sample of all the EVs in Shanghai, China, the city with the largest EV stock globally, collected in four consecutive weeks from 2021 to 2022. This dataset includes detailed information on the location, speed, battery status, car type, and other vehicular parameters of individual EVs. We develop algorithms to identify the home location of each EV from their trajectories and illustrate the spatial pattern of EV adoption in Shanghai. Subsequently, we calibrate a set of Poisson regression models of EV ownership at the neighborhood (jiedao) level on socioeconomic and BE characteristics.

Our findings demonstrate the pivotal role of the BE in EV adoption in China. On average, the EV ownership rates have a positive correlation with land use mix, number of parking lots, accessibility to public charging facilities, and number of shopping malls, while exhibiting a negative correlation with population density, job availability, metro station density, and distance to CBD. Moreover, the BE-EV relationship shows significant heterogeneity along multiple dimensions, such as EV type (battery electric vehicles (BEVs) vs. plug-in hybrid vehicles (PHEVs)), car classification (A-segment, B-segment, and C-segment) and residential location (urban vs. suburban). For instance, access to metro station shows a significant negative association with PHEV ownership but not with BEVs, implying a substitution relationship between metro and PHEVs. Furthermore, distance to CBD exhibits an insignificant effect on the ownership of low-end A-segment EVs, yet shows a strong negative influence on the ownership of more expensive B-segment and C-segment EVs, suggesting income as a mediating factor in this relationship. Interestingly, direct current charging piles (fast charging) do not show a significant correlation with EV ownership in suburban areas while alternating current charging piles (slow charging) do not correlate significantly with EV ownership in urban settings.

The research findings provide a robust foundation for developing nuanced land use and transportation planning policies to promote the adoption of EVs, thus contributing to the goal of achieving sustainable transportation in China.

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Keywords: Electric vehicle adoption, Built environment, Poisson regression, China

ENHANCING MOBILITY FOR VISUALLY IMPAIRED WITH SHARED AUTONOMOUS VEHICLES

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Individual Paper Presentation

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In 2023, the National Health Interview Survey reported that approximately 50.18 million American adults aged 18 and older disclosed experiencing varying degrees of vision loss (NHIS, 2023). People who are blind or visually impaired (BVI) face transportation barriers when actively participating in community activities (Bezyak et al., 2017). Mobility obstacles primarily stem from the restricted range of transportation options available and the substandard quality of existing transportation services for BVI people. These restrictions can negatively impact the physical and mental health, and the overall quality of life of BVI people (Fink et al., 2021). Beyond BVI people, the National Council on Disability (NCD) (2005a) has pointed out that improving the independence of people with disabilities (PWD) can be achieved by enhancing the existing transportation accessibility. In addition, increased independence can alleviate the inequities faced by PWD in society (Aldred & Woodcock, 2008). Aligned with the NCD report, we specifically proposed one such enhancement in transportation targeting BVI people.

The advent of autonomous vehicles (AV) presents an opportunity for BVI people to regain independent mobility using shared autonomous vehicles (SAVs), a ride-sharing system for on-demand travel where two or more passengers can share a car at the same time. SAV presents convenient and flexible services for BVI people. However, the literature on designing SAV for BVI people is still scant. The perceptions of BVI people were not effectively captured in AV design, due to limitations in the public engagement methods, posing a challenge for mainstream online surveys or intercept methods to reach this segment of society.

We aim to address this gap by raising public awareness regarding the specific needs and expectations of the BVI people for this transformative mode of transportation. We conducted empathy interviews with 15 BVI people (7 concluded, 8 pending) in College Station, Texas, to understand their mobility challenges and the ideal autonomous vehicle journey envisioned. The thematic analysis method was applied to the data interpretation phase. We made recommendations for the inclusive concept design of SAV's hail-riding services based on participants' demands and expectations.

The preliminary results revealed that the participants had not encountered ride-hailing services with a dedicated BVI mode in their mobile applications. Passengers were inconvenienced because there was no active audible guidance or instruction when they used the ride-hailing services. Following the completion of booking services, the target users raised concerns about the accurate positioning of the vehicle with respect to the passengers and the effective identification of vehicles by passengers. Through the analysis of participants' needs and expectations for SAV, we proposed solutions for SAV design in the dedicated mode of ride-hailing mobile application and precise positioning between BVI people and the SAV. We recommend enhancing the mobile application with a simple user interface featuring large fonts, contrasting colors, and active audio cues for effective SAV information. In addition to the conventional use of GPS for long-distance locating accuracy, we suggest incorporating Bluetooth and vibration on the phone to locate the approaching vehicle; the vibration intensifies as the passenger gets closer to the vehicle when the phone is facing it. Blue flashing lights on the vehicle's roof and Braille markers on the handle display the car's identification number, facilitating passengers in identifying their booked vehicle. We put forward recommendations for the industry and transit agencies on how to deploy the SAV for our target users to enhance their independent mobility.

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Keywords: Shared autonomous vehicle, Disability (blind or visually impaired), Transportation policy, Mobility, AV design

EQUITY EVALUATION OF EV CHARGING LOCATION: A SPATIAL REGRESSION APPROACH

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Individual Paper Presentation

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The rapid growth of electric vehicles (EVs) has been widely recognized as a promising solution to reduce transportation-related carbon emissions and air pollution in urban areas. The transitions from ICE vehicles to EVs are imminent. However, the equity aspects of electric vehicle supply equipment (EVSE, also known as EV charging stations) location selection and distribution have rarely been investigated. This study addresses the following research questions: (1) How are EVSE locations spatially associated with socioeconomic characteristics in major U.S. metropolitan areas? (2) To what extent does the current EVSE distribution contribute to or alleviate social inequities?

To answer these questions, we employ a series of spatial statistical methods, including spatial autocorrelation detection and geographically weighted regression (GWR), to analyze the spatial patterns and associations between EVSE density and various demographic and socioeconomic variables at the census tract level in six metropolitan areas: Los Angeles, San Francisco, Portland, Seattle, Detroit, and Atlanta. We used the Alternative Fuels Data from the US Department of Energy for the charging stations, and the rest of the socioeconomic data from the Census 2020 and the 2019 American Community Survey data.

The GWR results reveal heterogeneous patterns of EVSE distribution across different metropolitan areas and neighborhoods. The associations between EVSE density and variables such as income, race, education, and housing characteristics vary spatially within and across the studied areas. For example, in the Los Angeles Metropolitan Area, EVSE density is negatively associated with housing density in Orange County, while positively associated with median household income in parts of Downtown Los Angeles and Santa Monica. In the San Francisco Bay Area, a negative correlation between EVSE density and the percentage of white-only population is found in South Bay, while no clear association is observed in San Francisco and Oakland. The Portland and Seattle metropolitan areas exhibit negative correlations between EVSE density and poverty rate in their city centers. These findings suggest that the availability and accessibility of EVSE in disadvantaged communities need improvement to ensure equitable access to EV charging infrastructure.

Moreover, the results indicate that current EVSE density is generally negatively associated with housing density, poverty rate, and the percentage of renters in certain neighborhoods, while positively associated with median household income in others. These patterns underscore the need for targeted policies and interventions to promote equitable EVSE distribution and address potential disparities in EV adoption.

This study contributes to the growing body of literature on transportation equity and environmental justice in the context of EV adoption. The proposed methodology can serve as a practical tool for evaluating and enhancing the spatial equity of EV charging infrastructure, ultimately supporting the transition towards a more sustainable and inclusive transportation system. Policymakers and urban planners can utilize the spatial statistical methods presented in this research to assess the equity implications of current and future EVSE locations, identify areas with limited access to charging stations, and develop targeted strategies to promote equitable EVSE distribution.

The findings of this study have important implications for planning scholarship and practice. First, they highlight the need for incorporating equity considerations into the planning and deployment of EVSE. Second, the study demonstrates the value of applying spatial statistical techniques, particularly GWR, to understand the spatially varying relationships between infrastructure distribution and socioeconomic factors. Finally, the results can inform the development of policies and interventions aimed at promoting a more equitable and inclusive EV adoption process.

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Keywords: electric vehicles, EV charging stations, spatial analysis, transportation equity, environmental justice

EVALUATING BOSTON TRANSPORT NETWORK'S RESILIENCE TO EXTREME CLIMATE EVENTS

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Individual Paper Presentation

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Climate change has brought extreme weather events, such as massive winter storms and record-breaking floods. Four of the top ten maximum 1-day Boston snowfall records since 1895 occurred in the past twenty-five years, including 2022, 2003, 1997, and 2015, with more than 22 inches of snow in one day. Boston's high-tide flooding record was set in 2009 and 2017, with 22 days each year. Extreme weather events can significantly reduce the infrastructure level of service, network connectivity, visibility, vehicle performance, mobility, and accessibility (Markolf, et al., 2019). Communities with different sociodemographic characteristics can also be impacted inequitably. Essential and low-income workers may not have alternative work modes (e.g., work-from-home) or travel modes and thus suffer more during extreme climate events.

In this paper, we employ big data, including INRIX minute-by-minute GPS data (INRIX, 2023), smartphone location-based service (LBS) data, and NOAA weather data in the Boston metro area, to (1) develop methods and metrics to measure the transportation system level of services (LOS); (2) estimate the statistical relationship between weather events (snowfall) and the transportation system LOS metrics, (3) quantify the resilience of the transportation infrastructure in the extreme climate events, and (4) measure the equity impacts of the climate events on communities with different socioeconomic characteristics.

By developing a simulation model via the multi-modal, open-source traffic flow simulation platform Eclipse SUMO (Simulation of Urban MObility) (Krajzewicz, 2010), we simulate the transportation system performances under different climate event scenarios and measure their impacts on communities at the census tract level. We also estimate the travel demand from smartphone LBS data and calibrate the simulation model using INRIX GPS data. The simulation tool is useful for developing policy responses to prepare cities for future extreme climate events.

The simulation model calibrated with the INRIX GPS data can be useful for scenario planning when incorporating climate events and predicting their impacts on transportation systems. The quantifiable relationship between

climate events and the transportation system can be used to prepare transportation agencies to develop climate-resilient transportation infrastructure plans.

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Keywords: climate resilience, transportation performance, simulation, scenario analysis, big data

EXPERTS' DEFINITION OF BIKE EQUITY; APPLICATION OF DELPHI-AHP TECHNIQUE

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Individual Paper Presentation

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Today’s societies face both sustainability and social justice challenges. Studies have shown a paradigm shift in transport and land use planning to push for more sustainable and equitable modes of travel that improve transportation benefits and mitigate the adverse effects of transportation practices and policies on vulnerable populations (Honey-Rosés et al., 2021). Cycling offers prospects as a socially, environmentally, and economically sustainable mobility alternative (Buehler & Pucher, 2021). As a result, cities began adopting policies to reduce the private car modal share and dedicate more space to cyclists (Honey-Rosés et al., 2021).

Consequently, there has been a significant increase in funding for bicycle infrastructure investment in recent years. However, despite this progress, bicycle equity impacts are often overlooked (Lee et al., 2017). This has resulted in an unfair distribution of active transportation costs and benefits, with income and racial minorities having lower access to bicycle infrastructure and experiencing lower bicycle usage rates. Additionally, they face a higher risk of bike-vehicle collisions and more significant concern for traffic hazards and air pollution (Kent & Karner, 2019; Mora et al., 2021).

How these benefits and costs are measured is a prerequisite to making a system more equitable. Although some strides have been made in transport equity evaluation, the unique challenges and complexities of cycling have yet to be fully considered. There are increasing numbers of studies on bike equity analysis with a primary focus on the fair distribution of cycling infrastructure and often overlook other critical dimensions such as the quality of facilities, safety considerations, individual perceptions and preferences, etc. This disparity in perceived indicators potentially inhibits capturing a comprehensive and precise assessment of bike equity.

The overarching goal of this study is to reconcile the existing disparity regarding the essential components for assessing bike equity through expert consultation and consensus-building. To achieve this aim, this research is guided by two primary questions that ensure a thorough and nuanced approach: What are the key components of

measuring bike equity? And how to determine the importance (weights) of the selected indicators and components? This process involves engaging with diverse experts, including bike advocates, field experts, policymakers, and scholars, to establish a unified understanding of the key factors in measuring bike equity.

By leveraging the Delphi-AHP (Analytic Hierarchy Process) techniques—methods renowned for their systematic consensus-buildings—this research aims to distill the myriad perspectives on bike equity into a coherent set of key components. Delphi-AHP method can provide generally reliable results for identifying criteria and quantifying the relative importance of indicators while requiring a limited budget and a small number of participating experts (Cai et al., 2023)

Through iterative rounds of expert consultations (2-3 rounds) and quantitative analysis, the Delphi-AHP method will facilitate identifying and prioritizing indicators deemed crucial for assessing bike equity. The initial list of potential bike equity indicators has been identified through the first round of the Delphi survey, and it can be organized into two main categories: demand-based and supply-based indicators. This list will be used in the next rounds of the evaluation process to build a community consensus for a weighting system.

The outcomes of this research will significantly contribute to the existing knowledge base in transportation equity and sustainability. The new framework will provide policymakers and researchers with a nuanced, quantifiable means to evaluate the fairness of cycling initiatives, facilitating targeted interventions that rectify existing inequalities. This, in turn, contributes to the broader goal of fostering more sustainable, inclusive, and equitable urban transportation networks.

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Keywords: Bike Equity, Urban Sustainability, Delphi, AHP, Consensus Decision-Making

EXPLORING ACCESSIBILITY AS AN ALTERNATIVE METRIC FOR TRAFFIC IMPACT STUDIES

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Individual Paper Presentation

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Many scholars have advocated for a shift away from (auto) mobility to (multi-modal) accessibility as the focus of transportation and land use planning, not only for the environmental benefits associated with reduced vehicle travel, but also because providing access is, with few exceptions, the ultimate goal of the transportation system. But the concept of accessibility has not been well applied to local planning processes. Conventionally, development reviews for land use projects include traffic impact studies that have been using level of service (LOS) as the metric to measure vehicular flow on nearby road networks to ensure acceptable levels of traffic. A notable exception is California's recent change to adopt vehicle miles travelled (VMT) as the metric in environmental reviews required by the California Environmental Quality Act, which discourages projects that generate more-than-area-average vehicle travel. While the LOS metric has been criticized for focusing on auto mobility, the VMT metric, albeit a shift away from LOS, is still an indirect measure of accessibility. This paper uses an accessibility metric to evaluate the impacts of a sample of land use project proposals in Los Angeles, compares the evaluation outcomes with the LOS and VMT impacts reported in their submitted environmental impact reports (EIR), and considers the implications of the different metrics for local development review processes and land use patterns.

I focus on California because it is the first and only state that has adopted the VMT metric and has published guides on how it should be used in environmental reviews. I selected my sample from a single large city, Los Angeles, to 1) get a sample with different project types and different urban contexts, and 2) control for political and institutional differences across municipalities that may affect the development review processes. I selected a sample of 10 project proposals submitted to the City of Los Angeles from 2016 onwards (the year in which the state technical advisory on the VMT metric was published). I have reviewed the VMT and LOS analyses in their EIRs. And I will conduct the accessibility impact analysis using a commercial tool, Conveyal, for these project proposals using data from the project EIRs.

After reviewing these projects' LOS and VMT analyses, I find that all of the projects would cause a degradation of LOS on at least one of the project's nearby intersections, which, in a conventional traffic impact study, would typically signal significant impacts and require mitigation measures from the developer. However, most of these projects would cause less than significant VMT impact based on thresholds set by the City of LA. The next-step comparison of the accessibility impacts of these projects with the LOS and VMT impacts would show whether accessibility impacts are consistent or inconsistent with LOS and/or VMT impacts. Theoretically, accessibility benefits could yield from increased mobility (and hence a lower LOS impact) and/or increased proximity (and hence a lower VMT impact). So it is possible that a project that has high LOS impacts and low VMT impacts to have accessibility benefits; it is also just as possible that a project that has low LOS impacts and high VMT impacts to have accessibility benefits – as both LOS and VMT are partial and indirect measures of accessibility.

This paper addresses an understudied area in the literature about applying accessibility to planning practice: the use of accessibility metrics in local planning. The comparison of LOS, VMT, and accessibility metrics can demonstrate the different implications for land use developments under each metric and their alignment with important planning goals of enhancing accessibility, reducing greenhouse gas emissions, and promoting social equity.

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Keywords: Accessibility, LOS, VMT, Traffic impact studies, Environmental reviews

EXPLORING INDUCED TRAVEL EFFECTS FROM INTERCHANGES AND AUXILIARY LANES

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Individual Paper Presentation

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Roadway capacity expansion is often proposed as a solution to traffic congestion and even as a way to reduce greenhouse gas (GHG) emissions. The cited logic is often that increasing roadway capacity increases average vehicle speeds, which improves vehicle fuel efficiency and reduces per-mile emissions of GHGs and local air pollutants. But that logic relies on the flawed assumption that the demand for vehicle travel is inelastic, i.e., that it is unresponsive to changes in cost (including travel time cost). In fact, the demand for vehicle travel does respond to changes in cost. Empirical research demonstrates that as roadway supply increases vehicle miles traveled (VMT) generally does, too. This is the “induced travel” effect—a net increase in VMT across the roadway network due to an increase in roadway capacity, which ultimately erodes any initial increases in travel speeds and causes increased GHG emissions.

Our previous review of the evidence suggests that the longer-run (3-10 years) induced travel elasticity is close to 1.0 for capacity expansions on major roadways (including freeways, highways, and major arterials), i.e., a 1% increase in capacity would increase VMT by 1% (Volker & Handy, 2022). However, much less is known about the induced travel effects of other types of roadway facilities, such as interchanges and auxiliary lanes (Volker & Handy, 2022).

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The purpose of this ongoing research is to explore the induced travel effects of interchanges (including on- and off-ramps) and auxiliary lanes. Our mixed-methods study involves (1) reviewing the existing empirical literature on the induced travel effects of interchanges and auxiliary lanes, (2) reviewing the best practices currently employed by practitioners to estimate induced VMT from those types of projects, and (3) empirically estimating the induced travel effects from both an interchange project and an auxiliary lane project in California. For the case studies, we will analyze traffic flow data near the case study projects using descriptive statistics and interrupted time series-type modeling, akin to the methods used in other recent project-level induced travel analyses (Anderson et al., 2021). Better understanding the induced travel effects of a wider range of roadway facilities will help practitioners and policymakers more accurately calculate the benefits (like reduced traffic congestion) and costs (like emissions of GHGs and local air pollutants) of capacity expansions (Metz, 2021).

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Keywords: Induced travel, Vehicle miles traveled, Interchanges, Auxiliary lanes

EXPLORING MULTIMODAL CONNECTIVITY TO BRT STATIONS: A CASE IN SHANGHAI

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Individual Paper Presentation

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To improve the vitality of the high-density city, the Shanghai Master Plan (2017-2035) has adopted the concept of a Central Activities Zone (CAZ) from London, emphasizing integrating heterogeneous functions. The stations of the public transit system, especially Bus Rapid Transit (BRT), are regarded as the physical nexus connecting neighborhood functions. The median placement of BRT stations necessitates pedestrians to navigate crossings or footbridges, especially when requiring multiple transfers, thus intensifying pedestrian traffic. Hence, there is a compelling need for in-depth exploration of multimodal connectivity to BRT stations.

While most prior research has focused on the physical characteristics and service performance of BRT, emerging literature is exploring transit transfers and connections within catchment areas. However, these studies on multimodality often overlook pedestrian accessibility. This study addresses this gap by focusing on multimodal connectivity to BRT stations, examining active transportation to destinations within 800 meters or transfers to neighboring stations of BRT and other transit systems.

This study investigates the No. 71 medium-capacity bus from March to June 2023, the first BRT in Shanghai. Adjacent to paratransit services, including a partial route and four branch lines, the No. 71 bus forms part of the medium-capacity bus system on Yan'an Road, traversing the city center from east to west. Additionally, the No. 71 route intersects with several metro stations, further highlighting the substantial demand for seamless connections between paratransit services and transit hubs. By employing data analysis, participatory observation, in-depth interviews, and a questionnaire administered to 158 passengers, the study aims to address the following questions:

1. What are the spatiotemporal patterns of the No.71 Medium-capacity Bus passenger flows reaching stations, including pedestrian crossings, footbridges and biking routes?

2. How can these findings provide a strategic basis for strengthening the role of No. 71 as a regional public transit corridor, and fostering the development of other transit systems?

The findings underscore the No. 71 BRT system's success in integrating various modes of transit. However, there is room for improvement in enhancing the connectivity of its stations. Firstly, the synchronized schedule of the transit system limits the convenience of interchange between stations. Secondly, the lack of barrier-free facilities and long transfer distances reduce its appeal to passengers transferring to other public transit modes. Thirdly, unclear indications and limited public service areas confuse and dissatisfy people. Accordingly, this study proposes strategies for integrating pedestrian networks and mobility systems around transit stations, through supportive policies, intelligent transportation, and station detail improvements.

Overall, these findings provide key insights into realizing "zero-distance" transfers that are lacking for most BRT systems. These represent the stance of the major user groups, including seniors, carless commuters, students, and tourists, and contribute to social equity and further reduce carbon emissions.

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Keywords: Public transit system, Bus Rapid Transit BRT, Catchment areas, Multimodality, Travel behavior

EXPLORING THE EFFECT OF ADUS ON PARKING AND TRAVEL BEHAVIOR

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Individual Paper Presentation

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Accessory dwelling units (ADUs) – also called in-law units, secondary units, or granny flats – ADUs are small self-contained dwellings that share the site of a larger dwelling structure, either as a standalone structure or as a converted portion of the larger dwelling itself. Permitting of accessory dwelling units has skyrocketed over the last five years in California, as recent state laws have made permitting easier than ever. This has obvious ramifications for California's housing supply (Volker & Handy, 2023), but it also bears on the state's efforts to reduce vehicle miles traveled (VMT) and greenhouse gas (GHG) emissions. ADUs are often built where off-street parking used to be – such as through a garage conversion – and state law prohibits local governments from requiring replacement of those converted off-street parking spaces. Furthermore, ADUs are often exempt from minimum off-street parking requirements under state and/or local law. As a result, ADUs can reduce total off-street parking supply (Volker & Thigpen, 2022). Reducing residential parking availability can, in turn, reduce vehicle ownership, use, and resulting GHG emissions (Currans et al., 2022; Manville, 2017; Millard-Ball et al., 2021).

In this ongoing study, I am investigating the effect that ADU construction has on off-street parking supply and, in turn, vehicle ownership and VMT. I am in the process of conducting a survey of ADU owners in Sacramento, California about their parking availability, vehicle ownership, and vehicle travel before and after ADU construction. I hypothesize that ADU construction has reduced off-street parking supply (e.g., through garage conversions) and, in turn, reduced vehicle ownership and/or VMT. I will also explore geographic (including transit proximity) and socioeconomic differences in where ADU construction has caused a net reduction in parking and/or VMT using a range of data, including data from the US Census and Zillow home value estimates.

My results will provide baseline information to policymakers about whether and by how much ADUs and off-street parking reallocations affect VMT. This will be especially useful to local and regional governments and policymakers as they develop and prioritize strategies to reduce VMT and GHG emissions, including in sustainable communities strategies (per SB 375 in California), general plans, climate action plans, and VMT mitigation banks and exchanges. ADUs and parking management are increasingly common strategies. Indeed, on its website, the California Air Resources Board lists parking supply management and planning for accessible housing "at a range of densities" as some of the "key aspects" of sustainable communities strategies. But the magnitude of the effect of ADUs on parking supply, vehicle ownership, and VMT remains an open question. This project will help answer that.

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Keywords: Accessory dwelling units, Vehicle miles traveled, Parking, Housing

EXPLORING THE EFFECT OF MICROMOBILITY USE ON MODE SHIFT AND CAR OWNERSHIP

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Individual Paper Presentation

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Micromobility (i.e., bike-share and scooter-share) services are an important part of the new shared mobility revolution. From an environmental sustainability standpoint, cities prefer that micromobility trips replace car trips. As most micromobility trips are shorter than 2 miles, micromobility can easily contribute to environmental sustainability by replacing driving. Studies so far have not explored the long-term influence of micromobility on individuals’ travel choices. Some studies show that micromobility can reduce car use in the short term by replacing car trips (Barbour et al., 2019, Fishman et al., 2014, Fuller et al., 2013). Research shows that people who travel less by car and more by other modes are more willing to give up car ownership (Moody et al., 2021). It is expected that the availability of micromobility services, along with other shared modes, is likely to increase individuals' willingness to give up car ownership. Micromobility can influence zero-car households to not purchase a car, influencing one-car households not to purchase a second car, or influencing one or multiple-car households to give up ownership of a car.

This study takes a much broader look at the impacts of micromobility on travel behavior than previous studies, which have primarily looked at individual trips. We use individual-level data collected through an online survey distributed across different cities in the United States to explore micromobility services on daily travel, its broad travel pattern impacts (e.g., overall mode shift), and outcomes like car ownership that previously received little attention. Individual-level survey data provides us with the opportunity to assess individual-level behavioral changes from their use of micromobility services and how those changes may translate into their mode choice and car ownership decision. To this end, this study examines the following research questions:

To what extent does the use of micromobility services influence the use of other modes?

Does micromobility use influence car ownership decisions? If so, what are the different individual-level socio-demographic and latent attitudinal and behavioral factors associated with micromobility users who reduced car ownership?

Our analysis shows that as a result of using micromobility services, approximately 79% of car owners in the survey left their car at home at the beginning of the travel day. This result suggests that, for a subset of users, micromobility can enable a car-free or car-light day of travel, despite having a car available. Trips using micromobility services often replaced car trips, transit trips, and walking for most of the survey participants. We used a structural equation modeling approach to empirically examine the bidirectional relationship between micromobility use and car use and the impact of micromobility use on car ownership decisions. Our model shows that mental well-being benefits gained from micromobility use significantly influence individuals to use the service more and not purchase a car. Frequent users of micromobility services are more likely to report reducing car use since using micromobility, however, this frequent use may not translate into the decision of not purchase a car and getting rid of a household vehicle. Individuals who report micromobility services fit their travel patterns, enable them to perform activities, and reduce their financial burden of travel, are more likely to report not purchasing a household vehicle due to their use of micromobility services. The findings from this study have several sustainable transportation policy implications.

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Keywords: Micromobility, Mental Well-being, Car Ownership, Sustainability, Travel Behavior

EXPLORING THE POST-PANDEMIC ENDURANCE OF ACTIVE TRANSPORTATION PLANNING

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Individual Paper Presentation

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Central Theme: The COVID-19 pandemic warranted extreme public health measures which imposed restrictions on individuals' daily lives. This disruption presented an opportunity to re-think how urban policy and planning can address public needs. Particularly in the urban transportation sector, the promotion of automobility has long dominated policymaking, protected by combative political will (Walks, 2015; Wilson & Mitra, 2020). The pandemic

represented an opportunity to re-allocate some road space to allow physically distanced outdoor recreation and transportation options. While the current literature has focused on the impacts of such policy on travel behaviour and equity (Fischer & Winters, 2021; Kraus & Koch, 2021), little research has addressed the decision-making process behind such changes and their potential institutionalization.

Method: Drawing on Critical Junctures and Punctuated Equilibrium Theory, we developed the Framework for Understanding Abrupt Transportation Policy Change, and utilized it to explain how major changes to active transportation policy and planning emerged in the face of a crisis (the COVID-19 pandemic), and how they may be institutionalized over time. We interviewed 20 municipal employees who were directly involved in the pandemic-time active transportation planning in Canada's three largest urban regions: The Greater Toronto and Hamilton Area (GTHA, Ontario), Metro Montréal region (Quebec), and Metro Vancouver area (British Columbia). We conducted a thematic analysis of our interview findings to reveal key dynamics related to the long-term outcomes of active transportation planning during the COVID-19 pandemic.

Results: In our previous study, we found that the COVID-19 pandemic had the power of a crisis to disrupt the status quo and accelerate the rollout of active transportation facilities (Latanville et al., 2024). In this paper, with respect to the longer-term implications of the changes to active transportation policy and planning, we report that public and political reactions may have shifted. In many instances, municipal participants highlighted the effect of the pandemic-time active implementation and the community's ability to experience the facilities before providing feedback, use and support for active transportation appears to have increased post-pandemic. Some participants also pointed out changes to their public consultation process as a result of lessons learned during the pandemic. In particular, online community engagement that emerged during the pandemic has endured post-pandemic to create various hybrid models for community engagement. In these instances, participants explained the value of hybrid engagement models in helping to reach underepresented groups, thereby improving participation from an equity lens.

Politically, many participants emphasized the important role of local politicians in sustaining the momentum of active transportation improvements in their city. Some participants described the COVID-19 pandemic as revealing the inequities in the planning of road space to local politicians, which helped strengthen their commitment to active transportation projects post-pandemic. In such cases, participants reported increased political support for active transportation investments, exemplified through less politically contested project endorsements and approving capital funding at City Councils. In most cases, however, participants expressed that the council's priorities returned to the pre-pandemic status quo; one which did not include active transportation among the top of their list. The latter instance was more common for cities that had a less supportive council for active transportation pre-pandemic.

Conclusion: These findings offer novel contributions to our understanding of how in the face of a disruption, major shifts in active transportation policymaking approaches were achieved and how they may be institutionalized in the longer term.

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Keywords: COVID-19 pandemic, Active transportation, Street reallocations, Political opportunities, Critical junctures

EXPLORING THE ROLE OF RIDE-HAILING SERVICES IN DESTINATION-CENTRIC EQUITY

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Individual Paper Presentation

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As the use of app-based ride-hailing services continues to proliferate, its influence on improving the ability to travel, i.e., mobility, has not been the same across people. Differences in the use of these services across socioeconomic groups, reflected through their dissimilar ride-hailing travel behavior, show that these services do not necessarily bridge the mobility gaps equitably (Barajas & Brown, 2021; Brown, 2018). Further, an increase in mobility may not always equate to an increase in accessibility, i.e., the ability to reach destinations, due to variations in the spatial distribution of activities across a metropolitan region. To understand the potential of ride-hailing services in increasing accessibility, it is also important to analyze changes in destinations due to these services, as mode and destination decisions mutually influence one another (Dubernet & Axhausen, 2016). This paper seeks to understand the differential impact of app-based ride-hailing services across socioeconomic groups by analyzing the change in their destinations with the availability of these services.

Past research has shown that the influence of travel modes on destination choice varies across income levels due to differences in available travel modes. Lower-income people have fewer work location options because their limited travel options often guide their work location. Meanwhile, high-income people have more work location options because they have more flexibility to switch their travel mode based on their work location (Ben-Akiva, 1973). For discretionary, non-work activities, lower-income people either travel farther to affordable destinations based on available travel modes or adjust to limited destination options in proximity. In contrast, higher-income people have more destination options as they often use a personal vehicle (Clifton, 2004). The limited destination options impact the day-to-day activities of lower-income people, influencing their quality of life.

To understand the change in destinations across income levels, I took Chicago as the case study because it has significant ride-hailing use and high transit ridership compared to other metropolitan regions. I used the 2008 and 2018 Household Travel Surveys by the Chicago Metropolitan Agency for Planning for analysis as the datasets are from before and after ride-hailing services began operations in Chicago. Taking a quasi-experimental approach, I used Propensity Score Matching to identify a group of people from the 2008 dataset (control) comparable to the ride-hailing user group (treatment) from the 2018 dataset. For the two groups, I analyzed the impact of travel time and cost attributes of all trips performed by all users on the distance of their chosen destinations from the Central

Business District (CBD) across income levels using multi-group structural equation modeling (SEM). Next, I compared the path coefficients between the travel attributes (cost and time) and distance of chosen destinations from CBD across income levels within a group and between the treatment and control groups. Results show that the change in destinations was more for higher and middle-income people when compared to lower-income people with the advent of ride-hailing services. Changes in travel modes (shift to sustainable travel modes along with ride-hailing services) are much more in higher and middle-income people than among lower-income people. This shift to multi-modal travel has influenced destinations for higher and middle-income people, whereas lower-income people mostly still travel to similar locations.

This study fills the important knowledge gap of how recent technological changes in transportation are changing the destination choice for people. As transportation planners and policymakers formulate policies to regulate ride-hailing services to increase transportation equity, they should account for both mobility and destination outcomes. It can increase destination options for lower-income people, enhancing their ability to participate in various activities and thereby improving their quality of life.

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Keywords: Destination, App-Based Ride-hailing, Equity, Quasi-Experimental, SEM

EXPLORING THE SOURCES OF SPATIAL INEQUITY IN BIKE-SHARING USAGE

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Individual Paper Presentation

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Growing evidence indicates that bike-sharing usage is lower in historically disadvantaged neighborhoods, with disparities potentially varying across regions. Nevertheless, the factors leading to the inequitable distribution of bike-sharing usage remain underexplored, limiting the development of planning strategies to enhance equity within bike-sharing systems. Addressing this gap, I investigate the patterns and sources of disparities in bike-sharing usage between disadvantaged and more advantaged neighborhoods in Chicago. Specifically, this study employs regression analysis to examine whether significant disparities are observed in bike-sharing usage in relation to a neighborhood's disadvantaged status. Employing a decomposition method, I then analyze the statistical significance and relative importance of various factors, such as differences in bicycle infrastructure and smartphone access rates, in explaining any disparities. Additionally, I make a substantial contribution to the literature by

differentiating between the usage patterns of classic and electric bicycles, offering a nuanced understanding of the spatial patterns and equity implications of bike-sharing systems.

The findings reveal that both classic shared bikes and e-bikes are utilized more frequently in advantaged neighborhoods, although the reasons behind these disparities vary by bike type. Specifically, for classic shared bicycles, the risk of negative interactions with law enforcement significantly drives spatial inequity. In contrast, this factor does not markedly affect the spatial equity patterns of e-bike usage. Instead, the proximity to the city center significantly influences their inequitable distribution—a pattern not observed with classic bikes. A common factor for both bike types is the impact of bike infrastructure; notably, the scarcity of bicycle lanes and bike-sharing stations in disadvantaged neighborhoods plays a significant role in the inequitable distribution of bike-sharing usage. These findings suggest that tailored strategies are essential to tackle the distinct challenges of spatial equity in service usage faced by classic and electric bike-sharing systems.

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Keywords: Bike share, Shared micromobility, Spatial inequity, Decomposition analysis, Disadvantaged neighborhoods

FLEXIBLE WORK ARRANGEMENTS AND TRAVEL IN THE POST-PANDEMIC ERA

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Individual Paper Presentation

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Commuting decisions (whether and/or when to commute) play a significant role in shaping the overall travel behavior of workers. Flexible work arrangements, such as remote work, hybrid work, and flex time, offer some levels of autonomy to workers in making decisions about their commutes by setting them free from the rigidity of 9-to-5 working hours, and physical presence at their job locations. Workers can plan their daily activities more flexibly accommodating their personal needs and preferences (Wöhner, 2022).

The vast majority of studies from before the COVID-19 pandemic suggest higher overall trip-making and vehicle travel among workers with flexible work arrangements than workers who commute regularly (Speroni & Taylor, 2023). However, the pandemic brought about significant changes to travel and activity patterns. During the pandemic, working from home skyrocketed, online shopping and telemedicine increased, and time spent on in-home activities rose (Salon et al., 2021; Speroni & Taylor, 2023). Many of these changes persisted as the pandemic receded, although to a lesser extent than the peak pandemic period (Burrows & Burd, 2024).

Against this backdrop of the changing nature of work and activities, this research examines the travel behavior of workers with different types of work arrangements coming out of the pandemic, specifically focusing on whether and how the travel behavior of remote and hybrid workers varies from that of regular commuters. I analyze the 2022 National Household Travel Survey (Federal Highway Administration, 2024), which provides information on personal and household travel at the national level for the US. The data include information on survey respondents' socioeconomic status, household characteristics, employment status, work arrangements (fully remote, hybrid, not remote), and travel behavior on a single travel day.

I analyze the total number of trips for various purposes and the distance traveled by workers in different types of work arrangements. Then, I employ propensity score matching (PSM) to infer causality between flexible work arrangements and travel. With the PSM, I match every worker in the treatment group (remote worker, hybrid worker) with one worker in the control group (commuters who never work from home) based on various socioeconomic, demographic, household, and locational characteristics.

I find that working from home for the entire workweek results in fewer trips and fewer personal miles traveled. However, these workers make more shopping and social/recreation trips than regular commuters. In contrast, the travel behavior of workers who work in a hybrid arrangement varies based on whether they commute or not on a particular day. On the days they commute, hybrid workers make more trips and travel longer distances. In particular, they make more shopping and chauffeuring trips, likely because they plan those trips around their commute days. On the days they do not commute, hybrid workers' travel behaviors are more similar to that of the fully remote workers. They make overall fewer trips and travel fewer miles, but make more shopping and social/recreational trips than regular commuters.

The findings offer insight into the evolving landscape of travel behavior in the post-pandemic era. Understanding these differences is crucial for transportation planners, and policymakers as they navigate the implications of shifting work patterns on transportation infrastructure, traffic congestion, environmental sustainability, and public transit ridership.

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Keywords: Commute, Flexible Work, Remote Work, Hybrid Work, Travel Behavior

FROM CAR SUPREMACY TO PEACEFUL STREETS: SHIFTING POWER IN PUBLIC DISCOURSE

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Individual Paper Presentation

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In a recently published literature review, a team of researchers synthesized findings from nearly 500 studies on the negative externalities of car dependence, identifying more than 15 (non-exhaustive) categories of car harms ranging from social injustice and violence to ill health and environmental damage (Miner et al., 2024). Despite these detrimental impacts, as a society we seem to be unwilling to recognize them as such; researchers have even coined the term motonormativity to describe the "unconscious biases due to cultural assumptions about the role of private cars" that characterize our refusal to engage the adverse effects of our car-centric practices (Walker et al., 2023, p. 21). Several scholars have attempted to untangle the complex web of interactions that created - and continue to reinforce - our reliance on cars, making critical connections between the systemic factors that shape our relationship to them. For example, the system of automobility underscores processes of technological advancement and globalization (Sheller & Urry, 2000), car hegemony focuses on the cultural political economy (Haas, 2020), and the car regime emphasizes the role of state power applied through regulatory mechanisms (Böhm et al., 2006).

All of these conceptualizations shed light on important structural and cultural dimensions of how power has operated to maintain cars as the dominant mode of transportation. However, these theories fail to consider the role of everyday people in shaping norms and attitudes about our transportation system. Indeed, communities across the US - and globe - are mired in fraught debates about the purpose of our public streets and who belongs in the right of way. As such, individuals exercise considerable agency (often at the hyper-local level) to negotiate power over both tangible resources and intangible perceptions related to mobility. In fact, proposals to improve safety for all road users - whether through planning, engineering, design, or policy interventions - are often delayed, cancelled, or reversed because of resistance to such measures expressed in public meetings and civic discourse. At the same time, advocates for transportation reform leverage lived experience and data to highlight the realities of existing in the built environment as marginalized road users confronting daily instances of vehicular violence. This paper thus seeks to answer the research question: what discursive strategies are used to claim power over transportation priorities in public forums?

This paper presents two novel perspectives to expand our current understanding of these dynamics by examining oral testimonies delivered by public witnesses at government hearings on transportation policy in Washington, DC. The first proposes a theoretical framework - car supremacy - that centers people as wielders of power in perpetuating the existing modal hierarchy, and tests the framework using a Critical Discourse Analysis of testimonies opposing efforts to reduce car speed and space. The second posits an alternative theoretical approach - streets as sites of peacebuilding - and pilots the approach using a thematic analysis of testimonies attempting to dismantle the existing modal hierarchy. By assessing the rhetorical devices utilized in local mobility discourse, the findings of this qualitative analysis offer planners, policymakers, and advocates a new paradigm for navigating the conflict system inherent in car supremacy, challenging prevailing narratives about the existing modal hierarchy, and reimagining our streets away from the speed and storage of cars and toward the care and connection of communities.

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Keywords: car supremacy, modal hierarchy, peacebuilding, conflict system, Critical Discourse Analysis

GENDER INCLUSIVE TRANSIT: SHARED MOBILITY, SAFETY, AND EQUITY IN THE GTHA

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Individual Paper Presentation

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Central Theme or Planning Issue

Urban transportation systems are in a transformative phase, with shared mobility at the forefront, offering promising pathways toward gender inclusivity and multimodal connectivity. Addressing gender disparities is essential for equitable and gender-inclusive urban mobility. This research scrutinizes the integration of shared mobility solutions as a pivotal element for inclusivity, safety, and access in urban landscapes. Concentrating on the Greater Toronto and Hamilton Area (GTHA), the study delves into shared mobility's capacity to enhance the transit experience for a spectrum of gender identities, notably including LGBTQ+ individuals. It explores the intricate relationship between shared mobility and its potential to bridge inclusivity gaps, specifically examining the safety perceptions and travel behaviours of post-secondary students in the GTHA. The aim is to ascertain the extent to which shared mobility can facilitate a more inclusive, safe, and cohesive urban transportation network in sync with overarching equity objectives.

Approach and Methodology

This study employs a mixed-methods approach, intricately weaving together quantitative and qualitative research strands to offer a comprehensive analysis of shared mobility's impact on urban transport inclusivity. Quantitatively, the research leverages the expansive StudentMoveTO survey, which has garnered over 18,000 responses, providing a broad dataset on travel modes and perceptions of transportation equity. Qualitatively, the study enriches its dataset with 40 in-depth interviews, offering a deeper dive into the personal experiences and safety concerns related to shared mobility among different gender groups, including members of the LGBTQ+ community. This

qualitative exploration not only complements the quantitative data but also brings nuanced insights into the subjective realms of urban transit experiences. Together, this methodological synergy fosters a nuanced perspective on how shared mobility can be harnessed to sculpt more inclusive and gender-responsive urban transportation networks, aligning with the broader equity goals in the GTHA.

Findings and Analysis

Analysis from this study underscores that safety concerns disproportionately affect non-male genders, significantly shaping their engagement with public transit systems. Particularly, women, nonbinary individuals, and other gender minorities express elevated safety concerns, influencing their transportation modal choices and leading to a marked preference for shared mobility options. These alternatives were chosen for their perceived safety, offering users a greater sense of control, and reducing their vulnerability to safety risks. Additionally, the research highlights the essential role of multimodal transportation systems, which incorporate shared mobility services, in mitigating these safety issues and improving accessibility for everyone. Shared mobility acts as a linchpin in these networks, ensuring fluid transitions between different transportation modes, fostering an inclusive urban transit ecosystem and perceiving safety as a paramount concern across all gender identities.

Relevance and Implications

The findings of this study underscore the critical need for inclusive urban transportation planning that prioritizes the safety and accessibility concerns of non-male and LGBTQ+ students. The elevated safety apprehensions among these groups call for an urgent reassessment of transit policies to ensure they cater effectively to the nuanced needs of diverse populations. Shared mobility services emerge as a crucial element in this context, offering safer and more flexible travel options that can alleviate the perceived risks and barriers faced by non-male and LGBTQ+ individuals. Urban planners and transportation policymakers are thus encouraged to embed shared mobility more integrally within the urban transit ecosystem. By doing so, they can significantly improve the safety, accessibility, and overall user experience of public transportation systems, making them more attuned to the requirements of gender and sexual minorities. This strategic integration of shared mobility is key to advancing a more gender-inclusive and LGBTQ+-friendly mobility, fostering equitable and sustainable urban environments where everyone, regardless of gender identity or sexual orientation, has reliable access to safe transit options.

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Keywords: Shared Mobility, Gender and LGBTQ+ Inclusivity, Inclusive Urban Planning, Transportation Equity, Multimodal Transportation

HIGHWAY WIDENING + FREEWAY FIGHTERS: A RESEARCH AGENDA

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Individual Paper Presentation

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To avoid climate catastrophe, the IPCC says we must cut carbon emissions--the plurality of which come from transportation-- in half by 2030. Despite this warning, U.S. transportation policy continues to expand roadways while genuflecting at the altar of congestion relief. Frustratingly, road widening does not ease congestion in the long run; rather, wider roads increase car travel and its attendant harms. But not everything is doom and gloom; a new generation of Freeway Fighters has mobilized, and, somewhat counterintuitively, highway removal projects are also ascendant.

We argue for a research agenda that centers roadway expansions. We draw on literature from adjacent fields to motivate new lines of inquiry for current and emerging scholars. We hope this agenda quickly becomes outdated as scholars address these questions and push the field in new directions. Central to our agenda are the following questions:

What is the scope of roadway expansion? Despite attention on widening projects, there is little empirical data on this topic. What are the long-term trends of roadway expansions? How do trends vary by state? Do today's expansions and their impacts differ from past ones – if so, how? Are we in a new era of highway expansion?

How are roadway expansions framed and justified? Lee (2023) investigated motivations for highway expansions in California. What discourses do proponents use to justify roadway expansions in other contexts? What opposition do proponents face, and what resources and strategies do they use to resist change? In what ways do the conversations in transportation echo Lamb et. al's (2020) discourses of climate delay (e.g., redirecting responsibility and pushing non-transformative solutions)?

What is the political economy of roadway expansion? Construction industries, organized labor, consultants, land developers, etc. wield significant influence in highway expansion (Lee 2023). Yet their role in transportation policy and material benefits from roadway expansion is largely unexamined in transportation research, as is the governance landscape of transportation policy (Marsden & Reardon 2017). Who has power among and within industries and agencies? How are decisions made? How does research influence decision making? Meaningful change requires understanding these political and institutional dynamics, effective organizing, and collective action – not simply "better" ideas.

How do today's freeway fights differ from the freeway revolts of yesteryear? Modern-day freeway fighters in Portland have pilloried the Oregon DOT by focusing on the climate crisis. Advocates in Los Angeles emphasized environmental injustice and displacement. What frames, strategies, and resources do opponents of expansion projects use, and which have been most effective? How do the issues they raise compare to those from the

freeway revolts of the 1970s? What arguments are most persuasive with the public and policymakers? Scholars should work to understand, develop, test, and refine possible messages.

How are public sentiments about road building evolving? Officials often claim they are working for their constituents and that constituents want road expansions (Lee 2023). From within the anti-widening bubble among planning scholars, it is challenging but essential to accurately assess public opinion. Are public opinions shifting over time? Where? How? Why?

Where do we go from here? Transformative reforms seem impossible from our current position of auto dependency. What alternatives should we pursue instead? Who would win and lose from these alternatives, and what would be their unintended consequences? What policy tools, institutional structures, and funding mechanisms must accompany a shift away from roadway widening?

Answering these questions will not be easy. For many scholars, it will require learning new bodies of literature and new methods. Yet we argue that these investments are essential to produce meaningful transportation scholarship for the Anthropocene.

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Keywords: Transport policy, Framing, Political Economy, Climate Change, Public opinion

HOW AND WHERE DID OLDER PEOPLE TRAVEL BEFORE AND AFTER COVID IN DC?

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Individual Paper Presentation

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The COVID-19 pandemic disproportionately impacted older adults (Miller 2020), yet a gap remains in understanding how their travel behaviors specifically adapted to this unprecedented event. Although existing studies explore ridership recovery trends of the general population (e.g., Rowlands and Loh 2023), few research captures the nuances of how these patterns differ for older adults. We examined older adults’ transit usage before

and during COVID-19 and the trends of recovery through a case study of subway travel by older adults in Washington, D.C.

Using dataset from the Washington Metropolitan Area Transit Authority (WMATA), this research analyzed more than half a million subway trips made by older adults from 2018 – 2023. The study sought to investigate how travel of older adults changed during the pre-pandemic, early pandemic, and late pandemic periods and how the change compared with the travel behavior of all users. The data included travel dates, times, and origin-destination pairs, providing a detailed view of travel behaviours. We also used "points of interest" and "places of worship" data on Open Street Maps. This was merged with WMATA's subway station map to understand the relationship between older adults' travel and destinations that may attract them. Additionally, we used Metrorail ridership data for trips taken by all users published in WMATA's Ridership Data Portal to compare COVID recovery patterns between older adults and all users.

Our findings indicated weekday trips by older adults decreased 10% more than weekend trips during the early and late COVID periods. A similar pattern by all users (i.e. higher reduction of weekday trips compared to weekend trips) is reported previously (e.g, Rowlands and Loh 2023). Our study reveals a new insight that the average number of all trips (weekend and weekday) by older adults fell 77% during early COVID (2020), which is lower than the drop for trips by all subway users. However, trips by older adults recovered slower than that of all users. Possible explanations include the higher proportion of non-discretionary trips (such as commuting to work and school) by the general public during the late COVID period compared to older adults. Additionally, older adults may have chosen to retire after COVID (D'Angelo et al. 2024; Marcus 2021). We examined areas near subway stations to understand what destinations attract older adults. The most popular exit stations are clustered around the central area, aligning with the overall social activity hotspots across the city. The pattern of popularity of trip exit stations during early and late COVID periods are similar, implying that pandemic induced patterns persisted.

These findings highlight the unique and persistent challenges faced by older travelers, requiring more targeted solutions from transit agencies to ensure equitable access to mobility. By understanding the specific travel trends and preferences of older adults, especially in the context of disruptions like the pandemic, planners can develop more adaptable transit solutions.

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Keywords: Travel Behavior, Senior mobility, inclusive public transit, urban planning, COVID-19

HOW DID THE BUILT ENVIRONMENT AFFECT TRAIL USE AFTER THE COVID-19 OUTBREAK?

