CONFERENCE PROCEEDINGS

2017
# TABLE OF CONTENTS

## COMPETITIVE PAPERS

## COMPLETE PAPERS

### THE CONSEQUENCES OF TIES TO THE PARENT FIRM FOR THE STRATEGIC DISCRETION OF SPINOFF EXECUTIVES.

*John A. Pearce II and Donald J. Schepker*

### ASSESSMENT OF INCOME INEQUALITY AND PROFITABILITY AMONG ACADEMIC STAFF OF AGRIPRENEURSHIP IN HIGHER INSTITUTIONS IN ONDO STATE NIGERIA

*O.O. Ehinnowo, M.O. Ilori, T.O. Fakokunde, A.I. Fatuase and I.O. Akinwunmi*

### IMMIGRANT ENTREPRENEURSHIP: A STUDY ON BRAZILIAN BUSINESSES AT POMPANO BEACH-FLORIDA

*Eduardo Picanço Cruz, Roberto Pessoa de Queiroz Falcão and Cesar Ramos Barreto*

### CORRUPTION, TURNAROUND AND ECONOMIC GROWTH: RECOVERING THE SOCIETAL INFRASTRUCTURE OF ENTREPRENEURSHIP

*William A. Andrews*

### FAMILY BASED CAPITALIZATION FOR SUSTAINABLE DEVELOPMENT, ECONOMIC GROWTH, EMPLOYMENT GENERATION AND POVERTY REDUCTION

*S.M. Mijanur Rahman and Mahmudul Hasan*

### FAMILIPRENEURSHIP: A COMPREHENSIVE APPROACH OF ENTREPRENEURSHIP FOR SUSTAINABLE DEVELOPMENT

*S.M. Mijanur Rahman and M.D. Osman Goni*

### GENDER DIFFERENCES AND ENTREPRENEURIAL MUNIFICENCE: THE PURSUIT OF INNOVATIVE NEW VENTURES

*Birton J. Cowden and Jintong Tang*

### FOR THE LOVE OF THE CRAFT: UNCOVERING THEMATIC REFLECTIONS IN COMPLEX VENTURES

*Laura Munoz, Richard J. Miller, and Kevin J. Hurt*

### UNDERSTANDING BIOSPHERE ENTREPRENEURSHIP THROUGH A FRAMEWORK APPROACH

*H.H. Frederick S.*

### THE PRICE TAG OF FAMILY BUSINESS INVESTMENTS: TRADING ENTREPRENEURSHIP FOR SOCIOEMOTIONAL WEALTH

*Giacomo Laffranchini, Michael R. Braun and Si Hyun Kim*

### GENDER DIFFERENCES IN EQUITY CROWDFUNDING: AN EXPLORATORY ANALYSIS

*Ross A. Malaga, Stanislav Mamonov and Janet Rosenblum*
FICTION AND FACT? A REVISITED METAPHORICAL APPROACH TO UNDERSTANDING THE ENTREPRENEUR
Diana Walsh and Katia Passerini .......................................................... 156

RELEVANCE OF STRONG TIES IN INFORMAL ENTREPRENEURSHIP: EVIDENCE FROM MEXICO
Cristian E. Villanueva, Adrianela Angeles and Luz C. Revilla .......................................................... 161

JUST ACT LIKE AN ENTREPRENEUR: SURVEYING LITERATURE ON EFFECTUATION EDUCATION
Todd Fernandez and Nathalie Duval-Coetil .......................................................... 190

PREDICTORS OF EARLY-STAGE ENTREPRENEURIAL ACTIVITY BEFORE AND DURING THE ECONOMIC CRISIS: A COMPARATIVE ANALYSIS BETWEEN SOUTHERN AND NORDIC EUROPEAN REGIONS
Susana C. Santos, António Caetano, Paola Spagnoli, Silvia Fernandes Costa and Xaver Neumeyer .......................................................... 220

ENTREPRENEURIAL RISK-TAKING FOR INTERNATIONALLY ORIENTED SMEs
Artur Baldauf and Olaf Rank .......................................................... 229

A DECADE OF CROSS-CAMPUS ENTREPRENEURSHIP EDUCATION: REVISITING OLD FINDINGS AND ASKING NEW QUESTIONS
Nathalie Duval-Coetil .......................................................... 235

EXAMINING WOMEN ENTREPRENEURIAL FIRMS: UNDERSTANDING THE FACTORS WHICH IMPACT GROWTH ORIENTATION
Emma Fleck .......................................................... 243

SEMI-STRUCTURED INTERVIEWS WITH 30 FOUNDERS: HOW SOCIOALLY-MEDIATED COGNITION EXPLAINS ENTREPRENEURS’ SHIFTING FROM BIASES AND HEURISTICS TO DELIBERATE THINKING
Andrew Herrity .......................................................... 278

ENTREPRENEURIAL INTENTION-BEHAVIOR TRANSLATION AMONG UNIVERSITY STUDENTS: DO INSTITUTIONS MATTER?
Karina Bogatyreva, Galina Shirokova, and Oleksy Osiyevskyy .......................................................... 301

THE INFLUENCES OF SOCIAL MEDIA ON ENTREPRENEURIAL PROCESS: THE THEORETICAL UNDERSTANDING FROM EFFECTUATION THEORY
Atthaphon Mumi, Michael Ciuchta and Yi Yang .......................................................... 309

A COMPETENCY-BASED APPROACH TO BACHELOR’S DEGREE ENTREPRENEURSHIP PROGRAMS
Yury Rubin, Mikhail Lednev and Danila Mozghukhin .......................................................... 341

ENTREPRENEURSHIP ELSEWHERE- EXAMINING THE ENTREPRENEURIAL CHARACTERISTICS OF EASTERN KENTUCKY ADOLESCENTS
David Snow and Justin Prater .......................................................... 377

INFORMAL ENTREPRENEURSHIP AND PAST EXPERIENCE IN AN EMERGING ECONOMY
Cory R.A. Hallam, Gianluca Zanella and Jhonny D.A. Lijeron .......................................................... 395
EMERGING MODELS OF BUSINESS INCUBATION: THE CASE OF GREECE
Tiago Ratinho and Michael Mitsopoulos.................................................................412

PASSION PAY? EXPLORING PRACTICES OF TALENT EXPLOITATION
Yongseok Jang........................................................................................................440

THE GIG ECONOMY, THE ALLEE EFFECT, AND THE LONG TAIL LIABILITY OF NEWNESS
Andrea Zavakos and Jay Janney............................................................................445

EMPRENDE LAB: A STUDENT ENTREPRENEURSHIP DEVELOPMENT PROGRAM FOR FUTURE BUSINESS LEADERS
Eduardo R. Díaz, Eduardo Durazo-Watanabe and Heberto X. Peterson R..................450

ENTREPRENEURIAL RESILIENCE, HIGH IMPACT CHALLENGES, AND FIRM PERFORMANCE
Yemisi Awotoye and Robert Singh ........................................................................482

AN EMERGING MODEL FOR THE EFFECTIVE TEACHING OF INNOVATION AND ENTREPRENEURSHIP AT THE GRADUATE LEVEL?
Lotfi Belkhir and Rafik Loutfy.............................................................................503

UNDERSTANDING ENTREPRENEURSHIP AND STRATEGIC MANAGEMENT IN SMEs WITH A SYSTEMIC APPROACH
Edmilson Lima.........................................................................................................520

THE DEMARCATION PROBLEM: EXPLORING THE BOUNDARIES OF ENTREPRENEURIAL ORIENTATION
Steven Phelan, Caroline Glackin and Bhavesh Bambrholia......................................530

A CONCEPTUAL MODEL OF GENDER-ENTREPRENEURSHIP FIT
Jerald Wallace and Elizabeth Boyd ........................................................................539

MIGRATION, CULTURE AND HOME-COUNTRY ENTREPRENEURSHIP
Dekuwmini Mornah and Michael H. Morris .........................................................568

A MULTI-LEVEL ANALYSIS OF THE U.S. START-UPS’ RELOCATION DECISIONS
In Hyeock (Ian) Lee ..................................................................................................580

THE RELATIONSHIP BETWEEN OPEN INNOVATION AND GLOBALIZATION: FOCUSED ON COLLABORATION MODES OF R&D IN SMEs
Rara (Hye-Seong) Jeon and Daniel Degravel .........................................................590

THE IMPACT OF ENVIRONMENTAL FACTORS ON INTERNATIONAL PERFORMANCE OF MULTIUNIT FRANCHISING
Andrey Kretinin and Todd Morgan.............................................................637

SOCIAL CAPITAL, DENSITY, AND STARTUP SURVIVAL: AN EMPIRICAL STUDY USING THE KAUFFMAN FIRM SURVEY
Cesar Bandera and Ellen Thomas .......................................................................642

PATenting IN THE SHARING ECONOMY: A DUAL-MARKET NARRATIVE ON NON-PRACTICING ENTITIES
Sanwar Sunny, Sunny Li Sun and Cheng Shu .....................................................658
INSTITUTIONAL PRESSURES AND SOCIAL ACTION: A COMPARISON OF ENTREPRENEUR SUPPORT ORGANIZATIONS IN ST. LOUIS AND BOSTON
Banu Özkazanç-Pan, Karren Knowlton and Susan Clark Muntean

TEACHING ENTREPRENEURSHIP AND/OR SMALL BUSINESS MANAGEMENT: SHIFTS IN CONTENT TENSIONS IN AUSTRALIAN UNIVERSITIES
Brian Gibson

HETEROGENEITY OF ENTREPRENEURIAL OPPORTUNITIES: A COMPLEXITY PERSPECTIVE
Hessam Sarooghi, Jeffrey Hornsby, Dirk Libaers and Niloofar Abolfathi

SHAPING INTERDISCIPLINARY RESEARCH PARADIGMS: THE INTERSECTION OF INSTITUTIONAL LOGICS AND INFORMAL IMMIGRANT ENTREPRENEURSHIP ACROSS DEVELOPING AND ADVANCED ECONOMIES
Lutisha Vickerie

SAUDI ARABIAN FEMALE ENTREPRENEURS: CHALLENGES AND SUCCESS ATTRIBUTES
Muhammad Rahatullah Khan and Norean R. Sharpe

THE SUB-SAHARAN AFRICA’S MODEL OF MULTINATIONAL ENTERPRISE: MOTIVATIONS AND STRATEGIES
Jean Kabongo and John Okpara

A PILOT STUDY EXAMINING THE ROLE OF ENTREPRENEURIAL INTENT AND NEED FOR ACHIEVEMENT IN ACCOUNTING STUDENTS’ CAREER ASPIRATIONS
Marco Lam, Jay Azriel and Susan L. Swanger

SAUDI ARABIAN MAPS OF ENTREPRENEURSHIP ECOSYSTEM SUBSTANTIATE ITS EXISTENCE-EVIDENCE OF EVOLUTION FROM 2013 TO 2017
Muhammad Khan

OPPORTUNITY RECOGNITION AND FIRM SUCCESS: A STUDY OF NOVICE AND EXPERIENCED ETHNIC MINORITY ENTREPRENEURS
SherRhonda R. Gibbs, Alisa L. Mosley, Harold W. Lundy Jr. and Mary M. White

A REVIEW OF CHALLENGES IN WOMEN’S ENTREPRENEURSHIP: A CONTEXT OF ETHNIC MINORITY IN VIETNAM
Q.K. Thieu, A.K. Das and Q.T. Nguyen

ABSTRACTS

A PROCESS MODEL FOR SOCIAL ENTREPRENEURSHIP: CASE STUDY EVIDENCE OF COMPASSION AND STRATEGIC OPENNESS
Thomas G. Pittz, Laura Madden and David Mayo
CONDITIONED TO CARE? GENDER DIFFERENCES IN ENTREPRENEURIAL SOCIAL RESPONSIBILITY
Whitney Oliver Peake and Kimberly Eddleston ................................................................. 932

WOMEN FAMILY MEMBER INVOLVEMENT IN CORPORATE GOVERNANCE:
A LONGITUDINAL STUDY OF PUBLIC Y-TRADED FAMILY FIRMS
Esra Memili, Haqing Chevy Fang and Holly Butner .......................................................... 937

EFFORT PERCEPTIONS VERSUS AUTONOMY CONCERNS: HOW DOES
CONFLICT DISSATISFY MEMBERS ON NASCENT ENTREPRENEURSHIP TEAMS?
Chihmao Hsieh and WooJin Lee ....................................................................................... 941

BORN GLOBALS FROM EMERGING MARKETS: THE SYNERGY OF
CONTEXT AND CAPABILITIES
Tatyana Tsukanova and Xiaotian Zhang ............................................................................ 946

NATIONAL POLICY AND COMPARATIVE INTERNATIONAL
ENTREPRENEURSHIP OUTCOMES
Shelby Solomon, Joshua Bendickson and Matthew Marvel ........................................... 949

CRITICAL SUCCESS FACTORS FOR ENTREPRENEURSHIP TRAINING
PROGRAMS DEVELOPMENT ON RUSSIAN MARKET
Alexey Baboshin .................................................................................................................. 950

FOR THE LOVE OF THE CRAFT: UNCOVERING THEMATIC REFLECTIONS
IN COMPLEX VENTURES
Laura Munoz, Richard J. Miller, and Kevin J. Hurt ........................................................... 951

KEY ISSUES FOR FAMILY BUSINESSES IN THE 21ST CENTURY: RESULTS
FROM A GROUNDED THEORY, ETHNOGRAPHIC CASE STUDY IN
PENNSYLVANIA
Morgan Clevenger, David Graff and Britton Heim .............................................................. 952

CUSTOMISED PROGRAM DEVELOPMENT IN ENTREPRENEURIAL
EDUCATION- AN INDIAN CASE STUDY
Seema Mahajan .................................................................................................................. 957

ANALYSIS OF THE IMPACT OF PERCEIVED ENTREPRENEURIAL BARRIERS
TO ATTITUDES AND INTENTION TO SET UP NEW BUSINESSES: THE
APPLICATION OF STRUCTURAL EQUATION MODELING
Roya Eshraghi Samani, Alireza Poursaeed, Shahraz Barani and Kiumarz Zarafshani .......................... 958

DO THEY KNOW WHAT WE THINK THEY KNOW?
Paula Englis ....................................................................................................................... 959

EVALUATION OF ENTREPRENEURIAL SKILLS OF STUDENTS ENROLLED IN
TECHNOLOGY EDUCATION INSTITUTIONS
Fariha Gull .......................................................................................................................... 960

DOES GLOBALIZATION HELP INCLUSIVE GROWTH? AN OPPORTUNITY
STRUCTURE PERSPECTIVE
Hao Liang, Sunny Li Sun and Chris Marquis ........................................................................... 961
ENTREPRENEURS AND OTHER ‘PRENEURS’: USING TEXT MINING AND
SOCIOLINGUISTICS TO EXPLORE IMPLICIT GENDER ASSOCIATIONS
WITHIN ENTREPRENEURSHIP
Mandy Whealon and Nathalie Duval-Couetil.................................................................962

USING THE MOTIVATION-ATTRIBUTES-SKILLS-KNOWLEDGE VALIDATION
MODEL IN IMPLEMENTING KNOWLEDGE MANAGEMENT STRATEGIES IN
SMALL AND MIDSIZE EMPLOYERS (SME’s): A THEORETICAL STUDY
Jeff Stevens and Jim Chen.................................................................................................963

AN EXAMINATION OF UNIVERSITY ENTREPRENEURSHIP ACCELERATORS
IN NORTH AMERICA
Lynn Metcalf, Thomas Katona and Jonathan York .................................................................964

A STRATEGIC APPROACH FOR POST-INITIAL PUBLIC OFFERING
ENTERPRISES
Cheng (Andy) Tseng and Chien-Chi Tseng ........................................................................965

STRATEGIC ANTECEDENTS OF INNOVATION: VARIANCE BETWEEN SMALL
AND LARGE FIRMS
Phillip Davis and Josh Bendickson......................................................................................966

MAPPING THE ENTREPRENEURIAL ECOSYSTEM IN TIJUANA: ANALYSIS
AND RECOMMENDATIONS
Lorena Santana and Guadalupe Sanchez ..........................................................................967

WHEN DO FAMILY BUSINESSES TRANSITION FROM FAMILY CEO TO
PROFESSIONAL MANAGEMENT?
Xi Yang........................................................................................................................................968

THE RELATIONSHIP BETWEEN OPEN INNOVATION AND GLOBALIZATION:
FOCUSED ON COLLABORATION MODES OF R&D SMEs
Rara Jeon................................................................................................................................969
TEACHING CASES

COMPLETE PAPERS

STALLION DELIVERIES: THE ACQUISITION DILEMMA OF A SUCCESSFUL STUDENT STARTUP
Shahid Qureshi and Sarfraz A. Mian ................................................................................................... 972

THE RAIL TRAIL FLATBREAD CO.
Adam Sulkowski, Angela F. Randolph, Benjamin Luippold and Jennifer Bailey.................................. 978

A NEW ANGEL’S INVESTMENT DECISION: WHAT DOES SHE CONSIDER?
Monica Zimmerman...................................................................................................................................... 980

TRANSIT TEAM CASE STUDY (ABRIDGED)
Jay Ebben and Alec Johnson ................................................................................................................ 1011

SPRINGFIELD AUTO COLLISION: THE DECISION TO IMPLEMENT LEAN SIX SIGMA-PRINCIPLES IN A STRUGGLING ENTREPRENEURIAL COMPANY
Daniel Jensen, Matthew Houseworth and Mary McCord ................................................................. 1017

EXPLORATION STRATEGY TEACHING CASE- ANTARCTICA- THE RACE TO THE SOUTH POLE
Mark Pomerantz............................................................................................................................................ 1047

SHOTSPOTTER
Donna Stoddard............................................................................................................................................ 1060

AUNTIE ANNE’S: SEARCHING FOR THE RIGHT RECIPE FOR CHINA
Marlene Reed and Les Palich ................................................................................................................ 1066

ABSTRACTS

BLACK SHEEP FOOD- CHOOSING THE RIGHT LEGAL STRUCTURE FOR MISSION-DRIVEN VENTURES
Maria Ballesteros-Sola and Jacquelyn Forrester................................................................................ 1073

COFFEE OF THE KUNA: $30,000 IN 30 DAYS?
Mark Simon, Rodney Shrader, Janell Townsend and Tianxu Chen.................................................... 1074

RAHAMA WRIGHT AND SHEA YELEEN
Lakshmi Balachandra and Donna Stoddard......................................................................................... 1075

THE WINE ENTERPRISE
Robert Ellis ................................................................................................................................................ 1076
DEVELOPMENTAL PAPERS

COMPLETE PAPERS

SELF-AWARENESS TO BENEFIT TECHNOLOGY FORECASTING IN SMALL BUSINESSES
Corinne Jenni ....................................................................................................................................................1077

ASSESSING LOCAL ENTREPRENEURIAL ECOSYSTEMS IN MEXICO: THE CASE OF SAN LUIS POTOSI
Pedro Martinez-Estrada and Elona Goma ...................................................................................................1087

A STUDY ON EFFECTS OF FUNDING TYPES ON FUNDED FIRM’S PERFORMANCE
Yunsoo Choi and Dohyeon Kim ....................................................................................................................1153

TECHNO-ENTREPRENEUR FROM EMERGING ECONOMICS: A CASE OF DJI IN GLOBAL COMPETITION AND INNOVATION
Xu Hongjia ......................................................................................................................................................1178

A SYSTEMATIZED OVERVIEW OF SOCIAL ENTREPRENEURSHIP RESEARCH
Kevin L. Rawls ...............................................................................................................................................1183

Shari L.S. Worthington ...................................................................................................................................1192

BREAKING THE ENTREPRENEURIAL GLASS CEILING: AN EXAMINATION OF GENDER DIFFERENCES IN THE EARLY-STAGE ACCELERATOR ENVIRONMENT
Heather-Jean MacNeil and Mary G. Schoonmaker .....................................................................................1222

WOMEN IN ENTREPRENEURSHIP HISTORY: THE JOURNEY AND INTERGENERATIONAL REFLECTION
Morgan R. Clevenger, Anne Heineman Batory, Emelie Meinhart, Michelle Lehman and Samantha Reinhardt..............................1231

ENVIRONMENT AS A DETERMINANT OF ENTREPRENEURIAL TYPE: NECESSITY OR OPPORTUNITY?
Yasmin Mattox and Ebony Miller-Wesley....................................................................................................1252

CROSS-DISCIPLINARY COMPETITION: ENTREPRENEURSHIP AND ENGINEERING LESSONS LEARNED
Colleen Robb and David Alexander ...........................................................................................................1259

TECH STARTUPS: A MODEL FOR REALISTIC ENTREPRENEURSHIP & SOFTWARE ENGINEERING PROJECT COLLABORATION
Colleen Robb, David Rahn and Kevin Buffardi...........................................................................................1280
<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNDERSTANDING THE ENTREPRENEURSHIP ECOSYSTEM IN HIGHER EDUCATION: A MINDMAP APPROACH</td>
<td>Jason Gordon, Brett Young and Phillip Hartley</td>
<td>1295</td>
</tr>
<tr>
<td>INTEGRATING ENTREPRENEURSHIP AND SUPPLY CHAIN PERSPECTIVES OF INNOVATION: THE INFLUENCE OF NETWORK CAPABILITY</td>
<td>Yiming Zhuang and Youngeun Lee</td>
<td>1300</td>
</tr>
<tr>
<td>WHY THE WAGE GAP AND SECOND GENERATION GENDER BIAS MATTERS IN ENTREPRENEURSHIP</td>
<td>Ethné Swartz</td>
<td>1306</td>
</tr>
<tr>
<td>THE ME NOBODY KNOWS</td>
<td>Michelle I. Spain</td>
<td>1314</td>
</tr>
<tr>
<td>SOCIAL ENTREPRENEURSHIP: A HEALING APPROACH TO A MORE SUSTAINABLE SOCIETY</td>
<td>Mark Pomerantz</td>
<td>1325</td>
</tr>
<tr>
<td>ABSTRACTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FLEXIBLE OR TRADITIONAL WORK ARRANGEMENTS? IMPLICATIONS FOR SMEs IN EMERGING ECONOMIES: THE CASE OF MEXICO</td>
<td>Saida. Perez, Yamel Ungson, Laura Lopez and Terri Lituchy</td>
<td>1345</td>
</tr>
<tr>
<td>AN EMPIRICAL STUDY OF ENTREPRENEURSHIP IN PRIVATE AND PUBLIC SECTOR ORGANIZATIONS: SOME EVIDENCE FROM GHANA</td>
<td>Bernard Obeng</td>
<td>1346</td>
</tr>
<tr>
<td>THE ROLE OF HUMOR IN STARTUP SUCCESS: THE MEDIATING ROLE OF TEAM PERFORMANCE</td>
<td>Shalini Gopalkrishnan</td>
<td>1348</td>
</tr>
<tr>
<td>PRELIMINARY RESULTS OF A MULTI-STATE ENTREPRENEURIAL COMMUNITIES RESEARCH INITIATIVE</td>
<td>Morgan Clevenger</td>
<td>1349</td>
</tr>
<tr>
<td>BOUNDED TRUST OR MISTRUST- DEPICTING BRAZILIAN IMMigrant ENTREPRENEURSHIP PRACTICES IN THE US</td>
<td>Eduardo Cruz, Roberto Pessoa de Queiroz Falcão and Cesar Ramos Barreto</td>
<td>1350</td>
</tr>
<tr>
<td>EFFECT OF AN INTERVENTION ON FEAR OF FAILURE ENTREPRENEURSHIP</td>
<td>Yemisi Awotoye</td>
<td>1351</td>
</tr>
<tr>
<td>APPLYING A HYBRID STOCHASTIC MODELLING APPROACH TO ANALYZE CROSS SECTOR COLLABORATION PERFORMANCES</td>
<td>Ales Jug</td>
<td>1352</td>
</tr>
</tbody>
</table>
EVALUATION OF ENTREPRENEURIAL SKILLS OF STUDENTS ENROLLED IN TECHNOLOGY EDUCATION INSTITUTIONS
Fariha Gull ...........................................................................................................................................................1353

WOMEN ENTREPRENEURS: ANALYSES OF CHALLENGES AND SUCCESSES IN MEXICO
Diana E. Woolfolk R. and Terri R. Lituchy......................................................................................................1354

‘OH DANNY BOY, THE INVESTMENT TYPES ARE CALLING’
Heidi Connole.....................................................................................................................................................1355

THE RELATIONSHIP OF LOCAL LEADERS AND BUSINESS INSTITUTIONS WITH ENTREPRENEURS
Britton Heim............................................................................................................................................................1356

ENTREPRENEURS AS RISK MINIMIZERS
Nawaf Alabduljader and George Solomon.......................................................................................................1357

OVERCONFIDENT ENTREPRENEURS: A STUDY OF KAUFFMAN FIRM SURVEY
Hyungkee Baek and Florence Neymotin........................................................................................................1358

THE ENTREPRENEURIAL MINDSET: THE RELATIONSHIP BETWEEN THE NEED FOR CLOSURE AND ENTREPRENEURIAL FIRM INNOVATIVENESS
Mark Schenkel and William McDowell...........................................................................................................1359

INNOVATION TO LAUNCH (I2L)
H. “Ky” Holland, Rachael Miller and Cassandra Maurer....................................................................................1360

THE EFFECTS OF ORGANIZATIONAL LEARNING, ENTREPRENEURIAL TEAM CREATIVITY, AND ENTREPRENEURIAL LEADERSHIP ON NEW VENTURE SUCCESS
Siang Tseng and Chien-Chi Tseng.....................................................................................................................1361

UNDERSTANDING SOCIAL BRICOLAGE IN DISASTER RESPONSE
Edmilson Lima and Reed Nelson...........................................................................................................................1362

PEERING BEHIND THE CURTAIN: EXPLORING THE UNDERLYING LOGIC BETWEEN ELEMENTS OF PIONEERING VENTURE CAPITALISTS’ MENTAL MODELS OF INVESTMENT GRADE ENTREPRENEURIAL OPPORTUNITIES
Marcus Crews...........................................................................................................................................................1363

ADDENDUM..........................................................................................................................................................1364
The Consequences of Ties to the Parent Firm for the Strategic Discretion of Spinoff Executives

John A. Pearce II
Department of Management, Bartley 2076
800 Lancaster Avenue
Villanova School of Business
Villanova University, Villanova, PA, 19085
Phone: (610) 519-4332; Fax: (610) 519-6566
Email: john.pearce@villanova.edu

and

Donald J. Schepker
Darla Moore School of Business
University of South Carolina
1014 Greene Street, Columbia, SC 29208
Phone: (803) 777-5977; Fax: (803) 777-6876
Email: Donald.Schepker@moore.sc.edu
The Consequences of Ties to the Parent Firm for the Strategic Discretion of Spinoff Executives

Abstract

Researchers argue that divestiture by spinning off a unit that has unique strategic needs reflects the firm’s priority to narrow the scope of its operations. However, research has not yet examined the conditions under which spinoffs actually undertake strategic change to improve their competitive engagement. Relying on the managerial cognition literature, we argue that ties to the parent firm and the level of parent involvement reduce the spinoff firm’s managerial discretion, which restricts the spinoff’s strategic change. We test hypotheses on these issues in 65 spinoffs across 194 firm-year observations and we find considerable support for our predictions.

Executive Summary

Spinoff firms are chosen for independence because the corporate executives believe that the spinoff’s chances for success in the marketplace will be enhanced by its independence and the associated opportunities to increase its market valuation, improve its borrowing and debt, sharpen its strategic focus, and increase its revenue growth. This distinctive approach to corporate entrepreneurship works. Since 1999, spinoffs have outperformed the S&P index by 6% in their first two years (Kapadia, 2016). So, how distinctive was the strategic change that the spinoffs employed? Did they use ties to their previous parent to maintain their economic trajectory or did they break these ties to expand executive discretion and employ new strategies?

The empirical research reported in this paper addresses these questions. We investigate the argument that ties to the parent firm and the level of parent involvement in the activities of the newly independent business reduce the spinoff’s managerial discretion, which in turn restrict the spinoff’s strategic change. We use a longitudinal research design to test hypotheses on these
issues on 65 spinoffs across 194 firm-year observations, using data from the three major exchanges, CRSP, and the SEC. The hypothesis are based on theories involving corporate entrepreneurship, managerial cognition, and managerial discretion. Our results confirm that ties to the parent limit the discretion of the spinoff, reducing strategic change. Unexpectedly, when the parent retains an investment, strategic change by the spinoff is more likely. Finally, our results illustrate that strategic change is a function of the spinoff’s pre-divestiture performance.

The findings of this research have important implications for entrepreneurship education. Future corporate entrepreneurs want to consider how the ongoing relationship between the parent and spinoff firms influence their cognitive choices and their efforts at strategic change.