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Individual Paper Presentation

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During the pandemic, multi-use trails became essential as safe outdoor spaces for physical activity and mental health relief, especially when indoor venues were restricted (Oswald Beiler, 2023). They contribute to public health by enabling social distancing and encouraging active transportation with a pivotal role in maintaining community well-being and resilience in the face of lockdowns and mobility constraints. Yet, the pandemic also highlighted the challenges faced by trail planners and managers, such as limited availability and the strain of user congestion, which intensified accessibility and safety concerns. Consequently, enhancing the efficiency of trail usage, especially for underutilized paths, emerged as a vital task for planners and managers during such public health events. Past research has identified the relationship between the built environment and trail usage (Lindsey et al., 2006), such as the positive correlation between population density and trail usage efficiency. This knowledge is invaluable to planners because it enables policymakers to effectively adjust policy choices, stimulating trail usage efficiency through the strategic shaping of the built environment. However, this knowledge may need to be updated during a pandemic. For instance, trail usage might decline in densely populated cities while increasing in less densely populated areas (Zhang & Fricker, 2021).

This study analyzes multi-use trail usage data collected from counters in the Greater Cincinnati region, tracking usage changes after the COVID-19 outbreak and categorizing them into growth (2019-2020), decline (2020-2021), and adjustment (2021-2022) phases. Through model fitting, we found that the Multiscale Geographically Weighted Regression (MGWR) is more suitable than Ordinary Least Squares (OLS) and Geographically Weighted Regression (GWR) for exploring how the built environment affects urban trail usage changes at different stages. Specifically, the major advantage of MGWR lies in its attention to spatial non-stationarity, assigning individual bandwidths to each variable, allowing for a nuanced understanding of the dynamic relationship between the built environment and trail usage over the course of the pandemic.

This study found that, as compared to pre-pandemic levels, the utilization of trails remains high in the aftermath of the pandemic in our study region. Although the outbreak of COVID-19 made trails at urban edges highly attractive, leading to increased usage, this growth pattern in usage ultimately returned to urban core areas. Regarding the built environment, during the growth phase, eliminating barriers to accessing trails could make them more popular, especially on the urban periphery. In the decline phase, enhancing the connections between open spaces, suburban pedestrian infrastructure, and trails can help prevent substitution effects. Furthermore, a polycentric and dense urban form can enhance the efficiency of trail usage at any time. During the decline period, public transit commuters in central urban areas increased their usage of trails, while vehicle commuters in the same areas made greater use of trails during the adjustment period. The findings suggest that future land-use and transportation planning should prioritize enhancing the accessibility and connectivity of trails, particularly in suburban areas, and adjust urban development to support a polycentric and dense environment, thereby improve the efficiency of trail usage or similar active transportation infrastructure in future pandemics.

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Keywords: multi-use trails, built environment, COVID-19, multiscale geographically weighted regression

HOW FINANCIAL SUPPORT FOR TRANSPORTATION AFFECTS FAMILY & INDIVIDUAL STRESS

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Individual Paper Presentation

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Low-income families face significant transportation challenges, including a lack of access to reliable transportation, high transportation costs, long travel times, and unsafe travel conditions (Curl, Clark, and Kearns, 2018; Kim, et al., 2024). These compounding challenges are likely a source of significant stress. While there are many studies on low-income households and stress (Brisson, et al., 2020), the role of transportation as it relates to stress is less well-developed. Scholars have examined the relationship between transportation mode and subjective well-being and happiness, finding that public transit users are the least happy with their journeys and most likely to have negative emotions (Zhu and Fan, 2018; Morris and Guerra, 2015). However, these studies have not focused explicitly on low-income individuals; nor have they explored the relationship between transportation interventions and changes in stress or happiness.

This paper addresses this gap in the literature by examining whether financial assistance for transportation eases stress among low-income travelers. The paper explores this issue through a content analysis of interviews with 35 low-income adults of differing household compositions before and during their participation in Los Angeles' Mobility Wallet program. Program participants received a monthly prepaid debit card of $150 to offset the costs of their transportation expenses. Our findings are based on interviewee responses to questions about the effect of the Mobility Wallet on their travel experience, household budget, and overall life satisfaction.

Our data show that before the program, transportation-related stress stemmed from the lack of reliable public transportation, reliance on other people, safety concerns during transit trips, overall conditions of poverty, and the lack of financial resources for transportation and other expenses. These stressors were particularly prevalent among households with children. After interviewees received their monthly transportation funds, many highlighted the role of the program in providing stress relief across multiple aspects of their lives. Reduced stress came from paying for on-demand Uber and Lyft rides to avoid being late, showing up early for work and having time for meals, engaging in more social activities, and having extra financial resources. Further, the transportation funds helped

interviewees cope with unexpected life shocks such as housing precarity or the loss of a personal vehicle. Stress relief outcomes were more measured for households with children because the monthly assistance covered a smaller percentage of their transportation costs, as all program participants received the same monthly dollar amount regardless of household size. Additionally, some interviewees reported that given the difficulty of their lives, transportation support could only go so far in easing stress.

These findings highlight the role of targeted transportation subsidies in stress reduction. The Mobility Wallet provided households with additional household income, which helped to alleviate some financial stress; it also enabled participants to manage their use of transportation modes more flexibly, easing anxieties associated with travel itself. The Mobility Wallet alone is not a substitute for more generous social support required to address larger issues of racial and income inequality. However, the data suggest that it can complement other service and infrastructure investments in improving the quality of life for low-income travelers and their households. This paper highlights how financial support for transportation is a new and novel way to improve transportation outcomes.

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Keywords: Transportation, program evaluation, affordability, equity, qualitative methods

IDENTIFYING HIGH-RISK LOCATIONS FOR EMERGENCY MEDICAL SERVICES DELAY

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Individual Paper Presentation

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Background

Emergency Medical Services (EMS) delay poses a challenge to public health, especially in ultra-dense cities and aging society. Ambulance response time (ART) is a key performance indicator for the urban EMS system, which refers to the time interval from when the ambulance is dispatched to leave the EMS facility to when it arrives at the call site. Established studies have discovered that ART is significantly correlated with weather, time, road network etc. The inaccuracy of ART predictions by map services (e.g., Google Maps) applicable to regular vehicles suggests that the built environment can affect ambulance travel differently to regular vehicles. Comprehensive investigation of the impact of the built environment on ART is needed for further reducing built environment obstacles to ambulance travel. And the capacity to identify high-risk locations for EMS delay at the building-level will be critical to precise optimization of urban EMS systems.

Methods

Standing on an urban planning perspective and supported by disciplines including emergency medicine and transportation, our study develops a quantitative-qualitative approach to construct a building-level ART prediction model and then validated it with ambulance drivers' experiences. A comprehensive theoretical framework is tailored for ART prediction incorporating new built environment factors of land use and development intensity. Based on data on 73,129 ambulance trajectories, a machine learning model is constructed and then employed to predict the ART for each of the 253,475 buildings in the central city of Shanghai under multiple combinations of traffic periods and weather conditions.To further understand the mechanisms by which various predictors influence ART and to validate the prediction model, we interviewed 10 ambulance drivers by telephone.

Findings

The results show that the accuracy of high-risk buildings for EMS delay (namely ART of longer than 12 minutes) achieves 91%. The performance of the model with built environment factors improved by 10% compared to the original model without such factors. Three of the new built environment factors, medical POI density, educational POI density and floor area ratio (FAR), appear near the top of the factor importance ranking. The buildings in some large single-functional lands are identified as high-risk whenever. Moreover, dense entrances to medical, educational or business high-FAR lands and the lack of bus priority lanes along the ambulance route result in longer ART during workday morning and evening peaks.

Ambulance drivers are interviewed. The most mentioned specific built environment factors impeding ambulance access were medical facilities (5 drivers mentioned hospital entrances) and educational facilities (5 drivers mentioned school entrances), followed by business areas (3 drivers mentioned) and residential areas (2 drivers mentioned). The drivers experiences not only validate the important role of the above three built environment factors but also emphasize the value of bus priority lanes for ambulance to borrow for swift access during traffic peaks.

In addition, to illustrate how this work would be applied, we simulated the effects of possible built environment interventions (adding an EMS facility and modifying hospital entrances) in two case areas predicted to concentrate high-risk buildings, and it presents an 83% and 35% reduction in high-risk buildings, respectively.

Implications

Our study provides a new computer-based tool for municipalities, EMS operators and urban planners to pinpoint the service blind spots of such urban emergency systems (including EMS, fire, etc.) and to develop optimized interventions. To reduce EMS delays in ultra-dense cities, our findings highlight the need for adding EMS facilities or opening emergency access in large single-functional lands, modifying inappropriate designs of entrances to medical, educational or business lands with high FAR, and providing more bus priority lanes to facilitate ambulances borrowing these lanes.

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Keywords: built environment, ambulance response time, healthy city, machine learning

IMPACT OF MAJOR TRANSPORT PROJECTS ON HOME VALUES IN MONTREAL, CANADA

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Individual Paper Presentation

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Accessibility gains from new public transit infrastructure lead to an increase in property prices in catchment areas of these projects, with some spill overs in other parts of the region (He, 2020). The positive impacts on land values start taking effect upon the announcement of the project (Knaap et al., 2001). The construction period of such large projects can be disturbing and prolonged leading to some losses in the gains observed after the announcement (Chatman et al., 2011). In 2016, plans were announced for the construction of the Réseau express métropolitain (REM), a new $8B CAD light-rail system in Montreal, Canada. The first phase of the project started operating in Summer 2023. Our study investigates the impact of the REM on housing prices in the region before and after operation using a hedonic data analysis approach. We use data from the sales of over half a million residential properties over twelve years (2012 to 2023), provided by a multiple listing service company. The dataset includes the unit and neighborhood characteristics, as well as sale date and price. We split the data into two groups based on their location: catchment area (within 1,500 meters from the entire system) and out-of-catchment area units. With the start of operation, in 2023, we split the catchment area group into operating and non-operating zones.

Our preliminary results showed that, between 2012 and 2016, home values increased yearly by an average of 2.09% in out-of-catchment areas and 3.05% in catchment zones. In 2017, after the announcement of the REM, home prices in the entire region increased by an average of 5.62%. Catchment area homes values increased by 6.23%, which is 1.11% higher than out-of-catchment homes. This confirms the capitalization impact of the planned investment on housing units, even before the beginning of construction. The housing market witnessed an unprecedented rise in prices starting 2020, due to the impacts of COVID-19 on teleworking patterns. Between 2020 and 2022, housing units' prices rose annually by 14.57% in out-of-catchment areas and only by 10.66% in catchment areas, showing a decrease in interest in locating near public transit. The surge in mortgage rates in 2023 led to a drop in housing prices for properties in out-of-catchment areas (1.17%). In 2023 the REM also started operation, within the catchment area around the nonoperating zone housing prices experienced a slight increase (0.83%), while the catchment area around the operating zone experienced a decline in prices (4.01%). This decline was particularly exacerbated for the latter group due to complaints from residents living along the operating section about disturbances caused by the noise and vibrations from the REM. Our findings display the quick reaction of the housing market to positive anticipated outcomes (accessibility gains) and negative externalities (operation noise) caused by new transport projects. The results underscore the importance of planning for high-density transit-oriented developments near new stations to capitalize on the land value gains and highlight the sensitivity of the housing market to external shocks and changes.

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Keywords: Transport project, Investment, Home Value, Accessibility, LRT

IMPACT OF MICROMOBILITY SYSTEM SIZES ON USAGE PATTERNS: PLANNING INSIGHTS

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Individual Paper Presentation

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According to the National Household Travel Survey, 35% of all car trips in the United States cover distances of under 2 miles. The introduction of shared micromobility systems, such as bike-sharing and scooter-sharing, expands transportation options for short journeys, particularly for the first and last miles of travel. Establishing robust

shared micromobility solutions can enable individuals to complete these short trips without relying on personal vehicles or taxis, potentially alleviating traffic congestion and environmental concerns. Nevertheless, a significant gap in this domain pertains to the absence of data-driven design and planning implications for shared micromobility systems that can adaptively apply to different cities, especially regarding micromobility system size such as fleet size and service area. To address this gap, we conducted an empirical study on micromobility usage patterns across 62 cities of varying sizes, aiming to characterize how the size of shared micromobility systems influenced usage patterns. Here, we employed geospatial data analysis, cluster analysis, spatial regression, and eXtreme Gradient Boosting (XGBoost) models, utilizing both general and individual trip data, as well as socio-demographics, the built environment, Points of Interest (POI), and street view images (SVIs) data. Our analysis revealed temporal and spatial variations in shared trips, typical trip origins and destinations, OD (Origin-Destination) flow patterns, and trip purposes across different cities. The results indicated that in larger systems, shared trips generally exhibited two daily peaks, with trip origins and destinations typically including locations like parking facilities, banks, restaurants, and schools. Conversely, in smaller systems, shared trips on weekends usually exceeded those on weekdays, occurring predominantly during nighttime hours, and trip origins and destinations were often linked to venues such as pubs, theaters, parking areas, and restaurants. Consequently, smaller system sizes tended to cater more to non-commuting activities, while larger system sizes accommodated both commuting and non-commuting activities. Meanwhile, we concluded that trip behaviors could also inform the optimization of system sizes for shared micromobility programs. Overall, these insights offer valuable guidance for designing and planning shared micromobility facilities, encompassing considerations such as fleet size, service area, and micromobility device placement, to enhance user efficiency and satisfaction with shared micromobility systems.

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Keywords: Shared micromobility, System size, Usage pattern, Micromobility facility planning, Machine learning

IMPACTS OF ACTIVE TRAVEL INFRASTRUCTURE ON THE GREEN GENTRIFICATION CYCLE

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Individual Paper Presentation

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In the face of climate change adaptation, cities are embracing green and active transport initiatives (i.e. walking, cycling, and transit). While both types of interventions provide important benefits to city residents, they increasingly pose perceived threats of gentrification, potentially excluding vulnerable residents and sparking debates on the fairness of creating "livable" cities that might exacerbate social inequities. Within the context of this complicated narrative about active transportation infrastructure, greening, and social inequity, there is an unmet need for an integrated analysis that considers the benefits of supports for active travel and greening together relative to gentrification. Examining census tract-level decadal changes in Seattle, Washington between 1990 and 2020, this research evaluates the neighborhood-level relationship between active travel infrastructure, green space access, and gentrification. Specifically, the study reveals the dynamic relationship between the deployment of bike lanes, high-frequency transit stations, and green space amenities in gentrifying and non-gentrifying neighbourhoods.

While links between gentrification and transportation (Chava & Renne, 2022; Kiani et al., 2023) have been analysed separately from links between gentrification and greening (Rigolon & Collins, 2023), the extent to which these links co-evolve within neighborhoods has not received close attention. This distinction matters because greening and active travel are often part of the same approach to making neighborhoods more livable. On the citywide scale, Seattle has seen sustained growth in recent decades, with a long history of racially divided access to green space (Connolly & Anguelovski, 2021) and has been found to have experienced continual processes of green gentrification since the 1990s (Anguelovski et al., 2022). In parallel, Seattle has significantly invested in its public transit network, including the construction of a light rail line, which has been undergoing continuous expansion since its opening in 2009. In parallel, the City has been implementing an ambitious Bicycle Master Plan that aims to add 100 miles of protected bicycle lanes and 250 miles of neighborhood greenways. However, to date, there is no detailed study of neighborhood-level green gentrification trends in Seattle or of the role of transport investments in shaping and/or reflecting those trends.

Using the green space dataset developed as part of the EU-funded Greenlulus project (2016-2021, GA670834) described in Connolly and Anguelovski (2021), we calculate the percentage change in green space coverage for each tract. Active transportation investments are assessed by examining changes in high-quality bicycle and transit networks, which are more likely to lead to gentrification. Using open-access data provided by the City of Seattle, we determine the percentage increase of high-quality bicycle lanes (buffered bike lanes, protected bike lanes, neighborhood greenways, and off-street trails) and the percentage increase of tract area that has access within a 500-metre network buffer to a high-quality transit station (light rail, bus rapid transit, and streetcar). Lastly, the gentrification score is built from the Longitudinal Tract Data Base and encompasses changes in real estate values and demographics (education, income, professional occupation, poverty level, and ethnicity), as detailed in Anguelovski et al. (2022).

The results allow us to specify the temporal patterns that characterize social and physical changes at the neighborhood scale and further theorize the sequencing of events that may generate more or less socially-just outcomes as measured through the lens of gentrification. By looking at Seattle, we seek to identify trends within a "leading case" wherein some of the strongest effects can be observed as a means for hypothesizing how these effects might then be extrapolated to other environments. This leading or critical case approach is a crucial step in

the theory development process that we expect will enable the refinement of our thinking about the relationship between active travel, greening and social equity. Ultimately, this thinking offers valuable insights to guide more equitable transportation policy approaches in urban development that account for interactions with social and ecological changes in the city.

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Keywords: active transportation, urban greening, gentrification, neighborhood change, livability

IMPACTS OF REMOTE WORK ON CAR TRAVEL AND TRANSIT RIDERSHIP IN THE USA

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Individual Paper Presentation

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Remote work's potential as a sustainable mobility solution has garnered attention, particularly due to its widespread adoption during the COVID-19 pandemic. Our study systematically examines the impacts of remote work on vehicle-miles traveled (VMT) and transit ridership in the United States from April 2020 to October 2022, and finds a significant and negative relationship between them: a 1% decrease in onsite workers corresponds to a 0.99% decrease in vehicle miles traveled and a 2.26% decrease in transit ridership. Notably, a 10% decrease in on-site workers compared to the pre-pandemic level could yield a consequential annual reduction of 191.8 million metric tons (10%) in carbon emissions from the transportation sector, alongside a substantial $3.7 billion (26.7%) annual loss in transit fare revenues within the contiguous US. Temporally, the impacts of remote work on the recovery rates of VMT and transit ridership display remarkable temporal consistency over the entire study period.

In terms of methodology, utilizing panel datasets providing extensive spatiotemporal coverage, we first employ the fixed-effect regressions, where the dependent variables are the recovery rates of VMT and transit ridership. By including the regional and month fixed effects in the models, we can effectively control for the region- and time-specific variations. In addition to the fixed effects, we account for other relevant covariates, including GDP per

capita, unemployment rate, the recovery rate of transit services, transit fares, population size, net migration rate, reopening status, reported COVID cases per capita, and vaccination rate. These covariates help to control for various factors that could potentially impact the fluctuations in VMT and transit ridership throughout the duration of the study. The primary independent variable of focus is the recovery rate of onsite workers.

However, fixed-effects models have limitations, such as omitted variable bias and reverse causality. Therefore, we adopted an instrumental variable approach using two-stage least squares (2SLS) estimation. Specifically, we used the percentage of suitable remote workers in each state/MSA for each month as our instrument. This instrument was derived by considering industry-specific percentages of suitable remote workers and variations in employment levels across different industries in each state/MSA. By employing this instrument, we effectively removed variations in the endogenous predictor (i.e., the percentage of onsite workers compared to pre-pandemic levels) unrelated to remote work, including changes due to shifts in unemployment rates. Additionally, we examine the spatial heterogeneity and temporal evolution of the causal effects, and estimate the corresponding marginal effect of remote work on the carbon emissions in each state and that on transit fare revenues in each MSA.

The widespread adoption of remote work offers significant benefits in terms of on-road carbon emissions. Notably, organizations worldwide have embraced remote work and are committed to maintaining these options in the future. This persistent trend is poised to generate enduring reductions in on-road carbon emissions, underscoring the need for companies and policymakers to recognize the environmental advantages of remote work and for governments to consider the incorporation of remote work strategies into their initiatives for transportation decarbonization. However, our research also reveals a significant challenge related to transit fare revenue loss due to reduced transit ridership. To address this challenge, transit agencies must focus on enhancing customer attraction and revenue generation while promoting sustainable urban growth through viable alternatives to car-centric and fuel-inefficient development. Given that remote work often involves home-based flexible trips, transit agencies can invest in on-demand services, flexible routing, and non-commuting trips in residential areas, thereby diversifying their service offerings beyond traditional fixed-route services primarily designed for regular commuting in the pre-pandemic era.

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Keywords: Remote work, Telecommuting, Vehicle miles traveled, Public transit, Work from home

IMPACTS OF TRANSIT ACCESS & SUBURBANIZATION ON SPATIAL MISMATCH OF THE POOR

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Individual Paper Presentation

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Post-industrialism and gentrification in US urban areas have expanded spatial mismatch (Kain, 1968) issues beyond urban centers, affecting suburban areas as well (Booi, 2023). Despite job opportunities moving to suburban centers, limited transit access poses challenges for the suburban poor in reaching nearby jobs (Blumenberg & Agrawal, 2014; Liu & Bardaka, 2021), trapping them in poverty despite increased job availability through suburbanization (Hu, 2015; Kneebone & Garr, 2010). Additionally, the poor face an affordability paradox, choosing affordable housing against transit connectivity and accessibility (Hu, 2015; Kramer, 2018), exacerbating spatial mismatch for them. Previous studies examining suburbanization and spatial mismatch among the poor have often overlooked the combined effects of factors like transit accessibility, suburban job centers, land use, and affordability (Delmelle et al., 2021; Delmelle & Nilsson, 2020; Liu & Bardaka, 2021). Given the current urban landscape, exploring these dynamics across different spatial locations and temporal dimensions is vital to reveal variations in transit accessibility, affordable housing, and spatial mismatch levels among the poor (Covington, 2015; Hu & Wang, 2017).

We employ statistical and machine learning models to investigate the spatial-temporal interplay between these factors and their impact on spatial mismatch for the poor, particularly in various suburban areas. We rely on the American Community Survey (ACS), Longitudinal Employer-Household Dynamics (LEHD), and local Metropolitan Planning Organizations (MPO) to collect longitudinal datasets for 2010, 2015, and 2019. These datasets will encompass variables like gravity-based multimodal job accessibility (separated by job types) (Pan et al., 2020), socioeconomics and housing characteristics, poverty rates, and network distance to locations of interest. Subsequently, to capture spatial dynamics within these variables, we detect spatially autocorrelated variables with a significant Moran's I and lag them (Anselin, 1995). Then, we use hierarchical clustering (Giuliano et al., 2019) to segment the metropolitan region into distinct categories: urban, inner-ring suburbs, outer-ring suburbs, and exurban areas. Subsequently, a categorical variable will be created to label these areas. Finally, we develop several structural equation models tailored to each sub-region, and a model covering the entire metropolitan area. These models will help empirically test how land use and the affordability paradox influences spatial mismatch, particularly among the suburban poor. We hypothesize that spatial mismatch will be most pronounced for the suburban poor. Furthermore, within suburbs, the highest spatial mismatch levels (driven by the affordability paradox) will be observed among the poor residing in inner-ring suburbs. We focus on the Dallas-Fort Worth Metropolitan Area and our unit of analysis are the Traffic Analysis Zones (TAZ).

The study's significance lies in its comprehensive investigation of spatial mismatch in suburban areas. By examining the interplay between suburbanization, transit accessibility, affordable housing, and land use factors, our research aims to uncover the underlying dynamics contributing to spatial disparities among low-income populations. Preliminary maps reveal blue-collar job accessibility shifting towards suburban areas. Expected findings include a nuanced understanding of how the affordability paradox manifests in suburban contexts, where limited transit access may hinder the accessibility of the poor despite job opportunities shifting to suburban centers. We aim to offer a comprehensive exploration of the complexities surrounding spatial mismatch in suburban areas, particularly for the suburban poor, shedding light on the interplay between transit accessibility, affordable housing, and land use factors. By identifying areas with higher transit accessibility but limited housing affordability, interventions can be targeted to enhance housing affordability, alleviate social and economic disparities among the suburban poor,

promote inclusive growth, and mitigate spatial inequalities. Accordingly, our study will help policymakers and planners develop interventions to reduce spatial mismatch by enhancing housing affordability in areas with higher transit accessibility and addressing socioeconomic disparities among the suburban poor.

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Keywords: Spatial Mismatch, Suburbanization, Transit Accessibility, Affordability Paradox, Social and Economic Disparities

IMPLEMENTING ELECTRIFIED MOBILITY HUBS: A CASE STUDY FROM PUGET SOUND AREA

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Individual Paper Presentation

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The transportation sector is transforming infrastructure and service delivery to accommodate dynamic demand changes while striving to meet GHG emission reduction targets. Despite transit's potential to lower GHG emissions, the COVID-19 pandemic precipitated a significant decline in ridership that persists below pre-2020 levels(APTA, n.d.; King County, 2024). Furthermore, a local commuter survey revealed a decreased reliance on public transit across various trip types, including healthcare, leisure, and social visits (Ashour et al., 2023), challenging the sector's reliance on traditional transit for decarbonization.

In this milieu, this study identifies underutilized park-and-ride facilities as potential Electrified-Mobility Hubs (EMHs), signifying a pivotal move from fossil fuels towards electrification by integrating various transport modes. Prevailing literature has touched upon the functionality and typology of EMHs(Arnold et al., 2023; Hosseini & Caulfield, 2023; Machado et al., 2018; Wong et al., 2020), yet the pragmatic aspects of planning and implementation from the organization's point of view remain underexplored. Our research addresses this gap with

the central inquiry: In terms of implementation, how can the concept of EMHs translate into concrete planning and action?

Employing a multi-faceted methodology, this study integrates peer-reviewed and grey literature reviews, site analyses, and collaborative engagements through regular meetings and workshops with stakeholders from three public agencies dedicated to electrifying transportation in the Puget Sound Area. The workshops probed key issues, including the spectrum of physical, functional, and operational needs for EMHs, prevailing site conditions, and agency perspectives on electrification initiatives and transit-oriented development.

Our initial findings reveal agencies struggling with:

Technological Ambiguity: There is trepidation regarding the future viability and compatibility of charging technologies.

Asset Specificity: Concerns about obsolescence in the wake of technological advancements prompt queries on the adaptability of existing facilities.

Business Model: Divided opinions exist on whether to internally manage charging infrastructure or outsource, necessitating a careful evaluation of both approaches.

Service Ambiguity: There is concern that expanding EV charging for non-transit users may conflict with organizational missions.

Despite these uncertainties, a pilot study using an underutilized facility is proposed to test and refine policies. This cross-agency collaboration not only facilitates a shared understanding of policymaking and site design for EMHs but also illuminates the complexities of multi-level governance in transportation planning.

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Keywords: Decarbonizing Transportation, Electrified Mobility Hub, Electrified Bus, Urban Design

INFLUENCES OF TELECOMMUTING ON HOUSEHOLD TOTAL TRIPS AND VMT GENERATION

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Individual Paper Presentation

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The Covid-19 pandemic, alongside changes in technology and shifts in the job market, has led to increasing numbers of workers in the U.S. telecommuting, or 'working from home' (Speroni & Taylor, 2023). As many workers and businesses shift to models allowing for some or all work to be carried out off-site, traditional patterns of commuting are shifting, causing potentially widespread impacts on all aspects of the transportation system. Much of the previously available data on telecommuting classified workers as either fully remote or fully on-site. In the post-pandemic economy, increasing numbers of workers are 'hybrid' telecommuters, working from home part-time (Speroni & Taylor, 2023). While telecommuting provides workers with the ability to decrease vehicle miles traveled (VMT) by eliminating commutes, previous research has shown that in many cases those who work from home actually generate more VMT than their counterparts, perhaps due in part to having more time to generate non-work trips for leisure and other purposes (Zhu & Mason, 2014; Su, McBride, & Goulias, 2021; Liu & Su, 2021) . As telecommuting becomes increasingly popular, understanding the broader impacts of this trend on travel outcomes is necessary to allow for planning processes that limit VMT generation and its negative social, environmental, and health effects, and to reassess transit systems to meet the changing travel needs of the population.

Using a household travel survey data from California, where a proliferation of high-tech companies and industries allowed for the early adoption of telecommuting models, this research aims to quantify the influences of telecommuting on household trips and VMT generation. It advances the current understanding of the influences of telecommuting on household trips and VMT in three ways. First, it explores these influences at the household level with precise locations of where people live to control for both sociodemographic characteristics and neighborhood built environmental features. Second, it employs a hierarchical two-stage modeling approach. Not only is this the appropriate method to analyze variables with large numbers of zeros, but it can also handle a nested data structure and take spatial autocorrelation and heterogeneity into account. Third, this study uses data from California, where telecommuting started earlier than elsewhere, allowing for a longer time for the impacts of telecommuting to be seen.

This study finds that the relationship between the frequency of telecommuting and an increase in household trips remains statistically significant considering built environment factors. However, the telecommuting-occasional group (1-5 days a month) is the only frequency of telecommuting associated with an increase in household VMT generation when the built environment is controlled for. This finding presents an important impact of telecommuting on travel behavior. That is, an increase in total household trips does not necessarily translate into an increase in household VMT when the built environment is controlled for.

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Keywords: telecommuting, work from home, trip generation, VMT, built environment

INFRASTRUCTURE, TRANSIT INVESTMENTS AND POPULATION DISPLACEMENT IN DENVER

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Individual Paper Presentation

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Not all transportation investments help all communities, since some can negatively impact groups within society. Urban renewal projects, for instance, led to a decrease in transportation access, particularly in minority and low-income neighborhoods (Bardaka et. al. 2018). Studies have shown that disproportionately high transportation costs can reduce access to healthcare, education, and job opportunities (Syed et al. 2013, Yeganeh et. al. 2018). Contemporary rail and bus-rapid transit investments, while conventionally considered beneficial to marginalized communities, can also be problematic. They may not connect people in these communities with their destinations of choice, while also resulting in reductions among regular bus services. Improved infrastructure and connectivity may even lead to adverse land use changes like gentrification and increase the pressures of displacement.

Our study uses 634,000 individual property transactions in the Denver Metro area from 1993 through 2021 to track changes in housing affordability within our study geography during the same period. We hypothesize that changes in property value are driven by factors like investments in roadway infrastructure, multimodal accessibility, and connectivity. In its turn, the change in property value drives changes in the sociodemographic makeup of the neighborhood, leading to displacement and gentrification. Thus, we first create a quality of neighborhood marker for all census block groups (CBGs) within our study area as a latent variable composed of indicators like park/green space area within the CBG, job and residential entropy of the CBG, intersection density, number/quality of schools, area of water bodies within the CBG, among others. We use other variables like sidewalk and bike infrastructure availability, available transit type, and transit stop density within a 1-mile buffer of the property as indicators of multimodal connectivity. We map these indicators and neighborhood quality markers to changes in property values over time and then map changes in property values to changes in sociodemographic in the CBGs using a SEM-MIMIC model (Muthen 2002).

The results of our study shed light on population displacement across the Denver Metro area over time as infrastructure and transit investments were made. As changes in community characteristics post investments are identified, policies related to price-controlled housing and rents could be implemented in efforts to control displacement of original residents post-investment. Our study also helps in comprehending the impact of transportation investments on communities over time with an increased understanding of complex issues such as the link between the supply of affordable housing and transit-accessible locations.

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Keywords: Transportation investment, Housing affordability, Redlining, Transit oriented development

INVESTIGATING THE FACTORS ASSOCIATED WITH CAR DEPENDENCE IN LOS ANGELES

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Individual Paper Presentation

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Los Angeles (LA) is one of the most car-dependent regions worldwide. It has a sprawled urban form, a well-connected highway system, and a limited set of reliable alternatives to private car travel (McIntosh et al., 2014). Previous studies show that extreme reliance on private cars results in numerous societal challenges, including traffic congestion, traffic fatalities and injuries, uncontrolled growth of greenhouse gas emissions, and fossil fuel dependency (Gudmundsson et al., 2016; Litman, 2019). As a result, it is imperative to promote alternative modes of transportation, particularly in car-dependent geographies like LA. This requires a comprehensive understanding of the factors influencing car dependence among LA residents.

This study aims to assess the determinants of car dependence in the LA region using a detailed travel survey, which was largely built on a previous mobility study that was applied to various cities worldwide, such as Berlin, Shanghai, and San Francisco. The study area included most of the City of LA and several surrounding cities in LA County. The survey was administered through an online opinion panel, spanning from mid-June to early-September 2023. The survey instrument was carefully designed to comprehensively capture the unique travel dynamics and behaviors prevalent in LA, particularly concerning car dependence and daily car usage. The survey questions include information on respondents' individual and household characteristics, travel-related attitudes, mode preferences for different trip purposes, and perceptions about their residential neighborhood. Quota sampling was employed to ensure that respondents' traits mirror the socio-demographic and geographic makeup of the population in the study area. Variables included in the quota sampling plan were age, race, ethnicity, gender, work status, annual household income, vehicle ownership, and residential location. A two-stage weighting process based on the same list of variables was applied to reduce any remaining deviations from the distributions of these variables in the local population. To account for objective built environment measures, we merged geocoded survey responses with the United States Environmental Protection Agency's Smart Location Database (SLD) version 3.0, which was published in May 2021. SLD is a rich dataset that includes more than 90 attributes summarizing characteristics such as

building density, land use diversity, urban design, transit accessibility, and destination accessibility at the census block group level (Chapman et al., 2021).

The final sample, which includes 1,235 respondents, consists of only car users (drivers and/or passengers) and those who provided reliable home address information that allowed geocoding. We will employ an integrated choice and latent variable (ICLV) model to examine the associations between individuals' car dependence (measured through self-reported private car trip frequencies for urban trips and long-distance trips), attitudes toward different transportation modes, transportation-related safety perceptions, objective and subjective built environment measures, and socio-demographics. An ICLV model integrates a standard discrete choice model with a latent variable structural equations model. This way, it could address unobserved heterogeneity more explicitly, enhance behavioral representation, and provide increased statistical efficiency by incorporating additional behavior-related information (Iogansen et al., 2023).

This novel study will yield significant insights into Angelenos' post-pandemic travel behavior. It will present a comprehensive analysis of factors that impact individuals' car preferences for daily and long-distance trips, with a particular emphasis on travel-related attitudes and the built environment. By identifying the psychological and neighborhood-level determinants of car dependence, this study will shed light on potential policies and strategies to reduce car dependence in the region. The findings will also help identify households that might be affected more than others by the lack of alternatives to private cars. Ultimately, this study will offer valuable insights for policymakers in developing sustainable, equitable, and just transportation policies for the LA region.

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Keywords: Car dependence, Psychological attitudes, Built environment, Travel behavior, Integrated choice and latent variable (ICLV) model

MEASURING SUBWAY'S IMPACTS ON URBAN VITALITY AND SOCIAL COHESION BY DMLDID

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Individual Paper Presentation

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Public transit plays a crucial role in promoting sustainable transport options. With better accessibility and affordability, people are expanding living circles and broadening visit patterns, contributing to consumption and interactions with amenities. The behavior changes would influence economic vitality and social cohesion among various income and race groups in the community. However, how to quantify such social impacts remains a question. We used a double/debiased machine learning based difference-in-differences approach with up-to-date granular mobility data in Massachusetts, U.S., to bridge the gap.

In Massachusetts, U.S., the Medford Branch of Green Line Extension (GLX), an extension at the northern end of the Massachusetts Bay Transportation Authority Green Line light rail system with 4.8 km in length and five additional stations, opened in December 2022. It is expected to stimulate the local economy and promote urban vibrancy for Somerville and surrounding cities. Abundant research has been dedicated to quantifying the influences of new subway lines, yet most infer human activities through neighborhood-level indicators, without specific investigation on the day-to-day economic situation of individual point of interest (POI) and attention to the developed countries' contexts, such as in the U.S., especially in the post-pandemic era. Moreover, methodologically, existing literature focused on using linear models for causal inference, while the non-linear relationship with the covariates may be neglected.

In this study, we quantified the influence of the Medford Branch of GLX on economic vitality and social cohesion via the changes of three outcome variables: daily amenity visits, weekly income diversity, and race diversity. While the first is captured by POI visit counts, the latter two are calculated based on the urban encounter evenness metrics by Yabe et al. (2023). We leveraged the daily visit patterns panel data to 904 POIs on 438 consecutive weeks from June 2022 to August 2023 in Somerville and two surrounding cities, Medford and Cambridge. We innovatively conducted causal inference using a double/debiased machine learning based difference-in-differences (DMLDiD) approach. Compared to the traditional linear or semiparametric DiD model, it demonstrates superior performance in handling high-dimensional covariates due to its greater flexibility in functional form and its ability to capture non-linear relationships through machine learning model, i.e., extreme gradient boosting (XGBoost) in this study. Such high predictive power is proved by significantly larger adjusted R-squared values for propensity score and outcome estimates.

The results show that the GLX has led to an average increase of 2.38 daily visits per POI at 0.01 statistical significance level. The income and racial diversity have improved by 2.35% and 2.32%, respectively, at 0.1 significance level. Our further investigation includes the spatial variation and amenity heterogeneity of the impacts. The methods of this research could also apply to transportation infrastructure planning in other cities, and our findings justify the social dimension of post-pandemic public transit promotion.

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Keywords: public transit, causal machine learning, difference-in-differences (DiD), urban vitality, social cohesion

MEETING CONTROVERSY WITH EMPATHY: A MULTIMEDIA APPROACH TO BICYCLE PLANNING

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Individual Paper Presentation

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Bicycle infrastructure planning is often plagued by controversy, with drivers opposing major financial investment and bicyclists indignant that their lives are at stake. It is essential that planners in car-dependent cities build empathy for bicyclists. Improving the safety, quantity, and connectedness of bicycle infrastructure networks requires finding ways to alleviate political divisiveness about biking among automobile drivers as well as local decision makers. In this paper, we answer the question: How can we build empathy for bicyclists in a car-dependent context where bicyclists are a minority of street users? In particular, we investigate the issues faced by bicyclists which must be shared to effectively build empathy among non-bicyclists, and the methods which are most effective at building empathy.

Beginning in August of 2022, a team of urban planning and engineering researchers at Arizona State University has collected several types of data related to bicyclists' experiences and the state of bicycling infrastructure in the city of Tempe, Arizona. The data was collected using both qualitative and quantitative methods, including semi-structured interviews with Tempe bicyclists, bicycle counting using motion-sensing cameras, lidar laser scanning to create a 3D digital twin that depicts the bicycling infrastructure within Tempe, and 2D and 3D first person view videos of bicycling along Tempe streets.

Then, the research team designed an immersive, multimedia event to share the rich data and facilitate discussions with city officials, local residents, bicycling advocacy groups, and others. The event will be held five times during April 2024, hosting a total of approximately 150 attendees (expected). As they rotate through a series of stations, participants will complete a survey about their roles, bicycling and driving experience in Tempe, and opinions about bicycling in Tempe; and a scavenger hunt to facilitate engagement with the data. Examples of stations include:

- A large screen showing first person videos of bicycling overlayed with related interview quotes;
- Virtual reality headsets showing 3D bicycling videos while riding a stationary bicycle;
- An interactive GIS heatmap of bicycle counts and points mentioned in the interviews;
- Point cloud visualization of the lidar data;
- A mosaic of 5,000 images of bicyclists captured by the motion-sensing camera;
- A list of tips and tricks from interviewees for new bicyclists to know about biking in Tempe; and
- A list of bicycling infrastructure improvements suggested by interviewees.

Following the self-paced exploration, participants will join a discussion session with the research team focusing on the following:

1. Which of the exploration stations was/were most effective in communicating the bicycling experience in Tempe? Why?

2. Which bicyclist experience(s) is/are most important for decision makers to understand? Why?

3. Which bicyclist experience(s) do you think is/are most important for non-bicycling automobile drivers to understand? Why?

Using qualitative content analysis of participants' written answers, we will determine which type of data and which display methods felt the most important and the most effective in building empathy toward bicyclists. We will also use statistical methods to compare the answers of people from different groups (bicyclists vs. non-bicyclists, drivers vs. non-drivers, gender, age, etc.).

The results of this research will help planners to bridge the gap between bicyclists and non-bicyclists, creating an environment where decision makers and drivers are informed and empathetic about the needs of bicyclists. The expected benefits of this are two-fold, resulting in better informed bicycle policy and infrastructure, and reduced conflict between street users.

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Keywords: Bicycle planning, Transportation policy, Community engagement, Car dependence, Decision making

META-ANALYSIS OF EMPIRICAL ESTIMATES OF INDUCED TRAVEL ELASTICITIES

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Individual Paper Presentation

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Despite its long-standing conceptualization and theorizations over several decades, induced travel is often disregarded, underestimated, or ignored in the evaluation of its environmental impacts on roadway capacity expansion projects. This neglect tends to inflate the perceived benefits of alleviating traffic congestion resulting from highway expansion initiatives while diminishing awareness of their environmental repercussions. One significant factor contributing to the marginalization of induced travel in the environmental review process results from the inherent limitations of travel demand models, which often lack comprehensive incorporation of the feedback mechanisms essential for precise prediction of the induced travel phenomenon.

Using a meta-analysis with a systematic literature review, this study aims to identify factors affecting the estimations of elasticities of induced vehicle miles traveled (VMT) and quantify the environmental and economic impacts of induced VMT. Through the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRIMSA), twelve studies on empirical estimates of area-wide induced travel elasticities were identified by the authors. This study applied meta-analysis and meta-regression models to pool the estimates of induced VMT across studies using statistical techniques such as weighted mean differences or effect sizes and calculate summary effect estimates and confidence intervals to assess the overall magnitude of induced VMT. In meta-regression, this study explores the impact of study-level characteristics (e.g., study design, geographic location, intervention type, etc.) on the estimates of induced VMT and identifies variables that significantly contribute to heterogeneity in the effect sizes across studies. Through sensitivity analysis and analysis of publication bias, the robustness of the meta-analysis findings and the influence of individual studies on the overall effect estimate and explore potential biases will be examined.

The summarized area-wide studies consistently demonstrate an induced travel effect resulting from roadway capacity expansions, even after accounting for various influencing factors and attempting to mitigate the endogeneity of roadway capacity. Short-term elasticity estimates range between 0.07-0.76 in the US and 0.07-0.99 across all studies, while longer-term estimates range from 0.26-1.06 in the US and 0.26-1.34 across all studies. The exclusion of studies incorporating local roads substantially narrows the elasticity ranges, indicating potentially lower elasticities for local roads compared to higher road classifications. Studies primarily focused on FHWA classes 1-4 roadways, with varying estimates of induced travel elasticities. Most studies controlled for factors affecting

VMT and attempted to address endogeneity using instrumental variables, with certain approaches yielding longer-term elasticities surpassing 1.0. The meta-analysis and meta-regression results of this study expect that taking variations in the estimates of induced travel demand into account helps improve the accurate estimation of many other relevant environmental, economic, and social impacts by roadway capacity expansions or transportation infrastructure investments. This approach also serves as a way to develop policy strategies for mitigating induced VMT effects for less GHG emissions along roadway expansion.

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Keywords: induced travel, elasticity, roadway capacity expansion projects, meta-analysis

MICROTRANSIT PERSPECTIVES AND OPPORTUNITIES IN SMALL AND MID-SIZED CITIES

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Individual Paper Presentation

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Microtransit is an on-demand, dynamically routed, shared ride public transit service operating in a fixed zone. Increasing in popularity in recent years, microtransit is often deployed to complement fixed-route service, extend fixed-route service, target a specific population (disabled people, healthcare trips), or replace fixed-route systems altogether when routes are underperforming or inefficient (Mayaud et al., 2021). The flexible service can fill transportation gaps for nondrivers, zero-vehicle households, disabled people, and individuals facing transportation insecurity that traditional fixed-route transit cannot provide due to political, economic, and operational constraints. Microtransit has the potential to improve accessibility for disadvantaged travelers, particularly low-income and transit-dependent communities (Bills et al., 2022).

However, microtransit has also faced scrutiny regarding equity, safety, and cost-effectiveness. Bonner and Miller-Hooks (2023) caution that equitable service zones are challenging to create and require a balancing of transportation need and potential ridership. Similarly, Ghimire et al. (2024) examined issues with microtransit systems caused by minimal existing policy, a lack of continuous funding for microtransit programs, safety concerns regarding virtual stop locations, and the ability to balance supply and demand equitably.

This study contributes to the existing scholarship on the implementation and evaluation of microtransit service from agency and user perspectives. This comparative, qualitative case study of microtransit systems in Austin, TX (Pickup by Capital Metro) and Wilson, NC (RIDE Wilson) examines the best practices, challenges, and future

opportunities of microtransit in small to mid-size cities. This study builds upon previous work by Hanson et al. (2021) that developed a framework to evaluate microtransit service from a performance measurement perspective using data provided by Capital Metro staff related to service and agency goals. Using semi-structured interviews with public agency staff and in-person focus groups with microtransit riders in each city, I find that microtransit in primarily used for access to grocery stores, first-and-last mile trips to fixed-route stops, and to access education. Microtransit can fill mobility and accessibility gaps to destinations critical for public health and well-being. The flexibility, reliability, and spontaneity of microtransit service influences why riders decide to use the service regularly. This research contributes to transportation planning scholarship on the potential for microtransit to fill service gaps in areas in which traditional fixed-route service may be underperforming or unfeasible. This comparative case study provides insights into the microtransit planning process, service evaluation, and rider experience that can be applied to other small-to-mid-sized urban areas to improve access and mobility.

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Keywords: microtransit, public transit, accessibility, rideshare, mobility

MOBILITY & RACIAL-SPATIAL ISOLATION IN SUBURBS: A QUANTITATIVE EXPLORATION

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Individual Paper Presentation

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In the U.S., transportation scholars have long documented racialized disparities in mobility and access, and so opportunities. Amidst the legacy of state-sanctioned practices and policies that confined low-income communities of color to neglected urban neighborhoods away from white suburbia, scholars concerned with such transportation disparities have tended to focus on urban areas. In recent decades, however, the traditional racial-spatial divide in U.S. regions has blurred, with an unprecedented growth of low-income residents of color in suburbs, which are experiencing increased levels of racial segregation and, in some areas, economic distress. Of course, suburban landscapes differ from urban ones, particularly in terms of the vast dispersion of land uses and activities—which

shape people's ability (or inability) to move through space and reach destinations. Amidst such complex and changing regional terrains, it is important to consider whether the expansion of low-income people of color to increasingly segregated and dispersed suburbs has introduced additional or different dimensions of racialized disparities in mobility and access.

Toward this end, the larger research project uses a mixed methods approach to explore the relationship between mobility and racial-spatial isolation in suburbs. This paper uses quantitative data and methods to understand the association between racial differences in mobility and racial isolation of people of color in suburbs compared to those in cities in California.

To measure racial differences in mobility—including car and transit access—I draw on data from the 2017 National Household Travel Survey (NHTS) California Add-On, the 2019 5-year American Community Survey (ACS), the Accessibility Observatory Database, and the EPA Smart Location Database. To measure racial-spatial isolation, I conceptualize it as not just based on an individual's residential location, but on an individual's "activity space," which encompasses the areas that include all locations that they visit as part of their daily activities and travel (Kwan 2012). Using the confidential 2017 NHTS California Add-on and the 2019 5-year ACS estimates, I construct a racial-spatial isolation metric that shows whether individuals are exposed to a more mono-racial or multi-racial population within their activity spaces—and so the extent to which they are or are not racially isolated (Jones & Pebley 2014).

Using these data, I produce descriptive statistics and linear regression models to predict the socioeconomic characteristics of activity spaces as a function of individual characteristics, particularly race and mobility, across suburbs and urban areas. I hypothesize that suburbanites of color experience higher levels of racial isolation within their activity spaces than their white counterparts. I anticipate finding that restrictions on the mobility of suburbanites of color—primarily in the form of lower levels of car access and inadequate transportation alternatives due to the lack of density and state neglect—are positively associated with racial isolation.

This paper is relevant to both planning scholars and practitioners. In terms of scholarship, by focusing on suburbs, this analysis expands the spatial scope of the transportation planning field, which traditionally focuses on the urban—particularly when considering racial and economic disparities in mobility and access. In terms of planning practice, this research identifies emergent transportation conditions with which planning agencies must contend—and raises the importance of spatial isolation when considering how to remove barriers to mobility and access. Indeed, interventions to improve mobility and access are quite different in dispersed suburban environments than in dense urban ones—and this research helps planners understand the unique transportation challenges and needs facing low-income suburbanites of color, particularly in the context of segregated and dispersed suburbs.

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Keywords: Mobility, Racial-spatial isolation, Suburbs, Activity spaces, National Household Travel Survey (NHTS)

MODE SHIFT: SHIFTING GEARS OR TAILPIPE DREAMS?

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Several municipalities across the country have released Climate Action Plans or Transportation Action Plans that include ambitious mode shift targets. These mode shift targets take the form of either non-auto mode shares (i.e., share of trips taken using non-auto modes, such as walking, biking, rolling, and public transit) or non-single occupancy vehicle (non-SOV) mode shares (i.e., share of trips taken using non-auto modes and non-single occupancy autos). For example, the City of Boston hopes to achieve a mode shift to the effect of 75% of trips being made by non-auto modes by 2030, while the City of San Francisco has set a non-SOV mode share target of 80% by 2030.

While setting these goals is both laudable and ambitious, it is not always clear how these targets are going to be met. Although many of us know what levers would be needed to achieve these targets (e.g., more reliable and expanded transit service, safer conditions for walking and biking, parking space reductions, land use changes), planning processes and synergistic policy goals can vary widely across municipalities. What actions are municipalities taking in order to achieve these goals? How will the projects needed to hit these targets be funded? To what extent were surrounding municipalities, Metropolitan Planning Organizations (MPOs), and State agencies involved in the development of these plans? How is progress toward these goals being measured and monitored?