**SPINOFF EXECUTIVES’ TIES TO THE PARENT FIRM**

Spinoffs, whereby a corporation (the “parent”) relinquishes residual control over a subsidiary (the “child”) to governance by the market rather than through hierarchy, are seen as a means to increase strategic focus for both the parent firm and spinoff firm (Allen, 2001; Veld & Veld-Merkoulova, 2004). Spinoffs provide a unique opportunity for the child firm to realign its strategy with the environment and refocus its core business. Yet, there is a relative scarcity of empirical evidence to support the claims of strategic independence for spinoffs (Semadeni & Cannella, 2011). Instead, research has focused primarily on the economic performance of the spun-off business, without regard to whether and under what conditions the spinoff altered its strategy.

This knowledge gap is surprising since prior research assumes spinoffs will engage in strategic refocusing once they are given legal independence from the parent, with the caveat that spinoff firm behavior may be constrained by ongoing formal and informal ties with the parent firm (Semadeni & Cannella, 2011; Woo, Willard, & Daellenbach, 1992). Strategic change alters
the firm’s relationship to its environment (Bruneel, Van, & Clarysse, 2013; Hutzschenreuter, Kleindienst, & Greger, 2012). However, lingering cognitive linkages between parent and child may root the spinoff’s strategy in the dominant logic of the parent (Kor & Mesko, 2013). Therefore, our research seeks to understand the impact of continuing relationships with its detached parent on the managerial discretion and strategic refocusing of the spinoff.

The assumption that spinoffs undergo a strategic refocus invites both verification and understanding, including the specification of the conditions under which changes occur. The idea that the spinoff will reorient its strategy has theoretical and practical appeal, based in the unprecedented opportunity for the spinoff’s management to break free from the routines and processes of the parent firm (VanderWerf, 1993).

The relationship between the parent and spinoff firms is likely to complicate a strategic change process. For instance, the spinoff firm’s executives and directors may have been trained in the parent firm’s culture or have executed the parent firm’s strategy prior to the spinoff (Kor & Mesko, 2013), leading to an increased commitment to the status quo (Hambrick et al., 1993). Finally, the parent may retain an ownership stake in the spinoff to preserve important influence on the strategic decision-making of the spinoff’s management team.

These arguments suggest that parental involvement in the spinoffs business may limit the managerial discretion afforded to the spinoff to effect strategic change. Hambrick and Finkelstein (1987) introduced the notion of managerial discretion, noting that forces impact the latitude of actions that managers can take to influence firm outcomes. For instance, when managerial discretion is high, executives can pursue a wide variety of actions that can significantly impact strategy and performance. However, discretion is limited when constraints exist within the environment, the organization, and the manager that limit perceived needs or
desires to undertake significant actions (Quigley & Hambrick, 2012).

While research has examined a variety of antecedents of managerial discretion (Wangrow, Schepker, & Barker, 2015), ties between spinoff firms and their parents have not been explored and may be a key determinant of the degree to which executives acquire latitude of action to initiate strategic change. In this paper, we argue that the managerial discretion of the spinoff’s executives is reduced when there are strong ties between the spinoff firm and the parent. Specifically, we examine four ties between the two entities and the relationship of each tie to the degree of strategic change undertaken by the spinoff firm following its divestiture.

THEORY AND HYPOTHESES

The Spinoff Context

A spinoff refers to a particular form of divestiture in which a parent firm separates its interests in a business unit by ceding most or all shares in the divested unit to the parent’s existing shareholders. Spinoffs serve as an important strategic tool because as they are often tax free conversions, when the parent divests at least 80 percent of the unit, when the unit has engaged in business with the parent for at least five years, and when the transaction be motivated by a legitimate business purpose. The decision to spin off the subsidiary can enable the spinoff to increase its strategic focus, enhance the efficiency of contracting, reduce regulatory constraints, improve management incentives, and increase shareholder wealth (Allen, 2001).

Despite the apparent theoretical importance of linkages between the parent and spinoff firm, research has failed to examine the role that these relationships play in altering the spinoff’s strategic focus (Sapienza, Parhankangas, & Autio, 2004; Semadeni & Cannella, 2011). This is unfortunate because the spinoff context provides an opportunity for the spinoff firm to investigate new strategies as it breaks free from the hierarchical authority and organizational
norms of the parent firm (Boeker & Goodstein, 1993). The degree of change pursued is likely to be dependent on the spinoff executives’ perceptions as to whether change is necessary and whether they have the discretion necessary to initiate change (Audia, Locke, & Smith, 2000).

**Managerial Discretion and Spinoff Strategic Change**

The concept of managerial discretion identifies the conditions under which executives exert influence over organizational outcomes (Hambrick & Finkelstein, 1987). Discretion exists in the absence of constraints over managerial behavior or when the linkages between managerial decisions and firm outcomes are ambiguous. Managerial characteristics suggest that managers’ cognitive orientation limits their perception of their ability to influence the organizational change and outcomes (Hambrick *et al.*, 1993), e.g., confidence in a firm’s strategy is likely to influence an executive’s perception of the need for strategic change (Hutzschenreuter *et al.*, 2012).

The firm’s internal organization includes powerful forces that limit the freedom that managers have to initiate change. For instance, a strong board may exert great influences over a firm’s strategy that restricts executives from undertaking bold strategic actions (Quigley & Hambrick, 2012). Research supports the notion that such restricted discretion lessens managers’ influence on organizational outcomes at the institutional, industry, firm, and individual levels.

The managerial discretion of a spinoff’s executives reflects their autonomy and independence in altering strategy following their divestiture. Semadeni & Cannella (2011, 1084) note that “continued ownership and oversight by the parent tacitly reinforces the processes and procedures the parent instilled when the child was a subsidiary, making it more difficult for the child firm to establish its unique identity and strategy independent of the parent.”

Ties between the parent and spinoff firms are likely to decrease the discretion perceived by spinoff executives. The spinoff may perpetuate the routines and patterns that were a result of
its parent’s strategic formulation and implementation processes (Woo et al., 1992). These
patterns can be the de facto dominant logic of the organization’s top management team, who
determine and direct the spinoff firm’s strategic management activities (Kor & Mesko, 2013).

For strategic change to be successfully implemented, the spinoff’s executives must break
with some established cognitive frames (de Holan & Phillips, 2004). When executives and board
members of the spinoff firm were involved with the parent, those experiences may reduce their
managerial discretion both consciously and subconsciously. Until executives can build new
experiences, the parent firm that influence their cognitive orientation, or until new leaders bring a
fresh perspective, the spinoff executives’ mindset may closely resemble the parent.

The parent may also act to tacitly or overtly exercise control over the spinoff firm’s
operations (Kang & Sorensen, 1999). When the parent retains a stake in the spinoff, research
suggests that oversight by the parent can decrease the stock market performance of the spinoff, if
the parent hampers the spinoff’s independence and adaptation (Semadeni & Cannella, 2011).

Excessive monitoring by the parent constrains the spinoff’s behavior, reducing the
likelihood that strategic changes will be made because the parent firm’s executives will favor
strategies that they initiated and believe are still appropriate (Henderson et al., 2006). However,
the parent’s continuing influence over the spinoff is problematic. When strategic change is
needed by the spinoff – as may have been the impetus for it having been divested – then
continued parental involvement that reduces the spinoff executives’ discretion in strategic
change is likely to prove counter-productive for both parties and the stockholders.

This literature suggests that ties with the parent firm limit the discretion of the spinoff’s
executives, either tacitly or overtly. Research argues that spinoffs serve as a means to realign the
new firm with its competitive environment and to break free of inertia resulting from parental
control (Woo et al., 1992). However, this change in strategic behavior is only likely to the degree that managers perceive their ability to make strategic changes. Thus, we propose:

*Hypothesis 1: Ties to the parent firm are negatively related to changes in the spinoff firm’s strategy, post-independence.*

**The Moderating Role of Pre Spinoff Performance**

Research suggests that strategic change is important when a spinoff firm seeks to create its own independent identity (Sapienza et al., 2004; Semadeni & Cannella, 2011). In particular, a spinoff must reorient itself to its new reality, including an altered set of stakeholders (Woo et al., 1992). While ties to the parent may limit the discretion of the spinoff in initiating strategic change, the perceived need for change by the spinoff’s management is an essential precursor to action. Their perception is influenced by the success of the current strategy. When the firm performs poorly, managers have discretion to initiate strategic change (Barker, Patterson, & Mueller, 2001) but change is rarely advisable when performance is strong (Audia et al., 2000).

The spinoff’s prior performance is likely to condition the appropriateness of both the parent’s response and the felt need for change by the spinoff’s executives and directors. When the pre-divestiture performance of the spinoff firm was poor, regardless of ongoing parent ties, it is likely that the spinoff’s strategy evaluation process will be change oriented (Pearce & Robbins, 1994), because poor performance evokes a powerful impetus for strategic change to meet investor expectations (Cyert & March, 1963).

For spinoffs with good pre-divestiture performance, however, the level of discretion afforded to executives to initiate strategic change by stockholders (including the parent) and the board is likely to be influenced by the spinoff’s ties to the parent firm. A spinoff that maintains close ties to the parent is likely to maintain the status quo in the anticipation of continuing its
success as a legally independent firm (Audia et al., 2000; Hambrick et al., 1993). Spinoff executives in this situation are unlikely to pursue new strategies for their firm because they are inclined to believe that future conditions will reward strategic persistence (Audia et al., 2000). Thus, we suggest that the ties between the parent and spinoff reduce the discretion of the spinoff’s executives because of their confidence that the success of the existing strategy will continue if the strategy is affirmed.

When parent involvement is less, allowing spinoff executives’ discretion to increase, good future performance provides the firm with slack resources that allow spinoff management to invest in new strategies to strategically refocus the firm (Barker & Duhaime, 1997), consistent with the goals of most spinoffs. As a result, the spinoff’s management may utilize strategic change to exert and expand its independence and autonomy. This strategic reorientation helps to free the spinoff from the holdover effects of its parent’s routines and processes (Woo et al., 1992). The reduction of ties to the parent allows the spinoff firm’s executive team to strategically refocus more so than when ties to the parent are retained and its performance history is strong.

Hypothesis 2: A subsidiary’s performance prior to becoming a spinoff will moderate the relationship between ties to its parent firm and the magnitude of change in subsidiary’s post spinoff strategy, such that stronger pre-spinoff performance will decrease the level of strategic change as parental ties increase.

METHODS

Data and Sample

The sample for this study was derived from all corporations listed on the New York Stock Exchange, American Stock Exchange, and NASDAQ for which the Center for Research in Security Prices (CRSP) daily tapes record a distribution code of 3763 from the period 2003 to
2011. The distribution code identifies firms that issue stock as part of a non-taxable spinoff. Because we wished to examine firm performance in the two years preceding and the two years following a spinoff, and because of time-lags in data reporting, 2011 was selected as our cut-off date. This yielded a final sample of 65 spinoff firms. All spinoff firms were tracked for three years after the spinoff date to observe their level of strategic change. One spinoff firm was delisted due to bankruptcy proceedings in year 3, leaving us with 194 observations.

All data on spinoff performance and strategic change was gathered via COMPUSTAT. It included two years of financial performance information on each new spinoff from the Securities and Exchange Commission. All data on executives and members of spinoff boards of directors were hand collected from biographical information included in firm annual reports, proxy statements, and securities registrations. Parent ownership was gathered from proxy statements.

The sample size of the study compares favorably to prior spinoff research, based on the number of spinoffs investigated per year of the study’s timeframe (Frank & Harden, 2001; Sapienza et al., 2004). In addition, our ability to longitudinally examine firms’ strategic changes after spinoff affords this study a unique perspective on the impacts of parental ties on subsequent spinoff behavior. This longitudinal approach also enhances analytical power by utilizing each firm-year as an observation and allowed us to evaluate how changes occur at different points in the tenure of firms, rather than relying on aggregate measures of change over a 3-year period.

**Dependent Variable**

The dependent variable employed in this study is the level of strategic change in the spinoff firm in a given three-year period. We examined change over a three year window, year $t$ (observation year) to year $t-2$, to provide a larger window to examine strategic changes. Given the nature of the panel data we employ, we utilized the observation year and two years prior to
understand how strategic resource allocation differed from prior years. To measure strategic change, we calculated the 3-year variance of six measures that have been used as indicators of strategic change in prior research: leverage (debt/equity); advertising intensity (advertising/sales), R&D intensity (R&D/sales), SG&A intensity (SG&A/sales), property, plant and equipment newness (net PPE/gross PPE), and inventory level (inventory/sales).

For each observation year, the three-year variance of each ratio was calculated. We then subtracted out the industry average variance using the firm’s 4 digit NAICS code. Strategic change is measured as the sum of the values for the six industry adjusted measures. These six measures may be readily influenced by top executives (e.g., Karaevli, 2007; Quigley & Hambrick, 2012). To account for outliers, we adjusted all industry adjusted ratios greater than -1 or 1 to 1. Thus, the maximum possible value of the strategic change measure is -6 or 6.

Independent Variables

The independent variable of greatest interest in our research is “ties to the parent firm”. We measured this using four different indicators designed to illustrate the degree of spinoff firm ties to the parent firm, and the extent to which the spinoff firm is still committed to the parent tacitly or overtly. Directors with parent ties is a count of the number of directors who have or have had a relationship with the spinoff’s parent, as an executive or as a director.

Executives with parent ties is a count of the number of firm executives who have held an employment position with the parent firm or one of its subsidiaries at any point in their career. Both executives and directors with parent ties were measured as of the date of the spinoff or the first date of the fiscal year for the two observation years subsequent to the spinoff’s completion. Executives who previously worked for the parent are likely to either be committed to the strategy set by the parent firm in the spinoff or have a cognitive orientation which becomes reflected
similarly in the strategy of both the parent and the spinoff.

References to parent is a count of the number of references to the former parent firm in the spinoff firm’s annual report in the year prior to the observation year. This variable indicates the degree to which the spinoff firm refers to the parent firm in its formal communications. It is reflective of both the degree to which the spinoff is engaging in related transactions with its parent, as well as to what degree management is concerning itself with the parent.

Stock owned by parent is the percentage of stock voting rights in the spinoff firm held by the parent firm or, in rare cases, former parent firm executives. The parent’s stock ownership can be a means by which control is exercised over the spinoff firm to limit its discretion. Parent stock ownership was measured at the time the spinoff occurred and in each observation year following.

Finally, we measured prior year’s firm performance as the spinoff firm’s return on assets (ROA) adjusted for its industry’s average ROA in the year prior to the observation year (t-1).

Control Variables

We controlled for macroeconomic effects in our dataset by creating a dummy for years during the recession (2007-2009). We controlled for industry effects using six industry classifications: agriculture, fishing, mining, and construction; manufacturing; transportation, communication, and utility; wholesale and retail; and finance, insurance, and real estate, and service. Firm size is measured as the natural log of firm assets, since size may influence the degree of inertia. Firm slack is measured as current assets divided by current liabilities, as firms with greater liquidity have more flexibility in making changes to strategy. Spinoff in parent’s industry is a dummy variable as to whether the spinoff firm is in the same 4-digit NAICS industry as its parent. Spinoff firms in the same industry as the parent firm may perceive less of a need for change, as past perceptions are likely to have some future relevance.
Analysis

Given that we utilized a pooled dataset with up to three observations for each firm, we tested hypotheses using generalized estimating equations (GEE). To account for non-independence of observations, we specified an autoregressive correlation structure. Further, GEE requires the specification of a distribution family and link function. Given the distribution of our dependent variable, we utilized the normal (Gaussian) distribution and identity link function. The STATA function \textit{xtgee} was used to estimate all models and we utilized robust standard errors to provide a conservative test of our hypotheses and correct for misspecification that may occur in the correlation structure (Henderson \textit{et al.}, 2006; Quigley & Hambrick, 2012).

RESULTS

Table 1 displays the means, standard deviations, and correlations for study variables. Consistent with prior research, strategic change is negatively related to the spinoff firm’s performance prior to the spinoff. However, strategic change is positively related to the percentage of stock voting rights owned by the parent.

Information collected on the sample spinoff firms showed that the average spinoff has just over four directors and five executives with ties to the parent firm, references its parent firm an average of 192 times in its first annual report, and maintained about seven percent ownership in the spinoff. Parent retained an investment in 17 of our 65 spinoff firms. These values suggest that spinoffs often continue to have ties to the parent firm following the spinoff.

[Insert Tables 1 and 2 about here]

Table 3 presents the test results on our hypotheses using GEE analysis. Model 1 presents the results of control variables. As seen in Model 1, prior year’s firm performance is negatively related to strategic change, suggesting that poorly performing firms engage in significant
strategic change post spinoff. Strategic change thus seems closely related to the need for strategic change as a means of correcting prior performance problems or continuing with successful strategies. Firm slack is also negatively related to change; spinoff firms with lower liquidity engage in greater levels of change. This finding suggests that slack resources are a constraint on managerial discretion, as without resources managers engage in less change.

Model 2 presents a direct test of our hypotheses. Hypothesis 1 posits that relatively greater numbers of spinoff firm ties to the parent post spinoff will reduce the extent of the spinoff’s strategic change. We examine ties to the parent using four separate indicators: directors with parent ties, executives with parent ties, references to parent, and stock retained by the parent. As seen in Model 2, both directors with parent ties and references to parent are negatively related to strategic change. Thus, we find partial support for Hypothesis 1. Directors with parent ties are likely to prevent strategic changes following spinoff, perhaps because of their commitment to prior strategies undertaken by the parent firm.

References to the parent provide a measure of the degree to which the spinoff’s management is mindful of its prior parent, either through influence in the development of strategy, commitment to prior strategic choices, or through cognition which leads managers to continually pursue a similar set of strategies across a variety of organizations. This cognitive orientation of the spinoff’s management roots its dominant logic in a manner that is consistent with the parent firm, thus reducing the felt need for strategic change. Consequently, these references to the parent create ties that reduce the felt level of discretion senior executives have within the firm, reducing their changes in strategy. However, contrary to our prediction, parent stock ownership is significantly and positively related to strategic change. Ownership may serve as an incentive for the parent to afford discretion to senior managers when necessary, allowing
spinoff management to engage in new strategies and investments if deemed necessary.

If the reason for spinoff is that the parent sees too little strategic value in retaining the subsidiary but wishes to participate in the long-term profitability of the child firm, then retained stock ownership does not correlate with the parent’s interest in subsidiary management. In such a case, the concern of the parent is for spinoff profitability not for spinoff strategy. If the parent wanted to continue to manage the spinoff, it would have been retained as a subsidiary.

To more fully test whether the negative effects of ties to the parent were more damaging to the spinoff’s level of strategic change at higher levels of connectedness, or were diminished at high levels, Model 3 tests for quadratic, or curvilinear, effects between our variables of ties to the parent and strategic change. Following convention, all four measures of ties to the parent are standardized prior to calculating the quadratic terms. In all models, only standardized variables are presented. As seen in Model 3, there is a significant curvilinear effect for both executives with parent ties and references to parent with regard to strategic change.

References to the parent have a consistent, negative relationship with strategic change, which declines at high levels. That is, at high levels of parent references, additional references have lesser effects on the degree to which strategic change is enacted. While we make no predictions regarding the nature of the curvilinear effects, we believe this finding provides further support for Hypothesis 1, since strategic change is most strongly lessened when firms employ an average number of executives who were rooted in the parent firm’s dominant logic.

Hypothesis 2 posits that the relationship between spinoff ties to the parent firm and strategic change will be moderated by the spinoff firm’s pre-spinoff performance. Models 4 through 7 test interaction terms for each independent variable separately, with all variables standardized prior to analysis. As seen in Models 4 through 7, three of the four interaction terms
are significant, providing support for Hypothesis 2. Prior firm performance negatively moderates the relationship between spinoff firm strategic change and three variables: directors with parent ties, references to parent, and stock owned by the parent.

In summary, our results provide evidence that ties to the parent reduce the level of discretion exercised by the spinoff firm following its separation from its parent. We also find that discretion is further reduced when the subsidiary’s performance prior to the spinoff was above average, and when many ties are maintained between the parent and the spinoff.

**DISCUSSION**

This paper uses research on both spinoffs and managerial discretion to theorize that involvement overtly or tacitly by the parent through selection of directors and executives and retention of ownership influences the level of perceived discretion by spinoff executives. This influence on discretion alters the spinoff’s engagement in strategic change. In testing new theory relating to managerial discretion, we answer recent calls for research to examine multiple characteristics and forces related to managerial discretion (Wangrow et al., 2015).

Our theoretical arguments also suggest that ties to the parent firm can reduce the managerial discretion of the spinoff’s executives through cognitive orientations rooted in the parent’s dominant logic, a cognitive orientation that helped create strategy at both the parent and spinoff firms, or through overt control by the parent firm through ownership ties. As such, we suggest that linkages to the parent firm, both formal and informal, can have lasting effects on spinoff firm strategic behavior, even when spinoffs are designed to engage in strategic change.

Our results provide support for our theory that ties to the parent firm reduce managerial discretion by indicating that when spinoff directors have greater number of ties to the parent or when the spinoff firm references the parent firm in its communications, the spinoff firm engages
in less strategic change compared to the industry average measured across six investment decisions. These results suggest that ties to the parent limit discretion, reducing strategic change.

Unexpectedly, the percentage of stock retained by the parent positively influences the degree of strategic change by the spinoff. When the parent firm has a strong incentive to see the spinoff firm perform well, strategic change by the spinoff is more likely. Finally, we illustrate how pre-spinoff performance moderates the relationship between ties to the parent and level of strategic change following the spinoff. Performance is important because it conditions whether firms perceive the need to change strategy (Hutzschenreuter et al., 2012). Our results illustrate that strategic change is likely when the unit performed poorly prior to the spinoff.

Consistent with our theory, strategic change by the spinoff is least likely when ties are maintained to the parents via directors; parent’s retention of spinoff stock is high; pre-spinoff performance was high; and parent references are frequent in a spinoff’s communications. It appears that continued ties to the parent severely constrain spinoff management’s discretion in initiating strategic change when prior performance was high. However, when few ties to the parent are maintained and performance is high, spinoff firm executives are more likely to initiate strategic change. In such cases, the limited ties to the parent firm, coupled with the context of a spinoff, enable greater managerial discretion. Our data suggests that in these situations strategic change is initiated as a means for spinoff firm’s executives to break the prior bonds to the parents and reorient the spinoff firm’s strategy in a new direction, consistent with the spinoff’s purpose.

**Theoretical and Practical Implications**

Our theory and results provide several interesting theoretical and practical implications for future research. First, our results suggest that the ongoing relationship between the parent and spinoff firm affects the strategic decisions undertaken by spinoff firm managers. Future theory
should examine why parent firms maintain stakes in spinoff firms and how these stakes influence spinoff strategic decision making. A second important theory question relates to how spinoff firms create their identities following a spinoff. In some cases, the spinoff may not alter its existing processes and routines because it was previously run as an unrelated subsidiary. When numerous pre-spinoff linkages exist, however, a spinoff firm may have greater trouble forging its own path and creating an identity. Third, future theory building may examine the conditions under which strategic change will have the greatest positive impact on spinoff firm performance, as well as the conditions under which post spinoff strategic change may be detrimental.

Our research also has applications for practicing executives. Spinoff firms must understand how ties to the parent firm influence their cognitive choices. Awareness of such ties may allow spinoff executives to overcome instances where discretion is perceived to be lacking and to better challenge their own assumptions about whether strategic change is necessary.

Parent firms want to understand how their involvement affects the spinoff (Semadeni & Cannella, 2011). When parent firms spinoff entities, they should be keenly aware of how their choice of management and board members may influence the strategic actions of the firm.

**Limitations.** While we believe this study presents novel findings regarding strategic change by spinoffs, it is not without limitations. First, this study contains a relatively small sample of 65 spinoffs observed, which may create problems in identifying effects that influence their strategic change. However, the longitudinal nature of our data allows us to examine effects on strategic change over multiple years, enhancing the validity of our findings. Second, our dependent variable, strategic change, focuses only on the allocation of resources. Alternative examinations could look at the degree of other measures of business unit strategy change.

**Implications for Entrepreneurship Education.** From the perspective of corporate
entrepreneurship, it is important to consider how the ongoing relationship between the parent and spinoff firms influence managers’ cognitive choices and their efforts at strategic change. Students will want to understand the complexity of parent-child relationships as a blend of positives (i.e., resource support) and challenges (i.e., self-seeking obstructionism). Students of boards want to consider the ramifications of starting an independent spinoff with directors who have allegiance to the parent or commitments that hamper consideration of free market options.

CONCLUSIONS

Despite a wide variety of publications that investigate post spinoff performance and the focus placed on spinoffs as a means to allow for strategic refocusing, minimal empirical research examines whether and when spinoffs are able to reorient their strategies. Using managerial discretion theory, this paper is the first to examine why some new spinoff firms engage in strategic change, while others continue the strategy employed by their parent.

Our theory suggests that ties to the parent, cognitive or through ownership control, limit the perceived discretion felt by executives, which limits the level of strategic change in which the firm engages. Our findings support our theory, suggesting that linkages through executives and directors, and references in firm communications, result in lower levels of strategic change. We illustrate that parental stock ownership allows for greater change, perhaps as a means of improved incentive alignment. Further, prior performance is a strong condition that influences change, particularly when spinoffs with strong performance are either constrained in their ability to make changes by prior ties or set free through lessened ties. These findings are especially important for spinoff firms that seek to refocus their strategies.
REFERENCES


Kor YY, Mesko A. 2013. Dynamic managerial capabilities: Configuration and orchestration of top executives' capabilities and the firm's dominant logic. Strategic Management Journal 34(2), 233-244.