To address these questions, we first reviewed 17 Climate Action Plan documents from different municipalities across the country - New York City, NY; Boston, MA; Washington, DC; Minneapolis, MN; Pittsburgh, PA; Portland, OR; Los Angeles, CA; Charlotte, NC; Chicago, IL; Atlanta, GA; Oakland, CA; San Francisco, CA; Seattle, WA; Denver, CO; Austin, TX; Cleveland, OH; and Phoenix, AZ. Based on our review of the information available within the Action Plans, we formulated categories of municipalities highlighting the detail with which efforts to achieve mode shift targets are being advanced. Building on these categories, we developed questions for semi-structured interviews of senior planners from these 17 municipalities who played key roles in developing the Action Plans.

We will begin interviews shortly and expect to share preliminary findings from our review of the Action Plans, as well as additional information shared by our interviewees, at the ACSP Conference in November. This paper will shed light on the pathways being adopted to meet the ambitious mode shift targets set by 17 different municipalities across the country. We will also discuss common challenges faced by municipalities along different fronts (e.g., policy, behavior change, funding, coordination) and potential ways to address these roadblocks for a sustainable mobility future.

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Keywords: Sustainable transportation, Climate change, Mode shift, Transportation policy, Transportation planning

MODIFIABLE AREAL UNIT PROBLEM IN MODE SHARE PLANNING OF TRANSIT STATIONS

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Individual Paper Presentation

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When modeling commuting mode share around public transit stations, it is common to overlook the scale at which built environment (BE) features are measured, potentially resulting in biased results. In public transit catchment area planning, the prevailing approach involves using 800-meter buffer sizes to extract BE features. However, it is crucial to acknowledge that the impact of BE on travel behavior may vary across spatial scales, a phenomenon known as the Modifiable Area Unit Problem (MAUP). Additionally, the optimal unit of analysis may differ based on the type of public transit stations (rail vs. BRT), as well as the specific travel behavior outcome under consideration. This study aims to address the following questions: (i) Which built environment features are sensitive to varying units of analysis in planning for commuting mode share within public transit stations? (ii) What buffer sizes should be considered for distinct commuting mode share planning in rail versus BRT catchment areas? To investigate these questions, we applied a series of Gradient Boosting Machines decision trees to examine potential threshold effects and relative importance of various BEs on mode share around more than 2890 rail and BRT stations across the United States.

The results highlight the impact of MAUP on mode share planning within public transit catchment areas, showing that varying units of analysis can influence the model's predictive power. Specifically, the use of 600-meter and 800-meter buffer sizes around rail and BRT stations, respectively, demonstrates optimal model performance for active modes of travel. However, 800-meter buffers yield the best model performances for private vehicles and public transit mode share for both rail and BRT stations. Also, certain BE features, such as employment density, intersection density, and distance from the central business district, consistently exhibit relative importance and similar threshold effects on active modes of commuting around both rail and BRT stations. However, residential density, jobs per household, and block size are sensitive to buffer sizes, showing different relative importance and threshold effects on active modes of commuting around both types of stations. These findings suggest that urban

and transportation planners should consider different units of analysis according to the type of public transit stations and the specific target outcomes in mode share planning around them.

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Keywords: land use, travel behavior, local level urban form, Machine learning, scale sensitive built environment features

MULTI-SCALE ANALYSIS OF PEDESTRIAN CROSSING DISTANCE IN US AND EU CITIES

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Individual Paper Presentation

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The distance a pedestrian must travel to cross a street directly relates to their safety, as well as whether they will choose to walk at all. Though, this fundamental aspect of urban walkability has never been quantitatively analyzed within or across entire cities. Using a combination of pedestrian-crossing data encoded within OpenStreetMap, as well as extracted from high-resolution satellite imagery, this study quantifies the length of every pedestrian crossing in Paris, San Francisco, and Irvine. This mapping approach – both granular and comprehensive – reveals a number of spatial patterns regarding each city's walkability, including multiple corridors which severely limit pedestrian access via clustered lengthy crossings. It also captures how eras in land-use and transportation planning – from dense Paris to car-centric Irvine – translate into significant differences in walkability. Indeed, the average pedestrian crossing distance varies from 27 feet in Paris to 63 feet in Irvine, with San Francisco falling in the middle at 43 feet. By overlaying pedestrian-vehicle collision data on this pedestrian-crossing map, this study demonstrates that collisions in all three cities do not occur randomly in relation to crossing distance, but are more prevalent on higher-than-average crossings. Indeed, the universe of crossings on which collisions have occurred are 20-40% longer than average crossings in each city. Overall, pedestrian-crossing distance can be accurately quantified at scale, and empower transport planners to identify clusters of pedestrian-hostile crossings, add context to pedestrian-vehicle collisions, and prioritize traffic-calming interventions such as curb extensions and pedestrian-refuge islands.

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Keywords: Pedestrian, GIS, Satellite Imagery, Transport Planning, Infrastructure

NEIGHBORHOOD-LEVEL SHIFTS IN SEVERE US PEDESTRIAN CRASHES DURING THE 2010S

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Individual Paper Presentation

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Despite many local, state, and national organizations establishing visionary goals to reduce US traffic-related deaths to zero and adopting “complete streets” policies to better-accommodate pedestrians in roadway projects, pedestrian fatalities increased more than any other type of roadway user fatalities during the 2010s (by 53%, from 4,302 in 2010 to 6,565 in 2020). This trend has continued into the 2020s (Petraglia & Macek 2023). We need a better understanding of the problem to help support safety improvements that will reverse this trend.

National-level studies show that much of the increase in pedestrian fatalities since 2010 has been at night (Ferenchak & Abadi 2021; Tefft, Arnold, & Horrey 2021; Ferenchak, Gutierrez, & Singleton 2022), among people aged 18 to 64 (Tefft, Arnold, & Horrey 2021), on urban arterials (Ferenchak & Abadi 2021; Tefft, Arnold, & Horrey 2021), and at non-intersection locations (Ferenchak & Abadi 2021; Tefft, Arnold, & Horrey 2021). Sanchez Rodriguez and Ferenchak (2023) found that fatal pedestrian crashes had shifted from downtown toward suburban locations between 1999-2002 and 2017-2020. They also found that fatal pedestrian crashes increasingly occurred in neighborhoods with high poverty rates, high proportions of non-Hispanic White residents, and low education levels. The suburbanization of poverty may be contributing to this crisis by increasing pedestrian activity in areas with high-speed, multi-lane arterial roadways, as hypothesized by Ferenchak and Abadi (2021).

To understand this problem better at the neighborhood scale, we conducted a longitudinal study to analyze shifts in fatal and severe injury (K&A) pedestrian crashes by census tract in eight states between 2008-2012 and 2017-2021. We asked the following question: What neighborhood characteristics had significant associations with increases in K&A pedestrian crashes between these two time periods? In addition to variables that have been examined in

previous studies, we also explored changes in the number and types of jobs at the neighborhood level to represent employment shifts that may be associated with pedestrian safety outcomes.

We gathered socioeconomic data from the American Community Survey, job data from the Longitudinal Employer-Household Dynamics dataset, and transportation and land use data from the Environmental Protection Agency Smart Location Database for more than 20,000 census tracts across eight states. Then we estimated negative binomial models to identify factors associated with the count of K&A pedestrian crashes during the baseline 2008-2012 period and binary logistic models to identify the characteristics of census tracts that experienced increases in K&A pedestrian crashes between 2008-2012 and 2017-2021.

We found that increases in K&A pedestrian crashes between the 2008-2012 baseline period and the 2017-2021 period were significantly associated with tract characteristics representing pedestrian exposure (e.g., total population and jobs). Tracts with more people and jobs in the baseline period and tracts where population and jobs grew more during the decade were more likely to experience increases in K&A pedestrian crashes. Controlling for overall tract population and jobs, increases were positively associated with the baseline period proportions of lower-income residents, unemployed workers, and Black and Hispanic residents. Tracts with lower population density and greater proportions of retail and service jobs during the baseline period were also significantly more likely than other tracts to experience increases in K&A pedestrian crashes during the 2010s. While additional research is needed, our results provide insights into where the most severe pedestrian crashes are shifting within states and metropolitan regions so that safety resources can be directed proactively toward these areas.

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Keywords: Pedestrian, Fatalities, Severe Injury Crashes, Longitudinal, Job Sectors

NO CAR, NO CHOICE? TRANSPORTATION ACCESS TO SCHOOL CHOICE IN CALIFORNIA

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School choice offers families an opportunity for children to attend schools other than those they are zoned to by residential location. Public school choice options and enrollments have grown over the past 30 years. Most families live beyond walking distance to choice schools, so vehicular transportation is needed to attend. Yet, most choice programs have not been designed with such access in mind, and most school transportation programs are designed only for neighborhood schools. Further, the spatial distribution of high-quality choice schools is uneven. A high percentage of low-income families would send their child to a "better" school further from home if they had adequate transportation, but many lack household vehicles and transit access is uneven. Such diminished access for children in households without cars—more than 50 percent of whom have incomes less than 150% of the poverty-line and are non-white—presents an equity issue.

This study examines the relationship between household transportation resources—automobiles and transit—and the likelihood that children attend a choice school. We match data from the 2017 National Household Travel Survey California Add-On with several education data sources to identify the school each respondent ages 5¬-17 attends and the school to which school districts zoned them. We use this novel combined dataset to develop a portrait of the travel behavior, transportation resources, and characteristics of students in California by school type: neighborhood zone public, choice public, and private. We analyze the characteristics that predict this choice of school type by constructing a series of multinomial logistic regression models for all students, students by grade level, and students by school type.

Descriptively, students attending choice public schools relied more on private automobiles (78%) than students attending neighborhood public schools (60%), while private school students relied almost entirely on vehicular transportation (90% automobile, 6% school bus). Among households without a private vehicle, only 19% of students attended a choice public school. Conversely, 41% of students in households with vehicle(s) attended a choice public or private school.

Controlling for student, household, neighborhood, and assigned zone school (even if students did not attend it) characteristics, a student in a household with at least one vehicle had more than double the predicted probability of attending a choice public school (0.31-0.34) compared with a student in a zero-vehicle household (0.15). The difference in predicted probabilities grew for students who were low-income, non-white, or zoned to low-performing schools. Living in neighborhoods with high-quality transit access did not affect the probabilities.

The findings of our analyses underscore the importance of transportation resources in enabling families to send their children to schools that best fit their needs. They also have implications for school location choice strategies.

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Keywords: school transportation, accessibility, zero-vehicle households, school choice

ON-STREET PARKING IN LOW-DENSITY RESIDENTIAL AREAS: DOES UPZONING MATTER?

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Individual Paper Presentation

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In the United States, street design standards and parking minimum requirements combine to provide a generous supply of on- and off-street parking in residential neighborhoods, especially those composed of primarily single-family houses (Guo & Schloeter, 2013). Past research shows that parking supply almost always exceeds parking demand. In small to medium-sized cities in California, Oregon, and Washington, on-street parking vacancy rates in single-family neighborhoods range between 71% and 89% (Roth, 2016; Schlossberg & Amos, 2015; Thigpen & Volker, 2017). Likewise, as few as 13% of households use their garages for car parking (Guo, 2013). Even more broadly, the total number of parking spaces (residential and non-residential) per car likely ranges from between 3.5 and 8 to 1 (Chester et al., 2010).

Understanding the oversupply of residential parking is critical. An increasing number of US cities and states are now allowing and promoting the construction of ADUs, duplexes, triplexes, and other "missing middle" housing types in neighborhoods zoned for single-family houses, and other local or state governments have repealed minimum parking standards. Parking is often a difficult topic for local practitioners to engage with as it is frequently a flashpoint for neighbors who fear increased density will lead to parking shortages (Wegmann, 2020).

But what happens when density is added to single-family neighborhoods? Does parking vacancy decrease to levels that result in full utilization? To answer this question, our research team counted parked cars in R1 residential zones and R2 residential zones according to established methods for quantifying parking utilization rates (Thigpen & Volker, 2017). The results of the study show that on-street parking is not fully occupied in either R1 or R2 residential neighborhoods, demonstrating that increasing density in R1 zones does not mean that available on-street parking will disappear. This study will prove useful to planning practitioners considering allowing more density in R1 residential areas or rezoning neighborhoods to R2.

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Keywords: Parking, Street design, Single-family zoning, Density

ONLINE DELIVERY PLATFORMS: DISPARITIES IN FOOD ACCESS IN US METRO AREAS

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Individual Paper Presentation

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Without making trips, individuals now have access to foods, drinks, and grocery items through online delivery platforms such as DoorDash, Uber Eats, and Grubhub. These platforms have become increasingly popular over the past years as they provide convenient and time-saving ways for food access, especially during unbenign weather conditions. Related studies investigated the trade-offs between access to food in virtual and physical space and their impacts on travel. However, it is not well-understood how accessibility facilitated by these platforms differs from our conventional understanding of accessibility in physical space. The present study addresses this gap by answering two questions. First, what are the differences in accessibility between physical space and ordering delivery online? Second, what types of neighborhoods and demographic groups experience greater accessibility when using these delivery platforms?

To answer these questions, this study measures accessibility to food services and grocery stores in every census tracts within the 50 most populated US metropolitan statistical areas (MSAs). For physical space, it measures accessibility with a cumulative opportunities approach using ESRI's drivable street networks and the location of food services and grocery stores from SafeGraph data. To measure accessibility facilitated by online platforms, it builds a web-scraping tool to collect data from DoorDash and Uber Eats (the two platforms with the largest market share in the US). The tool extracts the number of food services and grocery stores available for delivery to the address of each census tract's centroid. Next, it explores the differences in accessibility levels between physical and virtual space across the 50 MSAs. Finally, it builds a multiple regression model to investigate the relationships between accessibility and the characteristics of built environment, neighborhood, and demographics.

The findings reveal significant differences in the accessibility landscape between physical and virtual spaces. Transportation disadvantaged census tracts generally have greater access to food services and grocery stores in physical space, whereas the same census tracts experience lower accessibility levels using the delivery platforms. In the Los Angeles metropolitan area, for example, census tracts in Santa Monica, Long Beach, Glendale, and Beverley Hills (identified as transportation non-disadvantaged areas) have more delivery options available on DoorDash and Uber Eats compared to other parts of the region. The regression model further indicates that census tracts with more White, high-income, Internet access, and well-educated are more likely to have greater access to food services and grocery stores via online delivery platforms. This paper also finds that accessibility in virtual space

does not necessarily correspond to proximity to opportunities; rather, it depends on the capacity of delivery drivers serving the area.

This study offers several contributions. Physical accessibility primarily depends on two factors: the location of opportunities and transportation networks. In online delivery platforms, however, this work implies that access to food services and grocery stores is likely greater in areas with higher demand for deliveries and a sufficient supply of drivers. Online food delivery platforms are driven by market, where the demand for these services and the accessibility they provide create a reinforcing loop. Access to food and grocery items without traveling enables individuals to use their time more efficiently and enhances their quality of life, particularly in situations when traveling is not easy. With this understanding, planners can reduce access disparities facilitated by delivery platforms by addressing segregation and also identify the areas experiencing low accessibility in both physical and virtual space.

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Keywords: accessibility, online delivery platforms, inequities, urban analytics, markets

OPPORTUNITIES AND BARRIERS OF ADOPTING E-CARGO CYCLES

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Individual Paper Presentation

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E-cargo cycles have become increasingly popular in many cities around the world. These cycles provide a sustainable travel option, potentially reducing automobile dependency and promoting a healthier lifestyle (Riggs, 2016). They offer greater payload capacity and can cover longer distances than conventional cargo cycles. While some studies explore their potential for freight delivery in the 'last mile' (Tabascio et al., 2023), the opportunities and barriers of e-cargo cycles for personal use are not well understood. This study aims to fill this gap by investigating the general public's willingness to adopt e-cargo cycles, their potential uses, and any anticipated

barriers to use. It also examines the extent to which e-cargo cycles could replace vehicle trips and how various factors, including users' characteristics, perceived built environment, and attitudes, might affect their intent to purchase e-cargo cycles.

As part of a research project, we organized ten e-cargo cycle demonstration events across Toronto, Canada in collaboration with the non-profit organization Our Greenway Conservancy (OGC) between July and November 2023. These events were held at major public venues, parks, malls, and community centers to allow community members to learn about and try out different models of e-cargo cycles. Participants were able to see the cycles in person, receive important information about their features, and, where possible, obtain firsthand experience by taking them for a test ride. Many participants had never seen an e-cargo cycle before interacting with the demonstration. Before participating, all individuals completed a consent form and provided their contact information for follow-up. Later, we invited the participants to complete an online survey questionnaire via Qualtrics. A total of 313 invitations were sent out, of which 98 completed the full survey for those conducted in 2023.

We find that approximately 75% of respondents participated in activities, mainly pre-purchase (e.g., talking with friends and family, doing their own research, visiting bike stores), after their experience with the e-cargo cycle demonstration. This suggests the demonstration may have a positive impact on their intention to purchase e-cargo cycles. Within the next 12 months, around 23% of respondents plan to purchase a cycle for personal use, with roughly 80% indicating an interest in e-cargo cycles. The result shows that those most likely to adopt e-cargo cycles are younger, non-white, male, have children, lower income, renters, and currently own a cycle but not a car. We also asked the respondents if they had an e-cargo cycle, what purpose(s) they would use it for, and how they currently travel to perform those activities. The results suggest that the top three potential uses for e-cargo cycles are groceries, personal errands, and shopping. By comparing respondents' current mode of transportation to their willingness to use e-cargo cycles for various trip destinations, we find a potential shift from vehicles to e-cargo cycles. For instance, approximately 74% of car users are willing to use e-cargo cycles for grocery shopping. The respondents identified that lack of safe parking places at their residences, high prices, and a lack of infrastructure are the biggest barriers to purchasing an e-cargo cycle. Further, the results of our survey indicate that various built environment characteristics where they live also influence their willingness to adopt e-cargo cycles. These include the presence of cycle lanes, width of cycle lanes, street network connectivity, parking facilities at home and near stores, and neighborhood safety.

In sum, this study suggests that e-cargo cycles can be a viable alternative in sustainable mobility transition. Arranging public opportunities to test e-cargo cycles could expand its current market. Planners need to take proactive measures, such as changing existing bylaws, parking regulations and improving cycle infrastructure to accommodate e-cargo cycles.

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Keywords: e-cargo cycles, sustainable mobility, emerging mobility

PARKING THE MINIMUM PARKING REQUIREMENTS: EVIDENCE FROM NINE US CITIES

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Individual Paper Presentation

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Minimum parking requirements (MPRs) have been criticized by planners for their negative impact on urban form, housing affordability, and travel behavior. Consequently, in the last few decades, more than 1,500 cities of North America have repealed or reduced MPRs in some or all parts of their jurisdiction. Empirical research highlighting the benefits of parking deregulation can help promote innovative parking solutions. However, so far there is limited research on the impact of the removal of MPRs in US cities, and the results are mixed (Gabbe et al., 2020; Hess & Rehler, 2021; Manville, 2013). Moreover, not all studies employ a robust research design that isolates the causal impact of the policy change (Sohoni & Lee, 2023). In this study, we selected nine US cities that have repealed MPRs: three that repealed city-wide (San Francisco, CA, Buffalo, NY, and Hartford, CT), two that repealed along transit corridors (Somerville, MA and Honolulu, HI), and four that repealed in downtown (Washington, DC, Grand Rapids, MI, Cincinnati, OH, and Champaign, IL). For transit and downtown cases, we identified appropriate comparison groups where MPRs are still enforced, e.g., a one-mile buffer around the deregulated zones. For each city, and within each city for both deregulated zone and comparison group, we collected new construction permit data for at least three years before and after the date of reform. This yielded a quasi-experimental research design where measuring pre-reform and post-reform differences between deregulated zone and comparison group was possible. The total sample size across the nine cities was 817 projects.

Results show that six of the nine cities saw a statistically significant reduction in parking supply in the deregulated zones post MPR removal. These six cities comprise of two cities from each of the three different categories of reform type. The magnitude of parking supply reduction in these cities ranges from 62 %-points in Champaign, IL to 7 %-points in San Francisco, CA. However, city-level annual trend analysis reveals that parking supply began to decline prior to the reform in the years leading to it, in most of these cities, including San Francisco. Regression models also indicate that the change in zoning regulation (captured through a time-based dummy) was not a statistically significant contributing factor in most cities. Nevertheless, the models reveal the enhanced role played by built environment factors such as access to transit and employment density in developers' decisions on quantity of parking supply.

Three cities do not show a significant reduction in parking supply. In case of Washington DC, the city had already been enforcing requirements lower than the market demand. However, in the automobile-oriented cities of Hartford, CT and Grand Rapids, MI, developers continue the status quo by providing ample parking. Overall, across the nine cities, 68% of the developments in deregulated zones post reform provided fewer parking spaces than they would have had to, including 77 projects that provided no parking. Collectively, developers provided 6,794 fewer spaces and thereby saved approximately $135 million in construction costs. Additionally, at the city level, we find that the magnitude of reduction in parking supply is greater in cities that have a higher population density. We also observe a significant negative correlation between parking supply and residential density at the individual project level across the nine cities.

In summary, our findings suggest that the removal of MPRs is a culmination of the ongoing market pressure for reduced parking and increasing use of stopgap measures such as variance, rather than the deregulation triggering or causing the reduction.

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Keywords: Minimum parking requirements, parking reform, parking, quasi-experimental research, urban development

PATHWAYS FROM PEDESTRIAN AND BICYCLE INVESTMENTS TO ACTIVE TRANSPORTATION

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Individual Paper Presentation

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Over the course of the past three decades, there has been a notable expansion in the range of bicycle and pedestrian projects that are eligible for federal funding (Federal Highway Administration, 2021). Many previous studies have focused primarily on the impact of the physical environment on behaviors (Kärmeniemi et al., 2018; Smith et al., 2017). However, studies on the effects of active transportation investment on travel behavior change are limited.

This study complies a longitudinal dataset from the Federal Highway Administration and the American Time Use Survey to explore two research questions: (1) Does an increase in federal funding for bicycle and pedestrian projects lead to an increase in active travel behavior? (2) To what extent is the effect of transportation investment on active travel behavior mediated by traffic fatalities, one of the key environmental risk factors?

The findings indicate that federal funding appropriation for active transportation projects alone is inadequate to bring about significant changes in active transportation outcomes. The mediation analysis also reveals no significant pathways, indicating that pedestrian and bicycle fatalities do not display a significant association with both federal-level active transportation investment and active travel behaviors.

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Keywords: Active transportation, Physical activity, Federal investment, Travel behavior

PLANNING FOR CONNECTED AND AUTOMATED VEHICLES--MORE THAN ENGINEERING

Abstract ID: 1108.0.0.927.2024
Individual Paper Presentation

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Introduction

The rise of connected and automated vehicles (CAVs) is widely discussed among transportation professionals, public officials, industry leaders, and the general public. Despite recent setbacks to the CAV industry, including revocation of operating permits in the wake of well-publicized crashes in California, excitement over the prospect of a fully self-driving future persists. Yet massive uncertainties remain regarding how a transition to a CAV-dominated transportation system will unfold: What infrastructure and regulatory tools will be needed to effectively manage large fleets of CAVs? How might the widespread presence of CAVs on streets and roads impact other road users—and alter urban spatial structure? This study seeks to understand how the transportation profession is preparing for CAVs and inform discussions about the roles planners could and should play in shaping a safer, more equitable, and resource-efficient transportation future.

Methods

Two sets of interviews, exploring the state of knowledge and uncertainty over CAV impacts on transportation infrastructure and travel behavior, provided the data for this study. They include 1) a purposive national sample of 36 transportation professionals in 12 cities identified as 'CAV innovators' based on programs, policies, and partnerships; and 2) a convenience sample of 19 transportation professionals in North Carolina, which has devoted substantial resources to planning for a CAV-ready future. Both samples drew from public and private sectors, and state and local planning and engineering staff. Data collected as interview transcripts were subjected to thematic analysis using Atlas.ti.

Findings

Analysis of the national sample, collected in 2021, suggested that interviewees expect transformative CAV impacts but lack defined strategies for transitioning to CAV-adapted systems while protecting other road users. Most noted CAVs' need for predictability in the roadway environment and supportive infrastructure modifications like lane

markings, signs, and signals. Many also expressed concerns about pedestrians and others outside of vehicles having their convenience and safety subordinated to smooth CAV circulation.

The second sample, collected in 2022-23, targeted transportation professionals from across North Carolina, a state whose Department of Transportation has sought to establish itself as a leader in readiness for CAVs. Despite a generally "pro-CAV" attitude among state officials, the findings from North Carolina aligned with the national sample: Transportation professionals are concerned with the implications of CAVs for local and state transportation agencies, and the need to upgrade infrastructure, services, and policies in order to ensure safe, equitable, efficient mobility for all. Most interviewees were at a loss for how to identify, define, and—crucially—address these anticipated but uncertain impacts.

Implications for planning

There is currently no policy framework for regulating the rollout of CAVs on U.S. streets. Well-publicized incidents involving CAVs (including the Cruise taxi that dragged a pedestrian in San Francisco in October 2023) have led to temporary bans, but a cohesive regulatory framework remains elusive. With even senior transportation professionals in pro-CAV organizations seeking actionable legal and technical guidance on appropriate next steps to meet the CAV challenge, an even bigger problem may be lurking, as CAV boosterism and hype meet the reality of the mandate that governments protect public health and welfare. Public funds used to retool transportation networks for all modes and travelers may tap the brakes on rapidly evolving CAV technology introduced onto our roadways, and drive a more inclusive public debate over what modes, travelers, and supporting technology should be prioritized. Planners—partially sidelined during the heat of the technology-driven CAV campaign—belong at the center of these discussions, representing all travelers and all types of community stakeholders in shaping how and where we live, work, play, and travel, and how we allocate transportation resources.

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Keywords: connected automated vehicles, self-driving vehicles, uncertainty, planners' role

POST-INDUSTRIAL PARKING: CAR PARKING CONFLICT IN CHANGING INDUSTRIAL AREAS

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Individual Paper Presentation

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This paper examines conflicts over car parking in urban industrial zones, as a way of understanding changing patterns of land use and work in industrial areas. The limitations of minimum car parking policies – introduced in the 20th century alongside rising motorization – have been increasingly articulated by parking researchers including Michael Manville and Donald Shoup (2005). For the most part, critical literature on parking has focused on the impacts of 'predict and provide' parking policies on central commercial areas, and on housing and residential areas. Less studied is the role of car parking in industrial zones – areas that combine varied types of manufacturing, distribution, and repair functions spanning low impact to noxious trades, and non-industrial uses like gyms.

Creating separate use-based zones for industrial activity was a basic goal for early land use zoning and planning controls – with some zoning approaches more strictly separating work and home than others (Hirt 2007). Equally, zoning decisions have played a role in the retention or loss of zoned industrial land in Global North cities often characterized as post-industrial. Scholars emphasize that rather than being redundant, industrial areas remain essential in high-cost cities, but have changing functions and roles (Grodach et al 2023). A scarcity of industrial land in cities is a documented problem in cities, such as London, which have emphasised redevelopment for housing (Ferm & Jones 2017).

Industrial zoning also comes with parking policies – usually minimum parking ratios for industrial uses, at rates developed in the mid-20th century in a Fordist employment environment. These were based on estimates of peak demand for larger format, horizontal industrial areas, and assuming high needs for employee parking. The nature of industrial uses in Global North cities including Melbourne, Australia, has changed over subsequent decades through effects including offshoring, automation, storage and logistics, changes in waste processing, reduced and more casualised employment, and through increased prominence of creative, service-based industries. Additionally, while heavy industry is typically excluded from other zones, industrial zoning allows a range of uses including faith-based centres, and consumption-based hybrid businesses such as brew pubs.

While parking is a key focus of disputes around intensification in many cities, parking policies like minimum ratios have not always adapted (Taylor 2014). This paper examines car parking in urban industrial zones to better understand implications and conflicts over land use and work in industrial areas. It draws on interviews with industrial businesses and with planners across multiple Australian cities. It asks - how is the story of changing work and industry reflected in car parking? What are the legacy assumptions of parking ratios, and how are these influencing conflicts over car parking today? What role does parking play in contemporary industrial areas and in their nature and variety of planning tensions? The paper characterizes types of parking conflict that reflect and feed into the changing nature of industrial areas in high-cost cities. It discusses examples of site-based minimum parking ratios resulting in too little parking for some uses, and excess parking for many uses who are forced to provide more parking than needed and are restricted in their ability to establish or expand their business. Meanwhile off-street parking minimums do little to manage pressures on on-street parking spaces – many of which

are quickly filled by car repair businesses, impacting truck access. These conflicts are consistent with many critiques of conventional parking policies. The paper adds to literature calling for more systematic reform to parking policies, and to literature documenting the importance of industrial areas and advocating for sustainable approaches to their future place in cities.

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Keywords: car parking, parking policy, industrial areas, employment, zoning

PRODUCTIVE FRICTIONS AND SOCIAL INTERACTION: EVIDENCE FROM HO CHI MINH CITY

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Individual Paper Presentation

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Hansen (1959) originally defined accessibility as "the potential of opportunities for interactions." Yet, accessibility-focused research tends to focus on integration (of land use and transportation) rather than interaction, and to measure accessibility in terms of people's ability to reach given locations (and not to interact with them) (Miller, 2018). This paper provides empirical evidence in favor of thinking about transportation systems in terms of productive frictions, i.e., opportunities for interaction between people on the move with surrounding places, and people, as they traverse the built environment (Jamme, 2024).

The theory of productive friction holds that different forms of mobility enable various levels of exposure to environmental stimuli, and therefore differentiated levels of potential interaction with surrounding places. The level of productive frictions is determined neither by land use nor by transportation, but by the interaction of people with the surrounding environment that is permitted by their mode of travel. The more productive friction, the greater the likelihood that people engage with surrounding places and people, e.g., to buy something on the way, pause and hang out, and participate in street life. The theory of productive fricitons is grounded in the motorbike-centric environment of Ho Chi Minh City, Vietnam. In previous work, the author demonstrated theoretically that motorbike mobility is most conductive to productive frictions, and thus critical to the social and economic life of street spaces in Vietnam.

In this paper, the author returns to Vietnam to test the hypothesis that motorbike mobility is most supportive of social interactions. Specifically, I address the following research question: Compared to using other modes, how

does motorbike traffic relate to the number of people socializing on the streets of Ho Chi Minh City? And how does rapid growth of car traffic affect street life?

To answer these questions, in 2018 I collected 333 video recordings of traffic and street life on 20 street segments; and in 2023 I returned to Ho Chi Minh City to collect similar data on the same segments. I compiled a longitudinal database that includes, for approximately 1,500 locations, information about the number of people engaging in social interactions on the sidewalk space in front of the location, the number of street vendors, the type of location (land use), sidewalk characteristics, traffic, and the year, date, and time of observation. I used a series of nested two-level zero-inflated Poisson regressions to estimate the relationships between location, street, and traffic characteristics, and socializing activities on the streets.

The findings show overwhelmingly support the theory of productive frictions, as regression results show strong and significant positive relationships between motorbike use-related factors and the number of people vending or socializing on the streets. Interestingly, motorbike traffic volumes are not as strongly related to street life as the number of motorbikes stopped (i.e., parked) in public space. Expectedly, significant control variables include the type of land uses (e.g., commercial uses are more likely to support outdoor socializing than other uses). The 2023 data captured a significant increase in car traffic on recorded streets. While further analyses including these data point have yet to be completed, we expect that 2018-2023 car traffic growth will be negatively associated with socializing activities on the streets of Ho Chi Minh City.

This paper is the first to provide quantitative evidence of the positive relationship between intensive use of a transportation mode conducive to productive frictions, and human-environment interactions. As such, the findings advance planning, transportation and urban design research promoting socially and economically vibrant and inclusive public spaces supportive of local accessibility. Furthermore, the findings can help Vietnamese policymakers anticipate the impacts of pro-car policies.

The audience will learn about the theory of productive frictions, a novel approach to land use and transportation integration that connects to the urban design literature focused on measuring the vibrancy and inclusivity of street spaces. The audience will also learn about mobility, accessibility, and economic development challenges in Ho Chi Minh City, Vietnam.

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Keywords: Productive frictions, Inclusive public space, Street commerce, Powered two-wheelers, Vietnam

PUBLIC TRANSPORT ACCESSIBILITY, DENSITY, AND PLANNING IN VANCOUVER

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Individual Paper Presentation

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This paper utilizes a GIS-based tool developed to quantify accessibility provided by public transport infrastructure in order to provide decision-making support to planners. The quantification of accessibility by public transport on a metropolitan scale is combined with calculation of residential and employment densities in walking catchments surrounding urban rail stations and major bus stops; in addition, the values are calculated over a forty-year period in one metropolitan area where public transport services have been improved. The underlying motivation is to better understand the extent to which integrated transport and land use planning has achieved results in the metropolitan area of Vancouver, Canada.

The Spatial Network Analysis for Multimodal Urban Transport Systems (SNAMUTS) is an accessibility planning tool that enables comparison of accessibility by public transport across metropolitan areas, developed in the Australia with the purpose of providing decision support to planners (Curtis and Scheurer, 2016). A book (Planning for Public Transport Accessibility: An International Sourcebook, Curtis and Scheurer, 2016) by the developers of the tool compares 23 different metropolitan areas in the early 2010s. Four North American metropolitan areas (Montreal, Portland, Seattle, and Vancouver) were included, and were analyzed using 2012 data. This paper uses the tool to update the data to 2021, and also to calculate the values for a series of past years in Vancouver. Until now, the SNAMUTS tool has been used mainly for inter-city comparisons in recent years, and this would be the first time it has been used for a number of years covering previous decades.

The subject of the study is the metropolitan area of Vancouver, Canada. It is significant because a strategy of land use control and planning integrated together with the provision of a 78 km (56 station) urban rail rapid transit system have taken place over the last half century. It is one of few large metropolitan areas where freeway provision has been limited (Townsend and Ellis-Young, 2018), where strong regulatory constraints limit suburban expansion in most directions, and where transit share rose consistently for a couple of decades prior to 2020 when the beginning of the pandemic reduced transit use. In The Transit Metropolis: A Global Enquiry, Cervero (1998) classified Vancouver as an aspiring transit metropolis, and it is arguably the only one of North America's aspiring transit metropolis to make substantial gains toward transformation of transport and land use toward less automobile use.

A focus of spatial planning in Vancouver has been the creation of transit-oriented development at key points along the public transport network. While this is an idea that has been proposed in many cities since the 1950s, the extent to which it has been actually realized is exceptional in Vancouver given its North American context. Beyond examining the historical changes to accessibility by public transport over this forty-year period, another goal of the paper is to determine the level of coordination between accessibility by public transport measured using the SNAMUTS tool, together with changes in intensity of land use (measured in residents and employees in catchment areas along the public transport network).

In order to carry out the analysis, bus and urban rail routes and timetables were transferred from paper timetables published in 1981, 1991, and 2001, and PDF timetables published in 2011 and 2021. Census data on location of residents and jobs were used to calculate local area densities covering catchment areas. The paper provides a rare historical documentation of changes to accessibility influenced by transportation and land use plans.

Citations:

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Keywords: Spatial Network Analysis for Multimodal Urban Transport Systems (SNAMUTS), accessibility by public transportation, integrated transport and land use planning, Vancouver, Canada, transit-oriented development

RACE, RAIL, AND THE RIDER EXPERIENCE

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Analysis of transit equity has focused on theoretical accessibility rather than actual travel experience on public transportation. This research shifts the focus to the latter by exploring data collected as part of two rounds of on-board travel surveys in Minneapolis, Minnesota. Specifically, this research explores whether the gradual development of the local light rail system has been equitable for Black transit riders when compared to non-Black transit riders. This research looks at cross-sectional fairness during each of the two rounds of surveys as well as the longitudinal trend between the two rounds. This research examines equity from aggregate and disaggregate perspectives occasionally to discover that aggregate findings do not hold when confounding variables are controlled for in inferential models. This work tests equity for all riders in choosing light rail and for light rail riders in terms of the number of transfers, straight-line travel distance, and drive access/egress. The goal of this effort is to complicate the consideration of transit equity to incorporate the lived experience of actual transit users.

Citations:

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Keywords: Transit, Equity, Race, Travel Behavior, Survey

RAIL TRANSIT RIDERSHIP CHANGES DURING COVID-19

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Rail Transit Ridership Changes During COVID-19: Lessons from station area characteristics in California

The COVID-19 pandemic has had a significant impact on public transit ridership in the United States. Ridership has declined by as much as 80% in some cities, and is still recovering (Bureau of Transportation Statistics, 2021). According to the American Public Transportation Association (APTA), 76 percent of agencies responding to a survey conducted in March 2020 indicated that they have experienced a ridership decrease. For example, New York City's MTA lost 667 million riders in 2020, a 63% drop from the previous year. The Washington Metropolitan Area Transit Authority (WMATA) had a 79% drop from 2019's 248 million riders (Bureau of Transportation Statistics, 2021). The trend continued in the following months amid COVID-19. Ridership gradually recovered in 2022 post pandemic, though it was still below the pre-pandemic levels (Doyle, 2023). A number of factors contributed to this decline, including public health concerns about the spread of COVID-19 on public transit, increased work-from-home options, and transit service cuts during the pandemic. Although ridership has continued to improve for some agencies, overall ridership levels remain lower than pre-pandemic. In California, despite some exceptions transit ridership had been declining even before the pandemic, with the San Francisco Bay Area and the Greater Los Angeles Area losing between 10% and 25% transit boardings per capita between 2008 and 2018 (Taylor et al., 2020). The pandemic added a significant drop in ridership and related challenges. For example, the Bay Area Rapid Transit (BART) has lost more than 70% of the ridership between 2019 and 2020 (Urban Institute, 2021).

The decrease in ridership has negative consequences to transit revenue that eventually may translate into a vicious cycle where reduced transit services will result in additional ridership decline. Decreases in service also impact access to jobs, education, and other essential services, especially for the transit dependent population. Moreover, failing to attract ridership will also undermine the achievement of long-term sustainable transportation goals.

This study aims to understand the land use, built form, and transit network characteristics that example station-level changes in transit ridership pre- and post-COVID, and explores the degree to which those changes are transit-specific or the result of overall changes in visits to station areas. Specifically, it examines ridership changes between 2019 and 2021 for 242 rail stations belonging to Bay Area Rapid Transit (BART), San Diego Metropolitan Transit System (MTS), Sacramento Regional Transit (SACRT), and LA Metro and associates those changes with the built environment, socio-demographics, and rail network characteristics. We also compare these changes to overall activity in the station area. We find overall decreases in station-level ridership of 72%, but changes were not uniform. Station areas with a higher number of low-income workers, and more retail or entertainment jobs tend to have lower ridership declines, while areas with a higher number of high-income workers, more high-wage jobs, and with higher job accessibility by transit had higher ridership losses. When comparing ridership and overall activity changes, we found that ridership declined more drastically than activity across all four rail systems, which implies that rail transit riders switched to other modes of transportation when accessing the station areas. Given this, it is likely that rail transit services oriented towards commute travel, especially core station areas with jobs for higher income workers will continue to have an uneven recovery. Considering sources of funding other than passenger

fares in order to sustain rail transit, strategizing to reinvent and reinforce downtowns as destinations, and shifting rail transit services to appeal to non-commute travel can be promising strategies to support rail transit.

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Keywords: rail transit, ridership, resilience, COVID-19, built environment

RELATIONSHIPS BETWEEN MODE CHOICE AND PARENTAL ESCORTING FOR SCHOOL TRIPS

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A primary benefit of non-motorized travel for children is the ability to travel independently from adults, which can release household adults from the need to chauffeur their children to and from activities. However, both non-motorized travel and travel without a parent have declined in recent decades across multiple countries (Fyhri et al. 2011). While many efforts, broadly characterized as Safe Routes to Schools programs, have sought to encourage travel by active modes and to improve pedestrian and bicycle networks serving schools (McDonald et al. 2014), these efforts may overlook the role that the need for parental escorting (based either on cultural expectations or policy requirements) may have on the choice of mode for the journey to school. A few researchers have jointly modeled parental escort decisions and mode choice, although these have either modeled alternative combinations of mode-escort choices as independent from one another (Yarlagadda and Srinivasan 2008; He and Giuliano 2017) or have focused on older children (Ermagun, Hossein Rashidi, and Samimi 2015). To better characterize the relationship between mode choice and parental escort choice for the journey to school for primary school children, we have drawn on the 2009 and 2017 samples of the National Household Travel Survey to compile a sample of 4,910 school trips shorter than 1.25 miles by children between the ages of seven and fourteen years old. We have estimated a set of multinomial logistic regression models that jointly predict the choice of mode and escort for the

journey to school as choice among three alternatives: travel by car, travel by an active mode accompanied by a household adult, and travel by an active mode unaccompanied by a household adult. We test three different model structures. The first of these models the three alternatives as independent from one another. Two additional model use a nested model structure: One that groups active-mode trips accompanied by a household adult with trips by car and another that group active-mode trips accompanied by a household adult with those that are unaccompanied by a household adult. A fourth model uses a cross-nested model structure, which groups active-mode trips accompanied by a household adult with both unaccompanied active-mode trips and trips by car and estimates a parameter (alpha) for each group indicating the degree to which accompanied active trips fit in either group. We find that the best performing model is a cross-nested model, which yields an alpha parameter of 0.45 for the group with car trips and 0.55 for the group with unaccompanied active trips. This may suggest that strategies that address parental concerns about unaccompanied travel may be an important element of efforts to increase active travel to school.

Citations:

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Keywords: Children's travel, School travel, Active travel, Mode choice

REVIVING PUBLIC TRANSIT RIDERSHIP TO DOWNTOWNS

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During the pandemic, transit agencies across the country lost riders, and most have struggled to recover (Parker et al., 2021.) We examine the role of transit ridership before and after the pandemic in five downtowns of differing size, regional location, and composition in the San Francisco Bay Area (San Francisco, Oakland, San Jose, Berkeley, Walnut Creek). We also assess the importance being given to transit in public and private plans for these

downtowns. Our analysis is based on ridership data for 2019 and 2023 from six transit operators, review of downtown plans and business improvement district documents, and interviews with city officials, developers, property owners, and other key stakeholders from each case. We focus on downtowns as key economic engines of the metropolis as well as critical transit centers, despite recent challenges (Birch, 2009; Rosenthal et al., 2022; Hutson and Orlando, 2023.)

We find that the downtowns constitute important, often majority, shares of transit ridership for each of the transit operators. However, recovery rates for downtown activity overall and for transit in particular vary widely among the downtowns, reflecting differences in downtown population and employment characteristics. Transit recovery has been suppressed by the ability to work at home and/or drive to work outside of the peak period, two trends that accelerated during the pandemic and have persisted since then. Recovery has been lowest for the operators whose riders have these options, especially those traveling long distances. Recovery rates have been highest for the operators primarily serving those required to return to work as well as work and non-work travelers without other travel options. The regional rail systems, BART and Caltrain, suffered the most severe declines.

The five cities' downtown plans speak to the importance of transit, especially for congestion management, and include strategies to facilitate transit use through priority treatments and well-located and designed stops and stations. However, all but one of the plans was adopted pre-COVID and there has been no formal, organized effort to reconsider their content in response to the changes in activity levels that have occurred over the past four years. Official responses have instead been focused on specific changes such as loosening zoning language to allow for a wider variety of uses in downtown districts. Coordination of such interventions with transit providers has been limited, despite recognition that operators are facing fiscal cliffs and need to regain ridership to avoid further cutbacks.

Business leaders and the development community in the case study cities have been vocal in seeking to shore up downtown activity, but most of their proposals for doing so have been piecemeal. Among the advocated actions are to recruit and subsidize emerging industries, convert outmoded offices and retail to housing, expand outdoor seating for restaurants, attract sporting events, and sponsor festivals and street fairs. Most of our interviewees from the business sector see these as useful ways to lure people back to the downtown and fill empty spaces. However, few have given consideration to the transportation consequences of the various proposals.

In the final section of the paper, we assess the transit impacts of the strategies being proposed and show that most are unlikely to generate substantial, ongoing transit ridership, and some may increase auto use and congestion. We suggest strategies that could lead to a more realistic and sustainable recovery approaches tailored to the various downtown conditions we have investigated.

Citations:

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Keywords: transit ridership, downtown recovery, downtown plans, economic development

SAFETY ATTITUDES AFFECTING WALKING BEHAVIOR

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For many Americans who do not meet recommended physical activity levels, walking can be a representative form of physical activity. There may be various reasons for walking as a physical activity or a transportation mode. Several previous studies have shown that perceptions or attitudes about safety have an effect on walking activities (Kwon et al., 2022; Lyu & Forsyth, 2021) since experiences, attitudes, and perceptions can affect behavior (Barton et al., 2016). From a transportation planning perspective, the risk of crashes has a decisive impact on road users' safety (Carter et al., 2017). Therefore, this study aims to investigate how crash risk factors affect pedestrians' safety attitudes and whether their safety attitudes affect walking frequency.

Our study was conducted in ten carefully selected areas in Oregon, US, where we collected comprehensive data on crash risk factors, pedestrian and vehicle volumes, land use, sidewalks, intersections, transit stops, vehicle speed, and actual pedestrian-involved crash cases. We then surveyed over 500 residents in these areas, gathering data on their safety attitudes and walking frequency. This robust dataset was analyzed using structural equation modeling to test the relationships among crash risk factors, safety attitudes, and walking frequency, especially how crash risk factors and individual characteristics predict walking frequency mediated by safety attitudes.

We confirm that pedestrians' safety attitudes, measured by seven items in our survey, significantly predict their walking frequency. The safer people think walking in their neighborhood is, the more often they walk. We also found that crash risk factors and individual characteristics influence safety attitudes and walking frequency. More park areas significantly predict more positive safety attitudes, while other crash risk factors do not. Age and disability also significantly explain safety attitudes. Older people have more positive safety attitudes, while people who have disabilities have negative safety attitudes. Factors other than safety attitudes can also explain walking frequency. Better accessibility to the sidewalk and slower vehicle speeds in the neighborhood significantly predict more frequent walking, while larger commercial areas and more motorized vehicles in the household decrease walking frequency.

In conclusion, our findings indicate that pedestrians' safety attitudes can impact walking behavior and neighborhoods with better pedestrian facilities, and lower vehicle speeds can encourage more frequent walking. These findings can help design safe neighborhoods for pedestrians to encourage people to walk.

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Keywords: Perceived Safety, Safety Attitudes, Walking Behavior, Crash Risk Factors, Structural Equation Modeling

SEX DIFFERENCES IN ACTIVITY SPACES: A CALIFORNIA CASE STUDY

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Studies on differences in travel behavior by sex largely focus on single trip types (e.g., commute travel, non-work travel). The research shows that compared to men, on average, U.S. women travel shorter distances, a finding often interpreted as a disadvantage—evidence of limited access to opportunities for work, shopping, socializing, etc. (Crane, 2007; Giuliano, 2003). However, for many women—particularly women with children—access to any single destination is predicated on the need to make a suite of trips necessary to accommodate both work and household responsibilities. Therefore, conventional measures of access and opportunity do not adequately capture the complexity of women's travel.

In this analysis, we examine sex differences in the spatial extent of activity spaces, "the subset of all locations within which an individual has direct contact as a result of his or her day-to-day activities" (Golledge and Stimson, 1997: 279). To do this, we draw on data from the California add-on of the 2017 National Household Travel Survey (NHTS), which include information on all trips by location (latitude/longitude), mode, and trip purpose for survey respondents on a single travel day. We exclude respondents who used airplane or city-to-city bus modes of travel, as these trips typically cover distances beyond usual daily activity spaces. We also exclude respondents whose homes are outside of California, who traveled more than 200 miles on the survey day, or whose sex is not reported in the data. Our sample includes 24,507 survey respondents. Employing the Directional Distribution Measure with one standard deviation from ArcMap, we generate ellipses to depict the activity spaces of each respondent. The areas of these ellipses serve as a quantitative measure of activity space, with larger values indicating more extensive activity spaces.

We predict the size of activity spaces as a function of individual (e.g., sex, race/ethnicity, age, employment status and flexibility), household (e.g., household structure, income, vehicle ownership), trip (e.g., purpose, means of transportation), and residential location (e.g., urban area, neighborhood type, high-quality transit area) characteristics. The models include interaction terms by sex; we also develop separate sex-specific models.

The data show that women have significantly smaller activity spaces than men, a function of the gendered division of household responsibilities. A number of forward-thinking transportation agencies in Los Angeles (Los Angeles Metro, Los Angeles Department of Transportation) have engaged in efforts to better understand and plan for women's travel needs. Underscoring the national importance of this issue, the Transit Cooperative Research Program (TCRP) recently commissioned a study on "Addressing Travel Needs of Women on Public Transportation (TCRP B-53)." The findings from this study can inform these efforts and, potentially, provide the data necessary to justify greater attention to gender issues among transportation agencies and organizations.

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Keywords: gender, activity spaces, travel behavior, travel complexity, gender division of labor

SHARED MICROMOBILITY AND THE BUILT ENVIRONMENT: A META-ANALYSIS

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Shared micromobility has been gaining popularity as a means of emerging personal transportation across the US cities. In 2019, 136 million trips of shared micromobility were generated throughout the US, which is 60% more than the trips generated in 2018. The advanced GPS technology and smartphone applications in shared mobility bring together on-demand mobility services and enable users to find and drop off micromobility at their convenience.