Quigley TJ, Hambrick DC. 2012. When the former CEO stays on as board chair: Effects on successor discretion, strategic change, and performance. Strategic Management Journal 33(7), 834-859


**TABLE 1**

Means, Standard Deviations, and Correlations

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Strategic change</td>
<td>-1.31</td>
<td>1.32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Prior year's firm performance</td>
<td>1.86</td>
<td>4.98</td>
<td>-0.18 *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Firm size</td>
<td>7.37</td>
<td>1.86</td>
<td>-0.09</td>
<td>-1.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Firm slack</td>
<td>2.89</td>
<td>6.25</td>
<td>-0.09</td>
<td>0.19 *</td>
<td>-0.13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Ag, fishing, mining, construction</td>
<td>0.08</td>
<td>0.27</td>
<td>-0.02</td>
<td>-0.07</td>
<td>0.07</td>
<td>-0.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Manufacturing</td>
<td>0.40</td>
<td>0.49</td>
<td>-0.04</td>
<td>0.15 *</td>
<td>-0.08</td>
<td>0.08</td>
<td>-0.24 ***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Transportation, communication, utilities</td>
<td>0.10</td>
<td>0.30</td>
<td>0.14</td>
<td>-0.13</td>
<td>0.18 *</td>
<td>-0.08</td>
<td>0.10</td>
<td>-0.28 ***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Wholesale, retail</td>
<td>0.06</td>
<td>0.24</td>
<td>0.15 *</td>
<td>-0.07</td>
<td>-0.05</td>
<td>-0.03</td>
<td>-0.07</td>
<td>-0.21 **</td>
<td>-0.09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Finance, insurance, and real estate</td>
<td>0.15</td>
<td>0.36</td>
<td>-0.18 *</td>
<td>-0.09</td>
<td>0.17 *</td>
<td>0.11</td>
<td>-0.12</td>
<td>-0.35 ***</td>
<td>-0.15 *</td>
<td>-0.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Service</td>
<td>0.20</td>
<td>0.40</td>
<td>0.02</td>
<td>0.08</td>
<td>-0.20 **</td>
<td>-0.07</td>
<td>-0.15 *</td>
<td>-0.41 ***</td>
<td>-0.17 *</td>
<td>-0.13</td>
<td>-0.21 **</td>
<td></td>
</tr>
<tr>
<td>11. Recession year</td>
<td>0.35</td>
<td>0.48</td>
<td>-0.01</td>
<td>0.15 *</td>
<td>0.08</td>
<td>-0.06</td>
<td>-0.01</td>
<td>0.00</td>
<td>0.04</td>
<td>0.08</td>
<td>-0.07</td>
<td>-0.01</td>
</tr>
<tr>
<td>12. Spin-off in parent's industry</td>
<td>0.26</td>
<td>0.44</td>
<td>-0.09</td>
<td>0.02</td>
<td>-0.05</td>
<td>0.11</td>
<td>0.09</td>
<td>0.08</td>
<td>0.03</td>
<td>-0.15 *</td>
<td>-0.06</td>
<td>-0.04</td>
</tr>
<tr>
<td>13. Directors with parent ties</td>
<td>4.08</td>
<td>2.72</td>
<td>-0.10</td>
<td>0.00</td>
<td>0.09</td>
<td>-0.05</td>
<td>-0.02</td>
<td>-0.08</td>
<td>0.13</td>
<td>-0.30 ***</td>
<td>0.08</td>
<td>0.12</td>
</tr>
<tr>
<td>14. Executives with parent ties</td>
<td>5.41</td>
<td>3.05</td>
<td>-0.13</td>
<td>0.04</td>
<td>0.52 ***</td>
<td>-0.17 *</td>
<td>-0.01</td>
<td>0.10</td>
<td>-0.02</td>
<td>-0.09</td>
<td>0.05</td>
<td>-0.08</td>
</tr>
<tr>
<td>15 References to parent</td>
<td>192.22</td>
<td>139.96</td>
<td>-0.00</td>
<td>0.13</td>
<td>0.17 *</td>
<td>-0.03</td>
<td>-0.04</td>
<td>0.00</td>
<td>0.07</td>
<td>0.17 **</td>
<td>-0.05</td>
<td>-0.08</td>
</tr>
<tr>
<td>16. Stock owned by parent</td>
<td>7.27</td>
<td>18.66</td>
<td>0.17 *</td>
<td>-0.05</td>
<td>-0.08</td>
<td>-0.03</td>
<td>0.18 *</td>
<td>-0.23 **</td>
<td>0.19 **</td>
<td>-0.08</td>
<td>-0.15 *</td>
<td>0.19 **</td>
</tr>
</tbody>
</table>

* p < 0.05, ** p < 0.01, *** p < 0.001 level
n=194

<table>
<thead>
<tr>
<th></th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Spin-off in parent's industry</td>
<td>-0.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Directors with parent ties</td>
<td>-0.09</td>
<td>0.23 **</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Executives with parent ties</td>
<td>-0.05</td>
<td>0.23 ***</td>
<td>0.22 **</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 References to parent</td>
<td>0.04</td>
<td>-0.03</td>
<td>-0.13</td>
<td>0.14 *</td>
<td></td>
</tr>
<tr>
<td>16. Stock owned by parent</td>
<td>-0.23 **</td>
<td>0.01</td>
<td>0.28 ***</td>
<td>-0.10</td>
<td>0.22 **</td>
</tr>
</tbody>
</table>
### TABLE 2

**Results of GEE Analyses of Ties to the Parent Firm on Spinoff Strategic Change**

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
<th>Model 3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff</td>
<td>SE</td>
<td>Coeff</td>
<td>SE</td>
<td>Coeff</td>
<td>SE</td>
</tr>
<tr>
<td>Prior year's firm performance</td>
<td>-0.03*</td>
<td>(0.02)</td>
<td>-0.03*</td>
<td>(0.02)</td>
<td>-0.03*</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Firm size</td>
<td>-0.07</td>
<td>(0.09)</td>
<td>-0.05</td>
<td>(0.09)</td>
<td>-0.08</td>
<td>(0.09)</td>
</tr>
<tr>
<td>Firm slack</td>
<td>-0.02***</td>
<td>(0.00)</td>
<td>-0.02***</td>
<td>(0.00)</td>
<td>-0.02***</td>
<td>(0.00)</td>
</tr>
<tr>
<td>Spinoff in parent's industry</td>
<td>-0.30</td>
<td>(0.31)</td>
<td>-0.21</td>
<td>(0.35)</td>
<td>-0.15</td>
<td>(0.33)</td>
</tr>
<tr>
<td>Directors with parent ties</td>
<td></td>
<td></td>
<td>-0.23*</td>
<td>(0.14)</td>
<td>-0.28*</td>
<td>(0.15)</td>
</tr>
<tr>
<td>Executives with parent ties</td>
<td>0.04</td>
<td>(0.16)</td>
<td>0.02</td>
<td>(0.15)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>References to parent</td>
<td>-0.15*</td>
<td>(0.08)</td>
<td>-0.28*</td>
<td>(0.14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock owned by parent</td>
<td>0.27*</td>
<td>(0.12)</td>
<td>-0.05</td>
<td>(0.30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directors with parent ties - squared</td>
<td></td>
<td></td>
<td>0.02</td>
<td>(0.11)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executives with parent ties - squared</td>
<td></td>
<td></td>
<td>0.16*</td>
<td>(0.08)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>References to parent - squared</td>
<td></td>
<td></td>
<td>0.04*</td>
<td>(0.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock owned by parent - squared</td>
<td></td>
<td></td>
<td>0.13†</td>
<td>(0.10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directors with parent ties x prior firm performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executives with parent ties x prior firm performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>References to parent x prior firm performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock owned by parent x prior firm performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.68</td>
<td>(0.70)</td>
<td>-0.92</td>
<td>(0.79)</td>
<td>-1.02</td>
<td>(0.81)</td>
</tr>
<tr>
<td>Observations</td>
<td>194</td>
<td></td>
<td>194</td>
<td></td>
<td>194</td>
<td></td>
</tr>
<tr>
<td>Number of spinoffs</td>
<td>65</td>
<td></td>
<td>65</td>
<td></td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Wald chi-square</td>
<td>141.01***</td>
<td></td>
<td>182.69***</td>
<td></td>
<td>155.03***</td>
<td></td>
</tr>
</tbody>
</table>

† p<.10  
* p<.05  
** p<.01  
***p<.001
<table>
<thead>
<tr>
<th>Model</th>
<th>Coeff</th>
<th>SE</th>
<th>Coeff</th>
<th>SE</th>
<th>Coeff</th>
<th>SE</th>
<th>Coeff</th>
<th>SE</th>
<th>Coeff</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior year's firm performance</td>
<td>-0.04***</td>
<td>(0.01)</td>
<td>-0.02*</td>
<td>(0.01)</td>
<td>-0.02*</td>
<td>(0.01)</td>
<td>-0.04**</td>
<td>(0.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm size</td>
<td>-0.11</td>
<td>(0.10)</td>
<td>-0.08</td>
<td>(0.09)</td>
<td>-0.09</td>
<td>(0.09)</td>
<td>-0.09</td>
<td>(0.10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Firm slack</td>
<td>-0.02***</td>
<td>(0.00)</td>
<td>-0.02***</td>
<td>(0.00)</td>
<td>-0.02***</td>
<td>(0.00)</td>
<td>-0.02***</td>
<td>(0.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spinoff in parent's industry</td>
<td>-0.24</td>
<td>(0.35)</td>
<td>-0.14</td>
<td>(0.34)</td>
<td>-0.12</td>
<td>(0.34)</td>
<td>-0.20</td>
<td>(0.34)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directors with parent ties</td>
<td>-0.30*</td>
<td>(0.16)</td>
<td>-0.28*</td>
<td>(0.15)</td>
<td>-0.28*</td>
<td>(0.15)</td>
<td>-0.30*</td>
<td>(0.16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executives with parent ties</td>
<td>0.07</td>
<td>(0.15)</td>
<td>0.02</td>
<td>(0.15)</td>
<td>0.01</td>
<td>(0.15)</td>
<td>0.04</td>
<td>(0.15)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>References to parent</td>
<td>-0.28*</td>
<td>(0.13)</td>
<td>-0.28*</td>
<td>(0.14)</td>
<td>-0.24*</td>
<td>(0.13)</td>
<td>-0.30*</td>
<td>(0.14)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock owned by parent</td>
<td>-0.05</td>
<td>(0.24)</td>
<td>-0.06</td>
<td>(0.30)</td>
<td>-0.07</td>
<td>(0.31)</td>
<td>0.02</td>
<td>(0.28)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directors with parent ties - squared</td>
<td>0.01</td>
<td>(0.10)</td>
<td>0.02</td>
<td>(0.11)</td>
<td>0.02</td>
<td>(0.11)</td>
<td>0.02</td>
<td>(0.11)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executives with parent ties - squared</td>
<td>0.15*</td>
<td>(0.08)</td>
<td>0.16*</td>
<td>(0.08)</td>
<td>0.17*</td>
<td>(0.08)</td>
<td>0.16*</td>
<td>(0.08)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>References to parent - squared</td>
<td>0.04**</td>
<td>(0.02)</td>
<td>0.03*</td>
<td>(0.02)</td>
<td>0.04**</td>
<td>(0.02)</td>
<td>0.04**</td>
<td>(0.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock owned by parent - squared</td>
<td>0.12†</td>
<td>(0.08)</td>
<td>0.13†</td>
<td>(0.10)</td>
<td>0.14†</td>
<td>(0.10)</td>
<td>0.10</td>
<td>(0.09)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Directors with parent ties x prior firm performance</td>
<td>-0.29***</td>
<td>(0.08)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executives with parent ties x prior firm performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.02</td>
<td>(0.07)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>References to parent x prior firm performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.08*</td>
<td>(0.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock owned by parent x prior firm performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.21***</td>
<td>(0.05)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.78</td>
<td>(0.82)</td>
<td>-1.03</td>
<td>(0.79)</td>
<td>-1.00</td>
<td>(0.82)</td>
<td>-0.92</td>
<td>(0.82)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>194</td>
<td></td>
<td>194</td>
<td></td>
<td>194</td>
<td></td>
<td>194</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of spinoffs</td>
<td>65</td>
<td></td>
<td>65</td>
<td></td>
<td>65</td>
<td></td>
<td>65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald chi-square</td>
<td>282.84***</td>
<td></td>
<td>157.98***</td>
<td></td>
<td>311.46***</td>
<td></td>
<td>153.99***</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Assessment of Income Inequality and Profitability among Academic Staff of Agripreneurship in Higher Institutions in Ondo State Nigeria.

Ehinmowo, O.O., Ilori, M.O., Fakokunde, T.O., Fatuase, A.I. and Akinwunmi, I.O.

Abstract

This study examined income inequality and profitability among academic staff of Agripreneurship in higher institutions in Ondo State, Nigeria using primary data. A multistage sampling technique was used to select 40 respondents with the aid of structured questionnaire. The data collected were subjected to descriptive statistics, Lorenz curve, Gini coefficient and profitability measures. Results revealed that majority of the academics in agripreneurship (75%) were males and 90% were married with an average age of 52 years. Fruit juice production (25%) and livestock production (30%) were the most common enterprises. The result of the Gini coefficient (0.48) indicated that there was presence of inequality among the respondents. The results of the expense structure ratio (ESR) were 0.07, 0.05, 0.09, 0.08 and 0.12 for each enterprise; indicated that enterprise in Agripreneurship is a profitable business in the study area.

Keywords: Academic staff, Agripreneurship, Lorenz curve, Gini coefficient, profitability.
INTRODUCTION

Entrepreneurship is an innovative process of vision, change and creation; it needs energy and passion towards the creation and implementation of new ideas and creative solutions (David, 2013). It includes willingness to take risk in terms of career, time and the ability to have an effective team force, having a business plan and the vision to recognize opportunity where others see confusion and chaos (David, 2013). Dollinger (2003) defines entrepreneurship in agriculture as the creation of innovative economic organization for the purpose of growth or gain under conditions of risk and uncertainty in agriculture. Entrepreneurship in agriculture is seen as one of the most important solutions to poverty, unemployment and low economic growth. The creation of ventures and growth of existing Agri – enterprises is vital to increasing employment generation, improvement of incomes and livelihood.

Agripreneurship which is drawn from both Agriculture and Entrepreneurship is of utmost importance to the country. The peculiarities of the country’s agriculture sector shows there is a need for Agripreneurship. Agriculture was the bane of Nigerian economy before the discovery of oil and it supports high share of employment generation to the rural populace and its raw materials for urban industrialization; it employs about two third of Nigeria’s labour force and contributing about 40.2% of the Gross Domestic Product (GDP) in 2011. Agripreneurship is needed for the socio – economic lifting of the populace through creation of agribusinesses, improvement in standard of living and economic growth and development. It helps in the productivity of various businesses; Agricultural productivity is the index of the ratio of the value of total output to total input used in farm production process (Olayide and Heady, 1982). Productivity efficiency means the attainment of production goal without wastage. Hence, enterprise inefficiency involves the disproportionate and excessive usage of all inputs (Ajibefun
Agripreneurship is greatly influenced mainly by the economic situation, education and culture (Singh, 2013).

Agripreneurship is the sustainable, oriented marketed agriculture, it involves an increasing demand for quality food, reduce malnutrition both in women and children and ensure food security for the nation. The relationship between Agriculture and Entrepreneurship in Sub-Saharan Africa has been well established in the literature (Spencer, 2002). It is revealed that the proportion of the population having businesses in agriculture sector is on the increase in Asia, the proportion has increased in Sub-Saharan Africa in which Nigeria is inclusive most especially among those teaching Agripreneurship (Apata et al., 2009).

One way of enhancing development of entrepreneurship in agriculture is by providing good agricultural training targeted at raising productivity and returns on investments. Evidence of income inequality is glaring in many low income countries of sub-Saharan Africa (SSA) in which Nigeria is inclusive. Studies further revealed that income inequality has risen in many developing countries over the last two decades (Addison and Cornia, 2001), where citizens of a country or community have such drastically diverging fortunes which could be as a result of social and political fracturing Income inequality may be considered in relation to a number of interrelated factors such as education, occupation and political differences. These factors do not only produce a similar pattern of income distribution but also create a context of community infrastructure through policies that affect education, transportation and public health (Bakare, 2012); among these factors education play a major role. This study therefore looks at the income inequality and profitability of academic staff who are engaged in Agripreneurship in selected higher institutions in Ondo State, Nigeria.
LITERATURE REVIEW

The Concept of Inequality: Inequality is a property of the distribution in a population of some (presumably valued) resource such as income and wealth. It could also be viewed or conceptualized as the dispersion of a distribution either in terms of consumption, income or any other quality or attribute that shows or tells the welfare status of a population.

Inequality also refers to the difference that exists across groups (for example countries, individuals, races and gender.) which could be in terms of income, opportunity, employment and wealth. Income inequality measures the extent of differences in income received by individuals in the population from the lowest to the highest disparity in the levels of income among individuals in the economy. Income distribution is a description of the fractions of population that are at various levels of income. Inequality is a broader concept than poverty in that it is defined over the whole distribution, not only the censored distribution of individuals or households below a certain poverty line (World Bank, 1999).

According to World Bank (World Bank, 1999), decomposition of income inequality is required for both authentic and analytical reasons as economists may wish to access the contribution to overall inequality within and between different sub-groups of the population, for example within and between workers in industrial sectors, urban and rural sectors.

Ipinnaiye (2001) found out that the decomposition analysis of income shows that non-farm income contributes the most to overall income inequality in both the peri-urban areas of Ibadan. The author also stated that in year 2000 income inequality was higher in peri-urban areas than urban areas. Adebayo (2002) found out that in the rural areas of Ibadan metropolis, agricultural income contributes most to the overall income inequality accounting for 91% while rental income makes the least contributing to overall rural income inequality accounting for just 0.17%.
In the urban areas, non-farm income makes the largest contribution to overall income inequality accounting for 80% while transfer income reduces urban overall income inequality by 0.13%. Elbers et al. (2003) estimated income inequality for Ecuador, Mozambique and Madagascar. Based on a statistical procedure that combines households’ survey data with population census data, the analyses showed that the share of within-community inequality in overall inequality is high. Specifically, Gini-coefficients computed were between $0.320 - 0.518$ and $0.320 - 0.440$ in Madagascar and Mozambique respectively.

**Hypothetical Concentration Curve of Income Distribution:** The main feature of the Lorenz curve includes the curve and the line of perfect equality. This curve is widely used to show income inequality. Figure 1 shows the horizontal axis, which measures the proportion of the population while the vertical axis shows the proportion of the national income that they receive. The farther away the Lorenz curve is from the line of perfect equality, the more unequal the distribution of income in that country or among the population.

![Hypothetical Concentration Curve of Income Inequality](image)

**Fig. one:** Hypothetical Concentration Curve of Income Inequality

Source: Lorenz, 1905
Gini Coefficient: This is used to show the degree of income inequality, between different entrepreneurs in a population. The Gini coefficient is a precise way of measuring the position of the Lorenz curve. It has a value between 0 and 1 and it is worked out by measuring the ratio of the area between the Lorenz curve and the 45° line to the whole area below the 45° line. If the Lorenz curve is the 45° line, then the value of the Gini coefficient would be zero. In general, the closer the Lorenz curve is to the line of perfect equality, the less the inequality and the smaller the Gini coefficient (Oluwatayo, 2008).

RESEARCH METHODOLOGY

Study Area

This study was carried out in Ondo State, Nigeria. The State is situated between longitudes 4° 15’ E and 6° 00’ E of the Greenwich meridian and latitudes 5° 45’ N and 7° 45’ N which is the North of the equator in the South western Nigeria. The State has 18 Local Government Areas with a population of about 3,440,000 and land area of 14,606 km² (National Bureau of Statistics (NBS), 2006). The annual rainfall is between 1000mm and 1500mm with a high daily temperature of about 30°C. The State is known for various forms of enterprises and learning institutions. Four higher institutions notable for agripreneurship such as; The Federal University of Technology, Akure, Federal College of Agriculture, Akure, Ondo State University of Science and Technology and Rufus Giwa Polytechnic, Owo were selected. The major occupation of most of the academic staff is lecturing, mostly in agripreneurship courses.

Data Collection and Sampling Techniques

The data used in this study were collected from a cross – sectional survey through direct personal interview and structured questionnaire. Sample was selected using a multistage sampling technique. The first stage was the purposive selection of higher institutions taking
Entrepreneurship in Agriculture. This is because of the preponderance of academic staff of Agripreneurship in the study area. They are those in fruit juice production, barbecue (fish smoking), fish rearing, poultry and egg production (livestock) and pig production. The second stage was the random selection of 40 respondents that were employed for this study.

**Analytical Techniques**

Analytical techniques employed include descriptive statistics such as mean, standard deviation, frequency and percentage to analyze the socio economic characteristics of the academics, the Lorenz curve and the Gini coefficient were employed for the measurement of income inequality, Gross Margin, Benefit – cost – ratio, Expense structure ratio and Net Profit to analyze the profitability of the enterprise.

Gini – coefficient is presented as follows:

\[
\text{Gini – coefficient (G)} = \frac{A}{A+B}
\]  
Eqn. 1

\(A = \text{Area that lies between the line of equality and the Lorenz curve}\)

\(A + B = \text{Total area under the line of equality}\)

The Gross Margin (GM) of an enterprise is the difference between the total value of production (TVP) and the total variable cost of production (TVC), that is,

\[
\text{GM} = \text{TR} – \text{TVC}
\]  
Eqn. 2

\[
\text{NP} = \text{TR} – \text{TC}
\]  
Eqn. 3

\[
\text{Benefit-cost-ratio (BCR)} = \frac{\text{TR}}{\text{TC}}
\]  
Eqn. 4

\[
\text{Expense structure ratio (ESR)} = \frac{\text{FC}}{\text{VC}}
\]  
Eqn. 5

**Condition:**

If \(\text{GM} > 0\), then the enterprise is profitable

If \(\text{GM} < 0\), then the enterprise is not profitable

The Net Profit (NP) represents the difference between total revenue (TR) and total cost (TC)
Where: NP = Net Profit; TR = Total Revenue (₦) TC = Total Cost (₦), GM = Gross Margin (₦), TVC = Total Variable Cost (₦)

However, if NP > 0, then the enterprise is profitable.

RESULTS AND DISCUSSION

Socio-economic Characteristics of Academics in Agripreneurship: The results of the socio-economic characteristics of the Academic staff are presented in Table 1. The results revealed that 75 percent of the academic staff were males, and dominated enterprises in Agripreneurship. The finding agreed with Mazzarol et al (1999) that males have significantly higher entrepreneurial intension than females. It was further showed that over 97 percent of the academics were above 40 years old and that the average age was 52 years while majority of them, about 63 percent were in the age bracket 50 – 59 years. This implies that the academics were still active to combine both the theoretical and practical aspect of agripreneurship. It was shown that 90 percent of the academics were married which implies that most of them were matured and able to take care of their families. 60 percent of the academics spent at most thirteen years in school, this indicates that the level of educational attainment by them was high and this could have positive impact on innovative ideas and improving their businesses; also they were literate. The mean household size was 5 persons per house and majority of them (52.5%) fell between 4 and 6 persons per house. The study also revealed that 25 percent of the academic staff were into fruit juice production, 30 percent into livestock production (poultry, meat and egg), 12.5 percent into fish barbecue, 20 percent into fish breeding, and 12.5 percent into pig production. This shows that fruit juice and livestock production formed the majority of what the academic staff in agripreneurship were involved in. This might be as a result of the availability and accessibility to raw materials as well as the ease to establish the business.
Table 1: Socio-economic Characteristics of the Respondents

<table>
<thead>
<tr>
<th>Entrepreneurs characteristics</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>30</td>
<td>75.0</td>
</tr>
<tr>
<td>Female</td>
<td>10</td>
<td>25.0</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 – 39</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>40 – 49</td>
<td>10</td>
<td>25.0</td>
</tr>
<tr>
<td>50 – 59</td>
<td>20</td>
<td>50.0</td>
</tr>
<tr>
<td>60 above</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>36</td>
<td>90.0</td>
</tr>
<tr>
<td>Unmarried</td>
<td>4</td>
<td>10.0</td>
</tr>
<tr>
<td>Household size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 3</td>
<td>14</td>
<td>35.0</td>
</tr>
<tr>
<td>4 – 6</td>
<td>21</td>
<td>52.5</td>
</tr>
<tr>
<td>7 – 9</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>Education (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 – 12</td>
<td>10</td>
<td>25.0</td>
</tr>
<tr>
<td>13 – 18</td>
<td>24</td>
<td>60.0</td>
</tr>
<tr>
<td>19 – 20</td>
<td>5</td>
<td>12.5</td>
</tr>
<tr>
<td>21 and above</td>
<td>1</td>
<td>2.5</td>
</tr>
</tbody>
</table>
Agricultural Enterprise

| Fruit juice production | 10 | 25.0 |
| Livestock production (egg, meat and poultry) | 12 | 30.0 |
| Barbecue (fish) | 5 | 12.5 |
| Fish breeding | 8 | 20.0 |
| Pig production | 5 | 12.5 |

Sample size = 40

Source: Computed from field survey data, 2015

The income of the academic staff is presented in Table 2. It was revealed that 30 percent of the academics in fruit juice production, 25 percent in livestock production, 40 percent in fish barbecue and 75 percent in fish breeding earned income less than ₦150,000 per annum; while academics in pig production earned income between ₦550,001 – ₦750,000 per annum this revealed that pig production is a lucrative agri-enterprise than the other enterprises; this could be as a result of the high prolificacy of pigs as well as introduction of cross breeding as a form of innovation thereby resulting in higher income than other enterprises.

**Table 2: Income of Academic staff in Agripreneurship per Annum**

<table>
<thead>
<tr>
<th>Academics income (₦)</th>
<th>Fruit Juice production</th>
<th>Livestock production</th>
<th>Fish Barbecue</th>
<th>Fish Breeding</th>
<th>Pig production</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 150,000</td>
<td>3 30.0</td>
<td>3 25.0</td>
<td>2 40.0</td>
<td>6 75.0</td>
<td>-</td>
</tr>
<tr>
<td>150,001 – 350,000</td>
<td>2 20.0</td>
<td>3 25.0</td>
<td>1 20.0</td>
<td>2 25.0</td>
<td>2 40.0</td>
</tr>
<tr>
<td>350,001 – 550,000</td>
<td>5 50.0</td>
<td>6 50.0</td>
<td>2 40.0</td>
<td>-</td>
<td>2 40.0</td>
</tr>
</tbody>
</table>
Lorenz Curve and Gini Coefficient Analysis: This analysis is meant to examine the pattern of income distribution among the academics in the study area and also to show the income inequality among those in Agripreneurship enterprises in the study area. The Lorenz Curve of income distribution which is a product of the graphical representation of the data in Table 3. This is further confirmed by the Gini coefficient, which is a measure of inequality in the distribution of income. A Gini coefficient of 0.48 was obtained for the study area. This shows that there is a level of income inequality among academics in Agripreneurship. The difference between highest and income earners in the study area was 48 percent.

Table 3: Computation of Lorenz curve and Gini Coefficient for Academics in Agripreneurship

<table>
<thead>
<tr>
<th>Quintile</th>
<th>Income</th>
<th>Proportion of Income</th>
<th>Cumulative of Income</th>
<th>Proportion of Quintile</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>20</td>
<td>600,000</td>
<td>0.03</td>
<td>0.03</td>
<td>0.2</td>
</tr>
<tr>
<td>40</td>
<td>1,450,000</td>
<td>0.07</td>
<td>0.10</td>
<td>0.4</td>
</tr>
<tr>
<td>60</td>
<td>2,220,000</td>
<td>0.11</td>
<td>0.21</td>
<td>0.6</td>
</tr>
<tr>
<td>80</td>
<td>5,115,000</td>
<td>0.26</td>
<td>0.47</td>
<td>0.8</td>
</tr>
<tr>
<td>100</td>
<td>10,705,000</td>
<td>0.53</td>
<td>1.00</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Source: Computed from field survey, 2015
Figure one: Lorenz curve

Total area under the line of equality (A+B) = 0.5

Area between the line of perfect equality and the Lorenz Curve (A) = 0.5 – 0.26 = 0.24

Gini – Coefficient $G = \frac{A}{(A+B)}$

Gini – Coefficient = $\frac{0.24}{0.50} = 0.48$

**Profitability Analysis**

The profitability analysis of enterprises in Agripreneurship in the study area as shown in Table 4 revealed that the cost elements comprise total variable cost and total fixed cost while the revenue presents the sales accruing from the enterprise. Academics in Agripreneurship in study area in fruit juice production, livestock production, barbecue (fish), fish breeding and pig production incurred ₦426,522, ₦359,023, ₦380,374, ₦229,619, ₦187,865 respectively for cost of production in the various enterprises. It was further revealed that total variable cost for each enterprise was 93.5%, 95.2%, 91.6%, 91.9% and 89.2% of total cost while the total fixed cost
was 6.5%, 4.8%, 8.4%, 8.1% and 10.8%. The cost of raw material used formed the bulk of total variable cost which implies that the materials used for each enterprise is important for determining the different outputs in the study area as also observed by Ehinmowo et al. (2015) among small scale cassava processors. The gross margin and net profit of each enterprise shows that it is a highly profitable venture in the study area. Also, the expense structure ratio of 0.07, 0.05, 0.09, 0.08 and 0.12 of the enterprises showed that the total cost of each enterprise was made up of fixed cost items. The benefit-cost-ratio of 1.80, 1.95, 1.67, 2.28 and 3.18 implied that an academic in Agripreneurship that invested N1 realized N1.80k, 1.95k, 1.67k as revenue or gained 80k, 95k, 67k on each naira expended while N2 and N3 invested realized N2.28k and N3.18k or gained 28k and 18k on each naira expended. This again re-establishes the fact that the enterprises are profitable in the study area.

Table 4: Profitability Analysis for Enterprises in Agripreneurship in Ondo State, Nigeria

<table>
<thead>
<tr>
<th>Variables</th>
<th>Value (₦)/percentage</th>
<th>Value (₦)/percentage</th>
<th>Value (₦)/percentage</th>
<th>Value (₦)/percentage</th>
<th>Value (₦)/percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruit juice</td>
<td>37,254/8.7</td>
<td>42,422/12</td>
<td>45,116/11.9</td>
<td>51,421/22.4</td>
<td>32,457/17.3</td>
</tr>
<tr>
<td>Livestock production</td>
<td>217,425/51</td>
<td>182,421/50.7</td>
<td>225,415/59.3</td>
<td>109,245/47.6</td>
<td>87,552/46.6</td>
</tr>
<tr>
<td>Barbecue (fish)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fish breeding</td>
<td>20,005/4.7</td>
<td>31,411/8.7</td>
<td>15,245/4.0</td>
<td>18,225/7.9</td>
<td>27,245/14.5</td>
</tr>
<tr>
<td>Pig production</td>
<td>71,445/16.8</td>
<td>25,115/7.0</td>
<td>47,013/12.4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transportation cost</td>
<td>52,415/12.3</td>
<td>60,335/16.8</td>
<td>15,245/4.0</td>
<td>32,245/14.0</td>
<td>20,345/10.8</td>
</tr>
<tr>
<td></td>
<td>398,544/93.5</td>
<td>341,704/95.2</td>
<td>348,034/91.6</td>
<td>211,136/91.9</td>
<td>167,599/89.2</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Depreciation of equipment</td>
<td>2,732/0.5</td>
<td>1,894/0.5</td>
<td>2,115/0.6</td>
<td>2,242/1.0</td>
<td>1,724/0.9</td>
</tr>
<tr>
<td>Rent</td>
<td>25,246/6.0</td>
<td>15,425/4.3</td>
<td>30,225/7.8</td>
<td>16,241/7.1</td>
<td>18,542/9.9</td>
</tr>
<tr>
<td>Total fixed cost</td>
<td>27,978/6.5</td>
<td>17,319/4.8</td>
<td>32,340/8.4</td>
<td>18,483/8.1</td>
<td>20,266/10.8</td>
</tr>
<tr>
<td>Total cost of production</td>
<td>426,522/100</td>
<td>359,023/100</td>
<td>380,374/100</td>
<td>229,619/100</td>
<td>187,865/100</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>768,564</td>
<td>698,657</td>
<td>634,897</td>
<td>524,655</td>
<td>598,234</td>
</tr>
<tr>
<td>Net Profit</td>
<td>342,042</td>
<td>339,634</td>
<td>254,523</td>
<td>295,036</td>
<td>410,369</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>370,020</td>
<td>356,953</td>
<td>286,863</td>
<td>313,519</td>
<td>430,635</td>
</tr>
<tr>
<td>Expense structure ratio (ESR)</td>
<td>0.07</td>
<td>0.05</td>
<td>0.09</td>
<td>0.08</td>
<td>0.12</td>
</tr>
<tr>
<td>Benefit cost ratio (BCR)</td>
<td>1.80</td>
<td>1.95</td>
<td>1.67</td>
<td>2.28</td>
<td>3.18</td>
</tr>
</tbody>
</table>

Source: Computed from field survey, 2015

CONCLUSION

The Lorenz curve showed that there was income inequality among academic staff in Agripreneurship given the Gini coefficient of 0.48. The study also revealed that most of the academics in Agripreneurship know the technicalities of the business because of the knowledge in Agripreneurship education being taught; also the gross margin and net profit of each enterprise showed that the business is profitable. This was re-established by the values of profitability measures such as BCR and ESR that enterprises in Agripreneurship are lucrative. The study thus
concluded that various seminars and training should be put in place that would reduce income inequality among those in agri – enterprises.