Despite the growing popularity and convenience, no study has systematically summarized and statistically combined the quantitative literature on the relationship between shared micromobility usage and built environment factors. Even though several studies have attempted to investigate this relationship using empirical data of a case region, little work on this topic has generalized across studies and regions or helped make sense of differing results. Furthermore, studies on e-scooters as a dockless service remain unexplored in the current literature. Without this, readers have glimpses of many trees rather than a panoramic view of this complex and rich forest of research.

Given that the dramatic increase in free-floating bikesharing can lead to trade-offs against station-based bikesharing, the rapid growth in micromobility gave city planners and transportation engineers little time to identify their different travel behaviors depending on station type. Due to the confusion driven by the rapid influx

of these platforms, it has become increasingly apparent that comprehensive research is necessary to evaluate these effects of services on our cities.

This study aims to estimate the average effectiveness of shared micromobility ridership from selected studies and identify built environment factors affecting relative differences in the shared micromoblity ridership outcomes. This study examined the following research questions: what are the built environment factors affecting the shared micromobility ridership? Moreover, what are the average effectiveness of those built environment factors affecting relative differences in the shared micromoblity ridership?

To address the research questions above, this study conducts meta-analysis and meta-regression modelling. Through the Preferred Reporting Items for Systematic review and Meta-analysis (PRISMA) process, a total of 550 journal articles were found at the initial search--170 from the Web of Science, 17 from SCOPUS, 105 from ProQuest, and 99 from EBSCOhost. The Mendeley reference manager retained the 306 articles after screening duplicates. In addition, we included 16 studies through the snowball search using the additional manual searching process. We conducted the screening processes first by reading the title and abstract of each article and excluded 186 articles bringing in 120 articles. Then we assessed for eligibility through first including quantitative synthesis (n=98) and then excluded 22 articles based on the predefined inclusion and exclusion criteria (n=77). After that, we excluded 33 articles that did not include sample size, mean, standard deviation, and coefficient values used to calculate the effect size elasticity. Finally, 44 final samples of studies were included in the present review.

After implementing mixed-effect meta-analysis and meta-regression models, this study found several factors affecting variation across results of previous studies--such as distance to central business district, sociodemographic characteristics (e.g., age and race), bike station characteristics (the number of docks and bike racks, bike lane density and length), and so on. Characteristics of publications are examined to account for publication bias and impacts of model-design characteristics on bike share riderships. The findings of this study provide unique opportunities to examine the sensitivity of modeling results in previous studies on bike share ridership and additional insights into interactions between the built environment characteristics and dissemination of micromobility as a part of active transportation planning and policy development.

Citations:

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Keywords: Shared micromobility, E-scooter, Bikesharing, Built environment, Meta-regression

SO CLOSE, YET SO FAR: A NEW METHOD TO IDENTIFY MISSING PEDESTRIAN LINKS

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Post-war suburban development is often characterized by disconnected street networks designed around the automobile (Boeing, 2021). This forces pedestrians to take circuitous routes. Pedestrian infrastructure, if it exists at all, is often highly fragmented—further discouraging active travel. Despite these challenges, many suburban residents who cannot afford a car or are not able to drive still walk to their destinations, regardless of inconvenience and danger (Schmitt, 2020). Moreover, there is significant interest in increased active transportation to promote improved public health and environmental outcomes.

We, as planners, are interested in ways to retrofit existing suburban development to be conducive to active travel (Amos, 2020). A major part of retrofitting consists of large projects—sidewalks and bike lanes on major streets, rails-to-trails projects, and so on. However, another vital part is smaller projects to close network gaps. These might be implementing safe crossings of busy streets, closing short gaps in the sidewalk network, or adding "living ends"—connections between cul-de-sacs that permit through passage of pedestrians and bicyclists.

One of the key challenges with these smaller scale projects is identifying them . While planners are familiar with the large-scale needs of the communities they work in, many missing links are located on neighborhood streets and cul-de-sacs. Planners may be less familiar with these areas, unless there have been requests for improvements.

In this research, we introduce a computational tool to help planners identify potential locations where a small investment could significantly improve network connectivity. Specifically, we create an algorithm to identify locations that are less than 100 meters apart geographically, but over 1000 meters apart via the pedestrian network. We then score these using an accessibility metric to identify which locations would have the largest impact if connected.

The tool considers only the access implications of the links identified; it does not evaluate the feasibility of construction. For instance, identified links may cross private property, railroads, streams, highways, or significant topographical features that would make construction difficult. The results of this tool are not intended to be shovel-ready projects; rather, they are intended to support planners, who may come up with other creative solutions to close the identified gaps (e.g. perhaps a link can be built nearby, or a longer sidewalk facility could be used to connect to an existing link).

We apply the tool to the sidewalk and greenway network of Charlotte, North Carolina, in collaboration with local government agencies. Our accessibility metric is derived from the Charlotte Regional Transportation Planning Organization's bicycle and pedestrian project scoring guide, which divides different destination types by priority. Our accessibility metric is the total score of all destinations within 3.2 kilometers, summed across every resident of Charlotte. High scores indicate links that connect a large number of people to destinations, connect a smaller number of people to a large number of destinations, or some combination.

The highest-rated link in Charlotte provides a safe street crossing connecting two major commercial streets. This location is one that has previously been identified by advocates, including a Charlotte Vison Zero sub-committee, as

in need of a safe crosswalk. This demonstrates that the tool can successfully identify high-need locations, lending credence to the other locations identified.

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Keywords: pedestrian, living end, accessibility

SOCIOECONOMIC, REGION, AND TRAVEL MODE VARIANCE IN COMMUTE TIME EXPENDITURE

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Individual Paper Presentation

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A common objective in transportation planning and policy is to reduce commute travel times by increasing speeds and capacities of transportation facilities. This rests on an assumption that commuters seek to minimize travel time. Yet, countervailing theories and evidence suggest that commuters experience travel time utility and "budget" some amount of time for travel. Thus, speeding up travel may increase travel distance rather than reduce travel time. Much research on travel time budgets, expenditure, and utility, is either aggregate or based on geographic case studies; limited research investigates sources of deviation in the population. Using ten years of data (2013-22), we analyze whether travel time expenditure has changed over time, with particular focus on the effects of the COVID-19 pandemic; and whether travel time expenditure varies across the 100 most populous regions of the United States, locations within regions, modes of travel, socioeconomic factors, and when analyzed by residential location versus work location. We run basic regressions that test for regional and built environment effects. We find that transit users experience disproportionately greater travel time expenditure, and that travel time expenditure is positively associated with dispersed regional employment patterns and regional population levels.

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Keywords: Travel time budgets, Travel time expenditure, Commute mode share, Transportation and land use, COVID-19

STUDENT TRANSIT PROGRAMS AND OTHER MODES-TO-SCHOOL IN CALIFORNIA

Abstract ID: 1108.0.0.1030.2024
Individual Paper Presentation

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The school bus remains an important part of providing children a ride to school in the United States. In most of the country, nearly four in ten students rely on the school bus. But in California, less than ten percent of students take the school bus, with parental chauffeuring making up most of the difference. This lack of use stems from relatively few school districts providing school bus service to the general student population (Kapphahn and Ehlers, 2014). Scholars and policymakers alike have looked to public transit as a means of bridging this gap (Vincent et al., 2014), but research about the feasibility and observed use of this option for K-12 students is limited.

Is transit a solution for California public school students' access to education? To understand this broader question, we consider two research questions: (1) How do the transportation service options for students and families — both traditional school bus and public transit fare pass programs — vary between school district areas in California? And (2) what characteristics predict students' travel mode choices for trips to and from school?

This paper conducts a three-part, mixed-methods analysis of school transportation and travel in California. We rely on original data collection, the 2017 National Household Travel Survey (NHTS) California Add-On, and the Google Directions API. The Federal Highway Administration conducts the NHTS semi-regularly and asks participating U.S. households from a stratified random sample about their travel and activity patterns. The California Add-On's confidential spatial dataset includes the home and school locations of each child ages 5 through 17 in the sample. In all, we analyze 5,182 trips taken by 2,514 students.

We first collect data on student-oriented transit fare programs and school-provided transportation eligibility by age and distance for a stratified sample of 117 public school districts in California (roughly 10% of all districts). Second, we use NHTS trip-level data to identify school trips' origin and destination times and geocoordinates, and then use the Google Directions API to estimate distance, duration, and complexity of trips to and from school for all potential transportation modes (private car, walking, biking, and public transit). And third, we estimate a multinomial logistic regression to predict how families choose travel modes to school. Traditionally, such models have been limited by a lack of complete choice set data — in particular, whether a school bus was available to students (He, 2015; McDonald, 2008; Speroni, 2023). To address this, we use the results from our first two analyses to test how policy actions (e.g., if a student was offered a district-provided school bus or a public transit

pass) and other trip options (e.g., trip duration on transit versus the observed travel mode) influence the mode choice decision.

Preliminary descriptive findings suggest that travel behavior to and from school is unequal for students by race/ethnicity. Black and Latino/a students are more likely to walk to school than their white and Asian counterparts, despite Black students living further from school on average. Accordingly, Black and Latino/a students spend 6 to 10 minutes longer per day traveling to/from school than white students, on average.

Results of this paper can inform planners both in their domain and in areas shared with education policy. Planners can understand public transit's existing and potential role in providing important trips to and from school, similar to the emphasis that transit planners place now on adult commute trips. Additionally, results will reveal where students do not have access to transportation beyond the private car or walking—an issue for collaborative consideration by planners and education policymakers.

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Keywords: School transportation, Access to education, Youth transit programs, Fare-free transit

THE CARBON AND CALORY INFORMATION NUDGE EFFECT ON PROMOTING CYCLING CHOICE

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Individual Paper Presentation

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Cycling is appropriate for urban middle-distance travels. It offers environmental benefit of reducing carbon emissions and provides health benefit of burning calory. Under a growing emphasis on green and healthy travel, some navigation map providers (e.g. Baidu map or Google map) are displaying carbon and calory information about cycling to users. This can be an information nudge to encourage people switching to cycling, however, the effect of which is less explored. This study investigates whether and to what extent carbon and calory information about

cycling can direct people from driving to cycling for middle-distance trips in Shanghai, through a randomized stated preference survey and mixed logit models.

The stated preference survey investigated 1554 respondents in Shanghai about their mode choice for either cycling (bike sharing) or driving (car hailing) for middle-distance trip of 1,2,3,5,7 km. The respondents were randomly split into one control group that presents neither carbon nor calory information about cycling and three treatment groups that present carbon information, calory information, and both. Based on the survey data, we developed mixed logit models to analyze the nudging effect of carbon and calory information on promoting cycling mode choices. The model results show that providing carbon and calory information about cycling significantly increases the possibility of choosing it, regardless of the exact amount saved. Respondents are more sensitive to carbon information than calory information. Carbon information nudge is stronger for respondents with low-carbon travel habits, while calory information nudge proves most effective among respondents with self-reported good health.

We further apply the mixed logit model results to respondents' real-life middle-distance leisure travel demand in Shanghai and calculate their cycling mode share change if showing the carbon and calory information about cycling. The leisure travel demand includes 1-7 km trips from respondents' home locations to the nearest city parks in Shanghai. The estimates show that providing carbon information can increase the average cycling probability by 6.8%, higher than the effect of calory information (3.7%). The combination of carbon and calory information has the strongest effect that increases the average cycling probability by 10.3%.

The findings of this study would inform policy makers on how to use carbon and calory information nudges as a low-cost and effective strategy to boost green transport and how to enhance this effect by smartly tailoring information nudges to individual characteristics.

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Keywords: Cycling, Nudge, Carbon and health information, Middle-distance travels, Mode choice

THE IMPACT OF COVID-19 ON REMOTE WORK, COMMUTING, AND GHG EMISSIONS

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Individual Paper Presentation

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The transition towards remote working following the COVID-19 pandemic significantly reshaped commuting patterns and prompted discussions of the implications for reducing greenhouse gas (GHG) emissions. This study analyzes how changes in commuting behavior following COVID-19 have altered the spatial relationship between homes and workplaces.

Pre-pandemic, the share of telecommuters remained persistently low, ranging from 4% in 2006 to 6% in 2019 (Census ACS data). According to the U.S. Census Bureau, as of September 2022, 39.1% of adults in the U.S. still substituted some or all of their typical in-person work for telework. Working from home, by eliminating or reducing the need to commute to an office, could affect workers' residential choices (Liu and Su, 2021), and evidence of increases in housing demand in remote locations is consistent with workers moving away from job concentrations (Levin, 2020). If work is hybrid, with persons working at home and in an office, vehicle miles traveled could increase or decrease depending on the balance of longer distances between home and office, lower frequency commuting, and the possibility that persons might substitute other non-work driving for free time that results from less commuting (Nilles, 1988; Ory and Mokhtarian, 2006; Mokhtarian et al., 2004; Zhu et al., 2018). No empirical studiess have examined the joint impact of changes in working-from-home and jobs-housing re-location in the post-pandemic era.

I developed and field a survey in September 2023, using Ipsos' KnowledgePanel to gather a nationally representative sample of adults (18 years old or older) living in the U.S. and working full-time at the time of the survey. A total of 2,124 responses were collected among four types of workers: individuals with the ability to work from home and those without, further divided by whether they relocated following the Covid outbreak and whether their commuting and driving habits changed. This survey data serves a crucial role in filling gaps in previous work and offers a better understanding of the spatial and environmental implications of remote work. The analysis aims to offer the best estimate currently available regarding the impact of remote work on commute patterns and associated greenhouse gas emissions, helping Transit and Planning Agencies in modeling air quality and traffic congestion.

My findings highlight shifting work arrangements, characterized by a notable increase in remote work since the pandemic's onset. 71% of pre-covid in-person workers remained in-person in post-covid period, 17% switched to working hybrid, and 11% switched to working fully remotely. Regarding residential relocations, hybrid and remote workers were about 7% more likely to have moved than in-person workers. In-person workers who switch to remote or hybrid work arrangements were almost twice as likely to move than those who did not. The average distance between home and work has shifted notably across different work arrangements. For remote workers, it increased from 58.4 to 100.5 miles, while for hybrid workers, it decreased from 36.4 to 24.8 miles. Similarly, in-person workers experienced a decline, from 25.6 miles to 21.6 miles.

In terms of emissions, results show that post-covid hybrid workers generated higher weekly commute GHG emissions than pre-COVID period hybrid workers. The average went up from 27,949 tailpipe gram to 50,393 tailpipe gram. Since hybrid workers tend to commute on Tuesday, Wednesday, and Thursday, this could exacerbate traffic congestion and air pollution on those days. Individuals who work remotely for fewer days per week may opt to continue using older and less fuel-efficient vehicles. Since they still tend to relocate farther away from their workplace, this choice could result in the increase of not only weekly emission but also emissions on those particular days.

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Keywords: COVID-19, Commute, GHG Emissions, Housing

THE RISING COSTS OF CAR OWNERSHIP: TRANSPORT AFFORDABILITY IN THE US

Abstract ID: 1108.0.0.685.2024
Individual Paper Presentation

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The costs of car ownership are rapidly rising in the United States. This trend started before the global pandemic, which induced supply chain disruptions that spiked new car prices, drawing significant media attention to the problem. As the pandemic has waned, the trend of rising car costs has continued. Many factors likely drive these increases: average car prices for new and used vehicles, financing costs, and insurance rates, among others. These rising costs contribute to transport unaffordability, a dimension of transport poverty defined by a difficulty or inability to pay for transportation (Lucas, 2012). Within auto-dependent countries like the United States, transport unaffordability manifests most acutely when households with limited resources may feel forced to own vehicles to fully participate in society (Mattioli, 2017)

We use data from the Consumer Expenditure Survey from 1984 through 2022 to examine the trends in the costs of automobile ownership in the US. We focus on transportation expenditures generally and the costs attributable to car ownership: purchase costs, finance charges, insurance, maintenance, and fuel costs. As expected, we find that the costs of car ownership are growing faster than inflation and wages.

We argue that we are heading towards a two-tier system of automobility in the US. The affluent do not face burdens associated with rising car costs and have easily shouldered higher purchase and insurance costs. The lower tier, an increasingly large group, faces a transport affordability crisis of forced car ownership. Car costs for this group account for an increasing share of their take-home pay despite purchasing inexpensive cars while taking on greater debt risks. We characterize these two groups and pose several questions for transport research and planners to address these issues. We conclude that auto affordability will worsen due to shifting regulatory requirements, greater financial and geopolitical instability, and the transition to automated and electric vehicles.

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Keywords: Transport poverty, transport affordability, car ownership, car dependance, forced car ownership

THE ROAD ONE MUST WALK DOWN: COMMUTE AND DEPRESSION FOR BEIJING’S RESIDENTS

Abstract ID: 1108.0.0.29.2024
Individual Paper Presentation

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Central Theme

As a vital aspect of individual’s quality of life, mental health has been included as an important component of the U.N. Sustainable Development Goals. This study focuses on a specific aspect of mental health: depression, and examines its relationship with commute patterns.

Methodology

This study uses Beijing, China as a case study and examines the associations between door-to-door commute time and depressive symptoms for 1,582 survey respondents in urban and suburban neighborhoods. We also follow the “impedance theory” and the “stress process theory” and test whether commute time associates with depression by serving as a direct stressor, an indirect stressor that triggers higher work stress, or a moderator of the work stress-depression nexus. In addition, we decompose the overall commute time into mode-specific time to examine mode-specific effect sizes, and examine the mental health effect of multimodal commuting. Finally, we explore the heterogeneous effect levels for different age and occupation groups.

Findings

We find that every 10 additional minutes of commute time is associated with 1.1% higher probability of depression. We test for the mechanisms of the commute-depression link and find that commute is associated with depression as a direct stressor rather than triggering higher work stress. When decomposing commute time into mode-specific time, we found that time on mopeds/motorcycles has the strongest association with depression. Moreover, the commute-depression associations are stronger for older workers and blue-collar workers.

Implications to planning practice

For planners and policy makers, programs and policies that reduce commute time, promote active travel, encourage work at home, promote job-housing balance and increase the safety of mopeds will help improve the mental health of urban residents.

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Keywords: Well-being, Health, Sustainable mobility, China, Travel behavior

THE TRANSIT QUALITY EFFECTS ON MODAL SPLIT; INSIGHTS FOR EQUITY PLANNING

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Individual Paper Presentation

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Ensuring fair, effective, and sustainable transit services is crucial for both planning agencies and transit riders. Despite implementing various multimodal transportation policies and the recognized benefits of public transit, such as cost-effectiveness and lower emissions, many cities are struggling to deliver satisfactory transit quality. This issue has led to a consistent decline in transit ridership across different cities despite population growth (Driscoll et al., 2018; Erhardt et al., 2022). Past research has documented several factors contributing to this decline, including poor transit service quality, competition from other modes of transportation, certain built environment characteristics, socio-economic and demographic shifts, and the rise of remote work options (Cervero & Kockelman, 1997; De Witte et al., 2013; Dill et al., 2013; Grimsrud & El-Geneidy, 2013; Watkins et al., 2021). On the other hand, car-oriented and sprawled development, suburbanization of affluent households, migration of low-skill jobs to older suburbs, and concentration of urban poor in central areas (Grengs, 2005; Ihlanfeldt & Sjoquist, 1998; Kain, 1968) have limited mobility options for several socio-economic groups. To make these services more accessible and equitable, research has been done to evaluate how different factors may affect commuting mode choice. However, it has yet to explore how commuters from different socio-economic (such as income) groups may incorporate these influential factors into their commuting mode choices. Accordingly, this study attempts to

employ state-of-art modeling techniques to illuminate what drives commuting behavior choices and uncover disparities in this behavior from different socio-demographic groups. The insights generated by this research will inform multimodal transportation planning, public transit network design, and transportation equity.

To achieve our research goal and address the gap in the literature, we devise a multi-step statistical data analysis process utilizing state-of-the-art modeling techniques. Initially, we collect and process aggregate zonal data encompassing transportation accessibility, transit level-of-service (including in-vehicle time, wait time, and transfer time), the built environment, and sociodemographic factors. Subsequently, we construct two difference-in-difference (DID) models to examine the impact of introducing a new rail system in low- and high-income neighborhoods, aiming to understand variations across income categories. Following this step, we develop three types of longitudinal models (ordinary least square, spatial lag, and machine learning) to identify the most suitable technique for predicting zonal mode share data. Further, we build separate models for low- and high-income mode share data using the most effective technique identified. Finally, we compare the effects and relative importance of various factors across the two income groups, mainly focusing on the transit level of service. Our analysis draws data from the American Community Survey (ACS) for socio-demographics, Longitudinal Employer-Household Dynamics (LEHD) for employment and accessibility, and local Metropolitan Planning Organization (MPO) for built environment and transit service data. The Dallas-Fort Worth Metropolitan Area serves as the chosen case study, with Traffic Analysis Zones (TAZ) as the unit of analysis.

It is expected that the effect of new transit service be greater on low-income groups and our non-linear (machine learning) better fit the zonal modal split data. Also, it is hypothesized that higher income groups show more sensitivity toward transit quality variables. The results of this study hold promise for shedding light on different aspects of transit planning and equity in multimodal transportation. Our quasi-experimental design (DID) will allow us to showcase and compare the average impact of introducing light rail on mode share in both low- and high-income neighborhoods. Furthermore, our analysis, which examines the effects and significance of factors—especially transit level-of-service—on commuting mode share between low- and high-income groups, will provide new insights into improving the effectiveness of transit network design for all demographic segments.

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Keywords: Modal split analysis, Transportation equity, Transit service quality, Multimodal transportation Planning, Statistical and machine learning models

TRANSIT AGENCY'S RESPONSES TO HOMELESSNESS

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Individual Paper Presentation

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In recent years, the numbers of people experiencing unsheltered homelessness has risen. The aim of this research study was to better understand what transit agencies are doing in response to this and other types of homelessness. As part of the study, the research team reviewed grey and academic literature, and then interviewed transit agency staff, continuums of care, and homeless service providers at nine locations around the country.

The findings include several core thematic areas that cut across all of the work: orienting to an ethics of care; collaborating across a region; and, breaking down silos internally. Policies and program that transit agencies are adopting or creating to prevent and resolve homelessness include outreach work, reconsidering policing, using property, and promoting access and mobility. Lastly, key implementation drivers such as a leadership along with robust program effectiveness strategies are essential to program implementation and sustainability.

The purpose of this research is to support transit agencies as they work. The guide is meant to be a practical resource for transit agencies to formulate, develop, and implement practices related to the issues, challenges, and solutions in addressing homelessness in their communities and on their system.

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Keywords: Homelessness, Transit agencies

TRANSIT UNIONS IN DECARBONIZATION AND PLANNING POLICIES

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Individual Paper Presentation

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How do transport workers and labor unions affect decarbonization, sustainability and equity in transport policy? As cities move to decarbonize transportation while attempting to incorporate social and labor justice as integral components (Zabin, 2020), this study aims to understand the role of labor unions, including barriers and potential alliances. We focus in this study on California, where transit operators and mechanics are almost completely unionized, and study how labor policies and union politics are affecting the social and physical transformation of the public transportation system required for a greener economy.

This study relies on interviews with union members, public officials, and civil society experts in the state of California to map out public transportation unions' interests, priorities and courses of action around decarbonization and climate change. A complex "hierarchy of needs" emerges. Workplace safety and basic needs– including access to bathrooms, rest, and difficult work schedules coupled with long commutes – are important priorities. They tend to eclipse issues relating to attempts at decarbonization or long-term planning policy. The rapid introduction of electric buses in the state recently has left vehicle operators and mechanics with limited training and equipment, leading to significant safety problems. Transit services are also at the forefront of the homelessness crisis in the state, creating sometimes dangerous confrontations and requiring a complex skillset for which drivers are provided little training.

Unions are cautious in weighing in on many issues formally, such as housing and land use policy by transit agencies. In other spheres where union members feel they hold expertise, such as routing, level-of-service decisions, public engagement, and transport justice, workers have limited means of communicating or influencing operations. Nevertheless, transit unions are a significant political force in the state, and exert influence when organized on a larger scale, such as through top-down lobbying for state and federal legislation, though more rarely in legislative planning stages.

For a complete decarbonization of transit services, and for those services to regain their ability to capture a significant share of urban travel, technological changes like electrification and automation may be necessary but insufficient. Extensive long-term changes in the operation of transport systems, along with modification of the built environment in cities, are likely necessary to meet that goal. The future of transit funding, ridership, coverage and quality, alongside the employment prospects and quality of jobs in the sector, are completely entangled with each other, and with issues such as urban density and housing affordability, the dispersal of jobs and amenities, and parking and zoning policies.

Understanding unions' engagement, position and interest in these topics means considering both policy and advocacy literature, and direct practice such as through collective bargaining agreements and at the local level. Engaging with the complex, often cautious and skeptical relationship between labor interests and environmental interests, which has sometimes resulted in lost jobs, also requires considering what a union-driven vision of mobility and transportation and city planning may look like. Working to close this knowledge gap and articulate labor interests in planning language, can help develop a necessary part of the toolkit for urban decarbonization policy and alliances.

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Keywords: transportation, public transit, labor, decarbonization, participation

TRANSIT-TNC PARTNERSHIP'S IMPACT ON BUS RIDERSHIP: PINELLAS COUNTY EVIDENCE

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Individual Paper Presentation

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Transit agencies have been partnering with transportation network companies (TNCs), like Uber and Lyft, to offer subsidized rides that connect people to and from transit stations, aiming to address the first mile/last mile (FMLM) challenge and improve public transport ridership. While the literature exploring the relationship between transit and TNCs – when the two services operate independently – is extensive, research on their partnerships, particularly those involving economic incentives, has only recently emerged. The effectiveness of these partnerships in enhancing transit ridership remains speculative as previous studies have predominantly relied on stakeholder interviews or simulation models to understand the impacts, thereby necessitating quantitative assessments using empirical ridership data from real-world transit-TNC partnership programs.

This paper seeks to unravel the intricacies by evaluating the influence of the Direct Connect Program in Pinellas County, Florida, on enhancing local bus ridership. As one of the nation's earliest and largest transit-TNC partnership initiatives, the program provides discounted Uber trips to and from 26 bus stops across the county. We employed a dual approach: first, using a panel data regression model to assess the county-level effect of the program on bus ridership; then, a regression discontinuity model was applied to analyze changes in bus ridership before and after the program's implementation at each eligible stop. The two ridership numbers were measured by the Direct Connect Uber drop-offs and bus boardings at the stops.

The panel model analysis results indicated that the Direct Connect program did not significantly affect county-level bus ridership, potentially because the program was in its testing phase and not widely recognized by residents. However, with a more detailed scale analysis, the regression discontinuity model identified positive effects on bus ridership at three eligible stops during weekdays and two during weekends, all located in areas with higher population and employment density. Consequently, we recommend relocating or canceling stops with low bus ridership and establishing new stops in areas where most people live and work for further experiments. This

research is among the first to quantify the impact of a real transit-TNC partnership program aimed at enhancing bus usage, thus providing valuable insights for cities contemplating the adoption of such partnership programs, leveraging TNC services to improve public transit.

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Keywords: TNC, Transit, Pinellas County, Bus, Transit-TNC Partnership

TRANSPORTATION ACCESS AND EMPLOYMENT IN UNINCORPORATED COMMUNITIES

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Individual Paper Presentation

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Low-income unincorporated communities have proliferated in the U.S., along with housing costs (Durst et al., 2021). Meanwhile, many impoverished Americans struggle with reduced mobility due to the high costs of automobile ownership and limited non-automobile travel options (Blumenberg & Agrawal, 2014). Transportation precarity can reduce access to employment (Coren et al., 2022), thus limiting low-income people's social and economic mobility. However, research on low-income unincorporated areas emphasizes issues of housing precarity (Durst, 2019). Few studies have examined the interactions of peri-urban poverty, transportation access, and employment outcomes.

To bridge this gap in the literature, we draw from data collected through two years of fieldwork and surveys with 75 residents. This paper examines the relationship between automobility, legal status, social capital, and employment in Springville, a community located about 20 miles from downtown Dallas. Springville lacks running water, sewage systems, waste management services, public transit services, and internet access. Formerly enslaved African American families originally founded Springville in the 1870s. Environmental issues, including a FEMA flood plain

designation in 2003, have restricted the ability of residents to upgrade their homes. This caused most of Springville's original African American residents to leave the community.

Despite factors that make Springville unattractive, however, many residents have arrived within the last two decades. Newer residents include immigrants from Latin America and native-born Latinx and non-Hispanic white people. Many have moved to the community due to its affordable housing. Springville's population has grown more racially and ethnically diverse. As of 2023, it was home to 145 residents.

Springville's labor and transportation market contexts illustrate some of the challenges faced by low-income, unincorporated communities. The area, including and surrounding Springville, primarily hosts industrial employment. It offers few jobs in the service sector. In terms of transportation infrastructure, Springville lies about four miles from a three-digit U.S. highway. Residents can use the Dallas Area Rapid Transit (DART) GoLink on-demand transit service. However, due to its unincorporated status, the actual GoLink service area does not include Springville. Springville is an optimal case study for assessing connections between limited municipal services, transportation constraints, and employment outcomes.

To address research questions, we surveyed residents about their levels of automobile access, employment status, and travel behavior. First, how does automobile ownership influence employment access for low-income residents of peripheral unincorporated areas? How do other factors – including race, tenure, citizenship status, health status, and social capital– affect employment? Though most Springville residents lived in poverty, most had access to a working automobile. A large percentage of people with and without automobiles – indeed, 78 percent of employed Springville residents – held informal jobs. Further, informal workers who remained within the community earned meager wages. Many worked with livestock and did irregular tasks for neighbors.

We find that automobile access and employment outcomes had no statistically significant relationship. However, we identify a strong relationship between car ownership and commuting behavior: automobile owners were more likely to drive to work and non-owners were more likely to carpool with co-workers. This highlights the critical role that automobiles play in determining access to job opportunities. Other factors – including legal immigration status, history of incarceration, and access to social capital – also helped determine employment outcomes.

In informing policy, we find that auto-based transportation resources influence economic outcomes. Most (64%) Springville residents expressed interest in using public transit should it become available. Without access to public transit, however, residents of similar unincorporated municipalities may need to find creative ways to secure access – either private or shared – to automobiles.

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Keywords: unincorporated areas, transportation poverty, informal employment, peri-urban travel, automobile access

TRANSPORTATION EQUITY ANALYSIS OF FUTURE SHARED MOBILITY

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Future mobility promises to be environmentally sustainable, congestion-friendly, and more equitable if shared modes are made readily available, accessible and utilized (Eppenberger & Richter, 2021). Shared Autonomous Vehicles [as one form of future mobility] are debated to push for less vehicles on the road, controlled empty trips, managed gas emissions, and more affordable rides when compared to the private AV(Benkraouda et al., 2022). If we look at today's landscape of ride-hailing (as a form of shared mobility), studies suggest that they do not necessarily fill the transportation equity gap, and best case scenario complements public transportation in a specific context (Jin et al., 2019). In fact, some studies find that people of color, lower-income people, women, and older adults usually don't sign up for ride-hailing membership and consequently, there are clear disparities in access and use when compared to their counterparts (Dill & McNeil, 2021).

In aims of further deconstructing the equity landscape of shared new mobility, our research doesn't try to verify the equitableness of ride-hailing (as that has been investigated already), but rather try to understand the nature of this inequity. To understand the possible equity landscape of shared new mobility, we use ride-hailing data as a proxy since data on shared electric vehicles, shared connected vehicles, and shared autonomous vehicles is limited. We ask the following questions:

1) How does the ride-hailing travel behavior of lower income differ from that of higher income areas?

2) From a ride-hailing perspective, how do higher-income areas interact with lower-income areas?

We use Chicago as a case study for this analysis. For ride-hailing data, we utilize Chicago's Transportation Network Providers (TNP) data provided publicly and for socioeconomic factors, we use census data. Inspired by (Barajas & Brown, 2021), we conduct a regression analysis to see which socioeconomic factors influence ride-hailing trips. We run an OLS linear regression on a total of 42 socioeconomic factors and regress against density of trips per census tract.

We also analyze the origin-destination combinations to further understand the landscape of movement (low-income to high-income and vice versa).

Preliminary OLS suggests that socioeconomic factors most contributing to using ride haling are bus stops per capita, vehicle ownership, and percentage of people with disability.

Preliminary origin-destination results found that trips originating from higher income areas show distinct travel behavior patterns with peak hours very high. These trips are short in distance when compared to the rest areas. Mid-high income areas especially show higher utility of ride hailing throughout the day and evening. This suggests a more robust use of ride-hailing for different purposes such as entertainment, work, appointments, shopping, etc. Middle income areas show a typical 2-peak travel behavior, suggesting the utility of ride hailing for work purposes. Their trips also vary more in distance. Trips originating from low-income people have no clear travel behavior. This suggests a more necessity-based use of ride-hailing. Their trips also vary more in distance and cost.

This research aims to shed light on the nature of inequity in ride-hailing and promote a mobility future that makes shared mobility accessible, affordable, and readily available.

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Keywords: Shared Mobility, Ride-hailing, Connected and Autonomous Vehicles, Transportation Equity

TRAVEL NEEDS OF OLDER ADULT WOMEN IN MID-SIZE CANADIAN CITIES

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Individual Paper Presentation

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With the aging of baby boomers, the number of older adults (age 65+) in Canadian cities is rapidly increasing (Hartt & Biglieri, 2018). By 2050, older adults are projected to constitute 25% of the total population (Guruge et al., 2019). This generation is known to be highly dependent on personal automobiles and rarely use public transit to fulfil nearly all their daily travel needs well into their senior years (Rahman et al.,2016). However, at some age, each older adult will lose his/her/their driving license and will have to cease driving. How will older adults fulfil their travel needs when they can no longer drive? This challenge will be compounded among women. Women tend to live longer than men, generally have lower income/wealth, cease driving at earlier ages and are less affluent than their male counterparts (Hjorthol, 2012; Newbold, 2015). This paper examines the travel needs of older adult women and establishes the mobility challenges that they face after driving cessation. It includes an analysis of primary qualitative data derived from interviews with selected older adult women living in Kingston, Ontario.

Interview participants were asked about their travel needs, challenges encountered in making the trips, unfulfilled travel needs and reasons for the same. Additional questions were asked about travel wants, i.e., additional trips they would like to make if given a choice. Interview data will be coded thematically and analyzed using NVivo software. The findings will inform age-friendly and inclusive urban transportation programmes and services that cater to the unique travel needs and wants of older adult women, thereby enhancing their independence, social engagement, and quality of life.

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Keywords: Older Adults, Travel behavior, Mid-size cities, Unmet travel needs

TRENDS IN PARCEL DELIVERY DRIVER INJURY: EVIDENCE FROM NEISS-WORK

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Individual Paper Presentation

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The rise of e-commerce has rapidly increased the proportion of goods that are delivered directly to customers' homes. While this shift has increased convenience and accessibility to goods for consumers, it has brought a corresponding increase in delivery vehicles and personnel who compete for limited curb and street space, which have historically not been designed for this volume and type of use. Explosive growth of e-commerce has therefore placed notable demands on delivery personnel, with potential health and safety consequences, both as they navigate the transportation system and because much of their role is performed outside their vehicles in the built environment, particularly at the curb.

In this paper, we examined trends in parcel delivery driver injury through analyses of injuries treated in emergency departments (ED) in the United States from 2015 through 2022, using data from the occupational supplement to the National Electronic Injury Surveillance System (NEISS-Work). Emergency department data provides a critical, and often underutilized, data source when examining workplace safety and can help fill gaps and increase

understanding of burden, trends, and characteristics of these injuries. Prior work has begun to investigate these trends but has typically used occupational surveillance data that depends on employers to keep records and accurately respond to occupational injury surveys, a process which has well-documented patterns of underreporting. ED data provides an important way to triangulate these trends, since cases are recorded when presenting at the hospital, rather than when a workplace successfully records them.

Therefore, in the face of a dynamic delivery landscape in which e-commerce continues to drive change and a data landscape that eludes facile understanding of injury trends in this sector, this study pursues two main research questions:

1) What are the developing trends in delivery personnel injuries according to national estimates from a representative sample of emergency departments (EDs)?

2) How do injury trends among private carriers, where e-commerce is causing particularly rapid changes, compare to the United States Postal Service over the same period?

We explored trends among Couriers and Messengers as well as Postal Service personnel as designated by Bureau of Census (BOC) industry codes. We estimated counts and rates of injuries per 10,000 full time worker equivalents and examined demographics (e.g., age, sex) and other characteristics (e.g., source of injury, injury diagnosis) associated with these injuries.

We found that: 1) Injury counts among Couriers and Messengers have increased rapidly in recent years, largely speaking to growth in employment among private carriers, 2) ED-treated injury rates between 2015 and 2022, among both the Postal Service and Couriers and Messengers, have demonstrated upward trajectories, contrasting with overall US industry injury rates, which have trended downward, and 3) While ED-treated injury rates for these industries have taken different paths over time, both industries' ED-treated injury rates have converged toward a position much higher than average. Moreover, we found that ED injuries were disproportionately experienced by female and young personnel. Transportation incidents accounted for a relatively small percentage of injuries, while overexertion, falls, and contact with objects/equipment accounted for the bulk. Future research should investigate the interaction between the hazards that precipitate these injuries, the built environment, and work culture. We further conclude that the current data landscape prevents the development of a nuanced picture of injury trends and hazards, inhibiting exploration of many specific hazards, and therefore preventive measures that would be designed based on such specific exploration.

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Keywords: parcel delivery, safety, last-mile, freight, e-commerce

UNCOVERING THE CAUSAL IMPACT OF COMMUTE TIME ON REMOTE WORK PREFERENCES

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Individual Paper Presentation

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Remote work, which refers to work performed out of the traditional organizational constraints of space and time, has been recognized as a promising sustainable mobility solution due to its potential to mitigate traffic emissions by eliminating commuting. During the COVID-19 pandemic, the remote work mode experienced unprecedented growth and continues to prevail even after the pandemic. The study of remote work behavior has become an important topic in the field of planning and transportation. Among various approaches aimed at understanding the factors influencing individuals' remote work preferences and decisions, job-housing imbalance, measured by individuals' commuting time, has been identified as a significant factor. Nevertheless, there remains a lack of studies analyzing the causal impact of commute time on remote work.

Given that previous studies were based on surveys with small samples, this research studies the causal effect of individuals' commute time on remote work preferences and choices using the monthly conducted U.S. national SWAA survey, from May 2020 to June 2023, which covers the data over 100,000 residents. Considering the treatment variable in the traditional Propensity Score Matching (PSM) must be binary, we utilized the Generalized Propensity Score (GPS) method to address the endogenous issue caused by the self-selection bias. This research has three main findings. (1) Commute time has a stronger effect on people's remote work preferences over frequency. Discrepancies between people's remote work preferences and actual remote work frequency highlight the constraints individuals may encounter when opting to work from home. (2) The causal impact of commute time on people's remote work preferences is non-linear and exhibits a non-monotonic relationship, with the marginal effect fluctuating, changing from negative to positive and eventually approaching zero. (3) This causal impact mechanism is associated with various socioeconomic factors. Specifically, this causal impact is heterogeneous across gender, income, and whether having children.

This study has three main contributions. (1) We incorporated the concept of remote work preferences into the existing research framework on remote work. (2) This is one of the first studies that examined the causal impact of commuting time on remote work preferences. (3) We unraveled the non-linear effect of commuting time and analyzed the complex mechanism of commuting on remote work. The results of this research can provide valuable insights for policymakers to understand people's remote work preferences in the post-pandemic period, build more

vibrant urban communities, conduct traffic demand management, and reduce traffic emissions to address climate change issues.

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Keywords: Remote Work, Commute, Causal Inference, Generalized Propensity Score (GPS), Marginal Effect

UNCOVERING THE LATENT TELECOMMUTING DEMAND: 2023 MARYLAND COMMUTER SURVEY

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Individual Paper Presentation

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The COVID-19 pandemic has dramatically shifted the landscape towards telecommuting, underscoring its potential for a sustainable, equitable, and productive future. The literature highlights benefits such as enhanced work-life balance, increased productivity, and environmental improvements through reduced commuting. However, challenges exist, including the digital divide affecting lower-income groups and the potential for isolation and overwork due to decreased physical workplace interactions. Moreover, transitioning to telecommuting requires significant organizational changes, including technology investments and management practice adjustments, to ensure its viability (Asmussen et al., 2024; Huo et al., 2023; Zhang et al., 2020).

This study, utilizing the 2023 Maryland Commuter Survey (MCS), provides empirical insights into the latent demand for telecommuting among Maryland's workforce, a topic not fully explored in existing literature. It reveals a consistent preference for telecommuting, despite a strong return to in-person work, quantitatively highlighting the demand for remote work arrangements within Maryland. The research segments workers based on their telecommuting status, desire, and feasibility, offering a detailed understanding of how demographic and occupational differences influence telecommuting preferences.

The analysis identifies several distinct groups based on their ability and preferences for telecommuting. “Tele-Ready Enthusiasts” tend to be relatively young and highly educated, are disproportionately self-employed, and more often work in healthcare and professional services. “Current Telecommuters” also tend to be highly educated,have relatively high incomes, and work predominantly in office settings. By contrast, “Remote Dreamers”

report preference for telecommuting but the inability to do so in their current jobs. They are more often people of color with lower incomes and education, and tend to work in customer-facing roles like retail and education. Socioeconomic disparities between the groups highlight inequities in who is able to telecommute.

Participants across categories cite telecommuting's benefits, including flexibility, reduced commuting times, and improved productivity, emphasizing the widespread value placed on work-life balance. Furthermore, telecommuting is seen as an adaptive approach to enhance employment access and equity, especially for workers with disabilities and those desiring remote work, suggesting its role in addressing sustainability and equity issues.

Despite the positive outlook, the digital divide remains a barrier, especially for Remote Dreamers hampered by socioeconomic and educational challenges. The study suggests the need for policies that extend beyond infrastructure to improve digital access and literacy and enable a transition to telecommute-friendly roles. This approach would address the limitations of certain industries and roles that require physical presence, ensuring telecommuting is a feasible option across various sectors.

In conclusion, the latent demand for telecommuting among Maryland workers suggests a significant, yet underutilized, opportunity to reshape the future of work in ways that promote flexibility, sustainability, and equity. As the state navigates the post-pandemic work landscape, developing policies and infrastructure that support telecommuting could align workforce desires with broader environmental and social goals for a new era of work that embraces the benefits of remote and hybrid models.

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Keywords: Telecommuting, Hybrid work, Latent demand, VMT, Digital divide

UNDERSTANDING E-BIKE INJURIES: ANALYSIS OF NEISS EMERGENCY ROOM RECORDS

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Individual Paper Presentation

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The dramatic increase in e-bicycle ridership over the past few years has generated excitement over the sustainability benefits but concern over safety implications. Planners and policy makers thus face competing pressure to both support and limit e-bike usage. Much of the debate focuses on what policies are needed to protect riders and other transportation system users. E-bikes raise safety concerns beyond those associated with human-powered bicycles because e-bikes are faster and accelerate more quickly.

This study explores 2022 e-bike injury data from the National Electronic Injury Surveillance System (NEISS), a national dataset from the U.S. Consumer Product Safety commission. NEISS is of particular value for understanding e-bicycle injuries because it is the only datasource that can be used to estimate national injury numbers. We analyze NEISS data to answer three research questions about e-bicycle injuries:

- What types of injuries were sustained?

- What personal characteristics and incident circumstances were associated with e-bike injuries?

- To what extent is NEISS data on e-bike injuries reliable and useful?

NEISS tracks emergency room (ER) visits associated with consumer products from a nationally representative sample of 96 hospitals. For each patient admitted to the ER, the NEISS “case” includes a short narrative of incident details (400 characters maximum) plus pre-coded variables on product type (including e-bicycles); patient characteristics, medical data, and incident location type.

We coded the narrative summary for each case to prepare the study dataset. We first checked to confirm whether an e-bicycle was involved, and this step generated 519 cases for further analysis. We then reviewed the narrative for relevant cases to document any available information about the patient’s activity when the incident occurred, the immediate cause of injury (i.e., collision with a motor vehicle vs. a fall), and additional factors leading up to the incident (i.e., swerving to avoid a collision or an unstable travel surface).

Study findings about e-bike injury cases include the following. Three-quarters of patients were male and 84% were adults. Findings on race and ethnicity are unreliable because no records were made for a large proportion of cases. Almost half of injuries were reported as occurring on a street or highway (48%), though another 38% were missing a location code. The body parts most commonly injured were the head (19%), face (12%), and knee (11%). The most common diagnoses were fracture (25%), contusion/abrasion (20%), laceration (13%), or internal organ injury (13%). With respect to the circumstances of the injury, almost all patients were traveling on the bicycle when injured. Fifty-three percent of injuries were caused by a fall (without mention of a collision), and 29% occurred when a rider collided with a motor vehicle. Alcohol was reported in 6% of cases and drug use in 1% of cases.

Finally, we also assessed how reliable and useful NEISS data is for understanding e-bicycle injuries. NEISS data proved useful for identifying the types of e-bike injuries commonly reported in ERs, as well as revealing that falls as well as collisions are common causes of injuries. Further, NEISS data can be used to compare the nature of injuries from e-bicycle injuries to those from human-powered bicycles and mopeds.

The data has serious limitations, however, due to both design and quality. A key limitation is that NEISS only reports injuries that resulted in an ER visit. Also, the database is not designed to capture precise details about the kind of injury circumstances that could be used to identify needed transportation planning and engineering improvements.There are also numerous data quality problems with NEISS: the narratives are often unclear or missing key information.

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Keywords: e-bicycles, safety, collisions, public health

URBAN ARTERIAL LANE WIDTH VERSUS SPEED AND SAFETY

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Individual Paper Presentation

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This quantitative analysis paper investigates the connection between lane width, speed, and crash rates to understand road safety and transportation impacts. The study consists of four main components: a literature review on the effects of narrower lanes and design features on speed and safety, a survey of minimum lane width policies by state DOTs and AASHTO Committee on Design members, and statistical analyses on factors affecting speeds and crash counts. Data from 320 urban and 61 rural arterial sections in Utah were analyzed. The results consistently support reducing minimum lane widths in Utah, indicating that narrower lanes on urban arterials can reduce vehicle speeds without increasing crash rates. The extra space from narrower lanes can be used for various safety-enhancing purposes such as bike lanes and medians..

The paper proposes revising the 12-foot standard to 11 feet in urban areas, possibly 10 feet in special cases, with exceptions for heavy truck traffic. The analysis was conducted separately for urban and rural arterials. Narrower lanes in urban areas led to lower speeds, with each foot of reduction resulting in a 1 mph speed decrease. Additional factors influencing urban arterial speeds include the number of lanes, median presence, on-street parking density, roadside objects, and block length. In rural areas, narrower lanes also reduced speeds, but the analysis was inconclusive due to limited sample size.

Injury crash counts on urban arterials were positively related to lane width and speed, with wider lanes and higher speeds increasing the likelihood of injury crashes. Other significant factors for crash counts were the number of

lanes and AADT per lane in thousands. In conclusion, this study supports reducing lane widths to enhance road safety and optimize transportation infrastructure in urban areas. Decision-makers and transportation agencies can use these findings to improve road safety and performance.

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Keywords: urban arterial lane width, traffic speed, traffic safety and Vision Zero, state lane width standards, livable streets

USER EXPERIENCES IN TRANSIT SERVICE DISRUPTIONS DURING A SOCIAL MOVEMENT

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Individual Paper Presentation

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In recent years, a growing number of social movements have emerged around the world, such as Occupy Wall Street (United States), Gezi Uprising (Turkey), and the Umbrella Movement (Hong Kong). These movements have seen urban spaces adopt strong symbolic meaning with regard to political power and the wider public sphere (Hutabarat, 2010; Lefebvre, 1991). Empirical studies have observed various social movements occupy and use public urban spaces, such as streets, squares and other open spaces, for public gatherings and political protest (Loukaitou-Sideris & Ehrenfeucht, 2009). Public transport systems can be sites of protest and subject to vandalism due to their symbolic nature as extensions of the government and their crucial functional role in everyday economic and social life, which social movements can strategically aim to disrupt. Service disruption of PT systems during social movements is not uncommon, which can markedly impact people's daily lives (Salmenkari, 2009) and attitudes towards public transport (He et al., 2024).

This study examines the impact of a social movement (the 2019 Anti-Extradition Law Amendment Bill Movement) on transit services in Hong Kong, where acts of violence and vandalism in public spaces disrupted urban services and everyday activity. We study the interplay between different political stances, attitudes towards radical protest activities, the perceived impact of public transport disruption on travel, and travel satisfaction in the context of social unrest. Employing a mixed-methods approach, we conducted a questionnaire survey and interviews in Hong Kong in 2020. Our results indicate that attitudes towards radical protests affect perceived impacts of transit disruption and travel satisfaction, and such relationships vary by our respondents' political views and socioeconomic status. Our study highlights the role of political ideology in support for social movements and the subjective nature of evaluations of service delivery performance, with citizen satisfaction not driven solely by objective performance but also by other social and political factors.