REFERENCES


David, R (2013): Entrepreneurship in Business Enterprise


Lorenz, M.O (1905) “Methods of measuring the concentration of wealth. Publication of the


IMMIGRANT ENTREPRENEURSHIP: A STUDY ON BRAZILIAN BUSINESSES AT POMPANO BEACH – FLORIDA

Eduardo Picanço Cruz ∴ Universidade Federal Fluminense – Rua Mario Santos Braga S/N, Sala 703B – Centro – Niterói – RJ – Brazil – Tel: +55(21)2629-9881– epicanco@id.uff.br

Roberto Pessoa de Queiroz Falcão ∴ Universidade Federal Fluminense

Cesar Ramos Barreto ∴ Universidade Federal Fluminense

Academic Abstract:
This exploratory case study on small-business owners in Florida, analyzes a Brazilian entrepreneurial community settled in Pompano Beach, the second largest Brazilian community in the U.S., and apparently typical ethnic enclave. The paper’s relevance relates to the current debate on immigration and to the collective understanding of the entrepreneurial aspects of these immigrants. Moreover, it contributes to entrepreneurship education with its insights about entrepreneur behavior and strategic choices among that specific group. This phenomenon has opened many study possibilities related to Brazilian nationals venturing overseas, such as its impact on the local communities regarding labor relations, economic mobility and transnationalism.

Keywords: immigrant entrepreneurship; ethnic enclave; transnational entrepreneurship; Brazilian immigrants; Florida

Executive Summary:
Synopsis: The paper presents an exploratory single case study on Brazilian small-business owners in Florida, analyzing and describing the profile of 40 entrepreneurs settled in Pompano Beach – a typical ethnic enclave. The relevance of the paper relates to the current debate on immigration and growing importance of Brazilian immigrants to the U.S.
Methodology: the researchers used the ‘snow ball’ technique to reach typical Brazilian entrepreneurs. The 40 in-depth interviews were triangulated with quantitative data collected in order to collect evidences about certain characteristics of that community. In addition, other sources of secondary information, e.g. newspaper articles and community web sites were consulted.
Findings: Pompano appears to be a typical Brazilian ethnic enclave. Nevertheless, the authors point out that alternative financial mechanisms and the bounded trust are not present in that community. The interviews revealed entrepreneurs’ growing skills level over the years, a reduction of business opening time, and a divergence between their current and previous activities in Brazil. However, all entrepreneurs demonstrated lack of knowledge on laws and local taxes before opening their businesses.
Implications for theory & So What: the research on different entrepreneurial ethnicities should help to develop a general immigrant entrepreneurship model.
Bibliometric review revealed that in the US, studies are concentrated on Hispanics and Asian communities. 

**Implications for practice:** the paper contributes to entrepreneurship education with its insights about entrepreneur behaviors and strategic choices. In practical terms, the description of this important Brazilian enclave in Florida could enlighten the impact on local communities regarding labor relations, economic mobility and transnationalism, giving subsidies for newcomers or players that are willing to exploit this ethnic niche. It could also reveal possible competitive advantages within ethnic enclaves, protection mechanisms against aggressive competitors within enclave boundaries and cultural influences of Brazilian small businesses over local markets.

**INTRODUCTION**

An astonishing amount of 60 million refugees fleeing from Northern Africa and the Middle East by the end of 2014 promoted one of the largest migration flows towards Europe, since World War II. Moreover, the current immigrant scenario shown by Aiyar et al. (2016) presents a growing stream of populations going from peripheral countries (like Brazil) for the core nations of the capitalist system (like the U.S. and Europe). Physical and social alienation are embedded in this displacement process. Moreover, not all immigrants have the qualifications in order to perform a legal trajectory, thus encouraging the configuration of various strategies including the use of financial, social and human capital stocks. Nevertheless, immigrants leaving Latin America to countries like the U.S. and Canada also follow this pattern.

Portes & Zhou (1992) indicate that there is a need to conduct studies on the various ethnic groups in order to achieve a general model of immigrant ethnic entrepreneurship, so this also represents one of the implications for entrepreneurship education of this study. This presents an opportunity for researching Brazilian entrepreneurs abroad and substantiates the relevance of the topic.

Ma, Zhao, Wang & Li (2013) carried out a bibliometric research through 1999 to 2008 and found shifting themes on immigrant entrepreneurship. The debate changed from ‘studies on enclave economies’, ‘ethnic business’ and ‘social inclusion’ to the research on ‘immigrant entrepreneurs’, ‘immigrant business networks’ and ‘transnational entrepreneurs’, showing the relevance of immigrant entrepreneurs within the globalized economy. Moreover, the authors point out some gaps and possible research topics, such as immigrant networks, transnational entrepreneurs, national culture and ethnic entrepreneurship, which will contribute to the development and refinement of theories on ethnic entrepreneurship, as also pointed out by Drori et al (2009).

The researchers also indicate the importance of researching Brazilian ethnic entrepreneurs for the following reasons:

1. The academic literature has a greater presence of studies on communities of Asian and Hispanic immigrants (Ma, Zhao, Wang, & Lee, 2013) and lacks studies on Brazilian communities. Therefore, the need to refine the theory on ethnic entrepreneurship through the studies of Brazilian communities compared to other immigrant communities will deepen the knowledge of works such as Portes & Zhou (2012), Jones & Ram (2010), Ram
et al (2011), Weitzel et al. (2010), although this comparison is not conducted is this very work;

(2) The Brazilian migratory phenomenon is more recent, intensified from the late 1980s and early 1990s on. Also, Brazilian immigrant communities experienced an increase especially in Florida, New York and Massachusetts (USA), England, Australia, Canada, among others;

(3) The need to investigate the behavior of transnational business networks created by the Brazilian community and these entrepreneurs (Chen & Tan, 2009; Drori et al, 2009; Tan, 2002). That also relates to the need to research the Brazilian national culture adapted into migration contexts. As well as the entrepreneurial culture itself of Brazilian ethnic firms. (e.g. Tan, 2002; Smallbone et al., 2010);

(4) Brazilian immigrant entrepreneurship is a recent phenomenon, which emerged alongside with three immigration flows associated with Brazilian environmental factors. Brazil’s economic distress combined with hyperinflation and political instability of the 1980’s caused unemployment and financial stagnation pushing a large number of Brazilian middle class citizens to become low-skilled migrant workers, especially in the United States, Japan and Europe (Assis & Sasaki, 2000).

In addition, the high interdisciplinary research on ethnic entrepreneurship could provide new ideas and new perspectives for the development of management studies and theories and its subdivisions.

This paper is an effort to understand through a theoretical approach the immigrant entrepreneurship and part of a series of investigations concerning Brazilian entrepreneurs established overseas. The researchers discuss issues concerning why, how, and when Brazilian citizens pursue new business ventures, either relying on their ethnic enclaves or focusing on the dominant market. In addition to that, they identify the immigrant’s reasons for leaving Brazil behind, as well as their personal impressions of the host country. The authors engaged in a thorough research on Brazilian entrepreneurial activities as far as Japan, Australia and Florida, United States.

The paper is organized as follows: section 2 will present facts about the Brazilian Immigration to the U.S., section 3 cites various theories of immigrant entrepreneurship present in the literature, section 4 describes the methodological approach used, section 5 presents the results and, finally, in Section 6 and 7 the discussion and conclusion of the article.

**BRAZILIAN IMMIGRATION TO THE U.S.**

The American dream is present on the third world’s middle class imaginary. From the original contact with a different reality that overwhelms tourists visiting the U.S., to the formal intent of venturing in a ‘land of opportunity’, the reasons for leaving Brazil could vary. Moreover, there is an association between economic crisis periods with the increase of violence, reduction of Government investments as well as migration flows. Brazil survived periods of hyperinflation and financial stagnation in the 1980’s and 1990, which encouraged considerable Brazilian immigration flows to the U.S. This Brazilian economic scenario was accompanied by the three

Also according to Sales (1992, 2001) and Sasaki (2006), Brazilian immigrants who arrived in the U.S. before 1990 belonged to Brazilian middle class and escaped from an economy characterized by high inflation rates. In an initial flow of immigration, Brazilian middle class citizens accepted engaging in low-skilled activities in the United States, Japan and Europe (Assis & Sasaki, 2000). Among these pioneers, the most successful ones were the first to open small businesses in foreign lands. That scenario was no different from other Latin American nations that had their skilled workers and investors escaping in search of better opportunities.

The growth of these businesses, both in number and in sales, generated a demand for labor. The exit strategy to pay cheaper wages and help relatives and friends was to summon Brazilians for these jobs (Drori et al., 2009). Therefore, this second wave of immigration emerges, characterized by low-skilled workers, with little or no familiarity with the English language.

Then, the third wave of immigration takes place from the 2000s on, when, despite experiencing an economic stability and GDP growth in Brazil, many entrepreneurs or wealthy families sought to protect their assets by investing in real estate and business in the U.S. They feared the social and redistributive policies implemented during the Labor Party (PT) government, led by President Lula.

Moreover, Pompano Beach depicts one of the most concentrated Brazilian immigrant populations of the U.S., representing 5.2 percent of the total of Brazilian immigrants living in the country, or 19,100 citizens. The number of Brazilian immigrants documented in the U.S. has remained at 10.5 percent of the total number of immigrants from all nationalities, which means 367,691 people, according to the U.S. Census Bureau - USCB (2013). In 2013, official figures show that Brazilian immigrants in Florida accounted for 20.58 percent of total Brazilian population documented in the United States. In 2013, official figures shows that Brazilian immigrants in Florida accounted for 20.58% of total Brazilian population documented in the United States. Updating the USCB data, Almeida (2013) stated that 60% of Brazilians living in Florida reside in South Florida, particularly in Miami-Dade (12,980), Broward (19,146) and Palm Beach (11,736).

Although there is no certainty about the actual number of Brazilians living in South Florida, the authors found that of the top 10 cities in Brazilian resident population in the U.S., five are located in South Florida and other four in Massachusetts, according to the City-Data.com (2015). Loch Lomond, a region of Pompano Beach city (Broward County) is home to the highest percentage of Brazilians living in the United States, accounting for 14.9% of the local population. The towns of Bonnie Loch-Woodsetter North and Deerfield Beach are ranked in eighth and ninth places respectively with 7.3% and 7% of Brazilians among residents.

The following part of the study presents a few theories about immigrant entrepreneurship.

**IMMIGRANT ENTREPRENEURSHIP AND ETHNIC ENCLAVES**

As Riddle (2008) shows, nowadays immigrants already represent 10% of the population of the developed countries. And alongside with immigration comes entrepreneurship.
Seminal papers on the subject abound in the literature, most of them emphasizing on sociological lenses. Some of them could be cited, such as Waldinger, Aldrich & Ward (1990), Butler e Greene (1997); Barret, Jones & Mc Evoy, (1996); Light & Gold (2000); Rath & Kloosterman (2000). This paper concentrates on the theories presented by Drori et al. (2009); Ndofor & Priem (2011); Portes (1981); Portes & Zhou (1992, 2012) and Zhou (2004), to be analyzed next.

In a classificatory effort, Portes & Zhou (2012) and Drori et al. (2009) present four types of immigrant entrepreneurial activities: ‘transnational entrepreneurs’ (TE); ‘ethnic entrepreneurs’ (EE), as in Kloosterman et al. (1998); Rath & Kloosterman (2000); Yinger (1985); ‘returning entrepreneurs (RE) and ‘international entrepreneurs’ (IE), as in McDougall & Oviatt (2000).

Especially both the transnational and the ethnic entrepreneurs, according to Drori et al. (2009), might take advantage of their own cultural leveraging or social capital. Further, as they integrate with their local communities, they tend to surpass their initial competitive advantages and become local players in the American economy, thus not depending anymore on their ethnic enclaves.

More specifically, the transnational entrepreneurs, according to Drori et al. (2009) account for approximately 3% of the globe’s population, and are a growing phenomenon. Actors living in at least two different economic and social environments carry out these cross-national activities. A constant flow of information, ideas, and business practices take place through their transnational entrepreneurial activities. That type of entrepreneur grew in the last decade, due to a few factors: the changing nature of international migration (Light, 2007; Riddle, 2008), the prevalence of e-mail, Internet, cheap telecom services and competitive airfares (Drori et al. 2009). Another issue that has indirectly affected that phenomenon was the change on visa policies. In fact, these policies directly affected inbound tourism and immigration to the country. Nevertheless, networking is also a key factor to transnational entrepreneurship, being at the same time support mechanisms and drivers of destination selection and business opportunities. It is worth of note three forms of network formations, such as ‘network of origin (ethnic, national), network of destination, and network of industry, so-called network of practice’ (Drori et al. 2009).

The enclave’s networking ‘lowers the barriers to emigration, but also enhances economic opportunities by leveraging resources toward the establishment of migrant friendly businesses. (Drori et al., 2009). These immigrant ventures take advantage of labor sourcing from migrant pools at lower rates. They also practice the dissemination of key market information, issues related to suppliers, technologies, and business practices. According to Zhou (2004), also three elements are part of ethnic entrepreneurship ecosystem. First, the ‘middleman minority’, being the ethnic groups in intermediate positions between the ruling elite and the people they rule, represented by small business owners. Second, the ‘ethnic market niches’, that are mainly labor intensive, low profit ventures that either supply exotic products to the mainstream markets or cater to unattended sectors of poor neighborhoods. Third, the ‘enclave economies’, which incorporate the two previous approaches, as an integrated cultural entity, with strong bonds of solidarity and co-ethnicity, privileged access to informal financial capital and ethnic workforce and spatial concentration of ethincial businesses.

Specific ethnic needs, such as ethnic foods or clothing, create a niche market within the community (Light 1972). These niche necessities also promote entry barriers related to specific
knowledge, language and cultural dimensions (Masurel, Nijkamp, Tastan, & Vindigni 2002),
enhancing their competitive advantages. These enclaves also promote unorthodox supply chains
and consumer outlets (Wilson & Portes 1980) as well as community sponsorship and alternative
financial capital supplies (Greene, 1997).

Two pathways are possible to the immigrant entrepreneurs. First, the ones who are socially
identified with their ethnic communities are more likely to become ethnic enclave entrepreneurs.
(Ndofor & Priem, 2011). They picture themselves connected to their communities by certain ties,
measures of prestige and even fate. Therefore, these entrepreneurs might venture in efforts to
improve their community status or even altruistic actions, such as helping a future competitor to
establish in this very enclave (Lee, 1999). Above all, immigrant entrepreneurs serve their ethnic
communities, using their connections to get access to key-resources, and to serve the ethnic
community altruistically. Conversely, individuals who have low identification with their ethnic
group, values or practices, or even despise their own compatriots (Spears et al., 1997) will try to
disassociate and differentiate themselves from their original ethnic group. (Ellemers & Van
Rijswijk, 1997).

Now, the significant influence of the types of capital-social human and economic capitals -
originally presented by Bourdieu (1986) is worth of note. The notion of economic or financial
capital is well known. Human capital relates to particular investments in schooling, education as
a whole, as well as work experiences, and work skills (Becker, 1993). Still, according to Ndofor
& Priem (2011) the social capital is connected to the immigrant entrepreneur’s professional
network, including other business owners, suppliers, service providers and even competitors.

The conventional knowledge related to immigrant entrepreneurship establishes that most
immigrants possess low human capital and therefore choose self-employment as the only viable
alternative to underemployment jobs (Aldrich & Waldinger, 1990). However, this is not the case
for all immigrants. Strong evidences of the Brazilian entrepreneur’s studies conducted by Cruz,
Barreto & Pinto (2015) point out to highly professional and skilled immigrants who also engage
in entrepreneurial ventures, corroborating with other studies. (Chaganti, Watts, Chaganti &
Zimmerman-Treichel, 2008).

Furthermore, immigrants with higher human capital originated from a better formal education
and work experience are less likely to risk entrepreneurial ventures. Other employment options
might have higher earnings for them, according to Becker (1993). On the other hand, immigrants
with less human capital might have fewer opportunities and face self-employment as a mere
substitute for that secondary market job income.

**METHODOLOGICAL APPROACH**

A single case study approach was used for this work and the analysis unit was the Brazilian
entrepreneurial community of Pompano. Through the in-depth interviews, details from the
entrepreneurs’ viewpoint were revealed. Thus, in this study, the researchers considered not just
the voice and perspective of these participants, but also of other relevant groups of actors, such as
the business associations, lawyers, and real estate agents. In addition, secondary sources of
information, such as newspaper articles and communities ‘websites were consulted. Therefore,
the so-called data triangulation arises from the need to confirm the validity of the processes (Yin,
2013). All the above configure a typical exploratory study (Yin, 2013), which could be a starting point for a broader social research.

The authors considered the Pompano Beach Area the region on which stand the cities and towns of Deerfield Beach, Fort Lauderdale, Pompano Beach (Broward County), Delray Beach and Boca Raton (Palm Beach County).

Now, regarding the data collection strategies, the authors divide it into three parts: i: how the qualitative data collection was conducted; ii: how the quantitative approach was used to support the description of each community; iii: how the researchers found the Brazilian entrepreneurs. Despite the qualitative strategy being the key approach for this comparative study, a quantitative data collection enabled the description of the immigrant entrepreneurial community.

The Qualitative Data Collection Strategy
According to Denzin & Lincoln (2005), a qualitative research relates to the skills of the researchers in observing the social world and establishing their propositions from how the subjects conceptualize their reality. In this sense, the selection of research subjects followed the typicality and accessibility criteria. Initially the researchers looked for Brazilian entrepreneurs that were established in that area of Florida- US. Regarding the accessibility criteria, the researchers applied the ‘snow-ball technique’ (Atkinson & Flint, 2001) through connections between members of the Brazilian entrepreneurial population. Thus, the chosen entrepreneurs were able to identify other members alike of the Brazilian community. The researchers followed Atkinson & Flint (2001) recommendations, of which the sampling process should end when the search for new respondents reaches saturation, so no more new contacts were added. It is noteworthy that after 25 to 30 interviews, the reports became very similar. Moreover, the addition of new respondents decelerated because many entrepreneurs recommended the same interviewees that have previously been indicated. However, in the present study, the researchers arbitrarily chose a number of 40 interviews to provide a better description of these entrepreneur groups (quantitative part of the survey). The authors noticed that saturation was reached in two aspects: saturation of interviewees and theoretical saturation.

Regarding the first aspect, the researchers conducted three trips to Pompano area, with a hiatus of about 10 months between each. In the first trip, the researchers had little knowledge of the Brazilian business owners, thus the strategy adopted was to visit a mall with large concentration of Brazilian businesses and ask entrepreneurs permission to interview them. On the second visit, the first interviewees indicated other entrepreneurs located in dispersed areas of the city. In the third and last visit, a prior contact was made with the Brazilian Business Group - a local association of Brazilian business owners, which indicated almost the same entrepreneurs who had already been interviewed. Related to the theoretical saturation, the researchers followed Denzin & Lincoln (2005) instructions, when the information provided by respondents had hardly any novelty to add-up to the material already collected, with no significant relevance for the improvement of theoretical reflection. The repetition found by the researchers were such as; similarity of reasons for leaving Brazil, akin opportunities of opening their first business in the U.S., resemblance in the size and complexity of the businesses, analog ways in how to manage and service (Brazilian) customers.
It is noteworthy that the interviewees’ saturation point depends indirectly on the theoretical framework used by the researchers, but rather on the objectives of the research, the depth level aimed to be explored, as well as the homogeneity of the study population. However, cognitive and affective issues coming from both the researchers and the respondents influence this tool. Thus, meeting that saturation point is subject to inaccuracies. In addition, travel costs of the research were a limiting factor to gather more respondents. Nevertheless, online interviewing is viable due to present technology, although it presents severe limitations regarding confidence and accessibility to respondents, because interviewees become skeptical and suspicious of the aims of the research.

In all cases, the in-depth interviews took place on site of the entrepreneurs businesses, through the application of a semi-structured script containing socio-demographic and business related questions. The average duration of the in depth assessments was 90 minutes, being the shortest ones 70 minutes and the longest ones 120 minutes. The in-depth interviews focused on detailed information about the entrepreneur’s thoughts, behaviors and life stories, specifically regarding their trajectory on the entrepreneurial venture in Florida.

**The Quantitative Data Collection and Triangulation**

As an additional source of information during the in-depth interviews, the researchers also collected quantitative data, through a semi-structured questionnaire. The information collected includes the socio-demographic data of the Brazilian entrepreneurs interviewed, such as age and schooling profiles, level of expertise and acquaintance of U.S. taxes and laws, reasons for leaving Brazil and period of departure, time from arrival to venturing in the U.S., business orientation (opportunity or necessity drive; enclave x main market orientation), etc.

This information is presented in tables and analyzed not as conclusive data, due to the sample sizes (40 entrepreneurs). Therefore, the main objective here is to characterize the community, but not, to generalize profiles. The methodological triangulation was completed with desk research and meetings with community leaders, lawyers, real estate agents and bank managers. In addition, the authors used secondary sources of information such as Bloem (2015) thesis, the US Census data and papers of Cruz, Barreto & Pinto (2015) and Cruz, Barreto & Amaral (2016). Further, the prolonged involvement and persistent observation in the field helped to increase probability of credible results.

**Locating Brazilian Entrepreneurs**

When the researchers started their study on Brazilian entrepreneurship in Florida, they found through a research on the web at first 78 Brazilian firms in Pompano Area. The following classified ads websites and Brazilian electronic magazines were consulted: www.brasilicando.com, www.verdeamarelo.net, www.brasileirosnosestadosunidos.com and brazilusamagazine.com. This online data collection evidenced a high concentration of Brazilian ventures in Pompano Beach.

In order to estimate or even locate Brazilian small business it is noteworthy the diversity encountered by the authors. That is represented by variables such as formal x informal businesses, established in physical facilities x virtual businesses, or labor intensive x single entrepreneurial businesses. Thus, many immigrants that belong or just serve the ethnic enclave are invisible to the mainstream market, such as a few informal entrepreneurs that specialize on
baking homemade cakes delivering directly to their customers, or a babysitter agency that focuses only on Brazilian families.

These ventures are not physically established, nor visible to the mainstream market, as opposed to restaurants or beauty parlors. They do not depend on any physical facility to operate, like an office or shop. However, these businesses collaborate significantly to the ethnic enclaves and make money go round in the social networks. After three years travelling and studying Brazilian entrepreneurship abroad, the authors assume that the ‘official numbers’ are important but not essential in order to understand immigrant entrepreneurial activities, patterns or behaviors. Table 1 shows small business owners interviewed segmented by business activities.

On the following section, the authors present the main empirical data collected.

**DESCRIPTION OF ENTREPRENEUR PROFILES THROUGH EMPIRICAL DATA**

On table 2, the authors present the socio-demographic data of the Brazilian entrepreneurs interviewed, such as age and schooling profiles. The majority of the sample is comprised of ages between 41 and 60 years old. Regarding the educational level of the interviewees, it is noticeable that entrepreneurs that came after 2000 present more years of schooling than the ones that came before 1990. The entrepreneurs who came between 1991 and 2000 follow the same pattern and show an intermediate level of education. Being an entrepreneur does not require a degree, so it is not strange to observe a higher percentage amount of people who had studied up to the high school.

On table 3 and 4, the authors present the immigration facts of the Brazilian entrepreneurs interviewed. This information includes their residence time in the U.S. and employment status upon arrival to the country, as well as the main reasons for leaving Brazil. 82.8% of the entrepreneurs are already living in the U.S. between 11 and 30 years, which shows that Pompano Beach holds a relatively established Brazilian community. In addition, 62.1% of them were unemployed by the time they arrived in the country. One of the current entrepreneurs mentioned that after graduating in Brazil, he sold his shop and even managed to get a good job in his area. However, he mentioned that what he earned wasn’t enough to leave his parents’ home and start-up a family. He also mentioned that there was no perspective of change; therefore, he decided to come to America and try something new.
Moreover, on table 4, regarding the main reasons to leave their mother nation, the respondents cited that they “no longer wanted to live in Brazil”, or that they “were delighted with the U.S. or else, they were encountering a “personal opportunity” to flee Brazil and immigrate to the U.S. Only 3.6% mentioned the reason being a “business opportunity”. This indicates that the idea to establish a business overseas occurred after some time living in the U.S. Still focused on the steps to leave their mother nation, researchers found that the average time between the idea of leaving Brazil and the definitive arrival in America was 2 years and 5 months, and 65.5% did not bring the family together at first.

---

Many Brazilian immigrants that “no longer wanted to live in Brazil” sustained that they could not make a better living while working there. In addition, some mentioned “the violence, the stress of everyday life, low wages, and lack of perspective”, which also led to comments like "all bad", "Brazil tired."

A few entrepreneurs also cited this discouragement with political and economic issues: “I left Brazil fearing Lula’s Government”, or even “I was disappointed with Brazil”, “the government lacks respect toward their citizens”, “Brazil is always the same: theft and very little opportunity” and “I gave in Brazil because of social and economic policies.”

With regard to the "delighted with the United States", framed responses from business owners mention that they decided to leave Brazil after a trip to the U.S., where they would have been delighted with the infrastructure and urban order, the cleanliness, the balance between taxation and social justice and formal education. A typical declaration was “I had a dream of living in America. Stepping in here was a golden dream!”

Personal opportunities refer to the category of the answers of those who left Brazil because they saw opportunities to study (mainly the English language) or work. Others revealed that the opportunity was actually the presence of relatives living in the United States, or even escaping personal problems, such as marriage related. Examples of stories are “I decided to come to the U.S. to learn about the American culture and study English for a year. Then I decided to stay.” Another respondent mentioned, “My son was born here, when my ex-husband worked in the U.S.”. In addition, some others cited they came to live their close relatives, such as their aunt or mother.

On table 1, the researchers present the business activities of the sampled Brazilian entrepreneurs. The data show a fair distribution of activities and no relevant concentration on any particular field of business.

Table 5 indicates that the interviewees had relative knowledge of their activities and about the American market. Several reasons were given to justify such unfamiliarity. Some reasons can be exemplified in the following quotations. An entrepreneur declared: “my work in Brazil did not exist in America”. A businessperson that works with technology in Brazil opened a bakery in the US justified: “the market here is much more competitive than in Brazil”. Some other
businesspeople cited similar declarations, a silkscreen print shop owner in Brazil that opened dry cleaners in the US said, “I didn’t find suppliers here in the US”, and some of them affirm “I saw that I had no Brazilian company in this business and decided to open mine”.

Now, regarding their motivations to start-up their businesses, the majority of Brazilian entrepreneurs mentioned that they were, at that time, opportunity driven, rather than necessity driven.

Another entrepreneur describes his trajectory on starting-up his business in the U.S. He mentions that he arrived in the country without any money. Therefore, he went through all natural ways of an immigrant, from washing dishes to washing cars and working as a waiter. Then he worked in travel agency until he had the opportunity to start the first business trading goods for Brazilians. After that, he started bringing Brazilian bands until he finally set up his current business.

The entrepreneurs that replied not opening their business in the same activities they had previously, blamed the American high competitiveness, the lack of knowledge about suppliers and different business models of equivalent activities in America.

Asking respondents generally if they understood what they were doing, Brazilian businessmen mentioned that they managed to start-up businesses in unfamiliar business activities. This reinforces the idea that they were entrepreneurs in essence. Thus, these entrepreneurs embraced the idea of exploring an opportunity and supported the risk of a new area, divergent from their previous experiences as entrepreneurs.

Although a few entrepreneurs showed an overwhelming experience at the time they came to the U.S., many mentioned the difficulties they faced.