Based on the findings, we propose several policy recommendations to enhance the resilience of public transport and urban service systems during periods of social unrest. First, due to their visibility and openness, transit systems are highly vulnerable to disruptive activities. Rail operators should prepare contingency plans for potential service disruptions. Second, measures can be taken to improve communication in similar situations as efficient communication of travel disruptions and the availability of alternative services is vital. Finally, we recommend ensuring the availability of alternative mobility options in the case of future disruptions to transit systems. More generally, it is critical to encourage a multi-modal transport system that includes emerging micro-mobility modes.

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Keywords: Transit disruption, Public transport, Travel satisfaction, Public acceptance, Social movement

UTILITY OR EQUITY? A CRITICAL ANALYSIS OF PUBLIC EV CHARGER ALLOCATION

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Individual Paper Presentation

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Federal and local policies support the transition to electric vehicles (EVs) as part of transportation electrification efforts, highlighting the need for an expanded charging infrastructure to accommodate the growth of EV adoption. Despite its importance, disparities in access to public chargers have been underscored, especially in historically

disadvantaged communities (Hsu and Fingerman, 2021). The term "charging equity," introduced by scholars like Carlton and Sultana (2022), delves into these disparities, emphasizing the need for equitable access within the broader framework of transportation equity. Transportation equity demands a normative understanding of equity - questioning for whom, for what purpose, and to what extent it should be applied (Karner et al., 2020). Measuring transportation equity is complex, often guided by egalitarian (focusing on equal access) or sufficientarian (ensuring needs meet a certain threshold) philosophies to tackle issues of access inequality and poverty.

In assessing charger access, existing studies have mainly adopted a distributional approach grounded in egalitarian philosophy (Hsu and Fingerman, 2021; Jiao et al., 2023), which normatively critiques scenarios where certain socio-demographic groups have greater access. These studies also often use a majority threshold definition, categorizing access based on race or income levels in neighborhoods. Inherently, using the majority threshold definition fundamentally neglects the needs of populations below the specified threshold and cannot address equity concerns on a continuous scale. Charging equity studies have also neglected to approach the charger access issue with sufficientarian framework.

In the meantime, Karner and Pereira (2024) introduced new methods to measure transportation equity on a continuous scale for both access inequality and access poverty. It remains uncertain how studies explicitly focused on charging equity can be integrated with these new transportation equity toolkits. Hence, transportation planning scholars often overlook the contributions of transportation engineers. The link between utility and the equity framework remains disconnected.

This study conducted a critical analysis of existing public chargers in the Austin metropolitan area. We proposed a comprehensive research framework, reviewed all existing methods for quantifying transportation equity, and provided empirical findings. We addressed both access inequality and access poverty concerning public chargers. For access inequality, Gini scores, Theil index, Palma ratio, and concentration index were showcased. For access poverty, the concept of charging deserts along with results from needs-gap analysis and FGT scores from low to high-income percentiles were calculated. Additionally, our study utilized an opportunity-based accessibility measure, employing travel time and a kernel density function to evaluate the quality of access to opportunities. Thus, we connected opportunity-based accessibility, the domain of transportation engineering, to equity studies and investigated the relationship between utility and equity.

The analysis results indicate that utility and equity are interrelated. Relying solely on equity methodologies falls short because previous frameworks fail to accurately calculate FGT scores. Utility alone cannot fully uncover disparities. To transition from a static threshold to a continuous scale in charging equity, the use of the concentration index provides empirical evidence of access inequality on a continuous scale across different demographics. The threshold definition aids in the calculation of the Theil index with the newly introduced segregation module in statistical software. The conventional Gini score helps to provide an overview of the existing conditions, while the Palma ratio is found to be ineffective. For access poverty, needs-gap analysis, such as charging desert, depends on a defined criterion for calculation. The calculation of FGT scores is more objective than the needs-gap analysis. However, accessibility scores must be determined to calculate FGT. Thus, a synthesis of utility and equity is required to fully understand charging equity. Hopefully, future research will be able to adopt and test newly introduced methods in their equity studies.

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Keywords: Electric vehicle, Electric vehicle charging station, Transportation equty, Charging equity, Equity toolkit

VEHICLE OWNERSHIP CHANGES IN CALIFORNIA DURING THE COVID-19 ERA

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Individual Paper Presentation

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While waning demand for transportation was widespread early in the pandemic, shifts in trip making were not uniform across the population. Fears of contracting the virus through in-person contact privileged the private automobile, in which travelers could minimize interactions with others. Higher-income transit users who had access to automobiles (or the financial resources to purchase one) had a strong incentive to shift modes, while those left riding transit were more likely to be lower-income riders with few mobility options. However, just as higher-income individuals could more easily avail themselves of vehicle travel, the normalization of work-from-home (WFH) led to declining demand for transport among an overlapping population of highly educated, white-collar workers. Lower-income workers, by contrast, were far less able to WFH, meaning those with the fewest resources were the least likely to have their travel burden reduced.

This analysis examines associations between household- and person-level socioeconomic characteristics and changes in vehicle ownership in California during the COVID-19 pandemic. Using Public Use Microdata Samples from the US census and a series of logistic regression models, I investigate car ownership rates among households across the income spectrum, and then assess the degree to which changes in WFH contributed to car ownership changes during the pandemic era.

Findings show modest increases in car ownership among lower-income households, particularly those earning less than the poverty threshold. All else equal, the proportion of these households with at least one vehicle per adult increased by approximately two percentage points during the post-pandemic period (relative to 2019), while the proportion of carless households declined by roughly the same amount. By contrast, car ownership in higher-income households declined following the pandemic's onset. By 2022, the proportion of households with at least one car per adult dropped by 2.5 percentage points compared to 2019, while the proportion with fewer cars than adults increased by a similar amount.

Much of the change in car ownership in higher-income households can be attributed to increasing rates of WFH. The percentage of university-educated workers who WFH rose nearly fourfold during the pandemic, and for high-income households, the likelihood of having at least one car per adult dropped from 85 percent when there were zero household members WFH to 70 percent when two adults WFH. WFH rates increased only slightly for those with less than a high school education during the pandemic, and in households earning less than the poverty threshold, there were no associations between WFH and changes in vehicle ownership.

Overall, results raise concerns that while increases in automobility may improve destination access for lower income households, the costs associated with vehicle ownership may increase the financial burden of poorer travelers, particularly in the absence of COVID-era subsidies.

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Keywords: COVID-19, travel behavior, vehicle ownership, socioeconomics

VULNERABILITY OF COMMUTES: SIMULATING US STREET NETWORK DISRUPTIONS

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Individual Paper Presentation

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Street networks underlie the commuting trips that physically connect people with their livelihoods. However, this infrastructure is vulnerable to disruption and failure from disasters, congestion, and targeted attacks. While the literature has investigated these disruptions' impacts on trips, particularly evacuations, we know little about the resilience and robustness of commutes following different disruption event types in different cities. Individuals' inability to access their livelihoods has enormous economic ramifications both for the individual and for society as it recovers from the disruption event. Where are commutes most vulnerable to street network failure in the US? What network design characteristics explain this variation in vulnerability? Are disadvantaged communities more vulnerable to commute disruptions, and in turn the impacts on their livelihoods?

To answer these interrelated questions, we model the street networks of 387 US metropolitan statistical areas (MSAs) and simulate commute trips for more than 82 million workers using the Census Transportation Planning Products (CTPP) data to identify origin-destination (OD) pairs. We then simulate these commute trips both before

and after network disruptions of three different types, representing: 1) targeted attacks on the most “important” points of the network, 2) random failures during high spatial entropy disasters, and 3) flooding-based disasters. We measure the impact of disruptions on our commute trips through two indicators of the inverse of vulnerability: 1) robustness, i.e., whether the trip remains possible following the event, and 2) efficiency, i.e., the increase in shortest-path distance due to rerouting after the event. We then build predictive models of each of these indicators to investigate the relationships between street network characteristics and commute vulnerability. The key variables of interest include three design variables (measures of connectedness, circuity, and the presence of network chokepoints) and one race variable (whether the commuter is white or not). The design variables jointly capture the connectedness, redundancy, and efficiency of the network, which hypothetically allow commuters to find alternative routes and to keep their trips completable when parts of the network fail. We also include a full set of controls.

Our findings reveal how removing important network nodes has enormous ramifications on the robustness and efficiency of commute trips. Destroying the most important 10% of nodes results in less than 15% of the commute trips remaining completable by any route. The random and flooding-based disruptions with a similar 10% extent were relatively less destructive, but still show large impacts: only 48% and 60% of commutes remain completable, respectively. Commutes in cities with poor connectedness, circuitous streets, and trips concentrated in vulnerable parts of the network are more likely to fail. We also find that white commuters’ trips exhibit greater robustness and efficiency following a disruption, suggesting a distinct equity problem. We argue that planners can influence these outcomes by 1) shifting the locations of homes and workplaces over time, 2) reducing segregation, and 3) emphasizing specific design characteristics that foster resilience when building new or retrofitting existing urban transportation networks.

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Keywords: Street Networks, Commutes, Resilience, Vulnerability, Inequity

WALKING ACROSS BORDERS: CHALLENGES TO WALKABILITY IN THE GLOBAL SOUTH

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Individual Paper Presentation

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Climate change and public health concerns are increasingly necessitating more attention to non-auto modes of transport. By improving walking infrastructure and enhancing the pedestrian experience, we can not only increase walking trips but also transit ridership. The literature on walkability perceptions and barriers is relatively nascent in the Global South, but has been growing recently. Gendered mobility issues have featured prominently in the few walkability studies situated in the Global South. Equity and gendered safety challenges will set us back in achieving our climate targets, unless we protect and value the needs of vulnerable groups who are dependent on walking and public transit.

Through an international collaborative project between MIT (USA), IIT Bombay (India), and TEC de Monterrey (Mexico), we aim to contribute to the growing literature on walkability perceptions and challenges in the Global South, with an eye towards exploring gendered differences as well. We chose four diverse rail transit stations - two each in Mumbai, IN and Monterrey, MX – to further examine pedestrian infrastructure in their catchment areas. These stations vary in terms of passenger volume transiting through the station, surrounding land use (which generate/attract trips with different purposes), and pedestrian infrastructure in the catchment areas (which enable/impede access to different destinations, including public transit). We also intend to explore determinants of walking propensity and identify challenges and barriers around walking, especially for women. This project builds on our previous research on walkability in Somerville, Boston, San Francisco, Los Angeles, and New York City (US), Melbourne (AU), and Beirut (LB).

We propose employing mixed methods to understand the pedestrian experience in our study areas. The initial phase of the project focuses on conducting walkability audits through both automated and manual approaches. We intend to explore whether automated approaches using Google Street View imagery, which are prominently used in the Global North, can be used effectively in the Global South as well. Building on our assessments of walkability in the study areas from Phase 1, we intend to learn more about the pedestrian experience directly from pedestrians who use these spaces in a regular manner. We propose conducting intercept surveys and short interviews of pedestrians in these transit catchment areas to understand two particular aspects of their experience: (a) why and where are they walking, and (b) the challenges and barriers they face when they walk. We intend to ask questions related to safety (e.g., interactions with vehicles, streetlights, interactions with other people in public spaces), pedestrian infrastructure (e.g., sidewalks, crosswalks, footbridges, pedestrian crossing signals), and attitudes towards walking. We have included questions related to the effect of extreme weather on pedestrian experiences in our survey as well.

In addition to understanding differences in walking behavior and impediments for walking across sociodemographic categories (e.g., gender, income, age), we will also explore whether (and how) the station type, surrounding land use, and pedestrian infrastructure in the catchment areas affect walking behaviors and perceptions. These efforts are expected to lead to a better understanding of walking needs and challenges in the Global South, so that we can inform the creation of urban spaces that facilitate more walking not just from one point to another, but also to and from public transit.

This project was recently funded by the Volvo Education and Research Foundation (VREF) and began in February 2024. We are currently working on the survey instrument and will conduct site visits for walkability audits and data

collection in May, June, and July. We expect to have wrapped up data collection and conducted preliminary data analysis by October, and are aiming to share our results to the ACSP community in November.

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Keywords: Walkability, Pedestrian safety, Transportation equity, Travel behavior, Transit-oriented development

WHERE DOES SOCIAL INFRASTRUCTURE EXIST NEAR SUBWAY STATIONS?

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Individual Paper Presentation

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Social infrastructure and subway stations play crucial roles in supporting social connections and transit flows in cities respectively. However, some subway stations present opportunities for dynamic third places to thrive, while others find themselves in underdeveloped areas, surrounded by vast parking lots. Prior studies primarily explored this divide through the frameworks of transit-oriented development (Curtis, et al, 2009) and location theory (Netz, et al, 2002). Yet, relationships between subway stations and social infrastructure are highly heterogeneous and are rarely addressed on a global scale. Little is known about the distribution of subway stations surrounded by social infrastructure versus those lacking such amenities. The complex interactions between factors (e.g., car-oriented infrastructure, population density, building areas, and locations of subway stations) further complicate the distinction between site-specific lessons and transferable insights for urban planners.

This study addresses this gap by analyzing 11,914 subway stations worldwide, using OpenStreetMap data retrieved in September 2023. We focus on two key questions: (1) Where does social infrastructure exist near subway stations? (2) How do built environment factors (e.g., population density, building area, road length, and car-oriented infrastructure) affect colocation patterns?

We conducted descriptive analyses on both city and station levels. At the city level, we grouped subway stations by city and calculated the median count of social infrastructure points of interest (SIPOIs) around the stations. At the

station level, we reported rankings of stations with high SIPOI count and diversity. To explore relationships between built environment factors (esp. car-oriented urban infrastructure), and SIPOI count and diversity, we plotted scatterplots between these variables on a log scale, with all data and data broken down by continents. Next, we used genetic matching to evaluate the effect of car-oriented infrastructure while controlling for population density, building area, road length, and continent. The findings were supplemented with highlighted case studies.

We found that cities with high quantity and diversity of social infrastructure around subway stations are concentrated in Europe, with a few other metropolises in Asia, South America, and North America. We also observed nonlinear relationships between SIPOI count and population density, building area, and road length, with variations across continents. However, stations with car-oriented roads and high parking availability within the catchment area have a consistent negative impact on the count of SIPOIs, even after controlling for other built environment factors. Moreover, road type has a stronger impact than parking, highlighting the importance of coordinating traffic demands on primary roads with local mobility needs for pedestrian-friendly pathways.

We shared a global dataset of subway stations and their surrounding SIPOI statistics. With the dataset, we also developed an interactive web tool that helps the public explore the relationship between subway stations and their surrounding social infrastructure. The web tool first shows all available subway stations and subway lines in the world. After zooming in, users can select a specific subway station, and view all the SIPOI in a 1 km buffer, along with the station's surrounding social and built environment factors in the buffer. Users can also download these SIPOI data for further exploration. This tool can help suggest case studies and instigate interest in learning about the disparities worldwide.

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Keywords: Social Infrastructure, Point of Interest, Subway Station, Car-oriented Infrastructure, OpenStreetMap

WHERE DOES THIS ROUTE GO? AMPLIFYING STUDENTS' VOICES FOR BETTER TRANSIT

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Individual Paper Presentation

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Urban transportation shares goals with both the civil rights and the environmental justice movements. It means that transportation investments have tremendous potential to right the wrongs experienced by disinvested and marginalized communities through cities and regions in the U.S. Much research has shown that public transportation is disproportionately used by low-income and people of color. We also know that mobility solutions are improved when diverse communities weigh in and coalesce as a movement that pushes against established power dynamics to generate tangible forms of transport justice. This history of transit justice reveals problems inherent to state and urban-transit programs.

Campus transportation interacts with this broader urban transportation system. As such, what is the implication of and for universities that are often anchoring institutions in those urban spaces? In his book, "In the Shadow of the Ivory Tower", Baldwin provides some insights with “the stories of ever-expanding campuses to illustrate the increasingly parasitic relationship between higher education and our cities." Moreover, in terms of equity, university students’ voices are disproportionately absent from the transit planning process and related literature. In the years since the pandemic began, universities have been turning to the work of social justice, potentially opening opportunities for student engagement as well. Given these efforts, this research raises these questions: how are university student riders represented and involved in local transit systems? What are the challenges that students face both in terms of access to transit and in navigating transit opportunities? Drawing from my intersectional identity as a woman of color, an international student, and a transit-dependent person, this case study of the University of Minnesota-Twin Cities (UMN-TC) analyzes students experiences and stories related to existing planning-development processes and potential alternatives that place a greater emphasis on student participation. UMN-TC has a diverse enrollment of 54,890 students, including low-income, women, parents, first generations, international students, students with different abilities. While quantitative data from the Parking and Transportation Services (PTS) about students’ riders is available, there is a lack of research related to students’ lived experiences with transit systems to and from the UMTC. The (symbolic) student representatives are part of a review committee but “Is including them enough ?" In their eponymous article, researchers recommend that participation processes need ongoing energy and critical engagement. This paper fills this gap by using a combination of ethnography/participant observation, interviews, and policy analysis to identify what services students utilize and need, along with capturing the barriers they face in reaching these services and potential intervention that could resource services. To explore how university and city planners, and policymakers might meet student needs through more participatory processes, I develop and test a pilot transit ambassadors’ program. The study population is international students and students from rural areas due to how expectations might be different from suburban or urban students. My preliminary findings show that (1) students rely on family members and friends to learn about the transit system and despite using apps, they want (more) physical presence of transit workers, reinforcing the human dimension of transit; (2) students are generally open to provide feedback if they are incentivized; (3) students are concerned with safety and prevalence of homelessness in transit.

Insights from this case will be developed to guide similar processes in comparable urban settings. We need to rethink how university communities inform and advance transportation equity work. As such, this study will shed light on opportunities for novel and tailored student/community engagement practices designed to build a more inclusive urban and regional transit system.

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Keywords: equity, transit, community engagement, universities

WHERE WE ARE WITH VMT MITIGATION MEASURES, BANK AND EXCHANGE IN CALIFORNIA

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Individual Paper Presentation

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This study aims to understand the current practices of vehicle miles traveled (VMT) mitigation measures and discuss potential challenges with VMT mitigation bank and exchange idea implementation using interviews of planning staff in local governments in California and online research. The effectiveness of VMT mitigation measures seem to be assessed differently by urban, suburban and rural entities. A study found that some built environmental policies that reduce VMT in suburban locations were not as effective as in urban areas. Increasing density and mixed-use development are found effective strategies in urban areas to mitigate VMT while job accessibility and increasing intersection density are promising approaches in suburban areas. California Office of Planning Research (OPR)'s technical advisory document on senate bill (SB) 743 that requires shift of transportation impact metric from level of service (LOS) to VMT acknowledged that "streamlining California Environmental Quality Act (CEQA) reviews could be effective in denser, urban part of the regions with relatively sufficient transit services".

The unique challenges we learned from interviews with suburban and rural counties are that they see they are not compatible with VMT mitigation programs. They have not seen many projects that fair well with VMT impact analysis, and they anticipated that eventually all VMT mitigation efforts would fall flat with the public and the rural areas will have a higher per capita VMT as it is unavoidable. The perception is that the mode shifts necessary for reducing auto trips would not work as public transportation and biking does not work to address daily needs of rural residents. Also, the common observation from rural jurisdictions is that it is difficult to find solutions that are cost effective that produces a sizeable VMT reduction for their rural setting. So, they all called for more cost-effective mitigation tools that would work for suburban and rural settings.

VMT mitigation bank and/or exchange was mentioned frequently during the interviews as more attentions have been paid to this emerging concept. For mitigation, most of the interviewees agreed with the need to think about on-site or off-site, regional, etc. The common understanding in the field is that everyone is exploring a mitigation bank or mitigation exchange, or fees, and they are aware of some of the leading agencies that are looking into a VMT bank or exchange. However, there is confusion over what is a model and what is a bank. Also, some cites that do not want new development in their jurisdiction think that they would not need a bank because they do not need to incentivize developers to pay into a bank. The full paper will present the status of different frameworks of VMT mitigation bank and exchange and discuss the challenges and considerations that need to be addressed in future implementations.

The consensus is that the entire state needs more data to diversity VMT mitigation toolbox that are empirically tested in various densities and settings, including VMT mitigation bank and exchange. In addition, another lesson learned is one size doesn't fit all with SB 743 implementation, which might need to be revisited soon.

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Keywords: VMT reduction, VMT mitigation strategies, VMT mitigation bank and exchange, California, Senate Bill 743

WITHER THE COMMUTE? ANALYZING POST-PANDEMIC COMMUTING PATTERNS IN THE U.S.

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Individual Paper Presentation

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The COVID-19 pandemic dramatically reshaped the landscape of work worldwide. With the implementation of lockdowns and social distancing measures to curb the spread of the virus, there was a rapid shift toward remote and hybrid work – even in industries where such practices had been rare. Research based on stated preference surveys from the early days of the pandemic suggested that most employees expected to continue working remotely in some capacity after the pandemic receded (Salon et al., 2022). Indeed, while remote and hybrid work did fall by half from the early pandemic peak levels, hours worked remotely in 2023 remained about five times higher than in 2019 (Speroni & Taylor, 2023).

While most jobs – short-order cook, surgeon, haircutter, factory worker, etc. – cannot reasonably be done remotely – many can be, and that number has grown over the past five years as employers have become more tolerant of remote and hybrid work. In the booming post-pandemic labor market, many workers have been able to push back on “return to office mandates” by some employers, though those mandates have had some effect (Tahlyan et al., 2024) and many employees prefer hybrid over fully remote work (Speroni & Taylor, 2023). With all of this post-pandemic flux, which workers are seeing enduring shifts to their work and commute patterns as a result of the pandemic?

We examine this question in the context of the US. Drawing on the recently published 2022 National Household Travel Survey (NHTS) (Federal Highway Administration, 2024), we analyze whether people who reported having a permanent reduction in commuting frequency to a physical work location differ from others in the workforce. The NHTS is a comprehensive survey with details on the characteristics and travel behaviors of individuals and households in the US. The data provide information on survey respondents’ demographic and socioeconomic characteristics, household structure, employment status, and travel behavior on a single travel day.

We examine descriptively the difference in socio-demographic and trip characteristics between pandemic-influenced workers (who travel less frequently to their workplaces and reported this to be a permanent change) and others in the workforce. Then we model the likelihood of the permanent reduction in commuting frequency as a function of various individual (sex, race/ethnicity, education, age, condition of disability), household (presence of a child in the household), trip (typical commute mode), and locational (residence in an urban or rural area) characteristics.

While a broad cross-section of the workforce moved home during the early months of the pandemic, we find that post-pandemic remote and hybrid workers are more like those who worked away from work pre-pandemic. For example, people who use commuter-oriented public transit systems, have disabilities, have higher levels of education (bachelor's degree or above), and /or live in urban areas are more likely to commute less often to work coming out of the pandemic and to report this change as permanent. Age is also associated with a permanent reduction in commuting frequency.

These findings suggest that while the pandemic broadened the possibility of remote and hybrid work to a wide variety of workers, such work arrangements post-pandemic are mostly confined to highly educated workers, a pattern that existed before the pandemic, although to a substantially lower degree. Further, the abandonment of public transit by many of these post-pandemic workers appears to be sticking, and looms ominously for transit systems in the years ahead.

The research contributes to the growing literature on emerging work and travel patterns coming out of the pandemic. These findings inform policy and planning in light of evolving travel patterns and can help guide the provision of effective and equitable transportation infrastructure and services.

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Keywords: Commuting, Remote Work, Hybrid Work, Public Transit, Travel Behavior

YIELDING TO SAFETY: THE EFFICACY OF FINES IN ROAD CASUALTY IN TAIWAN

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Individual Paper Presentation

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Traffic safety remains a critical concern in high-density cities across the world, especially for vulnerable road users such as pedestrians. In response to escalating pedestrian-involved road traffic injuries and fatalities, the Taiwanese government stipulated new penalty regulations aimed at enhancing pedestrian safety. While in western countries like the US, the "yield-to-pedestrians" policy has been found effective, Taiwan's unique traffic dynamics, including high prevalence of motorcycles, present a distinct challenge. The coexistence of pedestrians, motorcyclists, and other road users in densely populated urban areas necessitates tailored interventions to address the complexities of road safety and protect vulnerable road users.

This study contributes empirically to Taiwan's pedestrian safety discourse utilizing real-time traffic accident record data from the Taiwan National Police Agency to assess whether the implementation of the new penalty regulation has improved pedestrian safety in three dimensions: 1) non-fatal road injury; 2) fatal road injury; 3) road injury severity. Spanning from January 2015 to November 2023, time-series forecasting and regression discontinuity design are employed to determine whether there has been a significant reduction in road traffic injury frequency and severity. This research stratifies models by socio-economic characteristics and travel behavior, particularly examining policy impacts on vulnerable road user groups, such as senior citizens and pedestrians. Furthermore, the paper assesses the different levels of regulatory enforcement across cities to understand the spatial disparities of the new penalty. Overall, this paper anticipates valuable insights into the effectiveness of these regulations in enhancing road safety and pedestrian rights in Taiwan. It is specifically anticipated to contribute to the body of knowledge in South-East Asia with similar traffic and culture contexts, providing transferable lessons and informing evidence-based policy interventions to address pedestrian safety challenges regionally.

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Keywords: Pedestrian safety, Road injury, Built environment, Case time-series, Urban & Transportation planning

ZERO-FARE TRANSIT: A CATALYST FOR SOCIAL INCLUSION & ACCESS TO OPPORTUNITY?

Abstract ID: 1108.0.0.767.2024
Individual Paper Presentation

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Low-income populations often face significant barriers to accessing opportunities in education, employment, and healthcare due to limited resources and infrastructure in their communities. One crucial factor exacerbating this disparity is inadequate transportation options. The delivery of transit service is considered to help address this issue given the low auto ownership rates of low-income and minority households. This impact can be muted due to the presence of barriers which deter transit use. Research has shown that fare affordability is a barrier of use that is especially pronounced for low income and minority residents.

This study explores the impact which the implementation of a zero-fare policy has on access to essential destinations/services which can enhance quality of life and the ability to escape poverty (employment opportunities, healthcare services, educational opportunities, healthy food sources, etc.). Necessary data to conduct this study was collected via surveys with current bus users in the greater Kansas City region where major transit service providers have implemented a zero-fare policy. Survey participants were asked questions regarding changes in trip frequency and the nature of trips to essential destinations pre to post zero-fare implementation. Data was analyzed via appropriate regression models in order estimate the impact which zero-fare policy implementation has had on access to essential destinations/services and the mitigation of social exclusion. The degree to which the impact of zero-fare implementation varies across race, income, and other socio-demographic characteristics was also explored.

Findings from this study provide a better understanding of the equity implications associated with the implementation of a zero-fare policy. This can inform planning and policy decisions in a manner which can produce a system which better serves members of the population and is more equitable in nature.

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Keywords: Equity, Access to Opportunity, Transit, Fares, Social Exclusion

10-YEAR STUDY OF THE LINK BETWEEN NON-MOTORIZED COMMUTING AND HOUSING COSTS

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Research-in-Motion (RiM)

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Even though active travel modes like walking and cycling offer well-recognized advantages such as reducing traffic congestion, encouraging physical exercise, and cutting down on carbon emissions, there has been a consistent decrease in the use of non-motorized commuting, particularly in walking, despite a slight increase in cycling, as the primary transportation modes to work over the last twenty years. While there has been a general decrease in the use of active transport for commuting in the US (Buehler & Hamre, 2016), individuals who still prefer walking or cycling may have adjusted their preferences for travel time and their willingness to pay for housing in exchange for shorter commutes (Bereitschaft, 2020). Various factors, including income levels, household characteristics, lifestyle choices, and home ownership status, can impact the time spent on non-motorized commuting (Handy & Xing, 2011; Plaut, 2005). Therefore, this study aims to explore changes over the past decade in how the distance of non-motorized commuting trips, measured in miles, relates to housing costs. Specifically, it focuses on monthly rental expenses and homeownership status, examining these factors in relation to walking and cycling modes.

Using data from the American Community Survey (ACS) microdata spanning a decade from 2010 to 2019, this research delves into how housing expenses, particularly rental prices, relate to the durations of non-motorized commuting trips. The analysis is divided into two age categories: young adults (under 35 years old) and older adults (35 years old and above). The study aims to explore the different degrees of willingness among individuals in these age groups to pay higher housing rents based on their preferences for non-motorized transport, specifically walking and cycling. A dynamic panel model is used to examine how the dependent variable changes over time. This model incorporates lagged values of the housing cost and commuting time to capture dynamic relationships and time dependencies.

Preliminary findings reveal distinct commuting patterns among young adults under 35 and older adults over 35, both in terms of walking and cycling behaviors. Young adults tend to have shorter walking commutes but pay higher rents for smaller homes compared to older adults. Conversely, young adults under 35 have longer cycling commutes but pay less rent for smaller homes compared to older adults over 35.

Moreover, there's a noticeable urban-suburban divide in housing expenses, with urban residents generally paying more for smaller homes than suburban residents. However, the impact on trip length varies by mode of commuting. Urban residents have shorter walking commutes but higher rents compared to suburban counterparts. In contrast, urban residents exhibit longer cycling commutes but lower rents compared to their suburban counterparts.

An intriguing finding is the nuanced relationship between housing ownership and non-motorized commuting behaviors. Young individuals living in rental properties are willing to endure longer walking and cycling trips in exchange for reduced housing costs compared to those in owned homes. Over the past two decades, their commute durations have increased, with variations influenced by gender and age. These complex interactions between housing arrangements, commuting behaviors, and demographic factors suggest the need for further investigation into these dynamics.
This finding highlights the intricate decisions individuals make when choosing between the convenience of commuting and the affordability of housing. The shift towards longer commutes among younger renters over the years underscores the evolving priorities and trade-offs individuals make between housing affordability and travel time in the urban areas. It provides insight into the various strategies used by different demographic groups to balance housing expenses with their commuting preferences.

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Key Words: non-motorized commuting, bike commuting, walking commute, commuting preferences, housing trade-offs

ANALYZING MODAL PREFERENCES, LAND USE AND WALKABILITY FOR IMPROVED AQI

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Research-in-Motion (RiM)

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Assessment of the complex dynamics between modal preferences, air quality, and environmental planning in New York City (NYC) is important for achieving the net zero emissions goal by 2040. Utilizing spatial, temporal, and network analyses, we elucidate insights crucial for policymaking and urban planning efforts toward fostering healthier and more sustainable urban environments.

We first identified key air pollutants in NYC, such as PM 2.5, NO2, NOX, SO2, Black Carbon, and O3, leveraging open data from NYC government health surveys. Simultaneously, we compiled data on prevalent respiratory diseases from healthcare records to establish robust correlations between pollutant exposure and health outcomes. We conducted a temporal analysis spanning over a decade, scrutinizing historical data to discern patterns in air quality dynamics of various pollutants (Masiol et al., 2017). This analysis extends beyond pollutant concentrations to include temporal health impacts, notably hospitalizations, emergency visits, and fatalities attributed to various pollutants. Additionally, we explored temporal trends in transportation mode usage, utilizing datasets on ridership across various modes such as cars, buses, subways, and cycling. This analysis provides insights into shifting mobility patterns and their implications for emissions and public health.

To identify policy intervention points, our study employs GIS-based network analysis for various modes of transportation, meticulously mapping NYC's transportation infrastructure, including road networks, transit lines, and bus routes. Leveraging the NYC City Mobility Survey 2019 data, we identify areas with the highest frequency of daily origin-destination pairs and use them to generate random start and end points. By incorporating factors such as emissions and travel times into our routing models as an impedance, we develop several travel modes that allow only for a single mode use and an additional travel mode allowing for multi-modal use (Kuonen, 2015). We run the network analysis to optimize travel routes to minimize environmental impact while enhancing efficiency and find out the mode choice that consistently gives the lowest emissions, similar to how network route analysis runs for the shortest path (Delamater et al., 2012).

Additionally, to reduce emissions and shorten daily trip lengths, we advocate for incorporating mixed-use development in low walkability areas, an idea explored in our study assessing walkability's role in sustainable urban mobility (Darwish et al., 2023). Utilizing Columbia University’s Walkability Index (Rundle & Quinn, 2014), we evaluate NYC neighborhoods based on various factors such as residential and intersection density, land use mix, subway stop density, and retail building area ratios for walkability scores. By analyzing existing walkability levels and introducing mixed land use in low-walkability areas, we modify the index to incorporate mixed use, thereby examining its impact on areas with higher emissions.

Our results indicate that Multimodal transit demonstrates a significant reduction in emissions compared to private car usage. Notably, subways have emerged as a particularly efficient mode of transportation with minimal emissions per passenger mile. Our findings underscore the efficacy of multimodal transit as a sustainable transportation solution. Furthermore, our results also highlight that the introduction of mixed-use zoning in fostering vibrant neighborhoods leads to an improvement in the walkability of the area, which may further be conducive to shorter work trip lengths and increased walking and cycling.

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Key Words: Network Analysis, Geographic Information Systems (GIS), Air Quality, Walkability, Multimodal transit

APPROACHES TO MORE INCLUSIVE STATE FREIGHT ADVISORY COMMITTEES

Abstract ID: Accepted
Research-in-Motion (RiM)

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Freight demand is expected to reach 28.9 billion tons in 2050, an increase of 46% from 2017(1). States and localities are already experiencing increased pressure on their roadways, railways, ports, freight-generating facilities, and in adjacent communities. These communities experience greater instances of vehicle crashes, poorer air quality, and greater exposure to noise.

To date, state departments of transportation (DOTs) have been encouraged to collaborate with freight industry representatives through state freight advisory committees (FACs). The enactment of the 2021 Infrastructure Investment and Jobs Act (IIJA) and subsequent U.S. Department of Transportation (USDOT) guidance updated freight planning provisions, including FACs. IIJA recommends FACs include not-for-profit organizations or community organizations. The USDOT expands the list further to include “safety partners and advocates, representatives of environmental justice populations potentially affected by freight movement, representatives of minority or women-owned businesses, university transportation centers and other institutions of higher education with experience in freight.” The inclusion of these representatives signals two things: (1) FACs are no longer viewed as mere platforms for public and private sector collaborations and information exchanges, and (2) FACs need to have more diverse membership to tackle the complexity and disparate nature of the freight sector.

This paper takes an exploratory review of the current state of FACs and how state DOTs integrate them (or not) in state transportation planning processes. Our objective is to identify states that are currently using FACs to move beyond traditional approaches to freight planning. Transportation equity in the freight context has to consider geographically diffuse benefits but highly localized burdens. Recognizing the need to incorporate feedback from a diverse set of new and non-traditional stakeholders, this paper argues that state DOTs and FACs need to consider different engagement methods to enhance their ability to gather and incorporate inclusive input, especially given the rapid shifts in the supply chain and its attendant benefits and burdens. These FACs could create a space for more equity within the planning process. Our initial analysis shows uneven results in FAC composition, demonstrating a need for a different approach in cultivating FAC membership. Of the 48 jurisdictions analyzed, for which FAC information was publicly available, only 35% of FACs include IIJA/USDOT-recommended equity-focused representation.

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Key Words: urban freight, transportation equity, freight advisory committees, freight planning, IIJA

CAN MICROMOBILITY CONNECT FIRST-AND LAST-MILE OF PUBLIC RAIL TRANSIT?

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Research-in-Motion (RiM)

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Urban transportation systems face challenges in providing seamless connectivity, particularly for the first and last miles of commuters' journeys. Micromobility services, exemplified by e-scooters, have emerged as potential solutions to bridge this gap and enhance the efficiency and accessibility of public transit. Understanding the dynamics of integrating micromobility with existing transit infrastructure is crucial for addressing urban mobility challenges, accessibility, and promoting sustainable transportation options.

This research endeavors to provide guidelines and policy recommendations for transit agencies in Utah to enhance public transportation ridership by (1) assessing the overall impact of micromobility on public transit ridership and first/last mile connectivity, and (2) elucidating the determinants of integrated micromobility and public transit usage. We aim to investigate the implications of incorporating e-scooters into transit networks, focusing on factors influencing adoption, barriers to integration, and potential policy interventions by studying the Salt Lake County area. By shedding light on the complexities of micromobility integration, this research aims to examine the role of micromobility services, specifically e-scooters, in enhancing first/last mile connectivity within public transit systems. As transit ridership demonstrates declining trends in the US (American Public Transit Association, 2021), the integration of micromobility options with existing transit infrastructure presents a promising solution. Methodologically, intercept surveys were conducted to gather demographic data and behavioral insights from both e-scooter users and transit riders. Analysis techniques including descriptive statistics, chi-square tests, and thematic qualitative analysis were employed to extract meaningful findings. The results reveal a strong preference for e-scooters among younger demographics, driven by factors such as convenience and enjoyment. However, challenges related to cost, accessibility, and safety hinder widespread adoption and integration. Disparities in first/last-mile connectivity patterns between e-scooters and traditional modes of transport among transit riders further highlight the need for targeted interventions. That is, while micromobility services offer opportunities to enhance transit

connectivity, addressing barriers and promoting integration require concerted efforts from policymakers and transit authorities.
This study contributes valuable insights to the discourse on urban mobility, offering actionable recommendations to create more efficient and inclusive transportation systems. The findings of this study hold significant relevance for urban planners, policymakers, and transit agencies, offering insights into how micromobility services can complement existing transit infrastructure to improve overall transportation efficiency and accessibility. By understanding the determinants of integrated micromobility and public transit usage, planners can develop targeted interventions to address barriers and promote sustainable transportation options, thereby contributing to more efficient and inclusive urban mobility systems.

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Key Words: Micromobility, First/last Mile Connectivity, E-scooter, Public Transit, Intercept Survey

CHARGING INFRASTRUCTURE'S IMPACT ON EV ADOPTION IN URBAN NEIGHBORHOODS

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Research-in-Motion (RiM)

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The growing popularity of electric vehicles (EVs) forces transportation agencies to consider the demand, and optimal location for public EV charging infrastructure. Most public charging stations are privately owned, and cluster near destinations or along highways. These trends, coupled with the convenience of at-home charging, has led to a scarcity of charging infrastructure in urban residential areas where potential users may not have a dedicated place to park a vehicle and charge. Ironically, urban drivers may be more inclined to use EVs compared to other drivers because of shorter commutes and lower range anxiety, but without a place to change at home, many forego adoption. In this ongoing project, we ask: Does the lack of public charging stations discourage urban residents from adopting EVs? And to what extent does introduction of public charging stations near where urban drivers live enable them to switch to EVs?

Previous studies suggest that charging station accessibility relates positively with EV adoption. Surveys collected in large American cities indicate that the intent to purchase an EV has climbed overtime, and that perceived

accessibility to EV charging stations is a significant predictor of intent to purchase (Carley, Siddiki and Nicholson-Crotty, 2019). Researchers also identify inconvenient charging locations as a major challenge for widespread EV adoption, and have explored the use of mobile changing stations as a potential remedy (Afshar et al., 2022).

With regards to EV adoption in urban neighborhoods, Guerra and Daziano (2020) utilized stated preference surveys to identify the proximity of parking and charging stations as factors whose influence on residents' willingness to purchase EVs varies across urban geographies. In their study, residents living in multifamily housing near the city center were more likely to place high value on nearby parking and charging infrastructure compared to others.

The current research builds upon these studies by focusing on areas where at-home parking is limited, and by utilizing spatial data on charging locations, at-home parking, and vehicle fuel types. It will occur in three phases. In the first phase, we will analyze via regression vehicle registration data over national charging station data, and residential parking data to assess the proportional adoption of EVs compared to internal combustion vehicles across levels of access to charging stations, and with regards to if parking is available at the registered address. Preliminary work looking at New York City suggests that there are few charging locations near where private vehicles are registered. Soon, we will expand this work to include data from across the country.

In the second phase, we will directly examine if introduction of public charging stations in urban neighborhoods without at-home parking relates to higher adoption of EV vehicles. Using a time series approach, we will determine using descriptive statistics and regression analysis annual changes to the rate of EV adoption in areas without at-home parking, and gauge the extent to which introduction of public charging facilities relates to changes in EV adoption.

In the final phase, we will deploy surveys and interviews targeted at drivers residing in areas where at-home parking is not the norm to tease out qualitative nuances regarding how the location of charging infrastructures affects their vehicle purchasing decisions, and how they perceive their participation in the sociotechnical transition towards EVs.

On whole, this research will provide planners and other public agencies findings that can guide efforts to accelerate EV adoption among city drivers. The benefits of EV use should not be constrained to areas where people have a dedicated place to park their car at home, and we intend for this research to identify viable solutions to expand EV access.

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Key Words: Transportation, EVs, Infrastructure

CONSUMER VALUATION OF SIZE-RELATED VEHICLE ATTRIBUTES

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Research-in-Motion (RiM)

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Vehicle use - especially in cities - generates many external costs. While urban planners aim to create healthy livable cities for people, the perpetuation of the car can inhibit these goals. Cars cause air and water pollution, increased dioxide concentrations, millions of injuries and fatalities each year, traffic congestion, all while exacerbating inequalities of access and quality of life and disconnecting communities. The introduction of electric vehicles reduces some of these external costs but may actually increase others. The average EV is at least 1000 lbs. heavier than its predecessor, and this additional weight exacerbates non-tailpipe pollution and increases fatal crash risks. Additionally, electrification alone can only get us so far in our pursuit to drastically reduce transport emissions in the US in a timely manner, and the benefits of electrification have been found to be much larger if vehicle buyers would also downsize as they electrify.

Yet the market has trended strongly toward larger vehicles; with SUVs making up over half of the new vehicle market. Explanations for the trend include both market supply- and demand-side drivers, with an additional boost from - ironically - government environmental policies. Most of the existing literature focuses on supply-side and government policy drivers of vehicle size increases. Estimates of how much consumers actually value size-related vehicle attributes are relatively uncommon and highly variable.

This research contributes with new, high-quality estimates of how much and for what reasons consumers value vehicle size. These findings may point the way to new opportunities for vehicle designs and policies that both improve consumer welfare and reach environmental and other societal goals set forth by planners. We ask the following three key questions:
1. How much do consumers value attributes related to vehicle size (i.e. passenger seats, cargo space, towing capacity, ground clearance, vehicle height, four-wheel drive, body type, and safety rating) in the United States?
2. How does the valuation of these vehicle attributes vary across consumer market segments?
3. What are possible strategies for vehicle size and weight reduction that optimize - or at least minimize the loss to - consumer welfare?

To answer these questions, we developed a stated preference choice experiment to be deployed as part of a larger survey about household vehicle holdings and choices, and responses will be collected from a nationally representative sample of 10,000 U.S. residents in Summer 2024.

A D-efficient stated choice design will be employed, which will allow us to use the data to obtain high-quality estimates of consumer willingness to pay for each of these size-related vehicle attributes. The analysis of the stated choice data will be done with a mixed logit model. This allows us to infer consumer preferences and substitution effects in addition to calculating willingness to pay (WTP) measures. In addition to obtaining overall WTP estimates, we will also estimate how WTP for size-related vehicle attributes differs based on key demographic characteristics such as life stage and age, as well as between those who own sedans, SUVs, and trucks.

This research aims to generate a clearer picture of how consumers value vehicle weight- and size-related attributes, providing a better understanding of consumers' willingness to substitute across these vehicle attributes. This information then can be used to better design and deploy strategies for vehicle size and weight reduction that optimize - or at least minimize the loss to - consumer welfare. For planners, this will give us a clearer idea of how we can effectively advocate for reductions in vehicle size within our cities to achieve societal and environmental goals.

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Key Words: Vehicle choice, Vehicle attributes, Discrete choice modeling, stated choice experiment

FORGOING TRIPS: 2022 NATIONAL HOUSEHOLD TRAVEL SURVEY EXPLORATORY ANALYSIS

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Research-in-Motion (RiM)

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Some people in America face burdensome transportation barriers and thus must make difficult tradeoffs, such as forgoing trips they need to take or forgoing spending on essentials, which can have negative social, economic, and health impacts (Syed et al., 2013; Smart and Klein, 2020; Byhoff et al., 2021; Canterberry et al., 2022; Murphy et al., 2022). Despite massive federal, state, and local investment in transportation, we lack consensus on how to conceptualize and operationalize transportation needs, barriers, and tradeoffs, resulting in wide variability in how these concepts are defined and measured. Thus, scholars and practitioners across urban planning, public health, health care, and social work, have lacked understanding about the extent to which people are forgoing trips they need to take. For the first time in 2022, the authoritative source of national travel behavior data, the National Household Travel Survey, asked respondents if they had taken fewer trips than they planned on taking in the last 30 days and why.

The purpose of my exploratory study is to use the 2022 National Household Travel Survey (NHTS) to describe the prevalence of and reasons for forgone trips and identify which groups are most vulnerable to forgoing trips for transportation-related reasons. I determined if respondents forwent trips if they responded affirmatively to the NHTS question asking if they took fewer trips than they had planned on taking in the last 30 days. I determined if respondents forwent trips due to transportation-related reasons if they responded affirmatively to one of five

transportation-related reasons among the 10 reasons provided in the NHTS as response options for why respondents took fewer trips than planned. I then categorized survey respondents into three groups: did not forgo trips; forwent trips due to transportation-related reasons; and forwent trips due to other (non-transportation-related) reasons. I assessed differences among these three groups across various demographic and travel behavior characteristics.

My preliminary findings demonstrate that 78.7% of respondents did not forgo trips in the last 30 days, 7.6% forwent trips due to transportation-related reasons, and 13.8% forwent due to other reasons. There are important similarities and differences in demographic and travel behavior characteristics across the three groups that suggest that people who forwent trips due to transportation-related reasons are unique. Compared to people who forwent trips for other reasons, those who forwent trips due to transportation-related reasons are younger, Black and Hispanic renters, with similar number of children under age 5, more children aged 5-17, and lower incomes, but they work roughly the same hours per work. Although they have fewer vehicles per household, they have slightly more vehicles per driver. They took slightly more trips on the survey day, and those trips were more multimodal. Roughly twice as many used transit on the survey day and roughly three times as many used transit in the last 30 days. These trends are similar when comparing those who forwent trips due to transportation-related reasons to those who did not forgo trips.

In summary, having one vehicle per person does not protect people against forgoing trips. This may be due to unreliable vehicles and/or transportation cost-burden. Similarly, riding transit does not protect people against forgoing trips, rather, reliance on transit may increase the risk of forgoing trips. This may be due to insufficient transit. This study is important because it demonstrates that despite similar vehicle ownership, similar trip rates, and being more multimodal, some Americans are still unable to meet their transportation needs, which suggests the need for better conceptualization and operationalization of transportation needs.

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Key Words: transportation, forgone trips, unmet needs

HOW DID CYCLING RATES IN BUENOS AIRES INCREASE SO DRAMATICALLY?

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Research-in-Motion (RiM)

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This project examines how an ambitious program to invest in cycling infrastructure in 2009 affected cycling rates in Buenos Aires over the course of a decade. There is a growing policy interest in promoting bicycling as an affordable, healthy, and sustainable means of transportation in cities and countries around the globe. Despite a large and growing literature on how cycling infrastructure affects cycling rates and traffic safety, most of this work comes from the United States and Europe. Less is known about Latin American contexts where cycling and driving behaviors can differ substantially and where public policies may have differing affects. For example, cycling rates are often substantially higher in low-income peripheral settlements than centralized downtown locations. As a result, long-distance cycle paths near main arterials or highways may do substantially more to encourage cycling in Latin American cities than US ones.

To better understand how, where, and for whom new infrastructure influenced cycling, we match individual-level household travel survey data from 2009 and 2018 to a geospatial time-stamped database of cycle paths and bike-share stations. Using a general approach of examining matched pairs, we apply behavioral utility-theory-based models to compare how people in geographies with increased cycling infrastructure shifted behavior in relationship to similar individuals in similar neighborhoods that did not receive as much investment. Based on utility theory, changes in the attractiveness of cycling would have had the greatest impact on cycling rates in places where more people were on the edge of choosing whether to cycle. However, little is known from looking at aggregate data where these people reside, what modes they are switching from, who they are, and how they and others are likely to respond to increased investments in cycling. Moreover, large jumps in cycling rates, like those that occurred in Buenos Aires, may demonstrate substantial differences in how cycling infrastructure influenced the utility of cycling across different geographies or types of individuals.

Buenos Aires is an ideal place to examine the effects of different types of cycling infrastructure on travel behavior. In July 2009, the Government of Buenos Aires City initiated a plan to invest in cycling paths and a network of Ecobici bike-share stations. In 2010, the city had 35km of bike lanes and three Ecobici stations. By 2023, the network has reached a total of 300km of bike paths with 320 bike-sharing stations equipped with a total of 3,200 bikes. The share of trips made by bike skyrocketed from 0.4% to 7% in a decade. There are an estimated 400,000 cycling trips taken per day. Thus, this study can contribute not just to the literature on cycling in a Latin American context but also on the literature on transforming cities to be healthier and more sustainable. Very few places have achieved such a rapid increase in cycling mode share in such a short period of time. The context of cycling change in Buenos Aires may also help shed light on causality. Although the presence of cycling infrastructure and bicycle parking is generally associated with higher cycling rates (Broach, Dill, and Gliebe 2012; Dill and Carr 2003; Gutiérrez et al. 2020; Heinen and Buehler 2019; Howard and Burns 2001; Krizek and Johnson 2006; Parker, Gustat, and Rice 2011), the degree to which cyclists cause cycle lanes or cycle lanes cause cyclists remains unclear. In Buenos Aires, the causal direction of the associations is far clearer than in most contexts where change has been substantially more incremental.