**DISCUSSION**

The authors start the discussion based on the ‘ethnic enclave’ theories. They identify that the Brazilian immigration to the region began in the 1980s (Table 3). The interviews revealed that the first Brazilian immigrants had a satisfactory level of English and found jobs in local businesses, corroborating with how Bloem (2015) described this migration process to the area. The data also showed that 67% of Brazilians who arrived in the U.S. before 1990 had no prospect of employment (the overall average was 62.1% - Table 3).

Throughout the 1980s, the first Brazilian businesses were established in the region. According to what Portes & Zhou (1992) identified in their studies, these first companies in Pompano focused primarily on meeting the basic needs of the emerging community. Among the examples of activities are ethnic food shops and restaurants, communications, and money remittance to Brazil.
This remittance activity was the embryo of the future travel agencies – nowadays they sell tickets to Brazil and international tour packages. The last quotation relative to the table 6 “I saw that I had no Brazilian company in this business and decided to open mine” corroborates with this understanding.

Still confirming the observations of Bloem (2015), the researchers recognized that, between the decades of 1990 and 2010 a large contingent of Brazilians was ‘recruited’ to work in the emerging business of the Brazilian enclave in Pompano. Most of these migrant workers were less educated, and many had no previous familiarity with the English language. Sales (1992; 2001) cites that this type of recruitment has been one of the crucial factors for the ‘Governador Valadares phenomenon’, a Brazilian city that had a massive immigration to the U.S. This second wave of immigration involved growing amounts of people to that area. These immigrants were particularly less interactive with the American community, due to language barriers. Thus the authors suggest that this factor pushed to strengthening of the ethnic market niche, described by Light (1972) and Zhou (2004).

A few other assertions made by Drori et al. (2009) could be verified with the Brazilians in Pompano. First, that the enclave's networks ‘lowers the barriers to emigration’, second that they enhance economic opportunities by leveraging resources toward the establishment of migrant friendly businesses. In order to show evidences of these assumptions, the authors present the figure 1 that describes the percentage of companies that hire Brazilian, Hispanic and/or American employees. The figure highlights that, of the companies interviewed, 54% hire only Brazilians and only 8.4% of companies hire only Americans or Hispanics. The rest of them hire a blend of Americans, Hispanics and Brazilians. Some entrepreneurs agree that by employing Brazilians they “can have a closer relationship, talking exactly what I want in Portuguese” according to one of the interviewees.

Another interesting finding concerns the business dependence on Brazilian customers. Of the entrepreneurs established prior to 1990, 68% informed that their business depended on Brazilian buyers. However, that dependence drops to 33% of the established companies owned by entrepreneurs that arrived after the year 2000. This gives an indication that these early entrepreneurs sought not to enter in the mainstream markets or act as ‘middleman minorities’ (Zhou, 2004), for example, seeking the Latino local community. A businessman established prior to 1990 declared; “I always sell to Brazilians because they like dealing with ‘our people’”.

The respondents also informed that they returned their investment after a year and 10 months. This also provides evidences that ‘ethnic enclaves’ actually could generate quick cash as opposed to under-employment. Portes & Zhou (1992) also described that fact in the Miami Cuban enclave.

The difficulties to startup their businesses were namely related to the local environment, such as creating a business from scratch in a foreign land, Brazilian mistrusts in the United States, adaptation to the local customs, laws and environment.
Internal factors of the entrepreneur were also mentioned, such as the lack of information, the insecurity of trying a new business, the lack of experience, the capital involved on buying the first equipment, not having a mentor and finally, their struggle on creating brand awareness.

The researchers identified that the Brazilian who arrived before 1990 took an average of 15 years to open their businesses. The average drops to 6.22 years among those who arrived between 1991 and 2000 and to 5.27 years for those who arrived after 2001. It is noticeable that Brazilians are learning the modus operandi for opening businesses in the US. In addition, the local enclave community demands more services each year.

Although this Brazilian enclave in Pompano has several features described in the literature, they do not present the alternative funding mechanisms that occur in the Chinese, Cubans and Dominicans enclaves (Portes & Zhou, 1992). Moreover, the Brazilian enclaves do not perform a sense of bounded trust, described by several authors. Cultural factors might be responsible for these differences, but that should be further investigated.

Related to a ‘transnationalism’ perspective, the researchers questioned all respondent entrepreneurs whether if they were ‘willing to do business in Brazil?’ Surprisingly 73% said yes. The question now lies on identifying the most suitable category of Drori et al. (2009) studies:

1. Transnational Entrepreneurs (TE) – this study did not identify this specific type among the respondents, but the researchers found indications that this might be a future development, such as the current small trading companies;

2. Ethnic Entrepreneurs (EE) – this is still the main business strategy of Brazilian entrepreneurs in the area;

3. Returning Entrepreneurs (RE) - yet it does not seem a good alternative, considering the work of Siqueira & Santos (2012) with Brazilian U.S, returned immigrants, that the failed returned immigrants sought employment in their original towns. Moreover, according to the authors, is clear the sense of frustration due to returning to the same pre-emigration conditions, or, in some cases, worse off. On the other hand, the authors believe that young students attending American universities would return with a broader view of the market and become candidates to start-up innovative businesses back in Brazil, thus they could possibly fit in the Returning Entrepreneurs category - but this phenomenon is pretty recent;

4. International Entrepreneurs (IE) – this category was not found in the small and medium businesses of Pompano region, although real estate agents and Brazilian lawyers working in the area relate that, recently many South American investors are coming to the U.S.

Still regarding the relationship between the entrepreneurs and their homeland, when asked if they would return to live in Brazil, 80% of all respondents answered negatively. Among the main reasons listed were the difficulties they thought they would face to re-adapt to their country. In addition, many of them relate to the information that those who returned to Brazil repented.
Furthermore, these entrepreneurs expressed an idea that “in Brazil things do not work” and “violence prevails” or even that “in the United States everything is wonderful”.

Other examples of statements corroborate with this notion, such as “I'm homesick, but when I think about it, I reason that I do not want to go”, or “the worst thing for a Brazilian is to see America!” Another one said, “We no longer desire to return, there is a lot of bureaucracy and confusion”.

Some expressed thoughts that were more radical about Brazil, such as “there is only theft, and it does not get better, only worse”. Another one mentioned, “No one goes to jail, only the poor”, or “Brazil is hopeless”. Other respondents cites “One that lives here, when they go back to Brazil feel the violence and the lack of ethics of the Brazilian” or “I couldn’t bear to have all that I have achieved taken away from me!” One of the main concerns about Brazil regards to irregularities, illegality, and the mistrust that if they go back they will ever succeed as they did in the U.S.

Among those who said they would live in Brazil, the interviewers identified similar conditioning factors of those who would not return. For example, “I love Brazil, but if I ever go back I’ve got a feeling that I would only return to corruption and violence”. Another one mentioned, “I was born there and I know how it is. But one can ‘never say never’ ”. The statement “I have no short or medium-term plan on going back” reflects also the mistrust on Brazil.

At last, the researchers would like to bring into discussion the theories of the three types of capital (Bourdieu, 1986) applied to the Brazilian entrepreneurs in Pompano:

- On human capital, as shown in Table 2, the authors identified that over the years the Brazilian immigrant entrepreneurs arrived to the U.S. with higher levels of schooling. However, it is easy to identify the shortcomings of the implementation of the poverty theories and economic mobility concepts described by Portes and Zhou (1992). The particularities of the Brazilians differ at the point that, according to the classical theories, only the highly educated or highly experienced would have access to good yields abroad.

- Social capital perhaps is the greatest asset of the Brazilian entrepreneur community in Pompano. When they were questioned about the importance of their networks to establish their businesses, they declared identifying many opportunities, customers, suppliers and partners within their Brazilian networks.

- Economic capital is probably one of these three dimensions that present a weakness. Although the city of Pompano recently gained a ‘Banco do Brasil – Americas’ (Bank of Brazil) agency, the local manager cited that they deal mainly with personal accounts rather than corporate banking. Moreover, as previously mentioned, the authors did not identify any informal mechanisms of micro credit within the Brazilian community, coming from neither friends nor relatives.

CONCLUSION

The paper initially proposes to describe the Brazilian entrepreneurial community in Pompano Beach – Florida, as an effort to improve the general immigrant entrepreneurship theory.
Regarding seminal papers that had a first approach on ethnic entrepreneurship, this study enlightens the following aspects that can be used in an educational contexts: possible competitive advantages within ethnic enclaves, protection mechanisms against aggressive competitors within enclave boundaries, cultural influences of Brazilian small businesses over local markets. In a more local perspective this paper aims to investigate if whether these entrepreneurs were experienced or not on their current activities? Moreover, it also investigates whether they were acquainted with the U.S. laws and taxes.

The authors observed that the first Brazilian entrepreneurs that arrived in the area of Pompano Beach spent a few years working in American companies before engaging in their own entrepreneurial activities. This was a form to be acquainted with the American way of doing business, especially with regard to business location, supplier’s contacts and logistics. The interviews showed indications that most of them did not know the American laws and taxes before opening their businesses. These entrepreneurs dedicated themselves to establish the first portfolio of Brazilian products and services geared toward the community that was settled there.

This observation leads to answering the following two questions regarding law, taxes and venture orientation. The familiarity with the local laws and taxes was mainly obtained through daily activities. Accountants and lawyers were also important sources of that kind of information. It seems clear that these early entrepreneurs can be framed as opportunity driven, meeting the demand of a growing Brazilian community. The interviews corroborate to this conclusion.

Brazilians, who came to the region after the 1990s, composing the second wave of immigration, were able to learn about business in two ways. First, they engaged in local American companies. Second, as an employee of the Brazilian companies (the majority of them), that were expanding. Researchers collected testimonies that showed a mix of opportunity and necessity driven entrepreneurs. Many of them, reported coming to the U.S. with low level of qualification or training. However, this second group of emerging entrepreneurs had almost none familiarity with the local laws and taxes before opening your business.

Many entrepreneurs who arrived in Pompano Area after the 2000s (third wave), have focused on the American main market. Their level of schooling was higher. In addition, they were more business experienced and brought significant amount of capital to invest. The literature on Brazilian immigration in South Florida also corroborates with that. This last group of Brazilian entrepreneurs still lacked knowledge about the local laws and taxes before opening their businesses.

Moreover, in cities like Miami and Orlando, the researchers observed a brand new group of Brazilian entrepreneurs, arriving to the country in order to invest considerable amounts of capital. Conversely, these newcomers were supplied with a substantial volume of information about laws and taxes. It is not uncommon for them to hire beforehand ‘due diligence services’ from American or Brazilian consultants established in the US.

**Implications for Entrepreneurship Education**

A case study approach is always very useful as a learning resource for management’s students. As a matter of fact, Harvard University coined a robust methodology followed by many other schools of management or entrepreneurship.
After conducting the in-depth interviews and field observations of the Brazilian community in Pompano Beach, the researchers conclude that this immigrant community could be framed as an ‘ethnic enclave’, which implies on certain characteristics. The seminal authors, as a starting point, presented immigrant communities in the U.S. such as Chinese, Cubans and Dominicans, conforming the mainstream of the debate. Therefore, a study about Brazilians can improve concepts discussing similarities and divergences between entrepreneurs from different origins.

The reasons for that can be found in Portes & Zhou (1992) when they suggest that a model for each ethnicity should be researched and developed as a way to create a general model. This gap opens a window for new studies and theoretical approaches that might explain immigrant entrepreneurship from any background. As previously mentioned on the discussion section, for instance, some features are not present in that group, particularly the alternative financial mechanisms and the bounded trust.

Eventually, after concluding other studies, the authors will be able to reach a theoretical model, which explains Brazilian entrepreneurs’ characteristics and behaviors. Probably that will support other studies with new findings, or parameters, which validate, or refutes immigrant entrepreneurial behaviors, eventually using hypothesis-testing methodologies. Moreover, comparative case studies between Brazilian and other ethnic communities might bring development to the theory.

REFERENCES


Acknowledgments: The authors acknowledge the financial support of FAPERJ.

APENDIX

Table 1: Brazilian Business Interviewed segmented by business activities

<table>
<thead>
<tr>
<th>BUSINESS ACTIVITIES</th>
<th>POMPANO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Consultancy</td>
<td>3</td>
</tr>
<tr>
<td>Tourism (travel agencies)</td>
<td>2</td>
</tr>
<tr>
<td>Restaurants</td>
<td>2</td>
</tr>
<tr>
<td>Cafeterias and Bakeries</td>
<td>4</td>
</tr>
<tr>
<td>Accountants</td>
<td>3</td>
</tr>
<tr>
<td>Insurance</td>
<td>1</td>
</tr>
<tr>
<td>General Retail</td>
<td>7</td>
</tr>
<tr>
<td>Associations</td>
<td>2</td>
</tr>
<tr>
<td>Print shops</td>
<td>1</td>
</tr>
<tr>
<td>Imports/Exports</td>
<td>4</td>
</tr>
<tr>
<td>Construction</td>
<td>3</td>
</tr>
<tr>
<td>Dry Cleaning</td>
<td>2</td>
</tr>
<tr>
<td>Maintenance Services</td>
<td>4</td>
</tr>
<tr>
<td>Beauty parlors</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>40</strong></td>
</tr>
</tbody>
</table>

Source: organized by the authors, estimate based on ads available on websites or Brazilian newspapers

Table 2: Socio-demographic Profile of Brazilian entrepreneurs in Pompano Beach Area

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Up to 30</th>
<th>30-40</th>
<th>41-50</th>
<th>51-60</th>
<th>61-70</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3,4%</td>
<td>10,3%</td>
<td>38,1%</td>
<td>37,9%</td>
<td>10,3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Schooling vs. Arrival Year</th>
<th>Elementary School</th>
<th>High School</th>
<th>College/Univ.</th>
<th>Postgraduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 1990</td>
<td>11,1%</td>
<td>66,7%</td>
<td>22,2%</td>
<td>0,0%</td>
</tr>
<tr>
<td>Between 1991 e 2000</td>
<td>0,0%</td>
<td>54,5%</td>
<td>27,3%</td>
<td>18,2%</td>
</tr>
<tr>
<td>After 2000</td>
<td>0,0%</td>
<td>0,0%</td>
<td>44,4%</td>
<td>55,6%</td>
</tr>
</tbody>
</table>

Source: Data collected through in-depth interviews conducted by the authors

Table 3: Immigration Facts
### Table 4 Main Reasons for Leaving Brazil

<table>
<thead>
<tr>
<th>Main Reasons</th>
<th>Pompano Beach</th>
</tr>
</thead>
<tbody>
<tr>
<td>We no longer want to live in Brazil</td>
<td>42.9%</td>
</tr>
<tr>
<td>Delighted with the U.S.</td>
<td>10.7%</td>
</tr>
<tr>
<td>Personal Opportunity</td>
<td>42.9%</td>
</tr>
<tr>
<td>Business Opportunity</td>
<td>3.6%</td>
</tr>
</tbody>
</table>

Source: Data collected through in-depth interviews conducted by the authors

### Table 5 Knowledge of the Market and/or Business – Pompano Beach Area

<table>
<thead>
<tr>
<th>Did you have previous knowledge of your business activity?</th>
<th>Did you have previous knowledge of the American market?</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>58%</td>
</tr>
<tr>
<td>NO</td>
<td>42%</td>
</tr>
<tr>
<td></td>
<td>52%</td>
</tr>
<tr>
<td></td>
<td>48%</td>
</tr>
</tbody>
</table>

Source: Data collected through in-depth interviews conducted by the authors

### Table 6 Motivations toward Starting-up their Business - Pompano Beach Area

<table>
<thead>
<tr>
<th>Motivation</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity driven</td>
<td>65.5%</td>
</tr>
<tr>
<td>Necessity driven</td>
<td>34.5%</td>
</tr>
</tbody>
</table>

Source: Data collected through in-depth interviews conducted by the authors
Fig. 1 Percentage of employees of Brazilian companies hired by origin, in Pompano Beach Area, FL. Source: formulated by the authors
Corruption, Turnaround and Economic Growth: Recovering the Societal Infrastructure of Entrepreneurship
William A. Andrews  Stetson University

ABSTRACT
Entrepreneurship requires a supportive institutional environment to flourish. Using qualitative methodology, this research explored how in just 8 years, one city, Barranquilla, Colombia, dramatically changed the ethical climate of the city, creating an attractive environment for business growth and entrepreneurship. The model that emerged from the meta-themes offers a description of how BAQ redeemed its civil society from corruption. It includes the following constructs: New Leadership, Professionalizing of Staff, Quick Wins, Financial Recovery, Expanded Partnerships, and Developmental Strategies. SEARCH TERMS: Corruption, Economic growth, International entrepreneurship, civic leadership, development entrepreneurship

Introduction and Literature Review
The link between entrepreneurship and corruption has been fairly well established in the literature. Chowdhury et.al (2015) showed higher levels of corruption were associated with reduced cross-border entrepreneurship, a finding particularly relevant to this study since Barranquilla was orienting its development strategy toward attracting foreign investment. Belitiski et.al., (2016) found that corruption was generally negatively correlated with market entry although this effect was reversed in high-tax jurisdictions, presumably by facilitating tax evasion. The importance of the societal or institutional environment in facilitating or impeding entrepreneurship has been recognized by Chowhurdy et.al. (2015), Estrin (2013), Welter and Smallbone (2011), Addis et. al. (2010), Ackerman (2007) and others. Anokhin and Schulze (2009) added that reducing corruption increased confidence in a country’s institutions and stimulated innovation and entrepreneurship, a finding corroborated by this research. This research sought to understand and model the process by which one city, Barranquilla, Colombia,
transformed itself in just 8 years from a bankrupt, drug-infested caldron of crony capitalism to a model city for attracting capital, talent, and new businesses (U.S. Department of Commerce).

Methodology

The primary methodology was a qualitative research method known as grounded theory (Glazer and Strauss, 1967). Relying heavily on interview and observational data, grounded theory allows for an evolving set of hypotheses as disparate data support or undermine previous provisional hypotheses. In grounded theory research, themes emerge from field notes through axial coding, a process by which the researcher attempts to define and contextualize relevant constructs, categories and relationships.

Responses were codified by theme, initially yielding 31 themes. Subsequently, these 31 themes were conflated into seven meta-themes. The reporting of the findings were organized by meta-theme. To preserve anonymity, respondents were referred to by an alpha-numeric designation (e.g. B1, B17, etc.).

FINDINGS AND DISCUSSION:

FIGURE 1    CONCEPTUAL MAP OF BARRANQUILLA’S TURNAROUND
The conceptual map identifies some basic directional associations between six meta-themes and Restoring Confidence. These primary associations are shown with arrows. Other secondary associations are suggested in the discussion sections of this manuscript (for example, external partnerships were easier to engage once the staff was professionalized). It should also be noted that only slight evidence emerged that these constructs implied a sequence or chronology. With the clear exception that a change in leadership precipitated the other changes, the other constructs proceeded more or less simultaneously with one another with the possible exception of “Quick Meaningful Wins”, necessitated as an early priority to quickly distinguish the new regime from the previous series of self-serving ones.

The Turnaround: An Overview - Restoring Stakeholder Confidence

Restoring stakeholder confidence was the umbrella construct for all of the other constructs and was recognized by the newly-elected Mayor Char as such (B15); moreover, it was co-dependent with all of the other constructs. For example, the key to initiating substantial partnerships was restoring confidence in the government. Conversely, once such partnerships were established, they enhanced the credibility of the government. Because Char’s mayoral candidacy was heavily supported by the business community, Char recognized the political and societal imperatives of immediately addressing some of the concerns of the poor to pacify any concerns that their voice would no longer be heard. As the various voting constituents saw that public revenue was being used for noticeable public benefit, confidence began to accrue to the Office of the Mayor.
Conclusions and Implications

Contributions to Practice – Corruption is ubiquitous and seems intractable in many parts of the world. This research shows how one city broke the stranglehold of corruption, and replaced it with an economic environment conducive to entrepreneurship. It is hoped that the model may provide insights to other jurisdictions frustrated by corruption from being able to build an entrepreneurial ecosystem. The model that emerged from the meta-themes is essentially a story map of entrepreneurial re-birth of a city: New Leadership, Professionalizing of Staff, Quick Wins, Financial Recovery, Expanded Partnerships, and Developmental Strategies. The application of these constructs to particular municipal situations may provide insight into how to effectively rebuild a city’s entrepreneurial capacity through the reclamation of its civil institutions.

It is hoped that future research will be able to test aspects of this model using a sample size large enough to allow for generalizations on some of the proposed associations, and that the model will eventually be employed by those municipal leaders who find themselves with a similarly daunting turnaround challenge.

Complete References for Full Paper


Central Bank of Colombia, Balance of Payments Tables 2016
http://obieebr.banrep.gov.co/analytics/saw.dll?Go


S.M. Mijanur Rahman and Mahmudal Hasan

Family is the most primitive and long lasting institutions of human history. As an institution, family is contributing maximum benefit to the society, which is commonly remaining unrecognized and uncounted. An organizational tie within a family is highly defined and explicit than any other forms of organization. Family is the fundamental unit of our social construct. Irrespective of all other difference, we all belong to a common identity i.e. family identity. Family is the miniature of our society; even it is a prototype of a country in terms of its functionalities. Family bondage is a unique and irreversible relationship based on the ethical obligation. Family is the first place to learn for individuals and learning of basic life skill grows from family and mindset are shaped by family cultures which have everlasting and enormous effects on the rest of the life. Culture of a society mostly depends on families' culture of that society because individual characteristics of a person are predominantly influenced and shaped by family environments.

Family Based Capitalization (FBC) is a (proposed) program for restoring family as a changing agent towards an entrepreneurial society through promoting Familipreneurship. Familipreneurship is an interactive and evolving tool, which capacitates a family to utilize their individual and collective scattered capitals (Financial capital, Human capital, Physical capital, Social capital, Knowledge capital, Cultural capital, Intangible capital, and natural capital) as performing capitals to optimize wealth. Internal relationships (bonding), relations with other communities (bridging) and relations with their natural and institutional environment (linkage) are the largest social capital of mankind which remains mostly unused, even undetected. Familipreneurship unfolds the opportunities to utilize social capitals through the matrix relationships of individuals and family with society, nation, and the world. Utilization of social
capitals accelerate the process of wealth optimization through maximizing performing capitals by accumulating scattered, unused and undetected resources and pave the ways for shaping the future towards an entrepreneurial planet.

FBC proposes family as a level of intervention and analysis for socio-economic development which is the most effective way of desired and sustainable change towards an inclusive society to establish a virtually boundary less/borderless entrepreneurial world to ensure the evolution of an equitable and just human civilization.

**Vision of FBC**

→ Wealth maximization for equitable and healthy society.

- → Restoration of inherited but shrink tradition and indigenous knowledge, culture and practices.
- → Establishing social norms and values through enriching Family values.
- → Multidimensional role of family as a social catalyst to remove all sorts of discrimination and injustice.
- → Institutionalization of social educational system (Familipreneurship Education) through family and Community.
- → Promoting entrepreneurial culture
- → Converting family into Enterprise by counting its in-house non-monetary activities in GDP
- → Making scattered/unused/undetected resources into performing Capitals
• Integrating work and family

• Family reunion

• Optimum utilization of social capital

• Reduced reliance on Finance capital

**Why Family Based Capitalization (FBC)?**

**Family Based Capitalization (FBC)** for Economic Development and Employment Generation through **Promoting #FAMILIPRENEURSHIP** to maximize wealth and optimize performing capital **BY**

• INCREASING social capital by promoting/using/developing Familiness

• EXPLORING potentialities of individuals

• VALUING human, knowledge and social capital

• OPTIMIZING use of human, knowledge, social, natural capital

• MINIMIZING the roles/needs of finance capital

• ORGANIZING scattered resources into performing asset and capital

• UTILIZING financial opportunities

• FACILITATING Family Edutainment

**TO Promote GREEN & sustainable Family Enterprise FOR**

• RESTORING inherited but shrink tradition and indigenous knowledge, culture, practices and values
• INSTITUTIONALIZING social educational and learning system through family based *Edutainment*.

• CREATING employment opportunities within the family and/or community to reduce internal labor migration.

• IMPROVING accessibility, reliability, function ability, transparency and structural improvement of our social systems.

• ESTABLISHING multidimensional role of family as a social catalyst to remove all sorts of discrimination and injustice towards an inclusive society with valuing diversity.

This will enable and capable us to:

• DEVELOP entrepreneurial skills;

• UNDERSTAND the process of starting new ventures;

• CREATE, identify, and evaluate new venture opportunities;

• TRANSFORM opportunity into success;

• OPTIMIZE strength to overcome threats & weakness;

• INTERPRET circumstances and quantify the value proposition;

• NAVIGATE the alternative resources option;

• USE social capital;

• ENHANCE and expand linkage & networks;

• INCREASE applied knowledge in solving personal and social problems;
• OBTAIN basic banking knowledge & funding options for credit/advance procedures;

• GAIN financial and professional support;

• CALCULATE credit worthiness before applying for funding;

• PREPARE an action plan with time frame;

• ASSESS the needs of resources for success;

• START to transform dreams/ideas into earning ventures;

*DO WHAT YOU ENJOY!*
Abstract: This paper is a conceptual argument to promote Familipreneurship as a comprehensive approach of entrepreneurship. ‘Familipreneurship’ means entrepreneurship of a family as an entrepreneurial unit, which enables them to transform their individual, and collective scattered capitals (Financial, Human, Social, Knowledge, Cultural, and natural capitals) into performing capitals to maximize wealth. This paper primarily investigated the power and capabilities of indigenous business family those who are doing business from generation to generation without any or less academic qualification or formal entrepreneurial education through observing for ten years as part of professional responsibilities, then reviewed existing literature extensively to construct a theoretical understanding and relates them with existing theories. Based on real life experience and extensive literature reviews, this paper is both exploratory and explanatory attempting to describe the notion of Familipreneurship and its implication. This paper showed family ties are the crucial factor in family enterprise, and it is an attempt to outline the special characteristics of Familipreneurship. Existing researcher are concentrated on the business hour activities of family enterprise and individual aspects of entrepreneurs and ignore family dynamics behind the shadow but Familipreneurship proposes families as a single unit and considered their 24*7 activities to solve the unresolved questions.

Key Words: Familipreneurship, Familiness, Social Capital, Family Enterprise

Introduction:

This paper is a conceptual argument to promote Familipreneurship as a comprehensive approach of entrepreneurship. ‘Familipreneurship’ means entrepreneurship of a family as an entrepreneurial unit, which enables them to transform their individual, and collective scattered capitals (Financial, Human, Social, Knowledge, Cultural, and natural capitals) into performing capitals to maximize wealth. Familipreneurship denotes entrepreneurship of a family as an entrepreneurial unit, which enables them to transform their individual and collective scattered capitals into performing capitals to maximize wealth (Rahman, 2011). Familipreneurship refers to the entrepreneurial spirit running through the family as a whole and not just confined to a single individual. The promotion of Familipreneurship will create a natural environment of transferring inherited knowledge, skill and important lesson and experience across the generations. This courageous collective effort will enable them to be blended together to reach their goals. Familipreneurship is an interactive and evolving phenomenon. Internal relationships (bonding), relations with other communities
(bridging) and relations with their natural and institutional environment (linkage) are the largest social capital of humanity, which remains mostly unused, even undetected. Familipreneurship intends to utilize social capitals through the matrix relationships of individuals and family with society, nation, and the world. Utilization of social capitals would accelerate the process of wealth optimization through maximizing performing capitals by accumulating scattered and unused resources for shaping the future towards an entrepreneurial planet.

Human civilization cannot exist without the family. Family is not a place; it is an institution. Whole is greater than the sum of its parts; a group is more powerful than the sum of same individuals. As a group, internal bondage among the family members are highly defined and often determined by moral obligation. Kinship is the largest social capital, which is the foundation of our social life. Family as an entity is the oldest, largest in number, longest in existence organization of human history. Families are unique among social systems (Giudice, Peruta, and Carayannis 2011) and future generations carry on their ancestor’s knowledge and experience of togetherness both culturally and arguably, genetically. Ties within a family is so powerful, effective and long lasting that family as an organization throughout the history exists without any oral or written constitution or standard norms. Matrix relations among the family members enable them to combine and best utilize their personal and collective capitals. Surprisingly, little study has been made of the family’s role. (Heck et al., 2006). Aldrich and Cliff (2003) have more equally focused on both the family and business (Stafford et al., 1999).

Researches on Family Enterprise showed family enterprises outperform than non-family counterpart (Morck and Yeung 2004) but the reasons are still unknown (Stanley 2010. Family business literature has developed the term familiness to denote the set of resources and capabilities to differentiate between family and non-family business (Habbershon & Williams, 1999; Pearson,
Sources and types of familiness are yet to be understood (Chrisman et al. 2005b). However, Familiness deals with the business activities of a business family but Familipreneurship deals with the 24/7 activities of a family from socio-economic perspective as a concept unto itself. It also suggests that promoting Familipreneurship will inherently promote our indigenous knowledge and culture from generation to generation creating social capital.

Methods/Methodology:

A field study was conducted in Chak Bazar, Dhaka and Khatunganj, Chittagong the two largest wholesale markets in Bangladesh and closely observed as part of their business process for a period of ten years. Characteristics of the venture creation experience are examined, and underlying dimensions are analyzed and empirically investigated. In-depth interviews were held with the founders of family enterprise and other members of that family with subsequent follow-up visits. Collected subjective experiences and data were analyzed objectively and closely monitored enterprise creation and development process. Long discussion and interaction were held to capture the experiences of the family members that have rarely been addressed in entrepreneurship (Gartner & Birley, 2002).

An iterative ‘back and forth’ approach between data and existing theories (Van Maanen et al. 2007) followed. This method of comparison (Eisenhardt, 1989) and inductive theory building as evidence is accumulated overtime. In line with Charmaz’s (2006) explanation of the social constructionist approach to theorizing reality is not considered as singular and concrete, thus insights into what the entrepreneurs believe is real for them were sought. By focusing on the real-life experiences of the entrepreneurs in context of family enterprise creation, it becomes possible to provide enough evidence using both “power and proof” quotes (Pratt, 2008). Thus, rather than using deductive
reasoning to formulate hypotheses, an explicit aim was to develop insights from the subjective experience with objective data in line with existing theory.

**Discussions:**

Findings show that the major portions of surveyed markets are dominated by ‘Kuttis’ and ‘Sowdagors’ (‘Kutti’ and ‘Sawdagar’ are called locally to some indigenous business families). They are mostly illiterate but uphold strong entrepreneurial knowledge and skills inherited from their families/ancestors. Therefore, they are dominating the context from generation to generation. Most of them do not have any formal entrepreneurial education or training; only reason behind their success is Familipreneurship; entrepreneurship gained through family environment. Their practical knowledge of enterprise is gathered through ‘doing’, although even the exceptions do not complete their secondary level education, and then starts enterprise or venture with other family members. In many cases founder of a family enterprise did not have any formal education let alone enterprise education, but they did very well in their job. Once a family enterprise is created, the next generation carries this on because of inherent Familipreneurship. If next generation fails to carry on, then easily they can start their alternatives because of their entrepreneurial qualities created through Familipreneurship.

This paper primarily examined the concept of Familipreneurship and its uniqueness based on secondary data then investigated the power and capabilities of indigenous business families those who are doing business from generation to generation without any or less academic qualification or formal entrepreneurial education to relate the notion of Familipreneurship. Based on real life experience and extensive literature reviews, this paper is both exploratory and explanatory extended attempt to describe the notion of Familipreneurship.
Thus, this paper intends to fill the existing gap in entrepreneurship literature and serves its purpose by affirming the economic value of relationship, which is our largest social capital and usually ignored in business perspective. Familipreneurship refers to the entrepreneurial spirit running through the family as a whole and not just confined to a single individual. This paper showed family ties are the crucial factor in family enterprise, and it is an attempt to outline the special characteristics of Familipreneurship and suggest some recommendation for promoting Familipreneurship and institutionalization of Familipreneurship Education.

**Conclusion:**

The purpose of this paper is to create intellectual debate affirming the existence of Indigenous knowledge and skills of the families that has been largely ignored in our social system as well as in existing entrepreneurship literature. Nicholson, Woods, and Henare (2012) examined the family business concept in Aotearoa New Zealand and agreed that relationship has its economic value. The promotion of Familipreneurship will create a natural environment of transferring inherited knowledge, skill and important lesson and experience across the generations. This courageous collective effort will enable them to be blended together to reach their goals. Promoting The family behind the family enterprise significantly influences the behavior of the family enterprise and family entrepreneurs. Family as a group is more capable of creating new and develop existing family enterprise including other forms of enterprises. Study on Familipreneurship will enrich our knowledge through discovering unknown dimensionality of family ventures and open a new perspective on a comprehensive approach to entrepreneurship. Familipreneurship will substantially contribute to materialize the UN declaration of integrating families with post15 development agendas.

==========
References:


Gender Differences and Entrepreneurial Munificence: The Pursuit of Innovative New Ventures

BIRTON J COWDEN
Berthiaume Center for Entrepreneurship
Isenberg School of Management
University of Massachusetts Amherst
121 Presidents Dr.
Amherst, MA 01003
bcowden@isenberg.umass.edu
413-577-2241

JINTONG TANG
John Cook School of Business
Saint Louis University
3674 Lindell Blvd., DS 469A
St. Louis, MO, 63108
jtang3@slu.edu

Visiting Chair Professor
Business School, Nankai University
Tianjin, China
Abstract

Much of the literature on gender differences in entrepreneurship focuses on entrepreneurial propensity and access to resources. This study takes a step further to explore gender differences in the type of new ventures pursued. Specifically, we investigate whether there is a gender difference in the pursuit of innovative vs. imitative new ventures. Additionally, we examine whether perceptions of the entrepreneur’s environment influence the pursuit of innovative new ventures for female vs. male entrepreneurs. Utilizing PSED data, we find that there is no significant difference between genders in the pursuit of innovative new ventures. However, entrepreneurial munificence (i.e., having friends that have started their own businesses, and perceived support of financial institutions) matters for female-led businesses in their pursuit of innovative new ventures. These findings have major implications for building effective entrepreneurial ecosystems.

Keywords: Female entrepreneurship, entrepreneurial munificence, innovative new ventures, PSED
Introduction

The research on women entrepreneurship has largely focused on entrepreneurial propensity and access to resources, where there is overwhelming evidence that women tend to partake in less entrepreneurial activities as compared to men, and have access to fewer resources (Jennings & Brush, 2013). While important, this study dives deeper into the types of ventures women are starting, to understand if there are gender differences in the creation of innovative new ventures vs. imitative new ventures. Much of the literature on entrepreneurial behavior assumes gender equality, but most of the concepts of being innovative (e.g. risk-taking, disruptive, etc.) have been developed by studying samples of males (de Bruin, Brush, & Welter, 2006), are masculine oriented (Baron, Markman, & Hirsa, 2001), and have been shown to be more prone in masculine environments (Shane, 1992). Additionally, a sampling of history's most innovative entrepreneurs is overwhelmingly male (e.g. Henry Ford, Steve Jobs, Bill Gates, etc.). Thus, this logic might lead to the assumption that starting innovative new ventures is predominantly a male activity, but is this true in practice? Additionally, what role does women entrepreneurs' local environment play in starting an innovative new venture vs. an imitative new venture?

Pulling from the social capital literature, we explore these relationships from the outsider perspective. Social capital (Coleman, 1990) is a resource created from the network of social ties that allows members of a group to trust one another and cooperate in the formation of new groups. Being a member of this group provides instant credit, while those not in the group are illegitimate (Bourdieu, 1986). Just as the idea of the liability of outsidership (Johanson & Vahlne, 2009) describes, the male-dominated idea of pursuing innovative new ventures might be a significant barrier (perceived or real) for female entrepreneurs (Bruni, Poggio, & Gherardi, 2004). Because of these hurdles for women, the environment in which they operate may become
more important. With being an outsider trying to gain access, the path of least resistance is to borrow existing capital from direct ties within the in-group than to build one's own social capital (Burt, 1998). Being in a community that more readily provides access to borrowed social capital may reduce the hurdles for women to pursue innovative new ventures.

**Literature Review**

*Innovative New Ventures*

Inherently, each new venture provides some change to its environment, as the demand and supply conditions within that market get rearranged (Kirzner, 1973; Schumpeter, 1934). "What we, unscientifically, call economic progress means essentially putting productive resources to uses hitherto untried in practice, and withdrawing them from uses they have served so far. This is what we call 'innovation'" (Schumpeter, 1928, p.378). From this understanding, literature has begun to understand the difference between innovative vs. imitative new ventures (e.g. Cowden, Tang, Yang, & Zhang, 2015). There are two perspectives in understanding what is innovative. One thought is to look solely at the innovativeness of the venture's product or service in comparison to the rest of the industry, irrespective of the context of the local market. For instance, the introduction of smart phones made waves in all markets, not just in Silicon Valley, and had a high degree of novelty to change many industries (Amason, Shrader, & Tompson, 2006). The second perspective on defining an innovative new venture looks at the context, that is, the direct market the new venture is looking to enter rather than just looking at breaking the frame of an entire industry. Scholars from this perspective concentrate on variations of overall newness to the market rather than the novelty of offerings in comparison to an industry (Dahlqvist & Wiklund, 2012). Thus, it could not be new and novel from an industry perspective,
but could be considered new and novel from the consumer's standpoint in a given marketplace with goods or services previously offered to them taken into consideration. Drawing upon this foundation of innovation, this study combines both the market newness of the new venture and the novelty of its offerings to capture innovative new ventures. Much of the Schumpeterian perspective could be construed as masculine oriented, requiring extreme risk-taking, while females may take fewer risks (Watson & Robinson, 2003). By combining both thoughts on the consideration of innovative new ventures, this study reduces many of the male-dominated connotations in this realm (Robb & Watson, 2012).

As stated above, much of what is thought of or what is published about innovative new ventures is male dominated (Baker, Aldrich, & Liou, 1997). However, when an individual is part of an underrepresented group, they will be more likely to perceive entry into that group as not feasible. Thus, it can be argued that innovative new ventures are less predominant for female entrepreneurs than for male entrepreneurs.

H1: Male entrepreneurs tend to pursue innovative new ventures more than female entrepreneurs.

**Entrepreneurial Munificence**

Research on innovative vs. imitative new ventures has focused on the characteristics of the founders. Some factors that have been explored include: work experience and beliefs about industry practices (Cliff, Jennings, & Greenwood, 2006), information-seeking behaviors (Dyer, Gregersen, & Christensen, 2008), and the founder's human and social capital (Samuelsson & Davidsson, 2009). To go beyond the individual factors, research also shows that actions of entrepreneurs are largely derived from their local environment (Cowden et al., 2015; Shane,
This could include the regulatory environment's influence on firm innovativeness (Zhu, Wittmann, & Peng, 2012), the cultural norms of promoting an innovative mindset (Cowden & Kalliny, 2013; Mueller & Thomas, 2001), or the cultural norms of consumers willing to accept innovativeness (Steenkamp, Hofstede, & Wiedel, 1999).

While environmental munificence refers to the level of abundant resources within a given environment that are critical for a company to succeed (Gnyawali & Fogel, 1994; Pfeffer & Salancik, 1978), entrepreneurial munificence refers to the environmental munificence for entrepreneurs (Tang, 2008). Research has shown that an entrepreneurial ecosystem consists of culture, governmental policy, financial resources, markets, and human resources (Isenberg, 2011). The more abundant and supportive these elements are, the higher the entrepreneurial munificence. To date there are no studies indicating that more munificent environments lead to more innovative new ventures, although this may be presumed as there are more opportunities in more munificent environments.

In the context of male vs. female entrepreneurs, the munificence of the environment may be more impactful for one group over the other in their entrepreneurial pursuits. As an outsider, it is harder to rely on your laurels and begin building your own social capital. Rather, "the key to outsiders breaking into the game is to borrow social capital rather than build it" (Burt, 1998, p. 6). In order to borrow such social capital, there must be access to varying parts of the entrepreneurial ecosystem. High entrepreneurial munificence would allow many different access points for female entrepreneurs to more legitimate groups that could provide the social and fiscal capital needed to reach success. Thus, the community plays a pivotal role for female entrepreneurs to gain access to the in-group, which helps alleviate some of the stressors of pursuing an innovative new venture. Following the same logic, male entrepreneurs, being part of
the norm and legitimate members for possibly being innovative, are much less dependent on their surrounding entrepreneurial munificence to pursue innovative new ventures.

H2a: Higher entrepreneurial munificence is positively associated with female entrepreneurs' pursuit of innovative new ventures.

H2b: Higher entrepreneurial munificence is not significantly associated with male entrepreneurs' pursuit of innovative new ventures.

Methodology

Data and Sample

This study uses data from the United States Panel Study of Entrepreneurial Dynamics II (PSED II) research programs. The PSED II is housed out of the Institute of Social Research at the University of Michigan. Beyond uncovering the process of firm emergence, this dataset also records all of personal and environmental factors associated with new venture creation (Reynolds, 2000). PSED II began in 2005-2006 with 31,845 individuals screened in the U.S. Potential entrepreneurs were identified by answering yes to either: (1) Are you, alone or with others, now trying to start a new business? (2) Are you, alone or with others, now starting a new business or new venture for your employer? An effort that is part of your job assignment? Nascent entrepreneurs were further identified by the following criteria: (1) The individual expects to be the owner or part owner of the new venture; (2) The individual is active in starting the new venture; and (3) The potential venture is still in the startup phase and cannot be considered an infant firm (a venture with positive cash flows that can cover expenses and salaries for three months). Subsequent interviews (Wave B-F) have been completed each year to understand the progress of new ventures (Reynolds & Curtin, 2008).
For the purposes of this study, the sample is derived from Wave B and focuses on new and active startups (Khan, Tang, & Joshi, 2014). An active startup is one that is already operating, defined as revenue exceeding expenses (variable BA 41), or if the respondent said the new venture will be the major focus of their career over the next 12 months (variable BA40). The sample consisted of 756 new or active startups. With missing data for some of the variables, the final sample size was 579 new ventures.

**Dependent Variable**

As noted above, an innovative new venture is derived by two dimensions: market newness and product/service novelty. Because of this, a composite measure is needed to look at new ventures. Traditional measures, such as R&D spending, tend to underestimate the abilities of smaller firms, and patent data does not capture market newness (Samuelsson & Davidsson, 2009). Therefore, we adopted the four-item measure developed by Samuelsson and Davidsson (2009) to categorize ventures as innovative or imitative (1) Has a patent, trademark, or copyright been applied for? (variable AD13); (2) Is R&D spending a major priority? (variable AS5); (3) Will potential customers consider this product or service new? (variable AS1); and (4) Are there any other businesses offering the same products or services? (variable AS2).

Not to favor one single indicator over another, all four dichotomous variables were analyzed together through Latent Class Analysis (LCA) (Lazarfeld & Henry, 1968), with a software designed to handle latent structure models of categorical variables from dichotomous items (LEM) (Vermunt, 1997). The result from the data with the best fit was two latent classes. These two classes represent innovative or imitative new ventures. Based on the LCA, 125 ventures were classified as innovative, and 454 were classified as imitative.
Independent Variables

Gender

Gender (variable QSEX) of the respondent was identified with "1" representing males and "2" representing females. For the analysis, the file was split by gender to compare how community resources influence the creation of innovative new ventures in both populations. With this split, males made up 353 new ventures with 72 being categorized as innovative, and females made up 226 of the total sample, with 53 categorized as innovative.

Entrepreneurial Munificence

We adopted Tang’s (2008) measure to gauge entrepreneurial munificence. Specifically, we selected seven items from the community resources section of PSED. Respondents were asked how strongly they agree with the following statements about their local community: (1) Young people are encouraged to be independent and start their new businesses (variable AP6); (2) State and local governments provide support for those starting new businesses (variable AP7); (3) Bankers and other investors go out of their way to help new businesses get started (variable AP8); (4) Community groups provide good support for those starting new businesses (variable AP9); (5) Many of your friends have started new businesses (variable AP10); (6) Many of your relatives have started new businesses (variable AP11); and (7) Most of the leaders in your community are people who own their own businesses (variable AP12). Respondents were asked to use a 5-point scale to indicate their agreement to these statements, with "1" representing “strongly agree” and "5" representing “strongly disagree.”
Control Variables

To get a better understanding if other aspects beyond gender influenced the pursuit of innovative new ventures, four control variables were used. These controls were selected to provide more contexts to these individuals than their gender and to answer the call that research should not lump women into one group (Jennings & Brush, 2013). The control variables selected were marital status, if they had children, education level, and age. Marital status (variable QS3) was coded as a categorical scale from 1 to 6 on different categories of marital status, ranging from married (coded as "1") to widowed (coded as "6"). Having children was captured by three variables that ask if the respondent has children below 6 years old, between 6 and 11, and between 12 and 17 (variables QS5A, QS5B, and QS6). Education (variable QS7) was measured with a categorical scale of 1 to 7 representing different education levels. Age (variable AGE) was captured with a scale of 1 to 13 representing age brackets, with a total range of ages from 18 to 75.

Results

A simple means comparison was used to test if males did pursue innovative new ventures more than females. The results showed that there was no significant difference between males and females pursuing innovative new ventures. Thus, Hypothesis 1 is not supported. While not statistically significant, it is noteworthy that the mean of innovative new ventures for female was 0.24 compared to 0.21 for males.

Logistic regression analysis was used to test the effects of entrepreneurial munificence on the pursuit of innovative new ventures in both male and female samples (via SPSS version 17, SPSS Inc. Chicago, IL). Tables 1 and 2 provide the means, standard deviations, and correlations
for the male and female samples, respectively. While most variables do not indicate multicollinearity (Tabachnick & Fidell, 2007), those variables that do appear to be significantly correlated are expected to be related as they are associated with the same measure.

Tables 3 and 4 represent the logistic regression results for the impact of entrepreneurial munificence on the pursuit of innovative new ventures in both male and female samples. In both tables, the first model represents the baseline model with control variables entered. For the male sample, the only control variable that has a significant relationship with innovative new ventures is the variable that represents not having small children. None of the other control variables or the entrepreneurial munificence variables produced a significant model in predicting the male sample's pursuit of innovative new ventures. There was, however, a significant model for the female sample when the entrepreneurial munificence variables were added in Model 2 (see Table 4). Entrepreneurial munificence in the female sample improved model Chi-square \((p < .05)\) and log likelihood. More specifically, two variables are statistically significant for females to pursue innovative new ventures: the perceived support of bankers and investors in the community, and having friends that have started their own business. Thus, this shows support for Hypothesis 2a and 2b, where the local environment and certain elements within the ecosystem are more important for females than males when starting innovative new ventures.
Discussion and Conclusion

The purpose of this study was twofold: (1) whether innovative new ventures were a male phenomenon, and (2) the effect of the ecosystem surrounding either male or female entrepreneurs on starting innovative new ventures. We found no significant difference between males and females starting innovative new ventures, and the mean of female-led innovative new ventures was actually slightly higher than that of the male-led ventures. Thus, starting innovative new ventures is not a male phenomenon and female entrepreneurs do have intentions to be innovative. From this finding, future research can focus on other comparisons such as the survival of female- vs. male-led innovative new ventures in the entrepreneurial process.

Secondly, this study also shows that entrepreneurial munificence matters in starting innovative new ventures, especially for female entrepreneurs. Traditionally seen as rarities, female-led, innovative new ventures need more help and assurance of access to resources. Research has shown that female entrepreneurs' largest concern is access to financial resources (Verheul & Thurik, 2001). The results of this study indicate that the females starting innovative new ventures feel quite strongly that bankers and investors are supportive in their community. Thus, by removing the financial barrier in the ecosystem for females, they tend to start more innovative new ventures than females that perceive less supportive financial institutions.

Findings from this study also support the notion that females pursuing innovative new ventures feel the need to access legitimate resources by borrowing social capital rather than building it (Burt, 1998). The results indicate that having friends that also have started new
businesses was significant for females starting innovative new ventures. Research shows that personal networks provide examples and support, which aids in the entrepreneur's confidence (Aldrich, 1999). The observation of other entrepreneurs helps reduce the uncertainty and ambiguity of starting one's own venture (Arenius & Minniti, 2005; Minniti, 2005). For innovative new ventures, this study indicates that having the direct network of friend entrepreneurs is more important for females than for males.

This study has implications for those building entrepreneurial ecosystems, especially ecosystems focusing on fostering high-impact, female-led ventures. First, the financial institution support must not only exist, but must also be well promoted and visible. As noted above, the perception of this support in the community is associated with females starting innovative new ventures. Secondly, ecosystems should help nurture deep relationships between existing entrepreneurs and women in the community. Having a primary network will help develop entrepreneurial role models for women, and allow deeper connections that may include emotional support.

This study does contain some limitations. First, there is a large difference between innovative new ventures vs. imitative new ventures in both samples. However, this is representative of most empirical populations and difficult to remedy (Aldrich, 1999). Secondly, the dependent variable was largely dichotomized. This is unavoidable, as the LCA requires either all dichotomous or all continuous variables. Lastly, due to the nature of PSED, not all entrepreneurial ecosystem elements (as described by Isenberg, 2011) were represented in this analysis. Future studies can add to these findings by testing other elements in the ecosystem.

By examining the types of ventures, this study provides deeper insights than just looking at general female entrepreneurial activity. From exploring the gender differences between
innovative and imitative new ventures, there are many more questions to study. For instance, which financial institutions are the most important to support innovative new ventures? What gender are the friends that have started new businesses and how do they influence females to start innovative new ventures? How does this differ in other countries with differing formal and informal institutions? What success rates do female-led innovative new ventures have vs. male-led innovative new ventures? All of these will help progress the topic in the process of demystifying entrepreneurship (Aldrich & Martinez, 2001).
References

Aldrich, HE and ME Martinez (2001). Many are called but few are chosen: An evolutionary perspective for the study of entrepreneurship. *Entrepreneurship Theory and Practice*, 25(4), 41-56.
Cowden, BJ and M Kalliny (2013). The Role of Culture in Developing Disruptive Innovation in Domestic Firms. In B Christiansen, E Turkina and N Williams (Eds.), *Cultural and Technological Influences on Global Business* (pp. 258-271). Hershey, PA: IGI Global.


<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital Status (Married)</td>
<td>.53</td>
<td>.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (Partner)</td>
<td>.04</td>
<td>.19</td>
<td>-.21**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (Separate)</td>
<td>.21</td>
<td>.41</td>
<td>-.55**</td>
<td>-.10*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (Divorced)</td>
<td>.17</td>
<td>.37</td>
<td>-.47**</td>
<td>-.09</td>
<td>-.23**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (Widowed)</td>
<td>.02</td>
<td>.15</td>
<td>-.16**</td>
<td>-.03</td>
<td>-.08</td>
<td>-.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (Never Married)</td>
<td>.03</td>
<td>.17</td>
<td>-.18**</td>
<td>-.04</td>
<td>-.09*</td>
<td>-.08</td>
<td>-.03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kids &lt;6</td>
<td>1.83</td>
<td>.38</td>
<td>-.14**</td>
<td>.00</td>
<td>.13*</td>
<td>.02</td>
<td>.01</td>
<td>.07</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kids 6-11</td>
<td>1.80</td>
<td>-.10</td>
<td>-.10*</td>
<td>-.05</td>
<td>.12**</td>
<td>.02</td>
<td>.02</td>
<td>.03</td>
<td>.13**</td>
<td></td>
</tr>
<tr>
<td>Kids 12-17</td>
<td>1.78</td>
<td>-.10*</td>
<td>-.11*</td>
<td>.06</td>
<td>.16**</td>
<td>-.05</td>
<td>-.02</td>
<td>-.01</td>
<td>-.02</td>
<td>.21**</td>
</tr>
<tr>
<td>Education</td>
<td>4.79</td>
<td>1.57</td>
<td>.18**</td>
<td>-.04</td>
<td>-.13**</td>
<td>-.01</td>
<td>-.11*</td>
<td>-.05</td>
<td>-.03</td>
<td>.03</td>
</tr>
<tr>
<td>Age</td>
<td>6.67</td>
<td>2.58</td>
<td>.22**</td>
<td>-.09</td>
<td>-.39**</td>
<td>.10*</td>
<td>.03</td>
<td>.18**</td>
<td>.29**</td>
<td>.14**</td>
</tr>
<tr>
<td>Ind Young People</td>
<td>2.80</td>
<td>1.13</td>
<td>-.01</td>
<td>-.06</td>
<td>.03</td>
<td>.02</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.05</td>
</tr>
<tr>
<td>Gov Support</td>
<td>2.82</td>
<td>1.15</td>
<td>.08</td>
<td>-.06</td>
<td>-.04</td>
<td>-.05</td>
<td>.06</td>
<td>.01</td>
<td>.05</td>
<td>.09</td>
</tr>
<tr>
<td>Financial Support</td>
<td>3.10</td>
<td>1.11</td>
<td>-.04</td>
<td>.01</td>
<td>.00</td>
<td>.11*</td>
<td>-.07</td>
<td>-.03</td>
<td>.11*</td>
<td>-.02</td>
</tr>
<tr>
<td>Community Support</td>
<td>2.68</td>
<td>1.02</td>
<td>-.01</td>
<td>-.06</td>
<td>.04</td>
<td>-.04</td>
<td>.06</td>
<td>.03</td>
<td>.02</td>
<td>.10*</td>
</tr>
<tr>
<td>Friend Entrepreneurs</td>
<td>2.92</td>
<td>1.14</td>
<td>.00</td>
<td>.01</td>
<td>-.02</td>
<td>-.02</td>
<td>.02</td>
<td>.05</td>
<td>-.02</td>
<td>-.03</td>
</tr>
<tr>
<td>Family Entrepreneurs</td>
<td>3.15</td>
<td>1.17</td>
<td>.04</td>
<td>-.06</td>
<td>-.04</td>
<td>-.02</td>
<td>.02</td>
<td>.05</td>
<td>.10*</td>
<td>.02</td>
</tr>
<tr>
<td>Community Leader</td>
<td>2.57</td>
<td>1.08</td>
<td>.02</td>
<td>-.09</td>
<td>.05</td>
<td>-.03</td>
<td>-.04</td>
<td>.01</td>
<td>.05</td>
<td>.01</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.21</td>
<td>.41</td>
<td>-.04</td>
<td>-.08</td>
<td>.00</td>
<td>.07</td>
<td>.06</td>
<td>.00</td>
<td>.11*</td>
<td>.04</td>
</tr>
</tbody>
</table>

*p<.05
**p<.01
Table 1. Male Sample Means, Standard Deviations, and Correlations (cont.)

<table>
<thead>
<tr>
<th></th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-.06</td>
<td>.00</td>
<td>.02</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-.06</td>
<td>.01</td>
<td>-.06</td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-.11*</td>
<td>-.04</td>
<td>-.11*</td>
<td>.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-.03</td>
<td>.01</td>
<td>.02</td>
<td>.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-.01</td>
<td>.04</td>
<td>-.07</td>
<td>.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-.08</td>
<td>.01</td>
<td>.13**</td>
<td>.13**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.03</td>
<td>.04</td>
<td>.03</td>
<td>.12**</td>
<td>.12**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.05</td>
<td>.05</td>
<td>-.01</td>
<td>-.06</td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.05</td>
<td>-.05</td>
<td>-.01</td>
<td>-.06</td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significance levels: *p < 0.05, **p < 0.01.**
<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital Status (Married)</td>
<td>.60</td>
<td>.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (Partner)</td>
<td>.03</td>
<td>.16</td>
<td>-20**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (Separate)</td>
<td>.19</td>
<td>.40</td>
<td>-60**</td>
<td>-08</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (Divorced)</td>
<td>.11</td>
<td>.32</td>
<td>-44**</td>
<td>-06</td>
<td>-18**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (Widowed)</td>
<td>.03</td>
<td>.16</td>
<td>-20**</td>
<td>-03</td>
<td>-08</td>
<td>-06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status (Never Married)</td>
<td>.04</td>
<td>.20</td>
<td>-25**</td>
<td>-03</td>
<td>-10</td>
<td>-07</td>
<td>-03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kids &lt;6</td>
<td>1.78</td>
<td>.41</td>
<td>.02</td>
<td>-03</td>
<td>-06</td>
<td>.08</td>
<td>-03</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kids 6-11</td>
<td>1.78</td>
<td>.41</td>
<td>.03</td>
<td>.09</td>
<td>.03</td>
<td>-07</td>
<td>.03</td>
<td>.01</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>Kids 12-17</td>
<td>1.76</td>
<td>.43</td>
<td>.02</td>
<td>.04</td>
<td>.03</td>
<td>.02</td>
<td>-02</td>
<td>.08</td>
<td>-02</td>
<td>.07</td>
</tr>
<tr>
<td>Education</td>
<td>4.86</td>
<td>1.48</td>
<td>.04</td>
<td>.06</td>
<td>.06</td>
<td>.00</td>
<td>-05</td>
<td>.06</td>
<td>.08</td>
<td>.14**</td>
</tr>
<tr>
<td>Age</td>
<td>6.63</td>
<td>2.36</td>
<td>-07</td>
<td>-06</td>
<td>.15**</td>
<td>.25**</td>
<td>-07</td>
<td>.17**</td>
<td>.45**</td>
<td>.16**</td>
</tr>
<tr>
<td>Ind Young People</td>
<td>2.74</td>
<td>1.11</td>
<td>.01</td>
<td>.06</td>
<td>.06</td>
<td>-05</td>
<td>-03</td>
<td>-04</td>
<td>.10</td>
<td>.11</td>
</tr>
<tr>
<td>Gov Support</td>
<td>2.86</td>
<td>1.07</td>
<td>.00</td>
<td>.00</td>
<td>.02</td>
<td>-01</td>
<td>-07</td>
<td>.03</td>
<td>-01</td>
<td>.06</td>
</tr>
<tr>
<td>Financial Support</td>
<td>2.97</td>
<td>1.07</td>
<td>.09</td>
<td>.06</td>
<td>.15**</td>
<td>.04</td>
<td>.03</td>
<td>.01</td>
<td>-02</td>
<td>.01</td>
</tr>
<tr>
<td>Community Support</td>
<td>2.61</td>
<td>.94</td>
<td>.02</td>
<td>.03</td>
<td>.03</td>
<td>.01</td>
<td>.02</td>
<td>.03</td>
<td>.11</td>
<td>.11</td>
</tr>
<tr>
<td>Friend Entrepreneurs</td>
<td>3.03</td>
<td>1.08</td>
<td>.04</td>
<td>.08</td>
<td>-07</td>
<td>.01</td>
<td>-07</td>
<td>.03</td>
<td>-08</td>
<td>.06</td>
</tr>
<tr>
<td>Family Entrepreneurs</td>
<td>3.14</td>
<td>1.16</td>
<td>.04</td>
<td>.06</td>
<td>-01</td>
<td>-01</td>
<td>.14*</td>
<td>-01</td>
<td>.14*</td>
<td>.06</td>
</tr>
<tr>
<td>Community Leader</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td>2.59</td>
<td>.99</td>
<td>-.15*</td>
<td>.14*</td>
<td>.00</td>
<td>.13*</td>
<td>-.03</td>
<td>.09</td>
<td>.06</td>
<td>.18**</td>
</tr>
<tr>
<td>Innovativeness</td>
<td>.24</td>
<td>.43</td>
<td>-.15**</td>
<td>.07</td>
<td>.06</td>
<td>.11</td>
<td>-.04</td>
<td>.06</td>
<td>.03</td>
<td>-.08</td>
</tr>
</tbody>
</table>

*p<.05
**p<.01
### Table 2. Female Sample Means, Standard Deviations, and Correlations (cont.)