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Key Words: cycling, bike lanes, Buenos Aires

HOW MUCH DOES TOD IMPACT ON HOUSEHOLD TRANSPORTATION COSTS?

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Research-in-Motion (RiM)

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Transit Oriented Development (TOD) has emerged as a prominent strategy in urban planning, aimed at facilitating smart growth by diminishing reliance on automobiles among residents, employees, and shoppers while encouraging greater utilization of public transit (Bernick et al., 1997). This approach holds the potential to reduce household transportation costs by enhancing access to employment centers and essential services, particularly benefiting low-income or zero-vehicle households through expanded mobility options (Guerra et al., 2018). Furthermore, households living within TODs areas are expected to incur lower transportation expenses than non-TOD areas due to reduced dependence on private vehicles and increased reliance on cost-effective modes of transportation such as public transit, walking, or cycling. Considering these potential impacts of TODs on household transportation costs, the current study endeavors to quantify the extent to which TODs can lead to reductions in household transportation costs relative to non-TOD areas. In pursuit of this research objective, the study first delineates TODs within the study area by employing six commonly recognized factors from TOD literature. These factors include net residential density, net employment density, land use diversity, levels of public transportation accessibility, intersection density, and cul-de-sac density (Kamruzzaman et al., 2014). Following the delineation of census block groups within the study area (which is Salt Lake County in this case) into TOD and non-TOD areas, the study compares the household transportation cost between the TOD and non-TOD areas. The Propensity Score Matching (PSM) approach is employed to facilitate the comparison. This approach is utilized to mitigate potential biases stemming from nonrandom treatment assignments, wherein differences in behavioral outcomes between treatment and control groups may be influenced by residential self-selection (Ewing et al., 2022). In this instance, a

binary logistic regression model is developed to estimate a propensity score, utilizing a subsample of households residing in TOD areas as the treatment group, and households in non-TOD areas as the control group. For this logistic regression model, variables representing household characteristics are included as independent variables. These variables encompass the total number of workers residing in station areas' block groups, the percentage of the population aged 18 to 64 years who are employed, the percentage of zero-car households in the Census Block Group, the count of workers earning $1250 per month or less (low wages), the count of workers earning more than $1250 per month but less than $3333 per month (medium wages), distance to the nearest transit station, and regional job accessibility. The dependent variable is represented by Transportation Costs as a percentage of Area Median Income (AMI). Subsequently, by utilizing the propensity score to match households residing in TODs with those in non-TOD areas, the study assesses whether TOD residents exhibit systematic differences from their matched counterparts in non-TOD areas regarding their transportation costs. It is expected that by comparing the transportation cost of households living in TOD and non-TOD areas, the study will provide evidence-based insights into the effectiveness of transit-oriented development in reducing transportation costs which will help policymakers to effectively advocate for transit-oriented development with a view to promoting sustainable cities and communities.

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Key Words: TOD, household transportation cost, propensity score matching

IMPACT OF TRAFFIC STRESS ON MODE CHOICE: A DATA-DRIVEN ANALYSIS IN MARYLAND

Abstract ID: 1110.0.0.633.2024
Research-in-Motion (RiM)

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The walking and biking traffic environment has been challenged due to increased number of vehicles and traffic speed, poor facilities for active travel, and fierce competition for curbside space (Clifton et al. 2016; Aziz et al. 2017). Level of traffic stress (LTS), an index to measure the traffic stress experienced by pedestrians and bicyclers, emerges as an important tool in the planning process for active travel by local transportation authority (Faghih Imani, Miller, and Saxe 2019). However, LTS has not yet been included in the regional mode choice models, which inhibits these models' ability in predicting people's travel behavior and estimating travel demand. There are two

reasons for the lack of LTS in regional choice models. First, LTS data is often not region-wide available. Second, information of alternative travel modes of trips, such as distance, duration, and monetary cost, in the whole region is limited. This study aims to address these research gaps and model the impact of LTS on people's mode choice for the entire Maryland state.
Specifically, we applied a unique dataset which contains the LTS for over 140 thousand roads in Maryland. In addition, for more than 50,000 trips collected from the Maryland statewide household travel survey, we requested travel cost information (i.e., distance and duration) of the routes of alternative travel modes from Google Maps API. Google Maps is the largest navigation platform and accounts for over 1 billion monthly users. This large number of users provide a huge database of route choices to Google Maps to train their own route recommendation system. With that said, the routes recommended by Google Maps could be those closest to people's route choices in their daily life. Google Maps also provides multiple routes between one origination-destination pair whenever they are available. We aggregated the LTS information for all routes and assembled other important features such as such as demographics, socio-demographics, and built environment attributes related to each trip. We constructed a nested logit model to estimate the effects of all variables on residents' mode choice in Maryland.
The results showed that LTS is negatively and significantly correlated with the probability of choosing walking for the trip. Specifically, 1% increase in LTS is associated with 0.052% increase in the probability of choosing car as the mode of transportation, holding other factors constant. In addition, a 1% increase in traffic stress is associated with a 0.027% decrease in the probability of choosing walking. The coefficients for biking and transit are not significant. The results offer valuable insights into how complete street policies, which are directly related to traffic stress on the roads, could influence people's mode choice and reduce the dependence on driving and encourage active travel.

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Key Words: Level of traffic stress, Mode choice modeling, Active travel

MPOS' LRT PLANS: BEST PRACTICES IN SUSTAINABILITY, EQUITY, & CLIMATE CHANGE

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Research-in-Motion (RiM)

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Over the past two decades, the transport landscape has changed dramatically. These changes have become more dynamic and affect our mobility, accessibility, safety, and public health. Transportation equity begins with the ability of users of various transportation options, including sustainable transportation, to arrive at their destination safely. Reducing the number of cars on the road, investment in public transportation, building better pedestrian infrastructure (i.e., quality sidewalks, crosswalks, crosswalk signaling, better connectivity), slowing speeding traffic,

and prioritizing non-motorized transportation increase transportation equity.
The built environment in the US is heavily influenced by the presence and use of motorized vehicles. Vehicle emissions account for 30% of all CO2 emissions in the US, making transportation the largest CO2 producing sector. CO2 emissions are driving climate change and are negatively impacting our health and the livability of our planet in a multitude of ways. Greenhouse gasses (GHG) contribute to air pollution which causes asthma in children and premature death in our seniors. GHG are also linked to death from extreme temperatures, and sea level rise that leads to coastal flooding and property damage. To address the negative impacts of transportation on our health and the health of our environment, we must infuse sustainability and equity in transportation planning.
Progressive states, defined as those with strong environmental protections and stringent greenhouse gas targets, offer an opportunity to study how their metropolitan planning organizations (MPOs) prioritize transportation modes to meet state's greenhouse gas targets. MPOs are regional transportation agencies responsible for the integrated long-range transportation (LRT) plans of multiple independent governmental jurisdictions. The LRT planning process seeks to align an agency's transportation investment priorities over the next 20 years with the state's vision and goals, which increasingly includes sustainable transportation, climate change and equity targets. This research asked what lessons have progressive MPOs learned in prioritizing and implementing sustainable modes of transportation in their LRT plans that account for climate change and equity in transportation?
Our qualitative approach first identified environmentally progressive states. Our assumption is that states with more progressive or stringent environmental protections, will prioritize sustainable transportation modes, climate change, and equity more so than states with loose environmental protection laws. The United States is divided into 5 regions – northeast, southeast, midwest, southwest, and west. A review of environmental laws in each state, especially greenhouse gas emission standards, were used to select environmentally progressive states in each of the 5 regions. Two progressive states from each region were randomly selected for a total of 10 states.
Using stratified random sampling, 4 MPOs from each region were chosen for a total of twenty MPOs. Ten smaller MPOs with populations more than 50,000, but less than 200,000 and 10 MPOs with populations larger than 200,000. Two authors of each of the 20 LRT plans were interviewed for a total of 40 interviews. Secondary data in the form of LRT plans, project selection metrics/rubrics, meeting minutes, internal memos and communiques, etc. were assessed their goals around sustainable transportation, climate change, and equity.
Content analysis of the qualitative data was used to develop key themes around best practices in implementing sustainable transportation, climate change and equity targets; implementation challenges; and overall lessons learned. In reaction to the Biden Administration's recent executive orders on equity, fairness and justice, this research has identified best practices and inform policy development and implementation of sustainable and equitable transportation planning that is responsive to climate change at the state, regional, and local-levels.

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Key Words: Sustainability, Equity, Climate, long-range, Plans

MULTI-PHASED ELECTRIFICATION OF BUS FLEETS THROUGH REINFORCEMENT LEARNING

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Research-in-Motion (RiM)

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To address climate change and environmental pollution, the electrification of transportation is gaining popularity worldwide. As an integral part of urban transportation, the electrification of buses plays a crucial role in reducing vehicular emissions. Previous studies on bus electrification have often overlooked long-term, phased fleet transitions. In reality, due to budget constraints, it is not feasible to replace all conventional buses with battery electric buses (BEBs) at once. Therefore, optimizing the bus fleet transition plan, which includes determining the timing and quantity of BEB purchases to replace traditional buses, as well as the installation of slow and fast chargers, becomes essential. Existing studies on multi-phased bus electrification are limited in scope and lack policy guidance. This study proposes an optimization model that considers the long-term, multi-phased decisions regarding vehicle purchases and charging facility installation. The case city for this study is Hong Kong, which had over 6,000 franchised buses operating on more than 700 routes as of 2022. Given the complex solution space, a reinforcement learning approach is employed to find an optimized solution. Furthermore, the study explores different scenarios, including the impact of different rates of BEB price reduction, as well as the influence of policy support mechanisms such as subsidies for BEBs, on the transition plan. This research aims to provide valuable insights and guidance for policymakers and stakeholders involved in the successful transition towards a sustainable and zero-emission public transportation system.

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Key Words: Battery electric buses, Fleet transition, Charging infrastructure, Reinforcement learning

PERCEIVED TRANSACTION COSTS IN TRANSPORTATION DECARBONIZATION POLICY FORUMS

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Research-in-Motion (RiM)

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Since 2022, the United States has made significant strides in transportation decarbonization, driven by legislative measures such as the Inflation Reduction Act. This Act not only accelerates the adoption of electric vehicles (EVs) but also boosts alternative fuel production. In this dynamic context, policy forums play a pivotal role, serving as essential venues for dialogue among diverse political and societal stakeholders. These forums are instrumental in facilitating learning, negotiation, and trust-building, all of which are foundational for effective governance in the modern era.

Recent scholarly consensus in public administration and policy processes underscores the principle of polycentricity, indicating the presence of multiple, functionally interdependent decision-making centers (Lubell et al., 2023a; V. Ostrom et al., 1961). Despite the wealth of research on collective decision-making mechanisms (Angst et al., 2022; Hileman & Bodin, 2019; Lubell et al., 2023), a critical gap remains in our understanding of the transaction costs associated with participating in policy forums dedicated to transportation decarbonization. Prior studies have primarily focused on the outcomes or benefits derived from such participation, often neglecting the nuanced complexities of transaction costs (Lubell et al., 2017).

This research aims to fill this gap by exploring the factors that influence perceived transaction costs among participants in transportation decarbonization policy forums. Through interviews with representatives from a diverse array of organizations—including government entities, transit authorities, trade associations, NGOs, and academic institutions—and the deployment of a survey instrument, we seek to gain a comprehensive understanding of these costs and their implications.

Our methodology entails a systematic assessment of perceived transaction costs, examined through the lenses of organizational, forum, and topic characteristics. This approach will enable us to identify significant patterns and correlations. Ultimately, this study aspires to shed light on the organizational and human dimensions that influence transaction costs in policy forum participation. We anticipate contributing to improved stakeholder cooperation and more effective information exchange in policy-making processes. The insights garnered from this research are expected to substantially enhance collaborative efforts toward decarbonizing transportation, thereby making policy formulation and implementation both more effective and efficient.

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Key Words: Decarbonizing Transportation, Perceived Transaction Cost, Policy Forum

POLYCRITICAL TRANSPORT INTERVENTIONS: ASSESSING ALTERNATIVE MODES

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Research-in-Motion (RiM)

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Cities have entered a polycritical era, where multiple crises demand response within the transport system. Whether the planning system is up to the tasks at hand is up of concern.
This Research in Motion examines the polycritical aspects of the transport system, and critically assesses policy interventions that promote accessibility while addressing urgent crises. It is the researchers' view that mass motorization and planning for mobility has directly led to crises of climate, safety, justice, and economic sustainability. To paraphrase a common refrain of planners, cars are the problem. As such, cities should work to reduce the role of cars in a modern city. This is not an original insight by any means. However, we argue that there is little need for further diagnosis of the problems of automobility as they are well-known.

What is novel, we believe, from this research is the assessment of policy interventions designed to address the problems caused by cars and reduce the use of and dependence on cars. In addition to the four crises noted above, we assess selected interventions on criteria of urgency, responsibility of the planner, doing more with less, political incentives, and uncertainty. We expect that the interventions we assess will be broadly recognized, but these criteria for analysis may be less obvious.

Urgency refers to whether a particular intervention reflects the timeliness of the crises at hand. As one example, building new mass transit infrastructure is widely accepted as a desirable goal. Yet new rail infrastructure is slow to build (a new line takes nearly two decades from proposal to opening), while reducing carbon emissions is something that needs to happen immediately. This is a temporal mismatch between crisis and solution.

Responsibility of the planner gets directly at whether planners are promoting solutions that address the problems at hand, or reflect a planner bias toward certain types of interventions. We assess whether the desired intervention can reasonably be assumed to have the impact desired, or if planners are contributing a sheen of action that avoid politically difficult solutions but suggest something is being done, even if ineffective.

Doing more with less is a criteria that reflects our view that large infrastructure and spatial planning will diminish

somewhat in the years ahead due to a variety of resource constraints and economic limitations. Cities will have to make choices about what to build, what to maintain, and what to save. Every effort to reduce driving implicitly expects more efficient use of resources and infrastructure, as well, though this is not usually called out directly as we do in this analysis.

We analyze the political incentives that exist for the interventions studied. Each intervention requires different sets of knowledge, expectations of control and order, and coalitions to build support. Local officials respond to political incentives, much more than empirical studies, and what succeeds in addressing the polycrises will need to account for these incentives.

Lastly, uncertainty permeates planning and reducing driving. There are technological innovations, both good and bad, but the climate is changing where people can live, fundamental relationships between home, work and school that affect regional spatial structure are changing, and the values we have as a society are changing. Planning must be a flexible tool that accounts for such uncertainty rather than press ahead with well-defined and precise interventions that are ultimately wrong and ineffective.

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Key Words: Accessibility, Transport planning, Mass transit, Uncertainty, Polycrises

RELATIONSHIP BETWEEN WELFARE ZONES AND PROFIT ZONES OF BRISBANE E-SCOOTERS

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Research-in-Motion (RiM)

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E-scooter sharing has become a popular micro-mobility for short travels in Brisbane, Austrilia. E-scooter sharing may satisfy short travel demand unmet by inconvenient transit services of excessive indirectness, transfer, and access-egress walking distance. However, this demand may be overlooked by e-scooter operators if not generating sufficient profits. In this paper, we identify the overlap and division of e-scooter welfare zones (serving inconvenient transit services) and profit zones in Brisbane CBD (central business district) and surrounding suburbs,

in order to provide policy implications for city councils and e-scooter operators on how to reach a win-win goal. We dissect the Brisbane CBD and surrounding suburbs into 767 grids of 250m*250m. Based on 128416 Neuron e-scooter trip trajectory data in Brisbane from 10th April, 2022 to May 7th, 2022 (28 days), we calculate the percentage of e-scooter trips serving inconvenient transit services and the percentage of profitable e-scooter trips in each grid. An e-scooter trip is identified as serving inconvenient transit service when it is off transit operation hours or its alternative transit travel has at least 1 transfer, above average indirectness level (1.28), and longer than 1km access-egress walking distance. An e-scooter trip is identified as a profitable trip when its trip revenue is above the mean value of all e-scooter trips and its time interval between trip end and trip start is below the mean value. Based on the percentage of e-scooter trips serving inconvenient transit services and percentage of profitable e-scooter trips, we use K-means method to cluster 767 grids into four zones:
(1) Welfare and profit zone (78.09% grids), with medium to high percentage of e-scooter trips serving inconvenient transit services and medium to high percentage of profitable e-scooter trips; majorly located in the center of Brisbane.
(2) Welfare and non-profit zone (10.56% grids), with high percentage of e-scooter trips serving inconvenient transit services but low percentage of profitable e-scooter trips; mostly located in Brisbane suburbs, especially western and eastern suburbs.
(3) Non-welfare and profit zone (5.35% grids), with low percentage of e-scooter trips serving inconvenient transit services but high percentage of profitable e-scooter trips; mostly located in Brisbane suburbs, especially northern suburbs.
(4) Non-welfare and non-profit zone (6.00% grids), with low percentage of e-scooter trips serving inconvenient transit services and low percentage of profitable e-scooter trips; mostly located in Brisbane suburbs, especially eastern and northern suburbs.
This paper provides insights for city councils on how to regulate e-scooter sharing and how to trade-off between public welfare and e-scooter profits. The welfare and profit zone indicates the common interest by public and e-scooter operators, while e-scooter supply for non-welfare and non-profit zone can be reduced. For the welfare but non-profit zone, city council may use economic and regulatory tools to encourage e-scooter operators providing a certain level of non-profit services to bridge transit gaps.

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Key Words: E-scooter sharing, Welfare zones, Profit zones, Urban transit gap, Brisbane

STREET-LEVEL PUBLIC TRANSIT ACCESSIBILITY AND NEIGHBORHOOD TYPOLOGIES

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Research-in-Motion (RiM)

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Public transit access plays a pivotal role in ensuring equitable mobility, particularly for socially marginalized communities (Foth et al., 2013). Existing research on transit accessibility has predominantly concentrated on regional and tract-level analysis (Bree et al., 2020; Kumar et al., 2020; Merlin et al., 2021), overlooking micro-scale, neighborhood-level accessibility that is vital for understanding the true impact on communities. Conducting high-resolution accessibility analysis thus becomes imperative in assessing whether these endeavors effectively cater to the needs of the intended population segments (Tribby and Zandbergen, 2012). This research identifies the relationship between street-level transit accessibility and both physical and socio-economic attributes, with a particular focus on identifying disparities in the distribution of transit services for different neighborhood typologies.

The spatial scope of the research focuses on major neighborhoods in Los Angeles County, including Downtown, Koreatown, South LA, Culver City, and Hollywood. To assess accessibility to public transit, street network analysis utilizing OSMnx and Pandana packages in Python was conducted. Combined with data from the 2022 American Community Survey (ACS), both physical attributes (intersection density, block length, and business density) and socioeconomic attributes (race, income level, housing expenditures, and employment) are analyzed with regard to transit accessibility. Employing correlational and comparative methodologies, the investigation identifies a statistically significant relationship between accessibility and neighborhood typologies across the study areas.

The preliminary findings reveal distinctive spatial patterns in public transit accessibility for different neighborhood typologies within Los Angeles, along with compelling disparities in public transit access across various socio-economic layers. This study's findings shed light on the imbalance in transit access and its implications for urban equity. The unequal distribution of street-level transit resources underscores the pressing need for more inclusive and targeted approaches to public transit development. By prioritizing the transportation needs of marginalized communities based on unique neighborhood typologies, policymakers can foster a more equitable urban environment and enhance overall accessibility for all residents. These insights are invaluable for guiding future public transit initiatives toward achieving a more equitable and sustainable transportation system in Los Angeles.

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Key Words: Transit accessibility, Equitable access, Urban network analysis, Neighborhood typology, Mobility planning

THE EFFECT OF METROPOLITAN EXPRESS RAILWAY SUPPLY ON LAND PRICE VARIATION

Abstract ID: 1110.0.0.175.2024
Research-in-Motion (RiM)

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With the opening of the Suseo-Dongtan section of Korea's metropolitan high-speed rail GTX A line, it is expected that commuting time in the metropolitan area will be shortened and spatial scope will be expanded. The supply of such large-scale railway infrastructure increases the value of nearby areas and leads to an increase in land prices. In this study, we analyze the land prices before and after the supply of GTX A line in the railway supply area to find out the economic impact of infrastructure supply and the transfer of supply costs according to land prices. The analysis target is GTX Line A Suseo Station, Seongnam Station, Yongin Station, and Dongtan Station, and the analysis period is set as 2017 when GTX started construction and 2024 when it was completed. First, the scope of influence due to infrastructure supply was estimated based on the trend line of individual publicly announced land prices according to the radius of each station. As a result, it was found that all railway stations were expanded compared to the urban railway area before supply. Next, land prices by use area within the damaged area were analyzed to identify land price changes according to land use characteristics. As a result, high rates of land price increase were observed in commercial and residential areas, but green areas were not affected. Lastly, as a result of analyzing the rate of increase in land prices in the damaged area compared to the GTX supply cost by railway station, it was confirmed that development utility was uneven depending on the characteristics of the supply location. Planned areas around GTX supply stations, such as Suseo Station and Dongtan Station, have high development utility, while areas scheduled for development after infrastructure supply, such as Yongin Station, have low development utility. In addition, it showed a certain level of development utility when supplied to major urban areas such as Seongnam Station. This shows that it is important to select an infrastructure supply location considering the impact of GTX supply on land price fluctuations in surrounding areas and the location and land use characteristics.
From now on, we will investigate how individual and regional characteristic variables affect changes in individual publicly announced land prices through a spatial lag model(SLM) or spatial error model(SEM) considering spatial deficit autoregressive. At this time, variables include transportation characteristics such as accessibility to downtown Seoul, development density characteristics such as land use, and humanities and social characteristics to investigate the impact of the construction of new metropolitan transportation facilities on surrounding land prices. Through this, it is expected that it will be possible to find out the economic impact of the supply of infrastructure on surrounding areas and the effect of increasing the value of the area.

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Key Words: Metropolitan express railway, Station area, Land price variation, Regional economy, SOC

TRANSPORTATION BARRIERS AND THE SHIFT TO ASSISTED LIVING FOR OLDER ADULTS

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Research-in-Motion (RiM)

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Understanding the factors that influence older adults’ residential choices will hold critical importance as the United States is witnessing a significant demographic shift towards an aging population. My research aims to empirically evaluate the effect that transportation barriers have on the decision-making process of older adults contemplating moving into assisted living arrangements rather than choosing to age-in-place. Given the challenges in meeting the residential needs of the growing senior population, a better understanding of how access to transportation – along with other socio-economic factors – influences these decisions will benefit policymakers and communities alike.
My hypothesis is that those older adults who reported that transportation issues kept them from visiting friends and families or going out for enjoyment in the prior years are more likely to make a residential transition to assisted living facilities (i.e., residential care homes, lifespan communities, and nursing homes). For many seniors, the availability and accessibility of transportation services are crucial in maintaining independence, access to healthcare, social engagement, and overall quality of life. Therefore, transportation barriers might be a pivotal factor in deciding to move into a more supportive living arrangement.
I am exploring this issue by using the data from the National Health & Aging Trends Study (NHATS), a nationally representative survey of Medicare recipients (65 or older) in the US. The NHATS is also a semi-longitudinal survey composed of three cohorts from 2011, 2015, and 2021 thus allowing assessment of changes within individuals over time. I will use propensity score matching to measure how the experience of transportation barriers, as a treatment, affects the seniors’ likelihood of making a residential transition. For this purpose, I will create two subsamples of those who made residential transition and those who are aging-in-place, and match them based on regression of social, demographic, and economic traits.
Overall, my findings can inform public and private sectors to assess future demands for assisted living facilities in their community given the socio-demographic profile of its aging population. Furthermore, it could also reveal how appropriate transportation interventions focusing on older adults and their caregivers could ameliorate the housing challenges expected from an aging society.

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Key Words: Aging, Transportation Barriers, Age In Place, Assisted Living, Residential Relocation

URBAN MOBILITY AND TIME POVERTY IN THE LIVES OF BRONX HOME CARE WORKERS

Abstract ID: 1110.0.0.1043.2024
Research-in-Motion (RiM)

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This research investigates the transportation challenges faced by home health aides in New York City area. Home care workers are essential workforce that play a crucial role for enabling the elderly to remain in their homes and neighborhoods, a concept widely known as "aging in place." This stability for clients, however, puts the home care workers into a contrasting reality of constant movement. These workers confront transportation challenges while performing multiple lengthy commutes daily to provide services across geographically dispersed homes.

The mobility of home care workers is a critical factor that impacts the accessibility and quality of care for the aging demographic preferring to remain at home. Predominantly low-income women of color and immigrants, these workers often navigate the complexities of urban transit systems under irregular and demanding schedules, with their unique transportation needs—arising from nonstandard work hours, the wide distribution of client locations, physical demands of their roles and their own responsibility of care at home—pointing to a significant oversight in current transportation planning paradigm.

In collaboration with Cooperative Home Care Associates (CHCA) in the Bronx, the study employs in-depth interviews and go-along interviews to investigate the aides' daily commuting experiences. By addressing the transportation challenges they encounter, this research seeks to contribute to improve the working conditions and well-being of home health aides, as well as to support the sustainability of home-based care services.

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Key Words: Mobility of care, Public transit, Gendered mobility, Qualitative method

Track 15 – Urban Design

Track 15 Pre-Organized Session Summaries and Abstracts for the Sessions

VERTICAL URBAN LIFE-STYLE: DESIGN + MARKETING OF HIGH-RISE LIVING
Abstract ID: 1112.0.0.728.2024
Pre-Organized Session Summary
Session Includes: 1108.0.0.755.2024, 1108.0.0.1186.2024, 1108.0.0.761.2024, 1108.0.0.877.2024

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This pre-organized session brings together papers that all address high-rise living from various perspectives. Over the past twenty years, we have seen an increase of this form of living around the globe, and there are a few places where the urban design of these structures came with an explicit marketing strategy. One of these places is Toronto, Canada, where the design of urban high-rise living has been directly linked to a creation of a particular life-style. This session will investigate the role of amenities in selling an urban life-style, how celebrities are utilized in the marketing of design elements, and how specific marketing strategies are part and parcel in the production process of these tall buildings. Further, the session will propose to see common space as part of public space; and it will problematize urban density and nodal development in the context of high-rise buildings. Since specific policies are directly linked to urban design outcomes, and by focusing on one geographical area, namely Toronto Canada, the session's goal is to present a systematic discussion of the production process of a particular form of living. The various contributions in this session may also speak to experiences in other places, since high-rise living has become a global phenomenon.

Learning Objective(s):

- A systematic discussion of the production process of high-rise living as a lifestyle and its design at one particular place
- To allow generalization from this specific case study so that other places can learn from it and may lead to comparative work in the future
- A critical analysis of what role common space has and its relation to public space

A MATTER OF PERSPECTIVE: DRAWING DESIRABILITY IN THE HIGH-RISE CITY

Abstract ID: 1108.0.0.755.2024
Pre-Organized Paper Presentation

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Before shovels hit the ground, the process of placemaking is well-underway through the image production work by planners, architects, and developers' sales teams (Fincher, Pardy & Shaw, 2016). This paper addresses the question: How do placemakers convey that an increasingly dense and tall city is a desirable built form and place for living? The skyline of Toronto, Canada shot upwards in half a century and continues to rise with its tallest residential tower under construction at 105 storeys. Toronto is emblematic of densification as a planning strategy and provides a site for applying verticality (Nethercote, 2018) as a register for theorizing the role of tall buildings in urban design and placemaking.

This paper focuses on the role of drawings – both by-hand and digital – in the placemaking process. Drawings are not neutral but actively shape how a place will be known (Biddulph, 2014). I present findings from an analysis of drawings within the visioning sections of City of Toronto planning documents read alongside a systematic sample of newspaper advertisements for residential apartments at five-year intervals from 1966 to 2021 (aligning with census years). Findings were derived from thematic content analysis using Atlas.ti for qualitative coding. The method enabled a temporal comparison of the drawing technologies and techniques, as well as differences in perspectives and angles of view, contexts, and the entourage (e.g. the scaled people and landscaping) included or excluded from the images.

I argue that the changing perspectives in the drawings over time demonstrate a shift in the high-rise as an object desired by residents of the city, to the city as an object desired by residents of the high-rise. In the early decades, city plans and ads depicted ink sketches of whole buildings in 2-point or 3-point perspectives (including both "birds' eye" and "worms' eye" views). These perspectives represent gazing upon and looking up at the high-rise as an object of desire, symbolizing the opportunity for residents to embrace this new building typology and 'move up' in lifestyle alongside the overall rising of the city's actual and symbolic stature. Over time, the drawings shifted from hand sketches to digital renderings alongside a change in perspective. The primarily outside gaze looking at the building exterior moved to include an interior view looking out over the city itself as the new object of desire for the high-rise resident to remake in their own image. The city at eye-level is also brought into view in later decades, with advertisements for high-rises promoting the streetscape as much as the square footage. The urban design of the street becomes part of the package of knowing the densified city and high-rise residents themselves as urbane and desirable.

This paper joins conversations in the literature on placemaking and the role of "tall stories woven around tall storeys" (Dovey, 1999, p. 118). My findings contribute a novel interpretation of image perspective in making a densifying place. My arguments complement Charitonidou's (2022) finding that modern architectural drawings' observer was transformed into post-modern architectural drawings' user. Moving beyond the architectural fonds, I make linkages to how high-rise building drawings have been used over time in policy documents guiding planning and urban design, and in advertisements selling and renting units. In this way, place images circulate meaning alongside flows of capital within the political economy of the built form, producing desirability in and for the high-rise city.

Citations:

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- Charitonidou, M. (2022). Drawing and Experiencing Architecture: The Evolving Significance of City's Inhabitants in the 20th Century. de Gruyter.
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- Fincher, R. Pardy, M. & Shaw, K. (2016). Place-making or placemasking? The everyday political economy of "making place", Planning Theory & Practice, 17:4, 516-536.
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Keywords: urban design, placemaking, image production, densification, high-rise

THE ROLE OF CELEBRITIES IN THE DESIGN OF CONDO LIFESTYLE

Abstract ID: 1108.0.0.1186.2024
Pre-Organized Paper Presentation

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Central theme:

While skyscrapers may have arguably their origin in cities such as Chicago and New York and in the form of office towers, they now can be found on a global scale and predominantly as condominium towers or apartment complexes. With this high-rise living, a particular lifestyle has evolved, which first had to be socially produced (Lehrer, 2012). Now, it is expected that a condominium has amenities that go beyond of normal usages of common areas. No longer is it enough to have a concierge, a party room, or a swimming pool, but it also includes rock climbing walls and dog washing stations. In this creation of the lifestyle, marketing always was front and centre in the selling of the condo life style (Cizmeci & Ercan 2005) . However, the construction of lifestyles in the marketing of condominiums has changed over time, as the influence of social media and celebrities is increasing in this area.

The allure of the condominium lifestyle has undergone a profound transformation in recent years, heavily influenced by the presence and actions of celebrities. This paper delves into the multifaceted role celebrities play in shaping perceptions, preferences, and consumption patterns within the realm of condominium living (McCracken, 1989). Through a comprehensive analysis of media discourse and social media trends, it explores the mechanisms by which celebrities impact the design, marketing, and overall ethos of condominium developments. Drawing on theories of celebrity endorsement and lifestyle branding (Yöres 2017; Zablocki & Rosabeth, 1976), this paper elucidates the symbiotic relationship between celebrities and the condo lifestyle.

Approach and methodology:

The role of celebrities in the design of Condo Lifestyle will be deliberated by analysing interviews with celebrities and marketing firms, various marketing materials, social media accounts and development websites. Furthermore, this research probes the social and cultural implications of celebrity-driven condo culture, including its effects on urban development, social stratification, and notions of identity and belonging. By analyzing interviews and other data, it explains the nuanced interplay between celebrity influence, consumer behavior, and urban space, shedding light on broader trends in contemporary lifestyle consumption.

Findings:

This paper investigates how celebrities leverage their status, image, and social capital to endorse specific developments, thereby imbuing them with a sense of desirability and exclusivity. Moreover, it examines the ways in which celebrities' personal lifestyles and design preferences are emulated and commodified within condo spaces, influencing architectural styles, interior decor choices, and amenities offered.

Relevance:

This research contributes to our understanding of the evolving dynamics between celebrity culture and urban living, highlighting the pivotal role of celebrities in shaping the aesthetic, social, and aspirational dimensions of the condo lifestyle. It underscores the need for further research into the intersections of celebrity endorsement, consumer culture, and urban design, to grasp the full extent of their impact on contemporary urban landscapes. Planning scholars can also use this knowledge to advocate for more inclusive and sustainable urban development practices that account for diverse cultural influences and societal aspirations.

Citations:

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- Condominiums in Toronto. Scapegoat. 3. 23.

Keywords: condo Lifestyle, social media, celebrity endorsement, design, marketing

A HOUSE IN THE SKY: THE ROLE OF PUBLIC SPACE IN HIGH-RISE HOME-MAKING

Abstract ID: 1108.0.0.761.2024
Pre-Organized Paper Presentation

Nataliya Murzenko [Universität Freiburg] n.murzenko@gmail.com, presenter

High-density in urban neighbourhoods continue to be planned for and developed across Canadian cities with an emphasis on transit-oriented development, walkable neighbourhoods, and environmental sustainability cited as the basis for policy makers across the country. Despite the prolonged policy shifts facilitating the condominium boom and gentrification of neighbourhoods across the Greater Toronto and Hamilton Area, a cultural shift associated with high-rise living has been slow to follow. Canadian culture, in line with other settler-colonial states such as Australia and the United States, continue to view high-rise living as a temporary, transitional stage suitable to childfree living either leading up to or following the ownership of a single-family detached house (Fincher, 2004). Although a growing body of work has emerged to better understand the lived experience of various high-rise

residents (Baxter, 2017; Dorignon & Nethercote, 2021; Nethercote & Horne, 2016), there is an unmet need to better understand the nuanced ways that particular shared spaces fit into the everyday lives of residents (March & Lehrer, 2019). Therefore, a thorough analysis of the lived experiences of residents can inform interventions in urban planning and building management with the goal to improve vertical living.

Informed by Henri Lefebvre's framework of the production of space, this research project will analyze the role that common areas have in expanding the boundaries of 'home' within high-rise apartments and condominiums and how these common spaces function as a form of public space. Specifically, I will examine the role that common areas such as hallways, elevators, lobbies, as well as amenities in high-rise buildings play in making and un-making residents' feelings of home and belonging within their chosen dwelling. Does the role of public space in home-making vary for different demographics and tenure types? Can public space in high-rise buildings create a sense of community among residents, and in doing so, mitigate the effects of disorientation on home-making and unmaking? I will conduct semi-structured open-ended interviews with about 20 residents in high-rise buildings equality distributed among the City of Toronto as well as the outlying suburbs, where we also witness a mushrooming of high-rise living.

Since densification and vertical growth of cities is continuing to provide a substantial amount of housing units across North America, I hope to contribute to the understanding of creating a sense of belonging, privacy and freedom associated with 'home' in a high-rise setting. This research can guide planning for future high-rise neighbourhoods, as well as a re-assessment of by-laws and regulations affecting the design and uses of common/public spaces within high-rise buildings.

Citations:

- Baxter, R (2017) The High-Rise Home: Verticality as Practice in London. International journal of urban and regional research, 41(2), 334-352.
- Dorignon, L., & Nethercote, M. (2021). Disorientation in the unmaking of high-rise homes. Transactions - Institute of British Geographers (1965), 46(2), 363-377. https://doi.org/10.1111/tran.12427
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Keywords: High-rise living, Public space, Home-making, Disorientation

WHAT IS TALL? DENSITY AND URBAN FORM

Abstract ID: 1108.0.0.877.2024
Pre-Organized Paper Presentation

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Over the past two decades, we have seen a trend in most Canadian cities, as well worldwide: to build housing in vertical form. Driven by a plethora of arguments, mostly coming from the economic and partially from the environmental side, high-rise living has become a reality both in central cities as well as in suburban municipalities (Barr, 2010). But what is tall for one community might not be tall for another. And what constitutes a tall building is usually regulated in the policy framework of the municipalities.

While height is regulated locally and manifests itself in various forms, it is often driven by trends of branding and growth, and it is a continuation of the financialization of housing which pushes building height in cities to promote a globalizing city image (Sklair, 2005, 2010; Graham, 2016). Global competition growth models further divide society into those who can afford to own a home and those who cannot, while privatizing amenity space into either luxury condominium towers or exclusive traditional communities to the detriment of individuals who cannot afford either. Usually, cities direct most of this form of development to the core, but more and more we find this same development in peripheral areas. Since land is a finite resource, cities are in the process of matching increased populations with locations for high-density housing (Beitel, 2016).

Approach and methodology:

What is tall? And how does tallness relate to density and urban form? This paper takes a critical look at the discussion of tallness. It relates it to density and urban form and has two steps. First, it provides a systematic analysis of height regulations in a wide range of municipalities. In a second step, it will use three case studies (Edmonton in Alberta, as well as Mississauga and Toronto in Ontario) where the focus will be to investigate the relationship between urban form, concentration of housing and tallness.

Findings and Relevance: This research looks to contrast and compare what is considered tall across Canada from a policy standpoint. As more and more Canadian cities try to combat horizontal sprawl, vertical housing will take an ever more prominent role in the urban form, either manifesting in vertical sprawl and super tall buildings, or uniformly push out from the core to the periphery. It is hoped that with this research, a small contribution will be made to the discussion of vertical living in relation to increased density and in particular on tall buildings and their relationship to sprawl, density and built form.

Citations:

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Keywords: Height, Tall Buildings, Density, Urban Form

RETHINKING THE PLACE OF URBAN DESIGN IN PLANNING CURRICULA

Abstract ID: 1109.0.0.163.2024
Roundtable Submission

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Urban design is often described as a professional practice and intellectual pursuit at the liminal space between other built environment disciplines, including architecture, landscape, architecture, civil engineering, and planning (Lang 1994). The field also draws upon other disciplines, from environmental psychology to urban sociology. To cope with this expansive field, scholars have long called for a "catholic" approach to urban design pedagogy (Moudon 1992). Urban design pedagogy must also confront emergent challenges, including informal urbanization in the Global South, mounting inequality both within and between cities, reducing dependence on private automobiles, and increasingly dire impacts from climate change.

This topical discussion roundtable will create a forum for a structured conversation about the state and future of urban design pedagogy within planning curricula. Invited participants will respond to a series of questions before opening up discussion to the audience. Questions for consideration will include: What characterizes the intellectual and professional positioning of urban designers whose training is rooted in planning, as compared to other built environment disciplines? How can a program balance the demand for design skills training with the other priorities of planning curricula? Beyond design skills-focused courses, what other pedagogical settings and content areas are essential to training planning-rooted urban designers (e.g., history and theory of urban design, research methods)? And, how can we create urban design pathways for planning students from a range of backgrounds including both those with and without previous design training?

Citations:

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- Lang, Jon T. Urban Design: The American Experience. New York: Van Nostrand Reinhold, 1994.
- Long, Judith Grant. "State of the Studio: Revisiting the Potential of Studio Pedagogy in U.S.-Based Planning Programs." Journal of Planning Education and Research 32, no. 4 (December 1, 2012): 431–48. https://doi.org/10.1177/0739456X12457685.

Key Words: urban design pedagogy, planning curriculum

WHOLE SENSORIUM URBAN DESIGN: BEYOND THE VISUAL

Abstract ID: 1109.0.0.425.2024
Roundtable Submission

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As far back as 1907, Simmel wrote that "every sense delivers contributions characteristic of its individual nature to the construction of sociated existence," calling for sensory analyses of social life. But urban and social studies since have tended to focus primarily on phenomena external to the senses, like space, mobility, and economy, without close attention to how these things are mediated and experienced with the whole human sensorium. When the senses are considered, at least within urban planning, it is most often considered from a ocular perspective: practices of urban documentation, design, and analysis typically rely on visual media representing Euclidean space, such as the plan, the diagram, or the map. Over the past 20 years, scholars have increasingly taken up Simmel's call, refining practices of sensory sociology, sensory geography (Hsu 2020), and sensory ethnography (Pink 2006). Within urban studies in particular, emergent "sensory urbanism" scholars have started to explore a number of themes. They have, for example, explored how smell is used to segregate and other within cities (Pow 2017), or how sound has been used to contest processes of gentrification (Summers 2021). We also see the necessity of extending this literature to applied practices that can inform urban design: for urban planners and designers to fully engage the city, they must reimagine conventional forms of urban representation so that they can intentionally consider these sensuous elements that construct our experience of the city (Crisman 2024). In this roundtable, we will present a series of provocations to spark conversation and discussion on how taste, touch, smell, and sound manifest within and, in turn, form the city. How have these sensorial phenomena shaped our urban experience, and how might we deploy them within urban design practice to create more diverse, equitable, and inclusive cities?

Citations:

- Jonathan Jae-an Crisman, Approximate Translation: Media, Narrative, and Experience in Urban Design (AR+D Publishing, 2024).
- Sarah Pink, The Future of Visual Anthropology: Engaging the Senses (Routledge, 2006).
- C. P. Pow, "Sensing Visceral Urban Politics and Metabolic Exclusion in a Chinese Neighbourhood," Transactions of the Institute of British Geographers 42, no. 2 (2017): 260–73.
- Hsuan Hsu, The Smell of Risk: Environmental Disparities and Olfactory Aesthetics (Oxford University Press, 2020).
- Brandi Thompson Summers, "Reclaiming the Chocolate City: Soundscapes of Gentrification and Resistance in Washington, DC," Environment and Planning D: Society and Space 39, no. 1 (2021): 30–46.
-

Key Words: taste, touch, smell, sound, senses

INCLUSIVE CITY BUILDING BASED ON C. ALEXANDER'S THEORY AND PRACTICE

Abstract ID: 1111.0.0.574.2024
Professional Development Workshop

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Christopher Alexander's theory and practice were developed to radically transform planning, urban design and architecture. His aim was to find ways in which people could once again create beautiful, sustainable and humane environments. A key to achieving this goal was empowering ordinary people to act responsibly and with knowledge in shaping their own living space. While it has transformed over time, and with growing experience of working on projects of various scales, this aim has never been abandoned. It continued to be to reconnect people with the built environment through direct intervention in its shaping. This work is being continued today by Building Beauty and by many professionals and organizations.

In this workshop we introduce the participants to some of the core ideas of Alexander's thought: life as a property of all matter, wholeness, centers as the essential entities from which the world is made, and our ability to gage the level of life and the integrity of the wholeness by using human feeling and our own innate sense of well-being. We'll show how these concepts are used, and some of the techniques developed over the years to implement his theory in participatory planning practice.

The major task of any building or planning project is to increase the degree of life in the wholeness where it occurs. In this workshop we will learn some basic techniques to learn to identify degrees of wholeness in urban space, analyze the centers on a site, map our feeling and sense of well-being in it, and envision improvements to the major centers on the site that will increase its emotional substance.

The workshop will start with a brief introduction of Alexander's thought and practice, and his contributions to urban planning and design. After the introduction we will go out and perform feeling and center mapping in the urban area surrounding the conference hotel. Returning to the room we will compile the individual maps to a joint feeling and center map and discuss their implications. Concluding the session will be a visioning phase where improvements to the area surveyed will be proposed by the participants and discussed.

Reminder for Workshop Participants: Attendees should bring a few pens and pencils for writing and drawing and a smartphone.

Citations:

- Seamon, D. (2019). Christopher Alexander's Theory of Wholeness as a Tetrad of Creative Activity: The Examples of A New Theory of Urban Design and The Nature of Order. Urban Science, 3(2), 46. https://doi.org/10.3390/urbansci3020046
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Keywords: Participative Planning, Space Analysis Methods, Community Visions, Placemaking, Feeling and Affect

Track 15 Individual Paper Presentations

A CHARACTERISTICS OF SCHOOL NEIGHBORHOOD ENVIRONMENT IN KOREAN NEW TOWNS

Abstract ID: 1108.0.0.905.2024
Individual Paper Presentation

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Schools have been perceived as neighborhood and community centers in urban planning and urban design. With the decline of the school-age population due to low birth rates and population aging, there is an increasing demand for ways to restructure schools beyond their educational function into social spaces that can be used by all generations. This study aims to classify school neighborhoods by type according to urban form and analyze temporal changes in their characteristics through mapping and cluster analysis by conducting case studies of four new cities in the Seoul metropolitan area. The main finding of the study is that schools, which used to be located in isolation adjacent to residential complexes, are gradually co-located with parks, libraries, and social welfare facilities, which can be used as a strategy for N-minute urban planning to provide daily life services to urban residents within walking distance.

Citations:

- Swain, R., Oswin, P., Truelove, V., & Larue, G. S. (2024). Children's and parents' perceptions on safe routes to schools: a mixed-methods study investigating factors influencing active school travel. Journal of Urban Design, 29(2), 208–230. https://doi.org/10.1080/13574809.2023.2223517
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Keywords: school neighborhood, new towns, mapping, urban form, clustering analysis

ASSESSING THE POLITICS OF ZONING REFORM IN DOWNTOWN LOS ANGELES

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Individual Paper Presentation

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This paper examines the process of negotiation to implement a modernized zoning code through the Downtown Los Angeles Community Plan Update "DTLA 2040." While the City's new zoning code developed design and planning tools for a streamlined process and improved public realm, downtown communities began mobilizing coalitions of knowledge and expertise to preemptively challenge and influence the plan. The problem of developing a citywide zoning framework, that can adapt responsively to local contexts, presents the political and planning tensions between centralized and decentralized control, and implementation through top-down versus bottom-up processes. Additionally, negotiating zoning changes with local community interests highlights the degree of flexibility between economic structural constraints and the agency of urban design tools to improve and/or constrain local issues and conditions. Planning theory suggests that social mobilization can shift power to communities, however, the liberalization of state planning also devolves responsibility potentially exacerbating unequal local power dynamics. Zoning in the U.S. has evolved from technocratic tool to a political framework for negotiation. Within this context, the social production and negotiation of zoning tools reveals choices and preferences that help to understand these power dynamics. This research examines the politics and practices of zoning reform and implementation in Downtown Los Angeles to answer two questions: (1) How do community coalitions align resources and interests to influence community plan policies and zoning codes? (2) How are new urban design and planning tools used to frame the process and negotiate conflicting priorities between diverse stakeholders?

This case study provides in-depth analysis of political and professional decision-making at the intersection of top-down zoning reform and robust community mobilization. Content analysis and process tracing examine the iterative changes to the community plan policies, zoning codes, and public comments to track the decision-making process from 2014 to 2023. Semi-structured interviews and observation of planning meetings are used to focus

analysis on the negotiations around two design and planning tools from 2019 to 2023. Specifically, a new hybrid zoning framework based on urban design tools is combined with an incentive zoning system for developers to produce community benefits. Findings present how the tensions between financial viability and community benefits of development projects take shape differently across the historically marginalized communities of Chinatown, Little Tokyo, and Skid Row. Furthermore, it reveals how the assumptions and preferences of particular

groups are prioritized over others and become encoded into the planning system. The research has implications for scholarship on the evolving understanding of urban regimes, and for practice in revealing how planners calculate and negotiate tools such as incentive base-bonus systems and inclusionary zoning policies.

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Keywords: zoning reform, community mobilization, community benefits, urban politics

ASSESSING USER SATISFACTION FOR URBAN DESIGN OF RAILWAY STATION AREAS

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Individual Paper Presentation

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Issue

Railway station areas play a crucial role in promoting sustainable development by attracting users through effective urban design; However, assessing user satisfaction in design is typically done by subjective evaluation, which can render crucial aspects neglected in projects as complex as railway station areas. 1) Existing digital methods have limited usefulness as they are usually informative on macro and micro levels but not on the district level, and also heavily depend on existing data. 2) The rich scientific and empirical knowledge of user perception and spatial qualities is potentially useful for evaluation, but the knowledge fragmentedly lies in different disciplines. Therefore, this research aims to build a framework for objectively and systematically assessing the urban design of railway station areas, which requires the advancing of digital methods and the integration of relevant knowledge. The intrinsic spatial-temporal complexity of station use also calls for a clear definition of station areas.

Methodology

1) This paper starts with the articulation of the spatial and temporal scales of station areas for urban design consideration. 2) It adopts the 'user needs pyramid' with five types of user needs: safety, speed, ease, comfort, and experience, and examines the possible meanings of these needs through a multidisciplinary literature review. The knowledge reviewed dives into urban features, environmental psychology, and pedestrian behavior. The user needs are finally translated into indicators that can be simulated. 3) This paper adopts an agent-based simulation approach, with MassMotion and Python scripts for movement and vision simulation. 4) Rotterdam Central Station

(RCS), with different events on different temporal scales in the old and the new scenarios, is used as a case to demonstrate how the proposed framework works.

Findings

1) The literature review shows a rich knowledge body to quantify most user needs, despite scientific evidence lacking to quantitively link one type of user need - comfort, with spatial aspects. 2) The proposed framework interprets user needs as peak-time safety, non-peak-time safety, transfer speed, ease of wayfinding, comfort regarding facilities, and visual experience; these needs are measured as flow density, view coverage, transfer distance and time, facility proximity, and visual elements' proportion and numbers, respectively. 3) The framework is effective in assessing design alternatives, by telling the changes in each user need and identifying the mismatch between needs. This serves as a general validation of the whole framework. 4) The framework's multiple components have varying degrees of validity. 5) The RCS case demonstrates that the assessment framework can be applied on the district level (e.g., 250m range) with substantial details to inform design decision-making, and is applicable during the design stage where existing data is lacking as projects have not yet been built. 6) The RCS case also suggests designing the core spaces for humans instead of for vehicles, and connecting/sharing stations with the neighborhoods.

Relevance and implications

This research and the resulting assessment framework have various relevance to practice and knowledge. 1) The framework helps with design iteration and management interventions, and its vivid mappings better communication between stakeholders in project development. 2) It facilitates academic research with the more objective analysis of station cases through repeatable data processing. 3) This paper strengthens the scientific knowledge of railway station areas through the multidisciplinary literature review that translates user needs for urban design use, visualizing abstract concepts of experience, and providing the digital means to explore new knowledge of spatial-morphological patterns that were not visible before. 4) The temporal dimension of stations necessitates designing stations that are event-supportive and resilient, facilitating user experience during festivals and disruptions.

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Keywords: agent-based simulation, temporal scale, crowd simulation, vision analysis, mapping

AVERTING DEAD MALL SYNDROME IN LARGE UK CITIES

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Individual Paper Presentation

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As consumer habits evolve, the role of purpose-built shopping centers is being severely tested (Enoch et al., 2022). The phrase ‘dead mall syndrome’ is now frequently used by planners to describe purpose-built shopping centres facing obsolescence. In North America, struggling purpose-built shopping centers are typically found in the suburbs (Dunham-Jones & Williamson, 2017), while in Western Europe, where suburban expansion and commercial decentralization has been less dramatic (e.g. Guimarães, 2019), they tend to be in town or city centers.

‘Dead mall syndrome’ and its urban design implications has received research attention in North American suburbs (e.g. Scharoun, 2012; Howard, 2015), but has yet to be comprehensively interrogated in Western European cities where the urban location of many purpose-built shopping centers present different planning and urban design challenges. In this paper, the design and adaptability of purpose-built shopping centers in large UK cities is examined with a focus on the extent to which ‘dead mall syndrome’ is occurring and how the prospect of obsolete shopping centers is reshaping future planning and urban design.

The research underpinning this study emerges from a multiple, mixed method case study of five UK city centers – Edinburgh, Glasgow, Hull, Liverpool, and Nottingham – that has sought to understand changing patterns of land use and approaches to place adaptation and design innovation. The study has two aims: (1) record the underlying trends in the retail landscape; and (2) identify the ways in which these changes have impacted the design and operation of shopping centers and the planning of UK city centers. The quantitative phase of the research created a large database containing land use and occupier details of all properties in the five-city sample over multiple decades, while the qualitative phase comprised an interview study involving 75 participants engaged in city center real estate development, leasing, operation, city planning and urban design.

The results show that shopping centers face high levels of vacancy and can no longer rely on rental income from retailers. All the shopping districts in the five city centers have shrunk as the number of vacant units has risen. This has resulted in some of the shopping centers examined becoming peripheral as they have lost their anchor tenants and struggled to fill vacant units. Despite these trends, the data revealed that purpose-built shopping centers with well-developed specializations, active center management or that are simply newer than their rivals have proved to be relatively resilient to ‘dead mall syndrome’.

The results also demonstrated that tenancies are more difficult to sustain in older, enclosed shopping centers than in newer open-air shopping centers that recreate a permeable street environment. In their efforts to avert ‘dead mall syndrome’, some operators of older, enclosed centers have therefore made a decisive shift toward repurposing for leisure and entertainment uses to ‘functionally requalify’ space left by the departure of traditional retailers, while others are adopting radical ‘de-malling’ measures that focus on reimaging shopping center sites as open-air mixed-use urban quarters that reintroduce office and residential land uses into the urban core.

The research suggests that a carefully managed and plan-led approach is necessary in UK city centers to ensure these urban transformations achieve a sustainable fix to the so-called ‘crisis on the high street’. Local government planners and urban designers thus have a key role to play in shaping both the ‘repurposing’ and ‘tear down and replace’ models to ensure that social and community infrastructure and public space is adequately provided through the process of ‘demalling’.

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Keywords: malls, city centres, repurposing, de-malling, urban transformation

COLLECTIVE SPACE: LIVING TOGETHER IN DIFFERENCE

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Individual Paper Presentation

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Decades of research reveals how segregation of new immigrant communities can breed isolation, increase inequality, and foment extremism among newcomers relegated “to the margins.” But other studies demonstrate how ideals of integration and assimilation can force first-generation immigrants to abandon deeply held social, political, and cultural customs in attempts to adopt the norms of host societies. This paper explores whether a middle ground might exist between these two ideological poles. How can we design and manage our cities, and especially our public spaces, to encourage recent immigrants and long-time residents to coexist peacefully and productively? This question is more important than ever given the most recent influx of new immigrants, refugees, and asylees from Central and South America to cities in the Americas.

Iris Young attempted to answer this question in the 1990s and 2000s in developing her notion of “differentiated solidarity,” a political and social ideal that values engagement with diverse others while affirming and celebrating group differentiation by non-mainstream counterpublics. This project is an attempt to place this theory in the material city.

Our paper reports on several years of interviews, observations, and spatial analyses of socioeconomic data conducted from 2021-24 in two immigrant “arrival neighborhoods” in Barcelona (Spain) and Santiago (Chile). We examine the role of the built environment, and sites of “social infrastructure” more specifically, in fostering or deterring perception of integration and belonging among first-generation immigrants. In the process, we discover in each neighborhood the emergence of what we call “collective spaces,” or public parks and plazas that host clustering of homogeneous groups of immigrants or native-born residents while also fostering connections across these different identity groups. Put another way, collective spaces allow, even celebrate, immigrant bonding and differentiation while simultaneously encourage bridging across newcomers and old-timers.

We find specifically that the design, location, and management of public space matters in the construction of solidarity across difference, and that certain physical features tend to increase bridging and bonding actions more

than others. For planners and designers seeking to find a middle ground between segregation and assimilation, this study provides early evidence that attention to material space can help us move beyond the either/or dichotomies that have characterized decades of urban theory and practice.

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Keywords: immigration, diversity, public space, segregation, integration

COMBINED CHARRETTES: DELIBERATIVE METHODS FOR ECOSYSTEM-BASED ADAPTATIONS

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Individual Paper Presentation

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Cities are at the forefront of climate action whereby ecosystem-based adaptations are considered the most apt (low- to no-regret) response that contributes to climate mitigation (carbon sequestration) and adaptation (coping with climate hazards, minimizing risks, and enhancing resilience) (Dhar & Khirfan, 2016). Integrating ecosystems within urban design interventions requires attention to the triad of distributive, procedural, and recognitional justice (Mohtat & Khirfan, 2021). Central to this are the shared social values toward cultural ecosystems and their benefits (CES). Specifically, the relationships between ecosystems and humans generate non-material benefits –i.e., cultural ecosystem services that provide a framework for ecosystem planning and management. These benefits, in the form of activities and experiences, yield individual and collective "preferences, principles and virtues" – in other words, values (Chan et al., 2012: 10). Shared social values toward CES and their benefits are experiential, hence, intangible, subjective, complex, and interconnected (Chan et al., 2012). They are often influenced by societal preferences, hence, constantly evolve and may even be transient (Kenter et al., 2015). They also may emerge from dialogue – meaning, they are co-shared and co-created. These characteristics render the classification and assessment of CES difficult (Chan et al., 2012); they also necessitate approaches and methods that account for the diversity of the preferences, principles, virtues that form CES values and for the possibility of their co-creation and co-emergence through dialogue (Kenter et al., 2015).

This paper argues that deliberative methods are most fitting for the assessment of the complex and heterogeneous collectively held shared values that are typically difficult to define and measure, that vary among people and cultures, and that warrant attentiveness to/and understanding of the nuanced and context-specific cultural differences (Chan et al., 2012). Accordingly, it adopts a method that combines, in a succession, participatory

mapping, value compass, and a charrette's co-design activities to identify options for community-based adaptation to climate change. This combination serves several purposes. Firstly, it overcomes the lack of structure in the conventional charrette's discussions, which is typical of deliberative in-depth discussion groups (Kenter et al., 2015). Secondly, it achieves a triad of deliberation, data collection, and knowledge exchange with the local communities. And thirdly, it yields rigorous data through iteration (i.e., holding multiple combined charrettes in each context, including a balance between the experiential knowledge of local communities and the expert knowledge of decision-makers (Friedmann, 1973).

The paper discusses this combined charrette's application in three vulnerable coastal communities, namely: Tobago, Trinidad and Tobago (77 participants); Negril, Jamaica (59 participants), and Charlottetown, Canada (34 participants). Centered on community-based adaptation, the combined charrette method sought to understand, the local communities' challenges, needs, and preferences in adapting the built form of their settlements to climate change to enhance their resilience. The inclusion of a charrette with local planners and policy-makers in each context also elucidates their priorities and approach to climate adaptation.

The findings reveal that, in each of these contexts, CES is the fulcrum for transformative and innovative action toward community-based climate adaptation. Indeed, without exception, the participants in all the combined charrettes highlighted ecosystems as their topmost assets. Accordingly, building human settlements in harmony with nature to enhance resilience to climate change risks emerged as a dominant CES theme in the three contexts. Importantly, the charrettes also reveal the importance of an integrated urban design approach that not only combines mitigation and adaptation, but also, mainstreams them within policies and plans to address current and future resilience to climate change risks. Lastly, while this paper addresses the advantages of the combined charrette, it also identifies the challenges in its application and the lessons gleaned for its future implementations.

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Keywords: climate adaptation, charrette, co-design, cultural ecosystem services

COMPARATIVE ANALYSIS OF COMMUNITY DESIGN AND DESIGN JUSTICE ORGANIZATIONS

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Individual Paper Presentation

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Throughout American urban history, diverse groups of urban planners and architects have come forward, committing themselves to advocate for people whose voices have often been overlooked in shaping and improving urban physical environments. Since the 1960s, professionals advocating for the concept of "community design" have provided planning and design services to underserved communities and have established organizations collectively known as Community Design Centers (CDCs) to facilitate relevant efforts. CDCs, which are primarily either independent nonprofits or university-affiliated entities, continue to exist today, with over 200 centers currently operating nationwide. More recently, a new wave of professionals in urban planning and architecture in the U.S. has begun to advocate for a newly emerged movement of "design justice," aimed at promoting socially just design practice. While principles associated with design justice demonstrate a more explicit commitment to supporting socio-cultural minorities compared to community design, both established practices share the common goal of empowering underserved communities through design and planning services.

However, considering the different historical contexts that motivated and shaped these practices, there are ongoing questions about how organizations aligned with the core principles of each practice distinctly conceptualize and organize their work in real-world settings. In this context, this study primarily aims to examine the differences between organizations classified as CDCs and those that are part of the professional network of design justice. To compare these organizations, we develop an analytical framework based on the existing literature and practical norms of community design and design justice. This framework concentrates on three dimensions often cited as distinctive characteristics of these organizations compared to other planning and design practices: organizational missions, community engagement approaches, and communities of interest.

Instead of investigating all relevant entities, we select 24 organizations, comprising 12 CDCs and 12 design justice organizations, for an in-depth analysis of each type of organization's specific characteristics and dynamics. Acknowledging the diversity within even the same category of organizations, we choose a variety of entities that represent different organizational characteristics to pinpoint their commonalities. Specific characteristics considered include organization type, location, and year of establishment. We utilize directories of organizations compiled by relevant professional networks to select these samples.

Drawing from this list, we gather relevant data from each organization's mission statements and websites, complemented by semi-structured interviews with their leaders or key staff members. The analysis of relevant data reveals that each CDC and design justice organization adopts distinct approaches to design and/or planning work. Despite their individual differences, common values and characteristics emerge within each category of organizations, underscoring meaningful distinctions between community design and design justice practices. Specifically, we noted that these organizations show distinct characteristics in (1) their framing of goals and communities of interest in their mission statements, (2) the specific efforts to differentiate their community engagement work from other planning and design practices, and (3) the types of communities each organization supports and serves. Additionally, we found that leaders of each type of organization often distinguish their work from another based on practice-specific characteristics, such as the for-profit status of design justice firms and the university affiliation of CDCs. Building on these insights, we explore potential implications for more nuanced

community engagement practices and different models for mission-driven organizations in urban planning and architecture.

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Keywords: community design, design justice, community design center, community engagement

ENVISIONING DHAKA'S WATERSCAPES - DESIGNING UNEVEN CLIMATE ADAPTATION

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Individual Paper Presentation

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Changing landscape and climate conditions are compounding socio-ecological crises that have plagued Bangladesh's capital city of Dhaka over its long history. Today, Dhaka is a fast growing metropolis whose modernization megaprojects embody the ambitions of a nation on the move, from the degrading descriptions of Bangladesh as a 20th century development "basket case" to what Brookings calls "one of Asia's most remarkable and unexpected success stories." In recent decades, Dhaka's rapid growth has spread urban settlements across the city's flood prone deltaic landscape, filling the canals, tanks, ponds, and other lowlands that once provided both stormwater retention capacity and green space in the city. In response, city and national authorities have completed and proposed several urban design interventions that link flood control green infrastructure with new public space amenities. This trend began with the development of the Hatirjheel, a 320-acre complex of retention ponds, green spaces, and new bridges and roadways, completed in 2008. Though the project had enormously uneven impacts and led to the displacement of thousands of people, it was seen by designers, planners, and decision makers as a success to be emulated elsewhere. In the years since, local and national plans have promoted this model of multi-purpose green infrastructure projects, including in Dhaka's updated Detailed Area Plan and the Bangladesh Delta Plan, a national strategy supported by the Dutch government and international planning, design, and engineering consultants. These plans call for replicating the Hatirjheel model across the capital, creating new stormwater retention areas by replacing "encroaching" settlements with new highly programmed open spaces.

In this paper, we assess the role of design and designers in promoting Dhaka's green infrastructure projects. We ask: What is the vision of Dhaka's future represented in these projects? Who are the imagined Dhaka residents that these projects are meant to serve? How do these imagined new urban subjects differ from current residents of these sites? How do design visualizations, along with written and spoken discourse from project proponents, shape the city's "adaptation regimes," defining the limits of what is possible and desirable as Dhaka responds to deepening climate change-linked socio-ecological crises (Paprocki 2018)?

To address these questions, we analyze visual and written materials from project documents and popular media accounts of Dhaka's green infrastructure projects. We also draw on interviews with a range of project stakeholders, including: residents of proposed green infrastructure sites, project designers and planners, academic researchers, and local bureaucrats.

We find that, while public space and stormwater retention are urgently needed in Dhaka, these projects represent a stark vision of "climate Haussmannization" (Lamb and Khirfan 2022), using design tools to obscure the uneven harms and benefits of urban adaptation interventions. Design visualizations of these multipurpose 'hydro-" and 'eco-" branded open spaces promise salvation from Dhaka's socio-ecological crises and a restoration of harmonious human-nature relations in the city. In furtherance of these visions, project visualizations often hide existing low-income communities slated for eviction beneath collaged gauzy green landscapes, sparkling blue waters, and gleaming but placeless architectures.

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Keywords: Urban Design, Green Infrastructure, Climate Change Adaptation, Flooding, Displacement

EVALUATING URBAN SKYLINES USING LONGITUDINAL STREET VIEW IMAGE DATA

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Individual Paper Presentation

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The skyline, characterized by the combination of natural and artificial landscapes, forms a horizontal line that provides the visual identity and pattern of a city. It shapes the perceived aesthetic value of a city and influences the visual and emotional quality of urban life. The complexity and preferences of skylines reflect a city's economic and global status, symbolizing its development and growth at a macro level. Additionally, skylines offer city images to individuals, creating psychological effects at a micro level. Furthermore, skylines serve as valuable references for

comparing urban identities amidst urban transformations. Specifically, limited changes in the skyline may maintain the visual and aesthetic values of the city, and dramatic changes may cause visual confusion.

Previous studies have primarily relied on surveys and other passive methods to measure the understanding, preference, and perceived complexity of certain skylines. However, there has been a lack of quantitative research tracking the changes in skylines across various urban landscapes. In this context, this study utilizes time-series street view big data to trace the transformations of skylines within urban landscapes. The study area is Seoul, the capital city of South Korea, known for its high density, well-developed transportation infrastructure, and coexistence of numerous high-rise apartments, commercial buildings, and natural landscapes. The study downloads street view image data from Naver Maps, the largest online map platform in Korea, covering a period of 14 years in a row, to track the change of skylines.

First, we extracted skyline variations based on diverse urban districts and their characteristics. Then analyze their interactions with physical and social urban environmental factors. Second, we developed a skyline equity index to compare the complexity of skylines and the exposure levels of natural landscapes. Third, we identified potential development areas that may result in indiscriminate destruction of skylines and visual confusion. Through these analyses, the study demonstrated how skylines and their changes can actively impact the lives and aesthetic values of residents. Ultimately, the research findings will provide strategic guidelines for urban planning and management, including the formulation of skyline composition and architectural regulations.

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Keywords: Skyline, Urban Landscape, Urban Design, Urban Aesthetics, Visibility

EVOLVING STREETS: UNRAVELING CHANGING PANDEMIC-INDUCED STREET DESIGNS

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Individual Paper Presentation

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Introduction

Street experiments are intentional and temporary changes of street regulations or forms, aimed at instigating people-centric street transition. During the Covid-19 pandemic, over 300 cities around the world implemented street interventions to serve active mobility and outdoor activities. Typical street changes included sidewalk expansion, curb space reallocation, and street closure (Combs & Pardo, 2021). These changes renegotiated street use for increased human-centric activities. Several years on, new street configurations kept evolving in quite a few cities beyond the pandemic influence. As previous studies asked: Can pandemic-induced street interventions lead to 'critical junctures' that foster people-centric street transformation (Gregg et al., 2022)? However, existing studies lack the duration to answer such a question.

We thereby ask: how did these experimental interventions evolve and stabilize in regulations and urban environment? In particular, we focus on the design changes that started with in a parsimonious fashion gradually evolved into more durable yet non-permanent structures through a three-year timeframe. Through a multiple case study on typical cities (Denver, New York, Los Angeles, etc.), the study explores the fine line between temporary and permanence in streetscape reconfigurations and its contribution to street transitions.

Method

A qualitative research design is employed to analyze the changing designs in pandemic-induced street experiments. We first identified the ideal-typical cities with tactical urbanism-inspired street experiments from the Global PISE database (Zhao et al., 2024). A screening identified Denver, New York, Los Angeles, Chicago, Vancouver, London, and Melbourne to exhibit iterative changes. We conducted interviews with key program initiators (February 2023 – January 2024), revolving around the rationales behind the design changes and material selections throughout the program stabilization process. We collected and design documents and crowdsourced street images. Through content analysis, we aimed to identify the degree of formalization in regulations and materials over time.

Result

Parting from the 'Wild West' during the pandemic, the temporary street changes have become more regulated to suit the formal planning system. The preliminary finding shows three main considerations in design and material choices: safety, durability, and sustainability. Specific materials and buffer spaces are dictated to ensure safe outdoor dining environment. Consideration has been put into deciding the optimal semi-permanent materials to remain flexibility and cost-effective while being able to endure the entire trialing period, which could take years. Further, sustainability was weighed in the decision-making process to reduce waste while using recycled materials. While being supportive of street experimentations, the initiators prudently managed the processes to ensure the continuation in the increasingly contested urban environment (Mandhan & Gregg, 2023).

Implications

This study has implications for street transition and streetscape design. For transitions, evaluating the evolutionary stages identifies design features – the critical ingredient of street transitions in a more systemic scale, conceptualized in the multi-level perspective (Geels, 2005). The finding concretizes the meaning of 'critical juncture' in the case of street experiments. In a broader picture, understanding how street experiments evolved sheds light on the urban space innovation pathways that are increasingly pertinent in the everchanging urban environment. For design, we reflect on the paradoxes in streetscape design, including the degree of informality, length of experiment and material selection, and temporality with sustainability. The reflections present the complexities and challenges in designing streetscapes that effectively respond to the needs of urban environments.

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Keywords: Urban Design, Street Experiment, International Study, Transitions, Learning

EXPLORING THE ROLE OF SOUNDSCAPE IN OUTDOOR INFORMAL LEARNING SPACES

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Individual Paper Presentation

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The negative impacts of environmental noise have been well documented and researched (World Health Organization, 2011). However, noise abatement measures are generally limited in reflecting people's true auditory experiences, relying solely on decibel levels (Adams et al., 2006). The emerging field of soundscape actively studies "the acoustic environment as perceived or experienced and/or understood by a person/people, in context" (Kang et al., 2016), taking into consideration people's subjective acoustic evaluations. Soundscape research calls for the design of holistic and multisensory experiences, promoting sound as a resource rather than waste to be managed. While current soundscape research primarily focuses on evaluating outdoor recreational spaces, such as parks, urban centers, plazas, and neighborhoods, to understand people's acoustical preference in the general dimensions of comfort (pleasantness, annoyance, vibrancy, calmness) (Kang et al., 2016), the studies rarely specify the function of the spaces under study. Outdoor informal learning spaces (ILS) such as university campuses, schoolyards, outdoor cafeterias, and open lawns offer people ample opportunities to study, reflect, restore energy, and interact with each other (Gulwadi et al., 2019). Previous studies have evaluated the acoustic qualities of ILSs in indoor settings (Scannell et al., 2016), but very limited research has explored people's soundscape preferences when engaging in informal learning activities outside.

This research investigates the role of ambient sound in informal learning spaces, with a focus on outdoor settings. This study interviewed over 50 students at more than 12 campus outdoor locations at the University of Wisconsin-Madison, to learn about their utilization of outdoor learning spaces and perceptions of sound during informal learning activities. The study ensured a comprehensive and diverse sample of participants and study areas, resulting in 52% of participants representing non-white populations and identifying more than 38 outdoor learning

spaces on and off campus. A variety of public/private spaces such as outdoor cafes, residential patios and courtyards, neighborhood parks (including dog parks), rooftop patios, and outdoor community spaces are consistently sought out by students for their accommodating environmental qualities for learning activities.

The findings from this research: (1) provide empirical evidence on the benefits of outdoor environments as informal learning spaces, (2) identify specific outdoor physical settings that support different learning activities, (3) identify the preferred soundscape conditions for outdoor learning under different circumstances, and (4) articulate the ways in which students from different social and cultural backgrounds have different listening preferences, particularly among BIPOC participants. Building on this foundation, the study offers planning and design recommendations to create acoustically supportive outdoor learning environments beyond mere decibel level considerations, encompassing college campuses, schoolyards, neighborhood parks, and green spaces.

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Keywords: Soundscape, Informal Learning, Noise

FIRST NATIONS PLACEMAKING IN VANCOUVER, BC: THREE GOVERNANCE MODELS

Abstract ID: 1108.0.0.1077.2024
Individual Paper Presentation

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First Nations Placemaking in Metropolitan Vancouver: an Analysis of three governance models

This paper compares three case studies of important place-making projects led by First Nations in metropolitan Vancouver, BC: The Senakw' development led by the Squamish Nation in Vancouver's False Creek area near the

downtown core; the kʷasən Village (Willingdon Lands) development led by the Musqueam Indian Band and Tsleil-Waututh Nation in the suburb of Burnaby; and the Tsawwassen Mills site on land owned by the Tsawwassen First Nation in the outer suburb of Delta. All three of these projects are mixed-use, with the first two directly involving several thousands of housing units. Each project reflects distinct First Nations' efforts to secure self-determination and economic development (Barry & Thompson-Fawcett, 2020), in spite of the constraints of a challenging colonial governance system.

These case studies are also interesting from a land use planning and ownership perspective. Senakw' is located on Squamish land, which they were illegally forced to surrender to the BC provincial government in 1913 and was returned in 2003 by the federal government. This means planning on this land occurs under the jurisdiction of Squamish Nation, under the Canadian federal Indian Act (Indian Act). However, municipal service agreements are needed from the City of Vancouver. kʷasən Village is private property located in the City of Burnaby purchased by Musqueam and Tsleil-Waututh. Planning for this development occurs within Burnaby's municipal planning frameworks, which is regulated by the provincial Land Act. The final case study, Twawwassen Mills is located on Tsawwassen treaty land.

Another aspect of these developments is the partnerships with local (settler) developers. For Senakw', Squamish used its economic development arm, the Nch'Kay West Corporation to enter into a partnership with Westbank Corp., a North American real estate development company, which is leading the construction work. kʷasən Village is jointly owned and being developed with Aquilini Development, a local real estate developer. Twawwassen Mills was created shortly after the Tsawwassen First Nation (TFN) signed a treaty with the Government of Canada in 2008. The treaty took the TFN out of the Indian Act, and gave TFN full control over land use decisions in its territory. The mall was built and operated by a private real estate developer, Ivanhoe Cambridge, on lands owned by the TFN and leased to the developer. The developments all present opportunities for rectifying colonial harms through Indigenous urban resurgence (Porter & Yiftachel, 2019), including presence on the land and design control. At the same time, each development represents a unique strategy for grappling with what can only be described as a deeply confining colonial system of regulation and control that has traditionally limited First Nations' opportunities for self-determination and economic development. Our paper analyzes the diverse strategies used to enhance place-making in each of these developments. Ultimately, the aim is to help planners in both Canada and the United States to appreciate the creative potential for Indigenous peoples to confront both the opportunities and the constraints to re-asserting their presence, defacto jurisdiction, and rights and responsibility to steward their lands (Atleo & Boron, 2022; Schiffer, 2018).

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Keywords: placemaking, First Nations, Indigenous, governance, Vancouver

GREEN AND COMPLETE STREETS: INSIGHTS FROM BIOMETRICS

Abstract ID: 1108.0.0.22.2024
Individual Paper Presentation

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Recent advancements in multidisciplinary design and computational and cognitive sciences are revolutionizing urban design methodologies. This evolution is pivotal in enhancing the quality of urban spaces while elucidating both intentional and unintentional aspects of human interaction within the built environment (Noland et al., 2017). The emerging urban planning practice of Green and Complete Streets offers a useful test case for exploring the role of a range of urban design stimuli in shaping subliminal human responses (Krenichyn, 2006).

Recognizing the bidirectional relationship between individuals and their surroundings underscores the importance of understanding how material impacts and cognitive processes shape perceptions of liveability (Barker, 1968). However, conventional planning practice often compartmentalized urban life's physical and experiential aspects, neglecting the holistic nature of human-environment interactions (Shelton & McNamara, 1996). While planners and urban designers will attend to aesthetics, cognitive scientists highlighted the complexity of human responses to spatial stimuli, advocating for an inclusive approach that integrates multisensory elements into the design process.

This presentation seeks to integrate human responses into the urban design process by asking: What are the subconscious reactions elicited by street designs featuring varying degrees of green elements and complete street features? Leveraging still images and videos as stimuli, the study aims to simulate pedestrians' visual experiences more authentically. We used the iMotions Online software tool and recruited 93 subjects to watch a series of images and videos while their webcams recorded eye movements and facial expressions. Analysis of participants' emotional responses and eye-tracking records reveals notable disparities in psychological processing between environments with low green and complete street features and those incorporating abundant green elements, with the latter eliciting significant fixation points. These fixation points underscore the role of urban design in enhancing livability and fostering well-being among residents (Hollander et al., 2020). Furthermore, the study underscores the importance of urban layouts that prioritize walkability and livability, contrasting with traditional car-centric designs, as exemplified by the principles of new urbanism.

The intersection of multidisciplinary design, computational sciences, and cognitive research offers promising avenues for reimagining urban environments and enhancing the human experience within them. Through empirical studies like the one presented here, insights into the psychological mechanisms underlying human-environment interactions can inform more nuanced approaches to urban design and planning, ultimately shaping places conducive to human well-being.

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Keywords: Green and Complete Streets, Emotional Responses, Psychology, Urban Design

INCLUSIVE WALKABILITY MATRIX FOR MINORITY: ROLE OF MICROSCALE FEATURES

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Individual Paper Presentation

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The relationship between the built environment and walking behavior has been a subject of longstanding interest to urban planners. One key observation within this relationship is the significantly weaker influence of conventional walkability matrices on walking activity in minority neighborhoods compared to non-minority neighborhoods. At first glance, this discrepancy might suggest that individuals in minority communities are less responsive to their surroundings for some reason. However, the observed lower responsiveness in minority neighborhoods may stem in part from the limitations of conventional matrices. They often fail to account for the unique characteristics of minority neighborhoods, such as deteriorated sidewalk conditions, scarcity of greenery, and traffic/crime safety concerns that can deter active walking behavior, regardless of the presence of supportive conventional walkability measures. Namely, the shortcomings of these conventional matrices lead to structurally biased results for minority neighborhoods, potentially leading to misguided policy interventions.

Our study aims to address the following critical questions: How do the limitations of conventional walkability matrices lead to biased assessments of walking behavior in minority neighborhoods? What are the specific barriers to active walking in these neighborhoods? Finally, how can a refined walkability matrix, which integrates microscale environmental attributes, more accurately reflect individual walking behavior?

This study focuses on Los Angeles County, CA, and uses the 2017 National Household Travel Survey-California Add-on (2017 NHTS-CA) to examine walking behavior. Minority neighborhoods are identified through K-means clustering using four socioeconomic variables derived from American Community Survey (ACS) data. The National Walkability Index (NWI) serves as the conventional walkability matrix. In addition, Google Street View is used in conjunction with computer vision algorithms to assess microscale environmental attributes.

While walkability matrices offer planners valuable insights into neighborhood pedestrian-friendliness, the findings of this study suggest the inadequacies of current matrices in representing the true degree of pedestrian friendliness, particularly in minority neighborhoods. Failure to accurately capture these nuances could lead to misguided interventions in these areas. This study underscores the importance of integrating microscale

environmental attributes into the development of more inclusive walkability matrices for minority neighborhoods. Such an approach is essential for fostering equitable and effective urban planning initiatives.

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Keywords: Walkability, Built Environments, Minority Neighborhoods, Google Street View, Computer Vision

MEASURING VISUAL STIMULI IN URBAN ENVIRONMENT USING EYE-TRACKING THROUGH VR

Abstract ID: 1108.0.0.1208.2024
Individual Paper Presentation

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Understanding how urban form elements influence pedestrians' visual experience while walking outdoors is crucial for supporting walking through urban design efforts (Hillnhütter, 2022). This study aims to measure the extent of visual stimulation pedestrians receive based on the form of the walking environment, particularly when appreciating urban surroundings along the street.

In studying how individuals perceive and engage with urban environments, urban design researchers attempt to measure the stimuli levels experienced and define walking environment characteristics. Jacobs (1993) found that attractive streets resulted in many head movements by interviewing both street users and design professionals, while Gehl found that 3.5 times more pedestrians turned their heads toward detailed facades with windows and entrances compared to monotonous facades (Gehl, 2006). Additionally, Hillnhütter (2022) measured head movements using video footage, minimizing the subjective intervention of the researcher in observation as much as possible, and found that more head movements occurred in walking environments with many green spaces and active social activities. Unfortunately, these approaches offer only indirect measures of pedestrians' visual attention, since head movements only provide coarse-grained information, such as the direction of sight, which may lack the granularity required to fully capture visual attention. Herein, eye-tracking technology presents valuable opportunities for identifying pedestrians' attention, which can further be leveraged to measure the

specific visual elements of buildings or surroundings that pedestrians are interested in (Spanjar&Suurenbroek, 2020).

Our research seeks to explore how pedestrians perceive varying degrees of stimulation based on form-related characteristics of the walking environment. We're developing a walking environment matrix to quantitatively describe urban form elements, assigning values between 1 and 5 through a pilot study integrating literature review and observations. The walking environment matrix consists of elements that pedestrians can experience visually, such as the shape of the road (e.g., straight lines, curves, etc.), enclosures, and edges, making it suitable for describing the characteristics and image of urban areas where pedestrians walk (Lynch, 1964). Based on the defined walking environment matrix, we create walking environments VR simulation models in human scale that controls the elements individually. The first study asks participants to wear VR headsets and randomly walk the simulation model for a limited time. Eye tracking provides how the public is understanding the walking environment by providing an unobtrusive, unconscious measure of participants' engagement with the simulated environment (Hollander et al., 2018). The following studies have the same experimental setup as the first and measure the difference in the frequency and speed of eye movement according to the shape of the road, the degree of enclosure, and the shape of the edge. In a walking environment, we examine the condition of urban form elements that maximize the visual stimulation of pedestrians.

This study provides insight into what urban form elements that significantly impact pedestrians in walking environments by measuring the level of visual stimuli that pedestrians receive from the walking environment. Furthermore, our results lay the groundwork for investigating how urban form elements influence pedestrians' perceptions of the walking environment. Understanding the public's visual experiences of the walking environment form elements can help to establish pedestrian-friendly urban design.

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Keywords: walking environments, pedestrian, urban form elements, stimulation, eye-tracking

PEDESTRIAN PERCEPTION ON STREETS WITH AUTONOMOUS VEHICLES

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Individual Paper Presentation

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The advancement of autonomous vehicles is reshaping our daily lives particularly in the way pedestrians interact with vehicles (Meeder & Weidmann, 2017).This transformation predominantly occurs on streets, where allocating space for pedestrians alongside autonomous vehicles is becoming technically feasible. (Duarte & Ratti, 2018). This presentation outlines guidelines for utilizing such spaces, proposing innovative methods to understand pedestrian perceptions and preferences in future street environments. This study goes beyond a simple analysis of the experimenter's surveys to understand if and how autonomous vehicles change the perception of pedestrians, at what point, and by what factors. The advantage of the virtual reality(VR) is that pedestrians' perceptions are captured in real time as they experience and evaluate the environment as a whole, making it easy to capture both point-in-time and environmental factors. To enhance this advantage, we also examine the brain's biometric data, the electroencephalogram (EEG), in real time. This allows us to investigate what extent distance factors affect pedestrian perception and whether negative aspects of VR, such as motion sickness (Hamad & Jia, 2022), affect pedestrians, not only through subjective data, but also through objective signals such as EEG.

A VR environment has been designed to incorporate non-player characters (NPCs) such as pedestrians, regular vehicles, autonomous vehicles, electronic scooters, and delivery robots. The simulation comprised forty-three scenarios that explore changes in median, curb removal, shelters, and other aspects resulting from the emergence of these modes of transportation. 100 recruited participants experienced ten randomly selected scenarios, reporting perceptions of peacefulness, comfort, and aesthetics for each scenario (Ewing & Handy, 2009). During the experiment, EEG sensors monitored participants' psychological responses in real-time and recorded it at one-second interval. Using this data, participants' emotional state of valence and arousal levels were measured for further analysis (Siirtola et al., 2023).

The cross-classified multilevel analysis showed that the presence of designated lanes designated for vehicles increased participants` feeling of peace and comfort, while the absence of such lanes was preferred for aesthetic reasons. Participants reported feeling less comfortable in areas where autonomous vehicles were mixed with regular vehicles. The results also demonstrated that electronic scooters and delivery robots were perceived positively for comfort. In addition, street elements such as medium barrier and medians were perceived as convenient, but not necessarily aesthetic. Curb removal was found to improve aesthetics but decrease peacefulness and comfort. The correlation analysis of EEG results indicates that there is a positive correlation between the perceived peacefulness, comfort, and aesthetics of the street environment and the values of valence and arousal. Moreover, the higher the perceived quality of the street environment, the higher the values of arousal until the time of crossing the crosswalk. These findings suggest that the survey responses of pedestrians are reliable and that their arousal levels increase when crossing a crosswalk. Specifically, the EEG cannot validate certain aspects of VR, such as VR motion sickness and other side effects.

Based on the results, this study is expected to propose proactive guidelines for future street design and space allocation through VR. Furthermore, the approach combining VR and EEG is expected to be an innovative tool for understanding the complex relationships between future urban environments, transportation modes, and human responses.

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Keywords: Autonomous vehicle, Perception, Street, Virtual Reality, Electroencephalogram

PEDESTRIANIZATION IN THE URBAN CORE OF ANTWERP, BELGIUM

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Individual Paper Presentation

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We often enjoy vibrant public spaces and pedestrian districts without fully understanding the transformations of those places over time. If you visit the urban core of Antwerp, Belgium today you will find a lively commercial district bustling with pedestrians and cyclists. It is difficult to imagine that this space was riddled with automobile traffic and on-street parking only a few decades ago. The process of its pedestrianization is even more remarkable, as a multitude of often conflicting stakeholders advocated for this transformation for over three decades. These range from Marxist student activists to Belgium's most famous capitalist, and from local architecture thesis students to widely known American architect Victor Gruen who was entering European planning in the late postwar era (Gregg, 2019; Wall 2005). Each with their own agendas, these stakeholders sought to pedestrianize Antwerp's urban core by battling government inertia, lukewarm initial public opinion, Antwerp's conservative shopkeepers - and not infrequently, one another. Ultimately, the persistence and political finesse of socialist mayor Bob Cools resulted in the pedestrianization of most of Antwerp's core, including the key Meir retail street in 1993. In subsequent decades, Antwerp has slowly continued to remove or tame car traffic in its most central public spaces.

This presentation seeks to place the rather curious process of Antwerp's core pedestrianization into a broader context of urban design implementation, including in America. While unlike North American downtowns, Antwerp's urban core still broadly remains a retail destination (Knack, 1982), its focus on pedestrian safety and experience mirrors contemporary practice in America, especially in the post-COVID era (Gregg, Hess, Brody, and James, 2022; Gregg 2023). More importantly, Antwerp's circuitous path towards its pedestrian future bears resemblance to contemporary American roadblocks toward street redesign. Building from archives in America and in Belgium, this research examines the historic and contemporary planning process behind Antwerp's downtown pedestrianization scheme. It highlights the strength of a design concept and articulates how an urban design idea can persist across

multiple actors, plans and proposals, and across decades. We conclude in framing this research not only as a case study of pedestrianization in Antwerp, but also as a case of how urban design ideas are realized over time.

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Keywords: urban design history, pedestrianization, retail, downtown revitalization

SHARING THE SINGLE-FAMILY HOUSING CITY: INFORMAL SUBDIVISIONS

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Individual Paper Presentation

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While cities are typically associated with dense housing and mixed land uses, planners zone most of the residential land in US cities for single-family housing (Hirt 2014; Mukhija, 2022). For example, in the city of Los Angeles, about three-quarters of the city's residentially zoned land is reserved for single-family housing (Badger and Bui 2019). Many residents, including working-class immigrants, have embraced and transformed the American Dream of single-family housing by adding unpermitted or informal accessory housing units on their single-family-zoned lots (Mukhija 2014). In this paper, we focus on Pacoima, a working-class neighborhood of mostly Latinx residents with predominantly single-family zoning in the northeast of Los Angeles's San Fernando Valley, to examine the prevalence and spatial pattern of informal housing additions and conversions. We ask how common unpermitted second units in Pacoima are and how they are organized on the community's single-family-zoned lots.

To answer our question, we draw on fieldwork and surveys-based research our graduate students conducted at UCLA in collaboration with Pacoima Beautiful, a well-regarded community-based organization (CBO) active in Pacoima and its adjacent communities. In 2018-2019 and 2020-2021, we structured our graduate students' group capstone projects to provide research for the CBO's efforts to bring green infrastructure investments to its community while avoiding the displacement of its working-class, largely Latinx, community members.

First, we find that informal accessory units are widespread in Pacoima, and almost half the lots have unpermitted second units, while several have additional informal housing units. Their prevalence suggests that informal second units are more common in Pacoima than in other parts of Los Angeles. Second, as in other neighborhoods of the

city, one-story second units in the back yard, which are not easily visible from the street, are the most common typology and account for almost two-thirds of the informal housing units. Third, we find that the multiple households on the single-family lots rarely share their common spaces. On the contrary, the residents have subdivided their lots into privatized informal subdivisions through fences, parking spaces, and parked cars. We elaborate on how these findings depart from conventional wisdom and discuss their implications for planning, including the limitations of current policy approaches.

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Keywords: Immigrant neighborhoods, Informal housing, Los Angeles, Pacoima

THE INFLUENCE OF URBAN PARK DESIGN ELEMENTS ON HEALTH BEHAVIOR

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Individual Paper Presentation

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With the rapid pace of urbanization, cities worldwide are encountering escalating resource and ecological challenges. Particularly in China, the combination of a large population and uneven development complicated public health issue. Studies indicate that urban parks play a crucial role in enhancing residents' well-being. However, the spatiotemporal variations in health behaviors and the influence of urban park design elements on these behaviors requires further investigation.

This research focus on the correlation between urban parks and health behaviors. Leveraging techniques such as remote sensing interpretation, field measurements, and machine learning, the study collected data on the external environmental factors and internal spatial characteristics of urban parks. It explores the spatiotemporal dynamics of health behaviors and investigates their correlation with park landscape features through multivariate linear regression and geographically and temporally weighted regression models, thereby formulating strategies to optimize urban parks for the promotion of healthy behaviors.

Focused on Xujiahui Park, Fuxing Park, and Lujiazui Central Green, the study conducts year-long field observations to capture the behavioral patterns of urban residents. It establishes a spatiotemporal relationship model between individual health behaviors and park landscape features through multivariate linear regression, examining the impact of park landscape features on health behaviors across various time frames, including monthly, daily, weekday, and weekends.

The key findings of this study include:

1) Health behaviors are subject to distinct spatiotemporal variations. Notably, health behavior density peaks during the spring and autumn seasons, with weekends experiencing a higher frequency of activities compared to weekdays. The variety of health behaviors also sees fluctuations, with weekends showing greater diversity.

2) The accessibility of parks plays a critical role in influencing health behaviors. The presence of roads, bus stations, and subway lines within a 400-meter radius of parks enhances the likelihood of health-related activities, as residents show a preference for walking or cycling to parks using public transportation.

3) The influence of land use in parks and their proximity to city centers is apparent on health behaviors. Parks close to city centers and with diverse surrounding land use promote more health behaviors

4) Recreational facilities are linked to an increase in health behavior density, and the availability of seating areas contributes to the diversity of activities. On the contrary, the abundance of streetlights appears to have a detrimental effect on health behaviors.

5) With respect to vegetation, overall plant coverage negatively affects health behaviors at a macro level but positively influences micro-level activities. Among various plant types, grasslands and trees-grass ones are particularly effective in attracting individuals for health activities. The green view ratio and the proportion of seasonal plants also play significant roles.

6) Spatial features within parks, especially connectivity, is one of the most important factors in health behavior dynamics. The study also indicates that parks with more intricate boundaries are more likely to draw visitors for health activities.

7) Concerning water features, the proximity to water bodies increases the density of health behaviors but does not significantly affect diversity. At the macro level, water body coverage might negatively impact health behaviors.

Based on these findings, the study proposes strategies for optimizing urban parks, including "permeation, integration, and diversification for park site selection," "spatiotemporal elastic spatial design," "humanization of spatial layout and facility arrangement," and "design of major landscape elements such as grading, water bodies, and vegetation." These strategies aim to create a healthier, more active, and sustainable urban environment. Despite certain limitations, such as the cross-sectional study design and the exclusion of subjective indicators, the empirical evidence provided offers valuable insights for urban planners and park designers, thereby guiding future urban planning and park renovations.

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Keywords: Urban parks, Landscape design elements, Health behaviors, Influencing factors

THE PRIVATE PRODUCTION OF THE PUBLIC REALM: PARKS & PHILANTHROPY IN TORONTO

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Individual Paper Presentation

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As parks and green spaces become more central to urban policy agendas, nonprofit organizations and philanthropic donors have emerged as key partners in urban park production, promising to deliver exceptional public spaces without straining municipal budgets (Joassart-Marcelli et al., 2011). These partnerships offer new funding and pathways for participation, but by redistributing responsibility from public agencies to private donors, also raise critical questions about how private interests shape public space (De Magalhães & Freire Trigo, 2017). Scholars continue to explore how philanthropy in park governance affects sociospatial outcomes for park users, primarily drawing from paradigmatic US-based cases (Mullenbach et al., 2021). Canadian cities, where park philanthropy has grown significantly in scale and profile only in recent years, remain underexplored, yet offer distinct and generative sociopolitical contexts in which to investigate the impact of philanthropy on park production and related implications for spatial justice.

In response, this study examines the drivers, modes, and implications of philanthropic engagement in the design, development, and management of urban public parks in Toronto, Canada. Considering justice in both planning processes and in realized public spaces, I ask: What is the role of philanthropy in the production of urban public parks, and what are the implications of this engagement for park justice?

To respond to this research question, I conduct a comparative case study of three recent, high-profile, philanthropy-led urban park projects in Toronto: The Bentway, The Meadoway, and The Art Trail. To analyze these cases and evaluate justice-based outcomes, I employ qualitative methods including document analysis, semi-structured interviews with public, private, and nonprofit sector stakeholders, site observations and urban design analysis, and media discourse analysis. Drawing from urban political ecology frameworks, I integrate theories of urban environmental governance and the production of public space (Boudreau et al., 2009) with social theories of the ideological construction of urban nature (Angelo, 2021) to investigate philanthropy as a means through which private actors make claims on public space, and to understand the relationship between new forms of public space governance and public space justice.

Early findings suggest that recent growth in the scale and scope of private donations to public realm projects in Toronto have been driven in part by demand-side factors, notably public agencies' limited long-term operating budgets for public parks, supply-side factors including growing interest amongst local donors in the public realm as an object of philanthropic interest, and urban policy mobilities in which policy discourses, models, and strategies regarding private funding and governance models for urban parks developed in the United States have been translated to the Canadian context. Receptivity amongst park agency officials and the general public towards

public-nonprofit park partnerships have empowered donors to embed private interests in the public realm through philanthropic giving, with varied implications for procedural justice in park planning processes. While parks developed with significant donations exemplify best practices in public consultation, park design, and programming, positive public reception may obfuscate uneven impacts on distributional and recognitional justice across urban park systems, citywide.

Theoretically, these findings advance understanding of the social, political, and economic processes and power relationships through which urban parks are produced, introducing new cases that highlight how Toronto's unique political-economic conditions intersect with broader structural forces to shape local urban environmental governance and uneven spatial outcomes. Practically, the results carry important implications for planners and policy makers seeking to harness the emergent benefits of philanthropic partnerships while mitigating potential negative impacts on spatial justice in urban public parks. These insights can support locally responsive planning and policy responses that expand community engagement, agency, and justice in urban park development, amidst ongoing imbalances in power and resources.

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Keywords: public space, governance, urban design, parks, philanthropy

THE PSYCHOLOGICAL BENEFITS OF THIRD PLACES PRE- AND POST-COVID19 LOCKDOWNS

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Individual Paper Presentation

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Loneliness or social isolation has been officially recognized as a public health concern by the U.S. Surgeon General (General, U.S., 2023). In our increasingly isolated society, chronic loneliness can be related to various psychiatric disorders, including depression, alcohol abuse, diminished sleep quality, substance misuse, and Alzheimer’s disease (Mushtaq et al., 2014). To tackle this public health issue and enhance psychological well-being, community design

emerges as a viable solution to foster social bonds. Consumer-facing businesses, categorized as third places, play a pivotal role in promoting psychological well-being by nurturing social connections, facilitating self-actualization, and uplifting mood.

Ray Oldenburg introduced the concept of "third places," which are public areas distinct from both home (considered the first place) and the workplace (considered the second place), where individuals gather to socialize and interact. Patronizing consumer-facing third places like cafes, coffee shops, bars, gyms, and grocery stores allows individuals to benefit from the time and expertise of professionals, promoting self-awareness crucial for self-actualization, closely tied to psychological well-being (Oldenburg, 1999). Moreover, within these establishments, individuals can have direct or indirect social interactions with friends, family, or fellow patrons, essential for mitigating social isolation. The importance of consumer-facing third places became evident during the lockdowns amid the initial spread of COVID-19, as younger adults and women were found to be more susceptible to depression, anxiety, and psychological distress due to limited social connections, compared to older adults and males (Kowal et al., 2020). However, empirical studies supporting the potential health benefits of consumer-facing third places remain scarce (Lee, 2022). In response, this study aimed to investigate the psychological benefits of consumer-facing third places as a potential solution to address public health concerns related to loneliness and social disconnection.

In this study, we utilized sequential explanatory mixed method design using survey that includes photo-based close-ended and open-ended questions, to examine and compare the perceived psychological benefits of urban parks and consumer-facing third places among college students in southern California before and after the COVID-19 lockdown. Overall, the findings from the photo-based close-ended questions revealed no significant disparity in the perceived restorative quality, sentiment, and preference for third places before and after the COVID-19 outbreak. However, crowded third places exhibited a notable decline in sentiment and preference mean scores following the COVID-19 lockdown in California. On the other hand, insights from open-ended questions unveiled a rise in visits to eating/drinking establishments and shops/stores post-COVID-19 lockdown in California, alongside a shift towards outdoor venues for activities. Moreover, our study findings suggest that consumer-facing third places hold the potential to yield diverse positive psychological effects on young adults, encompassing stress reduction, mood elevation, social advantages, and self-actualization.

These findings underscore the importance of policy and planning efforts aimed at fostering healthy communities through the maximization of third places' benefits. Firstly, prioritizing walkable neighborhood designs is essential to facilitate leisure activities, particularly for young adults who may lack access to personal vehicles. Secondly, urban planners and designers should promote the development of urban districts that blend public spaces with consumer-facing businesses, enhancing the role of retail outlets in enhancing the health and well-being of city dwellers.