<table>
<thead>
<tr>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.04</td>
<td>0.10</td>
<td>0.16**</td>
<td>0.02</td>
<td>0.09</td>
<td>0.01</td>
<td>0.00</td>
<td>0.03</td>
<td>0.02</td>
<td>0.31**</td>
</tr>
<tr>
<td>-0.14*</td>
<td>0.03</td>
<td>-0.13*</td>
<td>0.27**</td>
<td>0.44**</td>
<td>0.01</td>
<td>0.04</td>
<td>-0.02</td>
<td>0.37**</td>
<td>0.43**</td>
</tr>
<tr>
<td>-0.07</td>
<td>-0.07</td>
<td>-0.08</td>
<td>0.21**</td>
<td>0.02</td>
<td>0.03</td>
<td>0.15*</td>
<td>0.01</td>
<td>0.04</td>
<td>-0.02</td>
</tr>
<tr>
<td>-0.08</td>
<td>0.05</td>
<td>-0.02</td>
<td>0.22**</td>
<td>0.10</td>
<td>0.14*</td>
<td>0.07</td>
<td>0.28**</td>
<td>0.10</td>
<td>0.04</td>
</tr>
<tr>
<td>0.10</td>
<td>-0.02</td>
<td>0.14*</td>
<td>0.22**</td>
<td>0.10</td>
<td>0.04</td>
<td>0.10</td>
<td>0.17**</td>
<td>0.20**</td>
<td>0.07</td>
</tr>
</tbody>
</table>
### Table 3. Results of Logistic Regression Analysis for Male Sample (n = 354)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (S.E.)</td>
<td>Wald (Odds Ratio)</td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>-0.88 (.78)</td>
<td>1.27 (.41)</td>
</tr>
<tr>
<td>Partner</td>
<td>-2.40 (1.29)</td>
<td>3.46 (0.9)</td>
</tr>
<tr>
<td>Separated</td>
<td>-1.09 (.86)</td>
<td>1.63 (.34)</td>
</tr>
<tr>
<td>Divorced</td>
<td>-0.25 (.83)</td>
<td>0.09 (.78)</td>
</tr>
<tr>
<td>Widowed</td>
<td>0.25 (1.07)</td>
<td>0.06 (1.29)</td>
</tr>
<tr>
<td>Kids &lt;6</td>
<td>1.00 (0.46)*</td>
<td>4.68 (2.72)</td>
</tr>
<tr>
<td>Kids 6-11</td>
<td>0.14 (.37)</td>
<td>0.16 (1.16)</td>
</tr>
<tr>
<td>Kids 12-17</td>
<td>0.25 (.34)</td>
<td>0.57 (1.29)</td>
</tr>
<tr>
<td>Education</td>
<td>0.01 (.09)</td>
<td>0.01 (1.01)</td>
</tr>
<tr>
<td>Age</td>
<td>-0.08 (.07)</td>
<td>1.61 (.92)</td>
</tr>
<tr>
<td>Munificence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ind Young People</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gov Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financial Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friend Entrepreneurs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Entrepreneurs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Leader</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model X² (df)</td>
<td>15.44 (10)</td>
<td></td>
</tr>
<tr>
<td>ΔX²</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>-2 Log-Likelihood</td>
<td>334.86</td>
<td></td>
</tr>
<tr>
<td>Hosmer-Lemeshow Goodness of Fit X²</td>
<td>8.59</td>
<td>6.67</td>
</tr>
<tr>
<td>Classification (%)</td>
<td>79.4</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05
<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (S.E.)</td>
<td>Wald (Odds</td>
<td>B (S.E.)</td>
<td>Wald (Odds</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ratio)</td>
<td></td>
<td>Ratio)</td>
</tr>
<tr>
<td>Controls</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>-1.74 (.95)</td>
<td>3.38 (.18)</td>
<td>-2.09 (.98)*</td>
<td>4.57 (.12)</td>
</tr>
<tr>
<td>Partner</td>
<td>-.62 (1.21)</td>
<td>.26 (.54)</td>
<td>-1.00 (1.30)</td>
<td>.60 (.37)</td>
</tr>
<tr>
<td>Separated</td>
<td>-.19 (1.01)</td>
<td>1.65 (.27)</td>
<td>-1.49 (1.04)</td>
<td>2.05 (.23)</td>
</tr>
<tr>
<td>Divorced</td>
<td>-.82 (1.05)</td>
<td>.61 (.44)</td>
<td>-1.22 (1.09)</td>
<td>1.27 (.29)</td>
</tr>
<tr>
<td>Widowed</td>
<td>-2.14 (1.43)</td>
<td>2.25 (.12)</td>
<td>-2.41 (1.47)</td>
<td>2.69 (.09)</td>
</tr>
<tr>
<td>Kids &lt;6</td>
<td>.28 (.44)</td>
<td>1.32 (.49)</td>
<td>.07 (.49)</td>
<td></td>
</tr>
<tr>
<td>Kids 6-11</td>
<td>-.39 (.39)</td>
<td>1.00 (.68)</td>
<td>-.43 (.40)</td>
<td>1.12 (.65)</td>
</tr>
<tr>
<td>Kids 12-17</td>
<td>.37 (.39)</td>
<td>.88 (.45)</td>
<td>.22 (.42)</td>
<td>.28 (1.25)</td>
</tr>
<tr>
<td>Education</td>
<td>-.16 (.11)</td>
<td>2.07 (.85)</td>
<td>-.20 (.12)</td>
<td>2.71 (.82)</td>
</tr>
<tr>
<td>Age</td>
<td>-.04 (.08)</td>
<td>.26 (.96)</td>
<td>-.05 (.09)</td>
<td>.32 (.95)</td>
</tr>
<tr>
<td>Munificence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ind Young People</td>
<td>-10 (.18)</td>
<td>.27 (.91)</td>
<td>-10 (1.18)</td>
<td>.27 (1.91)</td>
</tr>
<tr>
<td>Gov Support</td>
<td>.01 (.19)</td>
<td>.00 (1.01)</td>
<td>.00 (.19)</td>
<td>.00 (1.01)</td>
</tr>
<tr>
<td>Financial Support</td>
<td>-.46 (.21)*</td>
<td>5.15 (.63)</td>
<td>3.19</td>
<td></td>
</tr>
<tr>
<td>Community Support</td>
<td>.43 (.24)</td>
<td>(1.54)</td>
<td>.43 (.24)</td>
<td>(1.54)</td>
</tr>
<tr>
<td>Friend Entrepreneurs</td>
<td>-.45 (.18)*</td>
<td>6.22 (.64)</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>Family Entrepreneurs</td>
<td>.24 (.17)</td>
<td>(1.27)</td>
<td>.24 (.17)</td>
<td>(1.27)</td>
</tr>
<tr>
<td>Community Leader</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td>.15 (.18)</td>
<td>.69 (1.16)</td>
<td>.15 (.18)</td>
<td>.69 (1.16)</td>
</tr>
<tr>
<td>Model X² (df)</td>
<td>13.59 (10)</td>
<td></td>
<td>27.42 (17)*</td>
<td></td>
</tr>
<tr>
<td>ΔX²</td>
<td></td>
<td>13.83*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 Log-Likelihood</td>
<td>236.03</td>
<td></td>
<td>222.2</td>
<td></td>
</tr>
<tr>
<td>Hosmer-Lemeshow Goodness of Fit X²</td>
<td>4.07</td>
<td>8.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classification (%)</td>
<td>78.1</td>
<td></td>
<td>78.9</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05
FOR THE LOVE OF THE CRAFT: UNCOVERING THEMATIC REFLECTIONS IN COMPLEX VENTURES

Laura Munoz, University of Dallas
1845 E. Northgate Drive
Irving, Texas 75062
972-721-5377
Lmunoz@udallas.edu

Richard J. Miller, University of Dallas

Kevin J. Hurt, Columbus State University

ACADEMIC ABSTRACT

Complex startup ventures, which involve multiple intricacies, such as significant financial resources, artisan skill, and business knowledge, can offer a unique understanding and uncover patterns and themes that advance the reality of setting up and launching such ventures. Through a thematic analysis of craft brewery owners, we uncover that complex startup ventures offer three major themes as part of their set up and startup process: production versus artisan struggle, freedom agents, and an inverse effect. Furthermore, a metamorphosis occurs within the entrepreneurs that allows the transformation and growth from an immature startup to a mature venture is also observed.

EXECUTIVE SUMMARY

Complex startup ventures, which we define as those that require and involve multiple intricacies, such as significant financial resources, artisan skill, and business knowledge, can offer a unique understanding and uncover patterns and themes that advance the reality of setting up and launching such ventures. Through a thematic analysis of craft brewery owners, we uncover that complex startup ventures offer three major themes as part of their set up and startup process: a struggle between being an artisan and running a production brewery, becoming freedom agents, and an inverse effect. The production versus artisan struggle uncovers the inner fight between striving for efficient production while nurturing the craft pursued by the artisan. Freedom agents addresses the entrepreneur’s need for aspiring to belong to something bigger, while freeing the consumer from the market’s restrained choices offered by “big companies.” The inverse effect denotes the acquired knowledge of pursuing an aggressive strategy in the development and introduction stages that will taper off as they move into the maturity stage. However, the inverse approach is adopted when pursuing growth via distribution. Entrepreneurs prefer to start conservatively and then, once a brand name and reputation has been established, the efforts will be intensified and become aggressive in the maturity stage.
These findings provide insight into the metamorphosis that occurs within the entrepreneurs that allows the transformation and growth from an immature startup to a mature venture. This change occurs as the entrepreneur learns to balance being an artisan while maintaining an efficient production operation. From this struggle, the entrepreneur develops the ability to be a freedom agent in which they are able to bring their product to the market and fill the niche that their opportunity recognition has allowed them to see.

**Keywords:** complex ventures, artisan, production, brewery, freedom agent, strategy, development stage, maturity stage, distribution issues, opportunity recognition

**INTRODUCTION**

Launching and successfully growing complex new ventures is at the heart of entrepreneurial research and while this may scare some entrepreneurs, some avidly jump into the opportunity of launching this type of venture. Interestingly, an industry that conveys high levels of complexity can be found in the craft beer industry. The craft brewing industry, defined as less than 6 million barrels of production per year (*Texas Breweries*), is where entrepreneurs face complex startup decisions that involve: devoting large capital amounts (typically in excess of $1 million), navigating a labyrinth of regulations and permitting requirements, pursuing a balance between being an artisanal and innovative brewer, and managing the brewery at optimal efficiency. The stiff competition and number of new startups has brought national attention to the craft beer industry as an important actor going against conglomerates (Nicastro, 2015). Given these startup issues and landscape, the decisions the entrepreneurs make and the processes they embark on to fund, launch, and manage their businesses can offer an understanding of how they balance the need to successfully grow with the need to maintain their artisanal roots.

Employing a thematic approach, complex startup ventures in the craft brewing industry were studied. Following Jocumsen (2004) and Serviere-Munoz and Saran (2012), we categorize these ventures as new business startups in a particular industry where independent and principal decision making resides in a single or limited owners. The term “complex” captures the difficulties and intricacies associated with ventures that are financial, artisan, and business knowledge intensive. Therefore, “complex startups” are those new ventures that involve multiple intricacies, such as substantial financial resources, artisan talent, and business knowledge where the decision making exists in a single or limited individuals.

This paper contribute to the entrepreneurship literature of startup ventures by offering a thematic analysis of the behavior and decision making of complex startup ventures that covers not only the large financial and operations side but also the artisan side. Therefore, the research question this paper pursues is: How do entrepreneurs startup and manage complex ventures?
METHODOLOGY

Sample
A purposive sample was pursued as it is a well-established strategy used to assist the researcher in identifying cases that will be able to provide a rich account of the phenomena being researched (Weiss, 1994). As part of this technique, criteria were established to be able to maximize range, an effort to capture dissimilar or uncommon cases as part of the sample (Weiss, 1994). Thus, based on an academic and practitioner-based literature review of complex startups, the following criteria were established to choose cases that maximized range: a) capacity size (achieved by including ventures with a wide-variation of their barrel capacity), b) firm age (achieved by including ventures that go from pre-launch stage to established ventures), c) market distribution (all available forms were included), and d) a minimum startup amount of $150,000.

The Texas Brewer’s Association shows a total of 274 craft breweries (Texas Breweries). Based on the a priori criteria mentioned, a total of 14 breweries were interviewed. The sample signifies 5% of the total breweries opened and functioning in Texas and 35% of the Dallas-Fort Worth market (Texas Breweries). The participants interviewed had ownership interest and were highly involved in the day to day operations of the business.

Data Collection and Analysis
Semi-structured interviews and document review were the qualitative research techniques employed. The use of these techniques has been successfully used in entrepreneurial research to provide a rich understanding of entrepreneurs’ experiences (Tello, Yang, & Latham, 2012). Following Tello et al. (2012), the two principal investigators (PIs) were involved in conducting and coding each interview. In this way, investigator triangulation was used to reduce researcher bias by involving more than one observer in data collection and interpretation (Bøllingtoft, 2007). The second triangulation of inter-method was used to confirm the findings and reduce misinterpretation by comparing multiple data sources (Bøllingtoft, 2007). Thus, the information obtained from the semi-structured interviews was corroborated through the review of relevant documents (Tello et al., 2012; Zellweger & Sieger, 2012) such as articles published by various public and private entities, marketing materials, and social media. Approval of the Institutional Review Board was obtained before conducting any activity that involved human participation.

The transcripts produced over 113 codes for the 14 interviews, which denotes the coding process was thorough and comprehensive. The codes were checked against each other and back to the original transcripts to offer themes that are sound, reliable, and distinctive. The objective of the analysis was to tell a rational story that was well-organized and logical. As a further reliability test, a member check was performed where the analysis was shared with some of the interviewees so they could comment and provide suggestions for improvement (Zellweger & Sieger, 2012).
DISCUSSION

This section explains each theme and subtheme that emerged as the interviews and documents were examined. Entrepreneurs running complex ventures focus on many roles, mainly the ones of brewer and producer. Therefore, based on these roles, the discussion will refer to the entrepreneur as “brewer” or “producer” depending on what role is being addressed. The first major theme to emerge was the production versus artisan struggle followed by the theme, freedom agents. The last key theme to emerge was the inverse effect. These three major themes lead to a greater understanding of the changing aspects and thought processes that are experienced in complex startups.

Production versus Artisan Struggle

The first theme emerged from the subthemes addressing: quality and consistency, knowledge of operations management, previous brewing experience, and artisan. The entrepreneur finds himself struggling to reconcile two dissimilar visions for the venture. The first vision is the artisan who brings love for the craft due to his previous brewing experience. Under this vision, the entrepreneur wants to focus on play and research such as testing with flavors and spending time with ingredients. The other side of the vision is formed by the producer, who’s knowledge and understanding of operations management leads to the realization that quality and consistency will lead to continued growth. The artisan wants to experiment and allow creativity to constantly flow. However, the producer knows that quality becomes a must when running the brewery.

We observed that the lack of knowledge on products and ingredients can lead not only to an increase in the struggle between production versus artisan mentalities but also makes the entrepreneur miss significant startup or planning issues such as unexpected expenses. For example, one interviewee was very vocal about knowing how to set up for the right capacity to avoid being undercapitalized. An issue that, according to this interviewee, can only be prevented by having previous knowledge.

Freedom Agents

This theme emerged from the subthemes of artisan and play and research as it became apparent that the entrepreneurs were seeking to contribute to something bigger, something that would go beyond the production of their beer. A key issue that makes breweries a complex venture is the distribution laws and other regulations that severely limit the brewery’s capacity to distribute their own product. Specifically, breweries are limited in their distribution rights once they contract with an external distributor. These laws serve as an incentive for the entrepreneurs to pursue freedom in how they see best to distribute their products. It was also noted that entrepreneurs were motivated to create something bigger due to the lack of options that consumers are left with from what was referred to as “the Big 3” (Budweiser, Miller, and Coors Light) who, based on their opinion, control the market.

Inverse Effect

The subthemes of undercapitalization and sustained growth lead to the emergence of the third theme. Undercapitalization was consistently mentioned by the interviewees as one of the top mistakes to avoid as operations in the developmental and introduction stages. An aggressive set up must be pursued to be fully able to sustain a robust production that will lead to profitable margins. Once maturity was achieved, a more conservative approach, where large capital
expenses are avoided, was preferred in order to protect the venture’s cash flow. However, the opposite effect takes place when a business is an on-going venture and thus it is ready to pursue growth via distribution. The opposite relationship takes place and thus an inverse effect. When addressing distribution, entrepreneurs exhibited their preference to start conservatively to build their distribution channels: start with local bars, restaurants, and grocery stores and as they grow, and the cash and production become more mature, then a more aggressive approach is adopted where the bigger accounts such as wholesaler, and large chain gas stations are pursued.

CONCLUSION

This research explored and described the factors driving entrepreneurs who opted to launch and manage complex start-up ventures. Focusing on breweries, it was uncovered that the artisan and production mentalities must be balanced. Both were complimentary of each other and served as a strong motivating force to these entrepreneurs. The theme of becoming a freedom agent was a unique contribution as it uncovered the love and passion for the craft and the belief of liberating the market from large conglomerates. Last, approaches to capitalization and distribution that mirror each other and thus create a inverse effect where also identified. Further research that explores other industries and their unique idiosyncrasies would only strengthen our understanding of how entrepreneurs approach set up, launch, and manage these complex ventures.

REFERENCES


Understanding Biosphere Entrepreneurship through a Framework Approach

Including Implications for Entrepreneurship Education (USASBE)

Dr HH Frederick S., Research Professor, Center for Entrepreneurial Culture, Tecnológico de Monterrey, México  +52-1-222-464-7688  hfrederick@itesm.mx

“What’s the business case for ending life on earth?” Ray Anderson, Chair, President’s Council on Sustainable Development, CEO Interface (Henderson & Sethi, 2006, p. x)

Abstract

Entrepreneurial activity may be inconsistent with the need to conserve the planet and prevent environmental damage. This article provides the theoretical basis for Biosphere Entrepreneurship, which goes beyond business and social entrepreneurship. It theoretically justifies entrepreneurial activity that adds value to Earth. Extending the work of Kuratko, Morris, and Schindehutte on ontological frameworks (2000; 2001; 2015), we combine entrepreneurship, climate change economics, and sustainability research in an attempt to build a theoretical base for biosphere entrepreneurship. In the Implications, we ask, what can educators do to help biosphere entrepreneurs address the existential and catastrophic risks facing humanity?

Keywords

Entrepreneurship, biosphere, framework analysis, ontology, theory-building, ecosystem, sustainability, ecosystems, resilience, sustainable development

Executive Summary

This article combines entrepreneurship research with climate economics and sustainability to build a new theory of biosphere entrepreneurship. Going beyond business and social entrepreneurship, which add value to private and community domains, respectively, biosphere entrepreneurship is entrepreneurial activity that adds value to the biosphere and ecosystem services.

The purpose of this article is to devise mental models (frameworks) relating entrepreneurship and climate change to facilitate theory-building. Using images and visual depictions, the article envisions a theoretical model of entrepreneurial ecology or biosphere entrepreneurship showing how the Earth, humanity, and the economy are connected through negative entrepreneurship and positive
entrepreneurship. It extends extant frameworks—entrepreneurial risk and survival frameworks; financial and capital frameworks; entrepreneurial growth frameworks; socio-cultural frameworks; and entrepreneurial opportunity frameworks—to theoretically justify entrepreneurial activity that adds value to Earth.

The article uses entrepreneurship ontology in the tradition of Kuratko, Morris, and Schindehutte (2000; 2001; 2015) to describe phenomena in a way to identify and classify concepts and relationships about which increasingly are reaching consensus. The purpose is to use ontological framework analysis to convert abstraction into order, prioritize variables, and identify relationships within a new field of biosphere entrepreneurship. We seek candidate frameworks combining the domains of entrepreneurship, climate economics, and sustainability to expand a theory of biosphere entrepreneurship.

The article concludes with implications for entrepreneurship education. If biosphere truly go beyond business entrepreneurs seeking private gain, and social entrepreneurs adding value to social communities, what are educators doing to help our young entrepreneurs see climate change as market failure, identify market opportunities, and come to grips with existential and catastrophic risk?

The framework approach to biosphere entrepreneurship

Ontological analysis seeks to build frameworks to describe phenomena that can be said to exist (Hofwebwer, 2004). A framework is an abstract construct (often using images and visual depictions) that researchers devise to identify, compare, and contrast components of concepts and relationships about which experts and observers increasingly have reached consensus. This work follows in the tradition of Kuratko, Morris, and Schindehutte (2000; 2001; 2015), who have taken the lead in using ontological framework analysis to convert abstraction into order, prioritize variables, and identify relationships within the field of entrepreneurship.

Using frameworks, we can develop theories that can explain and predict phenomena. Since any single framework covers only particular aspects of a phenomenon, the goal, according to above authors, is to generate a “meta-framework of frameworks” to create mental models through which partial observations are juxtaposed to be helpful in theory-building (Warriner, 1984, p. 34). The purpose of this article is to identify ‘fit’ frameworks may have explanatory or predictive power, or simplicity, or they may integrate well into or extend elegantly from existing frameworks. We seek candidate frameworks combining the domains of entrepreneurship, climate economics, and sustainability to expand a theory of biosphere entrepreneurship.
What is biosphere entrepreneurship?

Considerable research (Azmat, 2013; Kirkwood & Walton, 2014; S. Majid & Yaqun, 2016, 2016; Markman, Russo, Lumpkin, Jennings, & Mair, 2016; Schaper, 2016; Thurman, 2016; Walton & Kirkwood, 2013) has shown that entrepreneurs play a role in the transformation towards sustainability. Yet one might ask whether some entrepreneurial activity can sometimes be inconsistent with the need to conserve the planet and prevent environmental damage. There is a multitude of examples where entrepreneurs have achieved success by plundering Earth’s resources with impunity thus contributing to existential risks (Frederick, O’Connor, & Kuratko, 2016, pp. 3–4, 48, 64, 74–75, 129–130, 139–141; Penn, 2003). As Shepherd et al. (2013, p. 1251) argue, “some . . . entrepreneurs decide to act in ways that result in harm to the natural environment . . . perceive[ing] opportunities that harm the environment as highly attractive”.

The impact of economic livelihood on the natural environment dates back millennia (Crate & Nuttall, 2016). On balance over time entrepreneurs have undervalued the biodiversity, ecosystems and means of survival that nature provides, including resources such as energy, water, free space and materials. They have not valued nature as a living ecosystem and as a source of natural capital for entrepreneurial endeavors. Rather than adding value to living materials they have only aimed to reduce the quantity of dead resources. In the end, society through government has had to implement complex regulations, incentives and tools to penalize entrepreneurs or to encourage them to reduce waste and mitigate the effects of negative entrepreneurship.

Previous writings such as Malthus (1878), Carson (1962), Ehrlich (1968), Club of Rome (1972) presage the development of the modern literature on sustainability and the economy. But many authors (Burns & Witoszek, 2012; MacNeill, 2013) consider the sustainability literature to have truly begun with Our Common Future (1987), also known as the Brundtland Commission Report. This work examined the inter-relations of natural systems, environmental health, and the economy, and it outlined how the world’s population was already living well beyond the planet’s means to replenish natural resources, absorb pollution, and regulate important climatic conditions. The report defined sustainability as “[meeting] the needs of the present without compromising the ability of future generations to meet their own needs” and argued that it was not too late for technology and society to improve the environment while at the same time achieving economic growth (Brundtland, 1987, p. 3.27). Two decades later, in the same tradition, the Stern Review on The Economics of Climate Change (2007) asserted that climate change was the greatest market failure ever seen. By 2014, the second Stern Commission report (2014) expanded the argument that in fact there was no need to choose between fighting climate change and growing the world’s economy. One could do both at the same time.
Our Common Future and the Stern Reports connected environmental degradation to the economy. But many authors have suggested that in existential risks nonetheless provide opportunities for entrepreneurs (Dean & McMullen, 2007; Grisham, 2009; Lowitt, 2014; Nagler, 2012; Patchell & Hayter, 2013; Rodgers, 2010). Elkington and Burke’s *Green Capitalists* (1989) argued that environmentalism is in the entrepreneur’s best long-term interests. Bennett’s *Ecopreneuring* (1991) focused on opportunities for innovative entrepreneurs to create growth-oriented eco-businesses. Berle (1991), Blue (1991) and Anderson and Leal (1997) used terms like enviro-capitalists, environmental and green entrepreneurs. Porritt’s (2007) *Capitalism as if the World Matters* argued that the only way to save the world from environmental catastrophe was to embrace a new type of capitalism.

To distinguish this field from business entrepreneurship, which seeks to add value to the private purse, and social entrepreneurship, which seeks to add value to the community and society, the present author argues that we should now use the term biosphere entrepreneurship to describe entrepreneurial activity generating value for the biosphere and ecosystem services. The key characteristics of biosphere entrepreneurship include: adding value to the biosphere rather than irreplaceably extracting resources from it; improving human well-being while safeguarding natural ecosystems; utilizing biosphere resources, such as ecosystem services, and returning them to nature; upcycling of waste (producing a product of higher value than the original) in supply chains; balancing the relationship between humans and nature; promoting resilience (ability of the planet to recover); solving problems related to the biosphere and to sustainability dimensions (ecological, social and economic); and putting profits into generation/regeneration of ecosystem services (See Bergstrand, Björk, & Molnar, 2011; Björk, 2011; Björk & Olsson, 2013; Fry, 2013; Swedish Ministry of Environment, 2014, pp. 75, 102).

**Research questions**

In establishing a third kind of entrepreneurship beyond business and social entrepreneurship, the research questions are exploratory. Is there something there? Can we sort observations into categories? Can we extending existing frameworks? Can we envision a “framework of frameworks” that ties together disparate threads, each of which explains a portion of the phenomenon? As Kuratko et al. (2015, p. 3) maintain, “new opportunities for entrepreneurship theory . . . will be based on both expanding the contexts of entrepreneurship as well as a deepening of the existing theoretical approaches”. The purpose of this paper is to present a series of candidate frameworks that suggest the emergence biosphere entrepreneurship theory as it manifests in this century.

The learnings in this section are that entrepreneurs, as they seek and recognize opportunities, should look beyond adding value to the business and societal spheres. They can and should choose climate-resilient pathways that add value to the biosphere. Stressors that affect Earth’s resilience are challenges and
opportunities that can animate entrepreneurs. These stressors are the ‘pains’ that entrepreneurs love to solve.

Candidate frameworks for biosphere entrepreneurship

The entrepreneurial process is dynamic and has not remained static over time. This paper’s goal is to examine emerging frameworks within the field of entrepreneurship research that explain outcomes of entrepreneurial efforts and distinguish the context in which they occur. The present research maintains that Morris et al. (2001, p. 47) were only partially right when they wrote: “entrepreneurship is a meaningful concept at the individual, organizational, and societal levels, and the frameworks perspective is applicable at each of these levels”. In the present age, we must extend entrepreneurship theory beyond these levels to the realm of the biosphere. Both theory and practice point us in that direction.