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Keywords: Third Place, Mixed Methods Sequential Explanatory Design, Psychological Well-Being, Healthy Community, COVID-19

THE RESEARCH ON THE MULTI-CULTURAL INCLUSIVE IN URBAN PUBLIC OPEN SPACE

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Individual Paper Presentation

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In high-density built environments, the multicultural inclusiveness of public open spaces constitutes a crucial aspect of urban spatial quality and vitality. On the one hand, urban public open space provides a material carrier for the activities of people from diverse backgrounds. On the other hand, the activities of multicultural communities enrich the cultural significance of public spaces. With the increasing mobility of urban populations, migrant workers from outside and expatriates have gradually emerged as significant forces in urban development, simultaneously representing indispensable users of urban public open spaces alongside local residents. The inclusiveness of urban public open spaces provides the basis for the creation of multicultural spaces in cities.

Macau is a cosmopolitan city with a large foreign population and a high degree of population mobility. Among them, the community of foreign domestic helpers residing long-term in Macau actively participate in and utilizes the city's public spaces in their daily lives, especially the Filipino domestic helpers who have a certain scale and cultural background in Macau, and their gathering behavior during their rest days and public holidays is one of the common and typical activities in Macau's urban public open space. This study focuses on the phenomenon of foreign domestic helpers' gathering activities in urban open spaces in Macau, and attempts to explore their distribution characteristics, influencing factors and formation mechanisms at both macro and micro spatial scales.

The study adopted a research method that combines quantitative analysis of multi-source data with qualitative research such as questionnaire surveys and in-depth interviews. Firstly, through interviews and questionnaires with Filipino domestic helpers, combined with field surveys, 45 relatively fixed gathering places were identified and obtained, and the basic information of Filipino domestic helpers, gathering information and perception of the gathering environment were statistically summarized. Second, based on POI data, quantitative spatial analyses such as kernel density and Ripley's K-function were used to explore the distribution of meeting places and their spatial association with urban functions from the overall scale of the city. Third, based on the site image data, urban road network structure and spatial layout data, spatial analysis methods such as spatial syntax and semantic segmentation were applied to identify, cluster, and regression analysis the characteristics of the built environment in which the meeting place is located, the environmental elements of the site under the human field of view, and the human's perception of the surrounding physical and social environments on the urban micro scale, so as to explore the environmental tendency and spatial regularity of the gathering places chosen by the Filipino domestic workers.

The study found that the urban built environment, functional space, and attributes of venues are significantly associated with the social phenomenon of Filipino domestic workers' gatherings, and that the spatial environments of different gathering places are usually characterized by safety, accessibility, relative privacy, and openness to the public. In addition, the choice of gathering place is also influenced by factors such as cultural background, occupational characteristics, and the theme of the gathering. Through the conclusion, the study further explains the positive role of urban design in promoting multicultural integration from the planner's perspective. As an important element of the qualitative analysis of this study, exploring the time-frequency characteristics of Filipino domestic workers' gatherings in urban open spaces, family influences, and social support through social interactions needs to be further explored.

The study points out that in high-density, multicultural international cities, improving the accessibility of urban open spaces, increasing the degree of functional complexity of the surrounding area, and allowing for the diversified use of space will promote the behavior of "reinventing place", which not only provides opportunities for people with multicultural backgrounds to create rich and diverse cultural spaces, but also effectively provides more inclusive public open spaces for people with multicultural backgrounds, such as foreign residents and employed people.

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Keywords: urban public open space, multi-culture, spatial inclusive, spatial analysis method, Macau

EMOTIONAL IMPACT OF CHARACTERS IN URBAN: A CROSS-CULTURAL VR STUDY

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Research-in-Motion (RiM)

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Urban environments are important to human life, with over half the global population residing in cities. Understanding how urban environments impact well-being is critical. Many theories and research frameworks are dedicated to constructing an overall relationship between the natural or urban environment and human emotion (Kaplan, 1987; Lynch, 1984; Tuan, 1974; Ulrich, 1981). However, cross-cultural comparisons elucidating this relationship are limited. Additionally, there is a lack of standardized, scalable research protocol to conduct robust global comparisons. Understanding the relationship between visual characteristics and emotional arousal is crucial for maintaining a high-quality and healthy urban environment from a global perspective.

This study aims to examine how varying greenery, architectural style, and spatial scale in a virtual urban environment elicit emotional arousal. This research will adopt an exploratory sequential Mixed Method Design (Creswell & Clark, 2017) within 3 research sites in U.S and China. The first phase of the study will be a qualitative exploration of emotional arousal from various sets of virtual urban environments, in which semi-structured interviews based on a virtual reality (VR) urban environment. The thematic analysis identifies patterns informing quantitative tools to measure arousal. In the quantitative phase, these tools are tested on a large sample experiencing controlled environments. Statistical analysis examines differences in self-reported emotional arousal. Integrating cultural insights from interviews with empirical relationships revealed via simulations elucidates how targeted urban characteristic changes can enrich well-being.

This study introduces two self-developed research systems, EchoSphere and the Modular Urban Street Environment (MUSE), to support multi-site research. EchoSphere is a virtual platform for conducting interviews and traditional surveys, which also collects data from various sources, including in-VR surveys and behavioral and physiological measurements like eye-tracking and movement. MUSE, utilizing parametric design principles, dynamically reconfigures urban street elements like streets, greenery, and architecture. Integrated with EchoSphere, MUSE controls the virtual environment variables and collects participant feedback, enhancing the study's ability to systematically gather diverse data in a controlled setting.

At the time of the conference, the study is expected to be in the pilot research phase with primary data collection. Expected outcomes include differences in arousal based on greenery, architecture, and spatial scale, with discovering culture-specific reactions. Together, the insights demonstrate how modifying key visual elements creates uplifting urban settings, enriching well-being for diverse cultural needs and populations. Another highlight includes the synchronous, portable, cost-effective VR system EchoSphere, which enables unified experimental protocols and collaboration for future cross-cultural research guiding urban design worldwide. Through innovative VR methods and cross-cultural perspectives, this ongoing research hopes to illuminate the emotional impact of the built environment and pioneer future cities that inspire humanity.

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Key Words: Urban environments, Emotional arousal, Cross-cultural, Virtual reality (VR), Well-being

ENSNARED BY DESIGN: RESIDENT WELL-BEING AND THE URBAN DESIGN OF MHCS

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Research-in-Motion (RiM)

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Today, the US faces an unprecedented housing crisis where in no State can a full-time minimum wage worker afford market rate housing. Nationally, rents have risen at twice the pace of overall inflation, with supply chain issues and work-from-home boom during the Pandemic exacerbating the crisis further. In this landscape of housing unaffordability and unavailability, manufactured or mobile homes or trailers [MHs] have become the largest source of unsubsidized affordable housing in the US. Anywhere between 18 to 20 million Americans live in mobile home parks [MHP] or Manufactured Home Communities [MHCs] of one form or another. These provide access to affordable housing for households of modest means and are particularly important in small and rural communities where more than 50 percent of all MHs are located. While MHs provide a path to achieving the American Dream to people who are unable to access the housing market, in most MHCs, homeowners live in between the states of quasi-homelessness and quasi-homeownership as they lease the land from the MHC owners and are at constant risk of eviction. A majority of MHCs exist on lots that are zoned as Industrial or Commercial. This makes it harder for cities to oversee and ensure that residents are treated fairly and that MHCs meet general building code. Along with availability of cheap land, lax zoning makes small and rural communities more attractive for MHCs and rural areas near cities and towns show larger clusters of MHCs. While there is a growing body of literature on MHCs in the US, this literature and research has mostly focused on metropolitan areas and is drawn from work done in the southern US, with almost not research published on small and rural communities in the Mid-West and the Great Plains. Recent literature in planning has drawn attention to the lack of planning research on MHCs. In this paper we present findings from phase I of an ongoing project titled “Double-Wide Lives: realities of chasing the American dream in its mobile home parks”. This phase focuses on understanding who lives in MHCs, and the experiences and problems faced by residents of MHCs in the Greater Manhattan area of Riley County, Kansas. Using a mixed-methods approach-surveys and semi-structured interviews-this paper focuses on how the urban design, ownership structure, and location of MHCs influence the well-being of residents. Preliminary analysis shows that MHCs in Riley County are disproportionately located in the floodplain. While residents report adequate access to public parks and grocery stores, access is based on automobile use. Few residents use their yard and neighborhood for leisure or play, due to the urban design of MHCs, in particular how units are laid out in relation to one another. The paper helps to form a more in-depth understanding of not only who lives in MHCs in Riley County but also the factors that led residents to live in MHCs as well as built environment characteristics that are perceived to be detrimental and beneficial to their lives and well-being. The results presented bring to the fore how a lack of attention to the urban design of MHCs leads residents to change the ways they live their everyday lives. With its focus on a micropolitan city and its surrounding areas, this paper furthers the understanding of how MHCs serve to

fill the gap in affordable housing demand and supply, as well as how better urban design interventions may help to improve life in MHCs for residents.

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Key Words: Manufactured Housing, Manufactured Home Communities, Mobile Home Parks, Mobile Homes

NISHICHIBA URBAN FARMING SOCIAL EXPERIMENT TO GROW CROPS ON URBAN SIDEWALKS

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Research-in-Motion (RiM)

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Urban farming, in which urban agriculture is carried out in vacant spaces, is attracting attention as a method for effectively utilizing underutilized land in urban areas. While some private companies are engaging in Urban Farminrog for profit, there are also cases of Urban Farming in public spaces such as parks for the purpose of community making. The authors belong to the Matsuura Laboratory at Chiba University, which established "Nishi-Chiba Urban Farming (NUF)" in a corner of "ZOZO's Square," an open space provided by a private company along Nishi-Chiba Gakuen Street in Chiba City, and a street tree strip that is part of the sidewalk, and has been conducting activities for local residents to grow vegetables as a social experiment since November 2023. One of the features of this case study is the integrated use of the street tree strips, which are public space, and the plaza, which is private property. The objectives of this study are 1) to clarify the evaluation of Urban Farming by local residents and the attributes of local residents who are willing to participate in Urban Farming, and 2) to elucidate the planning process in the initial phase of newly established Urban Farming in order to gain knowledge for the integrated use of roads and land alongside roads as Urban Farming.

The Nishi-Chiba area, the study site, is characterized by a large young population, partly because Chiba University is adjacent to the area. For Objective 1), a questionnaire survey of local residents was conducted before the NUF was implemented, and a questionnaire survey of NUF participants was conducted immediately after the NUF was implemented. For Objective 2), the planning process during the initial phase was organized based on previous meeting materials, consultation materials with the government, and minutes of meetings.
The results of the study revealed the following two points. First, during the planning phase, Urban Farming in the street tree strips and vacant lots was highly regarded, and with respect to age groups, both younger and older generations are expected to participate. This is thought to be due to the fact that students and the elderly are more likely to have free time. Based on the results of a survey of NUF participants, two students indicated that they had not joined a neighborhood association and that their relationships with neighbors were weak, suggesting that Urban Farming created opportunities for interaction. Second, it is important in the initial stage of Urban Farming to 1) prepare multiple planning sites, 2) continuously discuss with the city hall and local residents, and 3) develop Urban Farming in phases. The simultaneous development of Urban Farming in the four project sites made it possible to develop the Urban Farming in phases. The city hall is in charge of managing the street tree strip, which is a public space, and the presence of city hall staff among the study members made it possible to proceed smoothly with preliminary discussions within the city hall. In addition, since it was necessary to obtain the consent of local residents in order to proceed with Urban Farming in the street tree strip, the plan was changed after four meetings of the local residents' association to explain the plan and obtain their understanding.

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Key Words: Urban Farming, Sidewalks, Private and public lands, Social experiment

PARK CHARACTERISTICS ASSOCIATED WITH PARK VISITS IN LOS ANGELES

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Research-in-Motion (RiM)

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This study aims to examine how various park features and surrounding neighborhood characteristics are related to the number of park visits in Los Angeles City. With growing concerns over environmental and public health issues due to urbanization, public green spaces have garnered increased attention for their roles in purifying air, mitigating the urban heat island effect, promoting physical activity, and facilitating social interactions. However, despite the acknowledged benefits, not all parks attract visitors, even when they are in close proximity to residential areas.

The research solely focuses on neighborhood parks and community parks, excluding smaller pocket parks or mini-parks and regional parks, to concentrate on designed parks. Previous research has identified factors such as proximity to a park, park sizes, the presence of specific amenities, environmental quality, and safety measures as influential in park usage. Thus, the park features include park sizes, vegetation measures using the Normalized Difference Vegetation Index (NDVI) from the National Agriculture Imagery Program (NAIP) aerial imagery and tree canopy coverage from TreePeople, and park amenity information from the Los Angeles County Department of Parks and Recreation. Additionally, socioeconomic characteristics from the Census Bureau, neighborhood safety using Esri®'s Crime Index, and surrounding land use are utilized for characteristics of surrounding neighborhoods. Advan Research's weekly aggregated raw counts of visits to points of interest (POIs) from a panel of mobile devices are employed for park visit data.

The statistical model employed is a basic ordinary least squares (OLS) regression, considering each park's data individually. However, the study remains open to employing spatial regression or other analytical methods if deemed necessary as the research progresses.

The relevance and implications of our work to planning scholarship, practice, and/or education lie in its focus on individual park characteristics rather than aggregated neighborhood built environments. Therefore, we can gain a deeper understanding of people's behavior regarding park visits and identify correlations between park and neighborhood characteristics and people's park visitation patterns. This research contributes to addressing important factors in planning and designing parks for the health and well-being of people in the future.

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Key Words: Park Design, Urban Green Spaces, Park Features, Park Visits, Neighborhood Parks

THE IMPACT OF PARK PROXIMITY ON DYSLIPIDEMIA DURING THE COVID-19 PANDEMIC

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Research-in-Motion (RiM)

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The prevalence of dyslipidemia is on the rise, particularly pronounced in highly urbanized regions of Asia, including South Korea, attributed in part to the adoption of Western-style dietary habits (Liu, Zhao, & Qi, 2022). Dyslipidemia, characterized by altered blood lipid levels, may progress unnoticed due to its asymptomatic nature, but poses significant risks for atherosclerotic cardiovascular disease, cerebrovascular disease, and mortality. In South Korea, the concern surrounding dyslipidemia has intensified, with the condition being recognized as one of the four major chronic diseases; obesity, high blood pressure, dyslipidemia, and diabetes. Notably, it has shown the most significant increase over the past decade among these four ailments (KDCA, 2023).
The COVID-19 pandemic has further exacerbated the situation. Notably, Hypercholesterolemia, a subtype of dyslipidemia, have increased by 3.6% among men in 2020, marking the most significant rise over the past ten years (KDCA, 2023). For women, although the rate of increase in 2020 remained stable compared to 2019, the ratio increased by 1.4% in 2021 and further by 4.5% in 2022, highlighting a dramatic escalation during the pandemic period. Previous studies have suggested that during pandemic periods, disruptions in lifestyle such as decreased physical activity, extended home confinement, and heightened consumption of fast-food deliveries have contributed to such a dramatic increase in dyslipidemia (Sonn et al., 2021).
Studies suggested that urban parks have played significant roles in human health during the pandemic period, as they encourage physical activity and foster social connections (Lin et al., 2023). Furthermore, urban parks hold significant potential in mitigating dyslipidemia by promoting physical activity, reducing air pollutants, and alleviation of stress (Rook, 2013). However, despite their potential, park usage has been strongly affected by residential park accessibility due to activity restrictions during the pandemic (Lee et al., 2023). In light of these findings, it can be suggested that the presence of nearby urban parks, which encourage sustained physical activity, could have mitigated dyslipidemia during the pandemic. Thus, the accessibility of urban parks during such periods may strongly influence their usage, which in turn impacts the prevalence of dyslipidemia. No studies have yet thoroughly examined the impact of urban parks on dyslipidemia during the pandemic.
Against this backdrop, this study employs the Difference-in-Differences (DID) model to examine the effects of proximity to residential parks on blood lipids and dyslipidemia rates during the COVID-19 pandemic. Focusing on Seoul, the capital of South Korea, the analysis spans from 2017 to 2022, covering three years prior to and following the onset of the pandemic. The objective is to evaluate the impact of green spaces on reducing blood lipids and alleviating dyslipidemia during the pandemic. Through this investigation, the study aims to identify the current status of vulnerable populations and regions that disadvantaged due to inadequate access to parks, such as areas with high residential density of dyslipidemia patients but limited park proximity. Furthermore, the study proposes directions for alleviating dyslipidemia during pandemic conditions through the green spaces provision, thereby contributing to the discourse on urban environmental policy in the context of pandemic-related challenges.

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Key Words: Dyslipidemia, Blood lipid, Park, Green Space

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Geographical And Temporal Weighted Regression
Geographically Weighted Regression
Georgia Counties
Geospatial Analysis
Geospatial Big Data
Germany
GHG Emissions
Gig Economy
GIS
GIS Analysis
Global Brand
Global Cities
Global City
Global South
Global Warming And Climate Change
Global-Local Interconnections
Globalizing Planning Education
Google Maps Reviews
Google Reviews
Google Street View
Governance
Government
Graduate Education
Graph Neural Network
Grassroots
Grassroots Action
Grassroots Governance
Grassroots Innovation
Grassroots Organization
Gray Spaces

Green And Complete Streets
Green Building
Green Cities
Green Coverage
Green Gentrification
Green Infrastructure
Green Infrastructure Decision-Making
Green Jobs
Green Roofs
Green Space
Green Spaces
Green Stormwater Infrastructure
Green Streets
Greenbelt
Greenery Exposure
Greenery Quality
Greenfield City
Greenhouse Gas Emissions
Greenspace
Groundwater Salinization
Group Behavior
Growth Machine
Growth Management
Guaranteed Income
Gulf Of Mexico
Habitat Fragmentation
Harassment
Hazard Mitigation
Hazard Mitigation Planning
Hazard Planning
Hazard Vulnerability
Hazards
Healing
Health
Health Behaviors
Health Care Access
Health Disparities
Health Equity
Health Geography
Health Impact Assessment
Health Improvement
Health Inequality
Health Outcomes
Health Promotion
Healthcare
Healthcare Facilities
Healthcare Infrastructure
Healthy Built Environment
Healthy Cities
Healthy City
Healthy Communities
Healthy Community
Healthy Housing
Heart Rate Variability
Heat Action Plan
Heat Exposure
Heat Mitigation
Heat Planning
Heat Resilience
Heat Risks
Heat Wave
Heat Waves
Heat-Related Health
Heatwave
Heatwave Effects
Heatwaves
Hedonic Model
Hedonic Price Modeling
Hedonic Pricing Model
Height
Heritage
Heritage Conservation
Heterogeneity
Hierarchical Clustering
Hierarchical Spatial Model
High-Density Rural
High-Injury Network
High-Latitude Cities
High-Rise
High-Rise Gated Communities
High-Rise Living
High-Tech Innovation
High-Tech Zones
Highway Capacity Expansion
Hinterlands
Hispanic
Hispanic Communities
Hispanic Enclaves
Hispanic Homeownership
Hispanic Homeownership Gap
Hispanic Origin
Historic Preservation
Historical Redlining
History
HMDA
Holistic Conservation
Hollow State
Home Delivery
Home Elevation
Home Lending
Home Sharing Ordinances
Home Value
Home-Making
Homeless Service Centers
Homeless Shelters
Homelessness
Homeowner Associations
Homeownership
Homeownership Gap
Hong Kong
Honolulu
HOPE VI
Household Formation
Household GHG Emissions
Household Livelihood
Household Transportation Cost
Housing
Housing Affordability
Housing And Health
Housing Assistance Leavers
Housing Burden
Housing Choice Voucher
Housing Choice Vouchers / Section 8
Housing Crisis
Housing Decay
Housing Decommodification
Housing Density
Housing Deterioration
Housing Development
Housing Disparity
Housing Displacement
Housing Equity

Housing Exclusion
Housing Finance
Housing Financialization
Housing First
Housing Infill Development
Housing Informality
Housing Insecurity
Housing Instability
Housing Investment
Housing Justice
Housing Market
Housing Mobility
Housing Opposition
Housing Planning
Housing Policy
Housing Precarity
Housing Premium
Housing Price
Housing Price Premium
Housing Production
Housing Quality
Housing Recovery Planning
Housing Search
Housing Segregation
Housing Shortages
Housing Struggle
Housing Tenure Mix
Housing Trade-Offs
Housing Trends
Housing Type
Housing Vouchers
Human Activity
Human Capital
Human Interactions
Human Mobility
Human Perception
Human Rights
Human Rights & Freedoms
Hurricane Betsy
Hurricane Recovery
Hurricanes
Hybrid Work
Identification
Identification Method
IIJA
Image Classification
Image Processing
Image Production
Image Segmentation
Immigrant Communities
Immigrant Neighborhoods
Immigrant Settlement
Immigrant Workers
Immigrants
Immigration
Impervious Surfaces
Implementation
In-Situ Adaptation
Incentive
Incentive Program
Incentive Structure
Inclusion
Inclusionary Housing
Inclusionary Zoning
Inclusive Community
Inclusive Development
Inclusive Mobility
Inclusive Planning
Inclusive Public Space
Inclusive Public Transit
Inclusive Urban Planning
Inclusiveness
Income Inequality
Income-Generation
India
Indian Cities
Indicators Of Gentrification
Indigenous
Indigenous Community Planning
Indigenous Food Sovereignty
Indigenous Futurities
Indigenous Identity
Indigenous Knowledge
Indigenous Knowledges
Indigenous Peoples
Indigenous Planning
Indigenous Sovereignty
Indigenous Wellbeing
Indigenous-Led Planning
Indigenous-Settler Reconciliation
Indonesia
Induced Travel
Induced Travel Demand
Industrial Areas
Industrial Decarbonization
Industrial Development
Industrial Diversification
Industrial Land
Industrial Land Use
Industrial Location Quotient
Industrial Planning
Industrial Policy
Industrial Preservation
Industrial Retention
Industrial Specialization
Industrialization
Industry
Inequality
Inequities
Inequity
Influencing Factors
Informal Economy
Informal Employment
Informal Housing
Informal Learning
Informal Planning
Informal Politics
Informal Settlements
Informality
Information Communication Technology
Infrastructual Labor
Infrastructure
Infrastructure Development Project
Infrastructure Finance
Infrastructure Investment And Jobs Act
Infrastructure Planning
Injury
Innovation
Innovation Districts
Innovation-In-Place

Insect
Instagram
Institutional Adaptation
Institutional Barriers
Institutional Collective Action (ICA)
Institutional Investors
Institutional Models
Institutional Ownership
Insulation
Insurance Premium
Insurgent Planning
Intangible Cultural Heritage
Integrated Choice And Latent Variable (ICLV) Model
Integrated Transport And Land Use Planning
Integrating Climate Mitigation And Adaptation
Integration
Intellectual History
Intelligent CCTV
Intensification
Intention
Inter-City Cooperation
Interaction Between Subjects And Objects
Interactive Maps
Intercept Survey
Interchanges
Intercity Travel
Interest Rates
Intermunicipal Collaborative Framework (ICF)
Internal Migration
International
International Development
International Planning
International Planning Education
International Students
International Study
Internet Access
Internet Location-Based Service Data
Internet Of Things
Intersectional Entrepreneurship
Intersectionality
Interview Approaches
Interviewing
Intoxication
Intrahousehold Analysis
Invest Model
Investment
Investors
Islamabad
Islamophobia
Istanbul
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Jingdezhen
Job Accessibility
Job Decentralization
Job Prospects
Job Sectors
Job Training
Jobs-Housing Balance
Journey To Work
Judicial Review
Just Cities
Just City
Just Climate Adaptation
Just Transition
Just Transitions
Just Urban Transitions
Justice
Justice Planning
Justice40
K-Means Clustering
Kansas City
Kashmir
Key Informants
Knowledge
Knowledge Economy
Knowledge Graph
Knowledge Production
Knowledge Structure
Kolkata
Korea
Labor
Labor Attraction
Labor Sub-Market
Land
Land Acquisition
Land Assemblage
Land Banking
Land Based Financing
Land Communal Ownership
Land Cover Change
Land Development
Land Governance
Land Pooling And Readjustment
Land Price Variation
Land Regimes
Land Stewardship
Land Surface Temperature
Land Use
Land Use Conflict
Land Use Conversion
Land Use Planning
Land Use Policy
Land Use Reform
Land Use Regulations
Land Value
Land Value Capture
Land-Use Policy
Landlord
Landlord Consolidation;
Landlords
Landscape Design Elements
Landscape Expansion Index
Landscape Heterogeneity
Landscape Metrics
Landscape Pattern
Landscape Perception
Landslide
Language Revitalization
Lansing, MI
Large Language Model
Large Language Models
Large Language Models (Llms)
Large Scale Solar Projects
Last-Mile
Latent Demand
Latent Growth Model
Latin America

Latin American Urban Studies
Latina/O/Xs
Latino Workforce
Latinx Placemaking
Law
Learning
Left-Behind Behavior
Left-Behind Places
Legal Pluralism
Lending
Level Of Satisfaction
Level Of Traffic Stress
Liberal Antiracism
Life Cycle Stage
Life Satisfaction
Life-Course
Light Rail Transit
Light-Rail Transit
LIHTC
Literature Reviews
Livability
Livable Streets
Lived Experience
Living End
Living Shorelines & Nature-Based Solutions
Local Adaptation
Local Climate Zone
Local Commercial District
Local Comprehensive Plan
Local Extinction
Local Government
Local Governments
Local Knowledge
Local Level Urban Form
Local Narratives
Local Public Finance
Local Segregation
Local Social Organizations
Location-Based Service Data
Logit Model
London Planning
Long-Range
Longitudinal
Longitudinal Panel
Longitudinal Smartphone Data
Lorenz Curve
LOS
Los Angeles
Los Angeles Metropolitan Region
Louisiana Parishes
Low Wage Labor
Low-Carbon City
Low-Cost Sensor
Low-Cost Sensors
Low-Income Area
Low-Income Housing
Low-Income Seniors
Low-Wage Workers
LRT
Lung Cancer Incidence
Macau
Machine Learning
Machine Learning (BART)
Machine Learning Approaches
Machine Learning,
Maine
Malls
Managed Retreat
Manufactured Home Communities
Manufactured Homes
Manufactured Housing
Mapping
Marginal Effect
Marginalization
Marginalized Residents
Marijuana-Impaired Driving
Maritime Southeast Asia
Market Fundamentals
Marketing
Markets
Mass Transit
Material Innovation
Measuring Gentrification
Mediation Analysis
Medical Service
Mega Projects
Megaprojects
Memorialization
Mental Disorder
Mental Health
Mental Well-Being
Mentoring
Meta-Analysis
Meta-Regression
Metabolic Rift
Metro Manila
Metro-Based Accessibility
Metropolisation
Metropolitan
Metropolitan Area
Metropolitan Areas
Metropolitan City
Metropolitan Express Railway
Metropolitan Governance
Metropolitan Planning Organizations
Metropolitan Planning Organizations (Mpos)
Metropolitan Statistics Area
Mexico City
Micro-Development
Microclimate Data
Microclimate Simulation
Microeconomics
Micromobility
Micromobility Facility Planning
Microtransit
Mid-Rise Development
Mid-Size Cities
Mid-Sized Cities
Middle East
Middle Housing
Middle-Distance Travels
Migrant Women
Migration
Migration Effectiveness Index
Migration Selectivity
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Minimum Business Continuity Objective
Minimum Business Continuity Objective (MBCO)

Minimum Parking Requirements
Minnesota
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Minority Banks
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Minority Rights And Urban Planning
Minority-Owned Businesses
Missing Data
Mithi River Pollution
Mitigation
Mixed Methods
Mixed Methods Sequential Explanatory Design
Mixed-Income Community
Mixed-Methods
Mixed-Use Development
ML And Gentrification
Mobile Home Parks
Mobile Homes
Mobile Phone Data
Mobile Phone Signaling Data
Mobile/Manufactured Housing
Mobility
Mobility Data
Mobility Disparity
Mobility Justice
Mobility Network
Mobility Of Care
Mobility Pattern
Mobility Planning
Modal Hierarchy
Modal Split Analysis
Mode Choice
Mode Choice Modeling
Mode Shift
Model Performance
Moderating Effect
Moderating Effects
Monuments
Moran's I Test
More-Than-Human
Morocco
Morphological Analysis
Motherhood
Motor-Vehicles
Movements
Multi-Benefits
Multi-Criteria Decision Making
Multi-Culture
Multi-Hazards
Multi-Level Governance
Multi-Level Modeling
Multi-Sourced Urban Data
Multi-Stakeholder Governance Model
Multi-Stakeholder Indicator System
Multi-Use Trails
Multifamily Rental Housing
Multigenerational Sharing
Multilevel Governance
Multilevel Model
Multimodal Transit
Multimodal Transportation
Multimodal Transportation Planning
Multimodality
Multinomial Logistic Regression
Multiple Temporalities
Multiscale Geographically Weighted Regression
Mumbai
Mumbai Mithi River
Municipal
Municipal Finance
Municipal Law
Municipal Planning
Museums
Mutual Aid
Narrative
NASA VIIRS Nighttime Light Data
National Decision Making
National Household Travel Survey (NHTS)
National Register
National Risk Index
Natural Capital
Natural Disasters
Natural Environment
Natural Experiment
Natural Features
Natural Land Use
Natural Language Processing (NLP)
Natural Resource And Environmental Conservation
Naturally Occurring Affordable Housing
Naturally Occurring Affordable Housing (NOAH)
Nature Economy
Nature-Based Program
Nature-Based Solutions
Nature-Based Solutions (NBS)
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Near-Experience Communities
Near-Roadway Impacts
Nebraska
Necropolitics
Needs Assessment
Negotiated Community Benefits
Neighborhood
Neighborhood Association
Neighborhood Change
Neighborhood Condition
Neighborhood Effects
Neighborhood Food Environment
Neighborhood Health
Neighborhood Morphology
Neighborhood Organizations
Neighborhood Parks
Neighborhood Perception
Neighborhood Planning
Neighborhood Redevelopment
Neighborhood Schools
Neighborhood Trajectories
Neighborhood Typology
Neighborhoods
Neighbourhood
Neoliberal Planning
Nepal Earthquake
Nepal Earthquake 2015
Network

Network Analysis
Network Of Plans
Network Resilience
Network Structure
Networking Space
Neurodiversity
New Jersey
New Orleans
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New Urban Agenda
New York City
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NGOs
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Nighttime Heat
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NIMBY
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Noise
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Non Profit Organizations
Non-Extractive Finance
Non-Linear Relationship
Non-Motorized Commuting
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Monitoring Programs
Non-State Actors
Nonprofit Financial Health
Nonprofits
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Novel Data
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Occupations
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Office-To-Residential Conversion
Oil Cities
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Online Delivery Platforms
Online Housing Listings
Online Media
Online Purchases
Online Reviews
Online-To-Offline (O2O)
Ontario
Open Data
Open-Source Big Data
Openstreetmap
Opportunity
Opportunity Zone
Optimism
Oregon
Organizations
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Outdoor Leisure Activities
Outdoor Markets
Outdoor Play
Outdoor Residential Environment
Outdoor Seating
Outdoor Thermal Comfort
Outreach
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Pandemic
Panel Analysis
Panel Fixed Effect Model
Panel Vector Autoregressive Model
Parametric Design
Parcel Delivery
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Park Accessibility
Park Design
Park Features
Park Users
Park Visit Duration
Park Visits
Parking
Parking Behavior
Parking Policy
Parking Reform
Parking Requirements
Parks
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Participatory Action Research
Participatory Design
Participatory Planning
Participatory Process
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Particular Matter
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Patent Citation Network
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Pedagogy
Pedestrian
Pedestrian Detection
Pedestrian Flow Prediction
Pedestrian Infrastructures
Pedestrian Safety
Pedestrian Volume
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Pedestrians
Pedestrians And Cyclists
Pediatric Outpatient Clinics
People-Centric Decision-Making
Perceived Accessibility
Perceived Safety
Perceived Transaction Cost
Perception
Perceptions
Performing Arts Centers
Peri-Urban Parks
Peri-Urban Travel
Permanent Supportive Housing (PSH)
Pharmacy
Philanthropy
Phone Data
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Physical Activity
Physical Commercial Center
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Pilot Project
Pilsen Chicago

Pinellas County
Place
Place Attachment
Place Image
Place-Based
Place-Based Policy
Place-Based Settlement Programs
Place-Keeping
Placed-Based Fieldwork
Placekeeping
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Plan Content Analysis
Plan Evaluation
Plan Integration
Plan Integration For Resilience Scorecard™
Plan Quality
Plan Quality Evaluation
Plan Support
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Planned Communities
Planned Relocations
Planners' Role
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Planning Automation
Planning Capabilities
Planning Commission
Planning Consultants
Planning Education
Planning Ethics
Planning Evaluation
Planning For Disability
Planning History
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Planning History Research
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Planning New City
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Planning Theory
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Point Of Interest
Point Of Interests
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Points Of Interest
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Policing Equity
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Policy Analysis
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Policy Impact
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Policy Judicialization
Policy Learning
Policy Network Analysis
Policy Preferences
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Polycentric City
Polycentric Development Implementation
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Post-Anthropocentrism
Post-Conflict Reconstruction
Post-Disaster Recovery
Post-Disaster Relocation
Post-Industrial Cities
Post-Industrial Redevelopment
Post-Pandemic
Post-Pandemic Period
Postconflict
Posthuman
Poverty
Poverty Alleviation Relocation
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Power Dynamics
Power Outages
Power Restoration Rates
Powered Two-Wheelers
Practical Judgement
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Predicting Gentrification
Preemption
Pregnancy
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Principal Component Analysis
Prison Education
Prison Re-Entry
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Private Rental Housing Market
Privately Owned Public Space
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Procedural Due Process
Procedural Justice
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Profit Zones
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Public Choice And Public Goods
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Public Finance
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Public Open Space
Public Opinion
Public Participation
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Public Private Partnership
Public Rental Housing
Public Schools
Public Sentiment Analysis
Public Service Facilities
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Qualitative Methodology
Qualitative Methods
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Racial Disparities
Racial Diversity
Racial Equity
Racial Profiling
Racial Segregation
Racial-Spatial Isolation
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Random Forest
Rapid-Urbanization
Rating Systems
Re-Industrialization Of City
Re-Urbanization Of Industry
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Real Estate Development
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Real-Time Climate Monitoring
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Recovery
Recovery Governance
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Redevelopment
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Redlining
Reflection
Reform Zoning
Refugee Camps
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Regenerative Futures
Reginal Spatial Form
Region Planning
Regional
Regional Centrality
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Regional Coordinated Development
Regional Coordinated Governance
Regional Development Policy
Regional Disparities
Regional Economic Development
Regional Economic Integration
Regional Economic Resilience
Regional Economy
Regional Governance
Regional Heterogeneity
Regional Innovation
Regional Labor Market

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Regional Segregation
Regional Transit
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Regression Discontinuity Design
Regulatory Reform
Regulatory Takings
Regulatory Tool
Rehabilitation
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Relational Geographies
Relational Populations
Religion
Religious Discrimination
Relocation
Relocation Networks
Remote Sensing
Remote Work
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Renewable Energy
Rent
Rental Assistance Demonstration
Rental Assistance Demonstration (RAD)
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Rental Housing Exclusion
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Rights To The City
Rio De Janeiro
Risk Assessment
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Risk Perception
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Road Injury
Road Safety
Roadway Capacity Expansion Projects
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Rural Preservation
Rural Revitalization
Rural Tourism
Rural Tourism Planning
Rural Transportation
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Safety Attitudes
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Salvage
São Paulo
São Paulo, Brazil
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Scalar Mismatch
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Scale Sensitive Built Environment Features
Scenario Analysis
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School Neighborhood
School Transport
School Transportation
School Travel
Sea Level Rise
Seaward Urban Expansion
Segmented Regression
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Self-Driving Vehicles

Self-Employment
Self-Organizing Map
SEM
Semantic Segmantation
Semantic Segmentation
Semi-Basement Home
Senate Bill 743
Senior Crashes
Senior Mobility
Senior Transportation
Seniors
Sense Of Community
Sense Of Place
Sensor Desert
Sentiment Analysis
Seoul Metropolitan Region
Service Area
Servicescape
Settlement Footprints
Settler Colonialism
Settler-Colonial Cities
Severe Injury Crashes
Sexual Violence
Shanghai
Shanghai Metropolis
Shanghai Metropolitan Area
SHAP
Shared Autonomous Vehicle
Shared Equity Housing
Shared Housing
Shared Micromobility
Shared Mobility
Shared Rental
Shelter
Shoreline Stability
Shoreline Suitability Analysis
Short-Term Rentals
Shortage Measure
Shrinking Cities
Shrinking City
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Sidewalk Networks
Sidewalks
Silver Zone
Simulation
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Single Family Rentals
Single-Family Housing
Single-Family Rental Housing
Single-Family Zoning
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Slum Upgrading
Small Business
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Smart Card Data Analysis
Smart Cities
Smart City
Smart Growth
Smartphone
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SOC
Social And Economic Disparities
Social Capital
Social Cohesion
Social Computing
Social Determinants Of Health
Social Disorganization
Social Equity
Social Equity Access
Social Exclusion
Social Experiment
Social Housing In Vancouver, Canada
Social Inclusion
Social Inequality
Social Infrastructure
Social Interaction
Social Interactions
Social Justice
Social Media
Social Media Data
Social Media Sentiment
Social Mix
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Social Network
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Social Network Analysis (SNA)
Social Planning
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Social Rent
Social Reproduction Theory
Social Spatial Segregation
Social Sustainability
Social Vulnerability
Social Vulnerability And Burden
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Socio-Economic Disparities
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Socio-Political Climate
Socio-Spatial Analysis
Sociodemographic Vulnerability
Socioecological Urbanism
Socioeconomic Characters
Socioeconomic Dynamics
Socioeconomic Factors
Socioeconomic Inclusion
Socioeconomics
Soil Contamination
Solar Energy
Solar Photovoltaics
Soundscape
South Africa
South Asia
South Korea
South Sudan
Southern California
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Spatial
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Spatial Analyses
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Spatial Autoregressive Models
Spatial Clustering
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Spatial Heterogeneity
Spatial Inclusive
Spatial Inequality

Spatial Inequity
Spatial Interaction
Spatial Justice
Spatial Leave-One-Out
Spatial Mismatch
Spatial Network Analysis For Multimodal Urban Transport Systems (SNAMUTS)
Spatial Panel Analysis
Spatial Patterns
Spatial Planning
Spatial Prioritization
Spatial Production
Spatial Restructuring
Spatial Scientometrics
Spatial Segregation Phenomenon
Spatial Shift-Share Analysis
Spatial Uneveness
Spatio-Temporal Accessibility
Spatio-Temporal Analysis
Spatio-Temporal Changes
Spatio-Temporal Characteristics
Spatio-Temporal Process Perspective
Spatiotemporal Analysis
Spatiotemporal Dynamics
Speed Camera
Spillovers
Sprawl
St. Louis
Stable Racial Integration
Stakeholder Engagement
Stakeholder Mobilization
State Lane Width Standards
State Mandates
State Preemption
State-Minority Relations
State-Owned Enterprises
Stated Choice Experiment
Statewide Zoning Preemption
Station Area
Statistical And Machine Learning Models
Status Quo Bias
Statutory Planning
Stimulation
STIRPAT Model
Stochastic Frontier Analysis
Stock Land
Stormwater
Stormwater Conveyance System
Stormwater Management
Stormwater Management Infrastructure
Storytelling
Strategic Planning
Street
Street Commerce
Street Design
Street Experiment
Street Food Businesses
Street Networks
Street Reallocations
Street Space Quality
Street Trees
Street Vending
Street Vendors And Hawkers
Street View
Street View Images
Street-Level Bureaucrats
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Structural Equation Model
Structural Equation Modeling
Structural Equation Modeling, Yeongwol Y Park
Structural Racism
Structural Violence
Sub-Saharan Africa
Sub-Saharan Africa,
Subcutural Communities
Subgroups
Subjective Perception
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Subprime Mortgages
Subsidies
Suburb
Suburban Development
Suburbanization
Suburbanization Of Poverty
Suburbs
Subway Station
Subway Usage
Supplemental Nutrition Assistance Program
Supplier Diversity
Supply And Demand
Supply Chains
Surface Runoff
Surveillance
Survey
Survey Methods
Survey Study
Survival Analysis
Sustainability
Sustainability Planning
Sustainable Cities
Sustainable Cities And Communities
Sustainable Design
Sustainable Development
Sustainable Development Goals
Sustainable Infrastructure
Sustainable Mobility
Sustainable Neighborhood Development
Sustainable Transportation
Sustainable Urban Form
Sustainable Urban Water Management
SWMM
Synthetic Control Method
System Conservation Planning
System Size
Systematic Review
Systematic Reviews
Systemic Barriers
Tactical Coaltions
Taihu Lake Urban Agglomeration
Tall Buildings
Tap Water
Tax Burden
Tax Incentives
Tax Increment Financing

Teaching
Teaching And Learning
Tech Boom
Technological Change
Technological Unemployment
Technology
Technology Diffusion
Technology Policy
Telecommuting
Temperature Anomaly
Temperature Variability
Temporal Pattern
Temporal Scale
Tenant
Tenant Protections
Tenant Rights
Tenant Screening
Tenants
Tenure Security
Terrain Conditions
Territorial Control
Territoriality
Territory Cognition
Texas
Text Analysis
Text Mining
The 2030 Agenda
The Elderly
The Hinterlands
The Right To The City
Theory
Therapeutic Landscapes
Therapeutic Potential
Thermal Comfort
Thermal Environment
Thermal Equity
Third Place
Third Place Theory
Third Places
Threshold Temperature
Tiebout Hypothesis
Time
Time And Temporality In Planning
Time-Dependent Land Use
Time-Sensitive Urban Areas
Time-Series Clustering
Time-Series Remote Sensing
TNC
Tobit Blinder-Oaxaca Decomposition
TOD
Tokyo
Topic Modelling
Toronto
Toronto Age-Inclusivity
Toronto Strong Neighbourhoods Strategy 2020 (TSNS)
Tourism
Tourism-Induced Housing Investment
Town-Village Commuting
Tradeoffs
Traditional Villages
Traffic Impact Studies
Traffic Safety
Traffic Safety And Vision Zero
Traffic Speed
Traffic Stress
Trail Traffic Counter Validation
Trainings
Trajectories
Transfer Of Development Rights
Transformation
Transformative Learning
Transformative Pedagogy
Transit
Transit Accessibility
Transit Agencies
Transit Disruption
Transit Fare
Transit Infrastructure
Transit Oriented Communities
Transit Oriented Development
Transit Police
Transit Ridership
Transit Service Quality
Transit Subsidy
Transit-Induced Gentrification
Transit-Oriented
Transit-Oriented Communities
Transit-Oriented Development
Transit-TNC Partnership
Transition Experiments
Transitions
Transnational Market
Transparency
Transpartisan Networks
Transport Affordability
Transport Equity
Transport Justice
Transport Planning
Transport Policy
Transport Poverty
Transport Project
Transportation
Transportation And Land Use
Transportation Barriers
Transportation Equity
Transportation Infrastructure
Transportation Investment
Transportation Justice
Transportation Network Company
Transportation Network Evolution
Transportation Performance
Transportation Planning
Transportation Planning Theory
Transportation Policy
Transportation Policymaking
Transportation Poverty
Transportation Sector
Trauma
Trauma Recovery
Trauma-Informed Planning
Travel Behavior
Travel Complexity
Travel Demand Forecasts
Travel Demand Management
Travel Demand Models
Travel Satisfaction
Travel Time
Travel Time Budgets
Travel Time Expenditure

Tree Canopy
Tree Canopy Cooling
Tree Equity
Tree Protection
Trip Distance
Trip Distribution
Trip Generation
Trust
Trust In First Responders
Tsunami
Twitter
Two-Stage Least Squares
Random Forests
Typhoon Haiyan
U.S.
Unbundling
Uncertainty
Unconstitutional Conditions
Undergraduate Education
Uneven Recovery
Unhoused
Unincorporated Areas
Unincorporated Communities
United States
Universities
University-Based Engagement
University-Community Partnerships
Unmet Needs
Unmet Travel Needs
Unrelated Variety
Unsupervised Learning
Unused Space
Upzoning
Urban
Urban Accessibility
Urban & Transportation Planning
Urban Aesthetics
Urban Agriculture
Urban AI
Urban Analytics
Urban And Peri-Urban Food Systems
Urban Areas
Urban Arterial Lane Width
Urban Bird Diversity
Urban Blocks
Urban Change
Urban Citizenship
Urban Climate Adaptation
Urban Climate Change
Urban Decline
Urban Densification
Urban Design
Urban Design History
Urban Design Strategies
Urban Development
Urban Digital Twin
Urban Ecology
Urban Economic Development
Urban Emotional Maps
Urban Emotions
Urban Environment
Urban Environmental Justice
Urban Environmental Protection
Urban Environments
Urban Excellence
Urban Expansion
Urban Experimentation
Urban Farming
Urban Feminism
Urban Flood
Urban Flooding
Urban Forest
Urban Forestry
Urban Form
Urban Form Elements
Urban Form Typology
Urban Freight
Urban From
Urban Function
Urban Function Mapping
Urban Gardening
Urban Governance
Urban Green Space
Urban Green Spaces
Urban Greening
Urban Growth
Urban Growth Boundary
Urban Healthcare Infrastructure
Urban Heat
Urban Heat Island
Urban Historical Area
Urban History
Urban Inequality
Urban Informality
Urban Informality And Poverty
Urban Informatics
Urban Infrastructure
Urban Landscape
Urban Management
Urban Manufacturing
Urban Microclimate Modeling
Urban Mobility
Urban Morphology
Urban Network Analysis
Urban Park Management
Urban Parks
Urban Parks Clustering
Urban Planning
Urban Planning Artificial Intelligence
Urban Planning Education
Urban Platforms
Urban Politics
Urban Progress
Urban Public Health
Urban Public Open Space
Urban Rail Transit
Urban Rail Transit Congestion
Urban Recovery
Urban Redevelopment
Urban Redevelopment Project
Urban Regeneration
Urban Renewal
Urban Renewal Design
Urban Research
Urban Resilience
Urban Rights
Urban Safety
Urban Science
Urban Sensing
Urban Shrinkage
Urban Socionature

Urban Spatial Patterns
Urban Spatial Structure
Urban Speculation
Urban Sprawl
Urban Street Design
Urban Streetscape
Urban Sustainability
Urban Sustainability Experimentation
Urban Technology
Urban Third Place
Urban Transformation
Urban Transformations
Urban Transit Gap
Urban Tree Canopy
Urban Tree Inventory
Urban Triage
Urban Vacancy
Urban Vibrancy
Urban Vitality
Urban Waterlogging
Urban Wetlands
Urban-Activity Level
Urban-Industrial Space
Urban-Rural Integration
Urban-Rural Relationships
Urban, Suburban, And Rural Differences In Public Attitudes
Urban/Rural Fringe
Urbanization
Urural
USA
Usage Pattern
User Feedback
Utilities
Utility Costs
Utopia
Vacant Lots
Vacant Property
Value Of Travel Time Savings
Vancouver
Vancouver, Canada
Vector Auto-Regressive (VAR)
Vehicle Attributes
Vehicle Choice
Vehicle Miles Traveled
Vehicle Ownership
Vietnam
Violence
Virtual Reality
Virtual Reality (VR)
Visibility
Visibility Analysis
Vision Analysis
Vision Planning
Vision Zero
Visitation Patterns
Visitor Group Clustering
Visual Assessment Of Landscapes
Visual Impairment
Visualization Tools
VMT
VMT Mitigation Bank And Exchange
VMT Mitigation Strategies
VMT Reduction
Voluntary Local Reviews
Vulnerability
Vulnerable Group
Vulnerable Population
Vulnerable Populations
Wages
Waiting Time
Walkability
Walkable City
Walking
Walking Behavior
Walking Commute
Walking Environments
Warehouses
Washington D.C.
Washington, DC
Waste Management
Water
Water Access
Water Commons
Water Resources Planning
Water Resources Policy & Planning
Water User Association
Water Utility Service
Water-Bodies
Water-Sensitive Urban Design (WSUD)
Waterfront
Waterfront Planning
Waterscape
Wave Theory
Weathering
Web Application
Weighted Linear Combination (WLC)
Weighted Urban Proliferation
Welcoming
Welcoming Campus
Welfare Zones
Well-Being
Wellbeing
Wetland Conservation
Wetland Program Plans
Wetlands
Wetlands Conservation
White
White Supremacy
Wicked Problems
Wild Forest Musk Deer
Wildfire
Wildfire Planning
Wildfire Prevention
Wildlife Habitat Corridors
Willingness To Pay
Women
Women Farmers
Women Migrants
Work At Home
Work Capacity
Work From Home
Work Trip
Work-Life Symmetry
Worker Cooperatives
Workforce Development
Workforce Intermediaries
World City
World City Network

Worldview
Wrapped Around Service
WUI
Xgboost
Yangtze River Delta
Yangtze River Delta Region
Year Of Construction
Young Adults
Youth
Youth Empowerment
Youth Transit Programs
Zero-Vehicle Households
Zones
Zoning
Zoning Reform
Zoning Regulations
Zooming Reform