In the present exegesis, we examine various frameworks that explain or can be extended to explain biosphere entrepreneurship. We begin with entrepreneurial risk frameworks and then move on to frameworks that deal with finance and capital, growth, society and culture, and opportunity.

Entrepreneurial risk and survival frameworks


These risks take place at the level of the individual level or at the level of the firm and economy. To date, entrepreneurship researchers have failed to investigate entrepreneurial risks at the existential level of global catastrophes. Existential risks are those that threaten the entire future of humanity through threats such as climate change.

Figure 1 depicts the scope for entrepreneurial action amidst these risks. This framework visualizes global catastrophic risks over a range, from crushing, yet endurable; to hellish and life-extinguishing. Some of these risks impact humanity across multiple generations through such dangers as nuclear warfare, global tyranny, disappearance of the ozone layer, destruction of culture, and pandemics. The Stern Review on the Economics of Climate Change estimated a 9.5% risk of human extinction by 2100 (2006, p. Chapter 2, Technical appendix, 47). Estimates of 10-20% total existential risk are fairly common (Bostrom, 2013; Bostrom & Cirkovic, 2011; Cotton-Barratt, Farquhar, Halstead, Schubert, & Snyder-Beattie, 2015; Sandberg & Bostrom, 2008). The question is where and how do these catastrophic and existential risks affect entrepreneurial action. What actions can entrepreneurs take to adapt to or mitigate these risks?
Adapting Bostrom (2013), we see that entrepreneurs have been able to take action on only some of the risks and calamities that face mankind (Figure 1 in pink). Entrepreneurs have designed solutions (in bold italics) at the personal, local and global levels, especially at the level of “imperceptible” severity. However, as we move toward the upper right, entrepreneurial action has had less to offer, with geo-engineering entrepreneurs perhaps the first to cross into action on global catastrophic risk (Bethune, 2016; Fountain, 2012; Frederick et al., 2016, pp. 103–107; “Geo-engineering,” 2009, “List of proposed geoengineering schemes,” 2016; Lukacs, 2012; Morton, 2015). The questions remain open whether entrepreneurs can address their higher-order global catastrophic risks not to mention crushing and hellish existential risks.

Figure 1 Existential risk and scope for entrepreneurial action

Survival frameworks

Most entrepreneurship research on survival has focused only “firm survival”, or the demise of a venture due to outside factors (Baggs, 2005; Esteve-Pérez & Mañez-Castillejo, 2008; Lewis & Churchill, 1983; Stearns, Carter, Reynolds, & Williams, 1995). Another research track in this vein has focused on “survival entrepreneurs”, namely necessity entrepreneurs who have no other choice for work and are eking out their survival through entrepreneurial activities (J. Bennett, 2009; Berner, Gomez, & Knorringa, 2012; Garoma, 2012; Kanothi, 2009; Liedholm, 2002). Finally, some work examined entrepreneurs in
times of natural disasters (Chamlee-Wright & Storr, 2009; Dinger, 2015; Solomona, 2013; Zolin & Kropp, 2007). Only a few commentators have caught the connection. One space industry observer discussed the “exit strategy” of the human race to extraterrestrial settlements (Valentine, 2012). The famous Interface carpet entrepreneur Ray Anderson, a champion of sustainability once quipped: “What’s the business case for ending life on earth?” (Henderson & Sethi, 2006, p. x).

In sum, the treatment of entrepreneurship related to existential threats is limited. Previous entrepreneurship research on survival has not yet treated the impact of entrepreneurs on the survival of the human race. Few researchers have investigated how new entrepreneurial ventures can “contribute[e] to human wellbeing and the functioning of ecological systems . . . adapting human activities to correspond with that aspired future” (Parrish, 2007, p. iii, 37). Entrepreneurs still act as if no crisis existed. Indeed, little of the extant literature examines how entrepreneurship affects the terms and conditions of human survival or appreciates, in the words of Campbell (2008, p. 165), “enterprise that recognizes the necessary interdependence of human development, economic activity and our place on Mother Earth”. Unlike evolutionary economics, which has extensively treated the subject (Gowdy, 2013; Mulder & Van Den Bergh, 2001; Safarzyńska & van den Bergh, 2010; Van den Bergh, 2007a, 2007b; Van Den Bergh & Gowdy, 2000), our research-- the exceptions being Potts, Foster, and Stratton (2010) and Breslin (2008)-- is poor in mapping entrepreneurial action against energy and material flows, system resilience, and co-evolutionary processes, and especially how entrepreneurship is constrained by and affects Earth’s carrying capacity,

In sum, this section shows the outlines of future entrepreneurial survival research. Expectation of ecological destruction alerts entrepreneurs to opportunities (Boons & Wagner, 2009). Entrepreneurial action can adapt to or mitigate a stressor rather than be limited by it (Rammel, 2003). Impending ecological collapse presents entrepreneurial opportunities. In states of uncertainty, entrepreneurs recognize negative environmental effects which, when revealed, stimulate entrepreneurial activity that mitigates such effects (Potts et al., 2010). If entrepreneurship is, indeed, responsive to environmental degradation, it can be argued that a co-evolutionary connection exists between economic and ecological systems. This co-evolution centers upon the growth of knowledge about environmental degradation and the capacities of entrepreneurs to take the opportunities that are presented.

Financial/capital frameworks

The entrepreneurial capital/finance framework focuses on the venture funding process through the different stages of growth, from seed capital to IPOs (Aggestam, 2014, 2014; Brophy & Shulman, 1992; Erikson, 2002; Kuratko et al., 2015). At its base, capital is seen as any resource used to create other goods or services (Sullivan & Sheffrin, 2003). But the classical framework typically views entrepreneurial capital as purely finance/money as well as industrial/manufacturing plants, and it has not considered new forms of capital.
Researchers now refer to entrepreneurial capital much more expansively (Forum for the Future, n.d.; Porritt, 2007; Tuazon, Corder, & McLellan, 2013). We look beyond the canon frameworks to look at two novel capital frameworks addressing biosphere entrepreneurship.

The first is the Five Capitals Framework derived from Boulding (1970, pp. 1, 11) and Diesendorf and Hamilton (1997). In this view, five types of entrepreneurial capital arise from three ‘spheres’. At the outside is the biosphere, which consists of all of the living and non-living things on Earth. The sociosphere, where social entrepreneurship exists, is composed of all the people in a social system, all the roles they occupy, all their inputs and outputs. The econosphere, where business entrepreneurship exists, is that subset of the sociosphere that is engaged in exchange mediated through prices.

Each sphere yields different forms of capital (see Figure 2).

- The econosphere yields both finance capital and manufacturing capital. Financial capital, also known as ‘money’, is the core of what entrepreneurs use to leverage other resources. Manufactured capital is made up of physical goods (ironically known as ‘the plant’) such as machinery, boats, computers and so forth that contribute to production rather than being the output itself.

- The sociosphere contributes two forms of capital. Human capital refers to the knowledge, skills, intellectual outputs, motivation, and talent that we carry around inside us. We call this human resources or labor. Social capital refers to the collective value of social networks and relationships among people, and to the inclinations that arise from these networks to do things for each other.

- The biosphere yields natural capital, or the stock of natural ecosystems services that entrepreneurs use to create goods or services for their markets. Natural capital supplies entrepreneurs with a multitude of ecosystem services ranging from waste recycling in mangrove swamps, to carbon sinks that absorb greenhouse gases, as well as water supply and erosion control. Natural capital is different from other forms of capital in that it cannot be produced (only destroyed) by human activity. Well-managed, natural capital can be indefinitely sustainable.

This exercise has led to a re-consideration of capital/finance performance measures beyond “profit” and shareholder value. These three spheres of entrepreneurial activity merge into the Triple Bottom Line (TBL) framework (Figure 3), a phrase coined by Elkington (1994, 1997). TBL typically looks at the three P’s: Planet (biosphere), People (econosphere), and Profits (econosphere). The difference with the classical capital/finance performance framework is that TBL serves not only a company’s shareholders its stakeholders, with the “natural environment as the primary and primordial stakeholder of the firm” (Driscoll & Starik, 2004). Thus defined, a primordial stakeholder is any living thing that is influenced, either directly or indirectly, by the actions of the firm. TBL uses concrete performance measures such as life-cycle analysis; gap analysis, such as eco-efficiency ratios and measures; industrial ecology and supply
chain linkages; emissions tracking; sources of greenhouse gas and reduction targets; and using an internal carbon dollar value in investment decision making.

Figure 2 The five capitals model within the biosphere, sociosphere and econosphere

In this section, we have extended the legacy capital/finance frameworks of entrepreneurial venture funding into the realm of the biosphere. We see that there is more to entrepreneurial capital seeking than money, and more to entrepreneurial performance measures that stakeholder value. As we move forward, entrepreneurs must take into consideration their use of and impact on all forms of capital with the goal of adding value to the biosphere, and not wantonly exploiting it.

Figure 3 Triple bottom line financial capital framework
Entrepreneurial growth, de-growth, and re-growth frameworks

Here we examine growth frameworks that relate to biosphere entrepreneurship. The classical economic growth paradigm (Rostow, 2000; Solow, 1956) seeks to optimize resources within an equilibrium environment. Give that the classical paradigm does not well account for wanton consumption of natural resources, nor the impact of technology, we should review with framework within the context of entrepreneurship.

In our research tradition, Schumpeter challenged the classical growth paradigm by introducing the disruptive entrepreneur. As Schumpeter saw it, a normal, healthy economy was not one in equilibrium, but one that was constantly being “disrupted” by technological innovation. Drawing upon Kondratieff (1922), Schumpeter (1939) described “long waves”, or business cycles driven by clusters of industries/technologies that introduced new sets of innovations in Figure 4. The entrepreneur's role was to accelerate this process of creative destruction of the ever-shortening cycles, allowing the economy to renew itself and bound onwards and upwards again (“Catch the wave,” 1999; Schumpeter, 1950, pp. 80–86). Not immune to evolutionary theory, Schumpeter said “the same process of industrial mutation—if I may use that biological term—that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one. This process of creative destruction is the essential fact about capitalism” (pg. 83).

Figure 4 Kondratieff/Schumpeterian long waves related to Stress on Earth’s carrying capacity
To relate this to biosphere entrepreneurship, let us make one small change to Schumpeter’s (Kondratieff’s) theory of long cycles of industrial innovation. We simply re-label the Y-axis. Schumpeter called it “Innovation”; here we change it to “Stress on Earth’s carry capacity”, and make no other changes. We see that each industrial cycle increases the burden of stresses on Earth’s carrying capacity and results in a ‘peak curve’ followed by demise and destruction. This corresponds to Hubbert’s peak resource theory which predicts the depletion of various natural resources (Black, 2014; Gray, 2015; Hubbert, 1982). A peak curve applies to any resource that can be harvested faster than it can be replaced. Hubbert used it initially to measure the end of finite resources such as coal, oil, natural gas and uranium, but the theory is now used with other resources such as the biosphere (Bostan et al., 2012; Franchetti & Apul, 2012; Holmgren, 2012).

Indeed, to recover resources and return to an equilibrium growth, some researchers have proposed the exact opposite to the classical framework. It is called the “de-growth” framework. The de-growth framework confronts traditional ideas of incessant growth, consumerism and capitalism (Andersson & Eriksson, 2010; Assadourian, 2012; Buch-Hansen, 2014; Kallis, 2011; Klitgaard & Krall, 2012; Victor, 2012). De-growth is defined as an equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions (Schneider, Kallis, & Martinez-Alier, 2010, p. 512). Entrepreneurs may find opportunities in decoupling resource consumption from economic growth. De-growth opportunity seekers might spot the need for resource and pollution caps and sanctuaries, infrastructure moratoria, eco-taxes, work-sharing and reduced working hours. We can also imagine opportunities in eco-villages and co-housing, cooperative production and consumption, various systems of sharing, and community-issued currencies. De-growth need not mean a decrease in wellbeing, or indeed of individual profit.

Our growth paradigm has focused on manufacturing products that could be later discarded into their graves—either landfills (in the worst case) or incinerators (in the best case). This has a deleterious impact on the environment in terms of pollution and is expensive since new materials have to be manufactured from scratch every time. McDonough & Braungart (2002) challenged entrepreneurs to envision a world without waste, a world without poisons and a world in which all materials are continuously recycled/upcycled from the economy in and out of the biosphere. The key to sustainability is making the economy work for the environment instead of against it. In the “cradle-to-cradle” framework, green ‘nutrients’ feed into the production process (see Figure 5). They can be continuously useful (recyclable) over repeated production without losing their integrity or quality. Some will ultimately be ‘down-cycled’ into lesser products, and will finally become waste. Others will be up-cycled into higher value-added products. Through design and manufacturing techniques, entrepreneurs could build products that can be fully re-grown for the biosphere (natural capital) or re-gained for the econosphere (manufactured capital).
Socio-cultural frameworks

Many biosphere-consequential behaviors are strongly influence by external factors (Gardner & Stern, 1996; P. C. Stern, 1999). Within entrepreneurship research, this framework is usually called the environmental framework (Alvarez & Urbano, 2012; Dubini, 1987; Edelman & Yli-Renko, 2010; Hayton, George, & Zahra, 2002; Nguyen, Frederick, & Nguyen, 2014; York & Venkataraman, 2010). But for reasons of clarity vis-à-vis the present topic, we will call it the socio-cultural framework, as many have done (Begley & Tan, 2001; Koe & Majid, 2014; Shivani, Mukherjee, & Sharan, 2006; Thornton, Ribeiro-Soriano, & Urbano, 2011; Toledano & Ribeiro-Soriano, 2011).

The socio-cultural framework traditionally looks at the many factors, conditions and influences (positive and negative) external to the entrepreneur that affect the emergence of a new venture. This refers to phenomena such as social and cultural beliefs, altruism, behavior, lifestyles, religion, family, education and social conditioning (Van de Ven, 1993). Prominent examples of this framework include Hofstede’s (1984) cultural dimensions model, and Trompenaars and Hampton-Turner’s (1998) human-nature dimensions. The questions thus arises whether there are socio-cultural factors that influence the emergence of biosphere entrepreneurs. While work is being done on the impact of those non-economic factors on social entrepreneurs (Koe, Sa’ari, Majid, & Ismail, 2012; I. A. Majid & Koe, 2012; Shivani et al., 2006; Thornton et al., 2011), little has been written on the impact of socio-cultural factors on biosphere entrepreneurs.
We should take each of these dimensions and map them against biosphere entrepreneurship. Due to spatial reasons, we must leave that to others. However, given some empirical evidence of the relationship (Nordlund & Garvill, 2003; Schultz & Zelezny, 1999, 1998), let it suffice to examine the framework of entrepreneurial altruism and its relationship to the biosphere (see Figure 6).

*Figure 6 Framework of the socio-cultural aspect of biospheric altruism*

History reveals that there are those entrepreneurs who took advantage of the instrumental value of Earth’s resources rather than cherishing and replenishing their intrinsic value. The first seeks economic expediency and exploits the environment with impunity. We call this the *egocentric* approach. The second type seeks intrinsic value, namely to “preserve the integrity, stability, and beauty of the biotic community” (Leopold, 1970, p. 18). We will call this the *ecocentric* approach. Drawing upon climate change sociology and particularly Values-Beliefs-Norms (VBN) theory (Dietz, Fitzgerald, A, & Shwom, R, 2005; P. Stern, 2000; P. C. Stern, Dietz, Abel, Guagnano, & Kalof, 1999; Zehr, 2015), let us examine a framework of biospheric altruism and contrast it with ego- and eco-centric altruism.

At base, we have the self-maximizing egocentric entrepreneurs seeking benefit for self and kin, who are inattentive or ignorant of the consequences on society or the biosphere, who may suffer, as Bandura suggests (Bandura, 1986, 2001; Bandura, Barbaranelli, Caprara, & Pastorelli, 1996) from a “moral disengagement” that harms the biosphere. Do these entrepreneurs structure their actions so they appear less harmful, shift accountability to others, or shift blame to the victims? Or is it, as Shepherd et al. (2013, p. 1252) posit, that low self-efficacy and high perceived resource-scarcity entrepreneurs use moral
disengagement to adjust their values to view harm to the planet as more attractive? In any case, we categorize them as egocentric.

At another level we have social altruism, where an entrepreneur reduces his own fitness while increasing another’s fitness in the expectation that the other will act similarly at a later time (Trivers, 1971). Human cooperation and benevolence can be understood as “resulting from networks of indirect reciprocity” (Alexander, 1987, pp. 3–20). Here we have the social entrepreneurs who move beyond self-interest to create value for their conspecifics and the broader community. At this level, entrepreneurs are moved to add value to the community, and they are aware of the consequences and believe they have the resources to reduce the threat.

Then there is biospheric altruism, where entrepreneurs go beyond individual self-interest and even community benefit to add value to species and ecosystems (Dietz et al., 2005; P. C. Stern & Dietz, 1994). These entrepreneurs launch ventures that contribute to the planet and to ecosystem services. Biosphere entrepreneurs are motivated through this type of altruism to support human well-being and ecological resilience by adding value to the biosphere.

In this section we have used altruism to map the relationship of socio-cultural factors to biosphere entrepreneurship. The main difference is where the “value-add” goes. Does it go into one’s pocket or into the social community, as business and social entrepreneurs might do? Or is there a third category of biosphere entrepreneurs included by socio-cultural factors who prefer to add value to natural capital. Other researchers should find a fecund area in mapping other socio-cultural factors as well.

Entrepreneurial opportunity frameworks

Identifying and shaping opportunity is central to the domain of entrepreneurship (Venkataraman, 1997). Opportunity, at its simplest, is a gap in the market where the potential exists to create value. There are four famous frameworks on how and why entrepreneurs identify opportunities. Cantillon (1680s-1734) first elaborated the competition opportunity framework of entrepreneurship (Cantillon, 2001; Hébert & Link, 2009). These entrepreneurs essentially discover discrepancies in the market, buy low and sell high, and drive the supply and demand equation to a new point of equilibrium. Next, best described by Schumpeter (1936), we have the innovation opportunity framework. The difference with Cantillon is that the entrepreneur creates new demand by introducing new goods and services that disrupt existing markets. Kirzner’s (1973) alertness opportunity framework combines the previous two opportunity models but places a higher emphasis on the entrepreneur’s superior levels of knowledge about the market, industry, technology or networks. The social opportunity framework shows that, more than making markets more efficient, this framework aims to fulfill needs not satisfied and unlikely to be satisfied by the market (Bornstein & Davis, 2010; Frederick et al., 2016, pp. 199–201; Goldsmith, Georges, & Burke,
2010; Phills, Deiglmeier, & Miller, 2008; Yunus, Moingeon, & Lehmann-Ortega, 2010). Each of these four opportunity frameworks above has its relation to biosphere entrepreneurs.

Many quip that entrepreneurs never waste a good crisis because they recognize opportunities where others see chaos or confusion (Dagnino & Mariani, 2007; Dimov, 2011; Gielnik, Zacher, & Frese, 2012; M. Schindehutte & Morris, 2009; Tang, Kaemar, & Busenitz, 2012). This could be no truer than in the present age when entrepreneurs face the existential threat of climate change and global warming. Cantillon’s competition entrepreneurs are seen in such arenas as emissions trading, biodiversity offsets, payments for ecosystems services (PES) and reducing emissions from deforestation and forest degradation (REDD) schemes. Next, Schumpeter’s disruption entrepreneurs see opportunities in biobanking, bioprospecting, carbon sequestration technologies, geo-engineering, species banking, and virtual water trade. Kirzner’s alertness entrepreneurs are bountiful in climate change-induced problems of population (aging, youth, overpopulation), water (pollution, sanitation), food (protein/water consumption ratio, drought resistant strains), fossil fuels (clean energy, emissions control), and biodiversity (aquaculture, genetic diversity, ecosystem brokering, ecotourism). Finally, social opportunity entrepreneurs have launched new forms of community planning, fair trade, habitat conservation, labor standards, and microfinance.

By reconciling and merging these frameworks, we arrived at the biosphere opportunity space framework (Adapted from Field et al., 2014, p. 29) (see Figure 7). Biosphere opportunity spaces are arenas in which entrepreneurs identify opportunities to create value for a more resilient planet. Opportunity spaces are pressure points created by both the physical and social worlds and reveal the gaps, market failures, unmet needs of the Planet.

*Figure 7 Biosphere opportunity space framework*
To narrate this framework, our world (a) is threatened from the outside by biophysical stressors (green arrows), such as climate change and degradation of ecosystems; and from the inside by social and economic stressors (red arrows), such as unrestrained economic growth, exploitation with impunity, population increase, poverty and inequality. These stressors expand and contract the resilience space (white hatched), which is Earth’s capacity to become strong, healthy, and to recover. Entrepreneurs operate within the Opportunity Space (b), where they face multiple decision points (d) and pathways that lead to different possible futures (e), each with differing sizes of resilience space (hatched).

Entrepreneurs take advantage of these pathways and exploit routes to market in which they act (or fail to act), or in which they manage (or fail to manage) risks related to the planet’s resilience. Some pathways (e) can lead to a world with lower risk and higher resilience (top right) while others (f) lead to higher risk and lower resilience (bottom right).

That brings us to a second entrepreneurial opportunity framework, a process called ‘The Natural Step’ (Alexius & Furusten, 2013; Bradbury & Clair, 1999; Herbertson & Tipler, 2006; Holmberg, 2006; Holmberg, Robert, & Eriksson, 1996; Martin & Schouten, 2014; B. Nattrass & Altomare, 1999; Brian Nattrass & Altomare, 2013). Imagine looking at a giant funnel on its side. The upper wall (green) is declining supply which we hope will reach a sustainable equilibrium of available resources and the ability of the ecosystem to continue to provide them. The lower wall (red) is increasing demand which we hope will reach a sustainable equilibrium between demand and the ecosystem’s ability to create them. The things we need to survive food, clean air and water, productive topsoil and others are in decline while the demand for them is increasing, which leads to a narrowing margin for action and opportunity (see Figure 8). Meanwhile, as the funnel narrows there are fewer options and less room to maneuver, with actions bumping against the wall (yellow blotches). How do entrepreneurs find a path through this ever narrowing funnel?

To summarize, we have reviewed dominant opportunity frameworks in the entrepreneurship literature and tried to reconcile them showing how entrepreneurial action can increase or lower opportunity spaces as well reduce risk. The basic learning is that there is narrowing scope for action as the biophysical and socio-economic stressors reduce Earth’s resilience and our collective capacity to help the planet recover.

During the historical transition from entrepreneurship based on extraction of resources with impunity to value-adding to the biosphere, entrepreneurs must address the complexity and the dynamics of ecosystems and climate in relation to social and economic activity. In the face of technological change, the uncertainty of consumer expectations, and the unpredictability of new regulations, entrepreneurs must learn not to violate conditions that systematically undermine Earth’s capacity to meet present and future needs of humanity (Norton, 2012, p. 167).
Toward a theory of biosphere entrepreneurship

Taking frameworks developed above, we now advance a synthesis. In the era of industrial entrepreneurship, from the nineteenth century through to the new millennium, entrepreneurs were not obliged to consider the environment in their planning and design. They focused on extraction of resources with little regard to their replenishment, on global distribution without regard to distance, on destruction without regard to environmental consequences. The history of entrepreneurship shows that entrepreneurs were not typically oriented towards the prevention of negative effects, to the reversal of degradation, or to net improvement in the physical universe. In the age of industrial entrepreneurs, waste was not a design consideration. The result was that some entrepreneurs (think Henry Ford and Thomas Edison) had a negative impact on the environment.

Now, in the age of sustainable entrepreneurship, we need to consider the biosphere as a locus for entrepreneurial activity, understand the biospheric factors that influence opportunity, consider the waste embodied in products, and develop techniques to add value to rather that extract from the biosphere. We need to move beyond simplistic zero-sum input–output analysis without regard to the consequences and to apply new concepts that take into account the “living dimension” of the products and services that we produce.

The biosphere is inextricably linked to the sociosphere and the econosphere. But problem is that, if what goes in must equal what goes out, entrepreneurs will not try to increase positive outputs to create surplus benefits. This leads us to a tentative reconciled model of biosphere entrepreneurship (see Figure 9).
All entrepreneurs operate within the econosphere but are greatly affected for the sociosphere and the biosphere. Beginning on the right, there are various frameworks of observed phenomena that influence entrepreneurship action. To begin, there are three types of entrepreneur influenced by socio-cultural factors: The commercial/business entrepreneur takes personal risks and profits personally. We call this egocentrism not at all in a negative sense. These are the self-maximizing entrepreneurs who have created value for themselves and their shareholders. At the next level we have the social entrepreneur who aim to contribute value to their conspecifics through community and social action. And now we have biosphere entrepreneurs who seek not only to increase their private purse and add value to the community; they see to increase resilience and capital in the complete system, in fact, to over-compensate for past and accelerating consumption, losses of biodiversity and threats to humanity.

Figure 9 Integrated frameworks for biosphere entrepreneurship

Turning to the left-hand side, from a material point of view, we can see objects (O) passing from the waste-free biosphere through the sociosphere into the realm of entrepreneurial opportunity within econosphere through the process of resource extraction and production. Next, after entrepreneurs are done with these resources, they pass them out of the econosphere as waste. Their value usually becomes negative (-), in other words, damaging to the environment and resulting in a net biosphere deficit. Throughout the history of entrepreneurship there has been an uneven, negative exchange to the biosphere resulting in a net deficit to the planet. This is ultimately unsustainable or what we call “negative entrepreneurship”.

However, this could be different. Positive entrepreneurship (+) can generate positive impacts through value adding and eliminating designed waste, duplication, disposability, planned obsolescence and
wasteful end purposes. Positive entrepreneurs can create net positive-impact loop systems and innovations that create levers for biophysical improvements and social transformation. Entrepreneurs can trigger “impact loops” of two types: They can amplify degradation or restoration in the biosphere. It seems to create net positive impacts, not less negative or even neutral ones, to expand the biosphere beyond pre-settlement conditions. The target of positive entrepreneurship is to reverse the degradation of the ecological footprint (Birkland, 2008; Cohen & Winn, 2007; Dean & McMullen, 2007; Kury, 2012; Shepherd & Patzelt, 2011).

One example of positive entrepreneurship will suffice here. Recycling usually means separating materials for disposal, but here we make the distinction between down-cycling and up-cycling. Down-cycling transforms waste materials and goods into lower uses. While it may address post-consumer waste, this is a small fraction of the waste entailed in extraction and processing. The obvious example is the recycling of plastics, which turns them into lower grade plastics without regard to the huge energy losses that were incurred in their production.

With up-cycling, waste materials are advanced into new, higher-value products. This is the practice of taking something that is disposable and repurposing it into a product of higher quality. An example would be reconstructing old mattresses, repairing and reusing carpet squares, turning wooden pallets into designer furniture and converting waste into art, edible chopsticks and compostable shoes, fashion & homewares made from PET bottles and fire hoses, and camping gear that is taken back and repaired when it is worn out (Birkeland, 2014; Desha, Timothy Beatley, & Birkeland, 2016; Korsgaard, Anderson, Gaddefors, & Kariv, 2016; McDonough & Braungart, 2002; Wang, 2011; Wilson, 2016).

In this section we have advanced a combination of frameworks. We distinguished industrial versus sustainable entrepreneurship in historical terms. We now must think of the biosphere as a locus for entrepreneurial activity and take into account the “living dimension” of what we produce. We then examine the material flows of biosphere resources into the zone of entrepreneurial opportunity, and observed that some of those resources are negative devalued. Positive entrepreneurs need to trigger impact loops that restore the biosphere and increase its resilience.

Conclusions

What have we accomplished here? On the one hand, we have reviewed and extended extant frameworks that have been substantiated by informed observers in the fields of entrepreneurship and sustainability using pictorial images. These included entrepreneurial risk frameworks as well as frameworks that deal with finance and capital, growth, society and culture, and opportunity. We have answered the research questions in the affirmative: There is something here. We have established that there is a third kind of entrepreneurship beyond business and social entrepreneurship. We have been able to sort observations
into categories, extend some existing frameworks, and envision a model that ties threads together. We have been able to satisfy Kuratko et al. (2015, p. 3) by opening up a new approach to entrepreneurship theory by expanding the context into the biosphere and deepening theory.

Drawing upon these concepts and structures, the author depicts a candidate theoretical model of biosphere entrepreneurship showing how Earth, people and the entrepreneurial economy are connected. The theoretical model thus presented shows the flow of energy and materials taken from and returned to the biosphere. For the most part, throughout the history of entrepreneurship this is an uneven exchange. Unsustainable (or negative) entrepreneurs have extracted and plundered resources, thus depleting Earth’s natural capital and decreasing its resilience. Normally entrepreneurs return these resources to the biosphere as waste in devalued form. Sustainable (or positive) entrepreneurship means returning resources in value-added form.

In the end, we see now to produce a cohort of positive entrepreneurship who can generate positive impacts through value adding and eliminating designed waste, duplication, disposability, planned obsolescence and wasteful end purposes. Insodoing, they can create net positive-impact loop systems and innovations that create levers for biophysical improvements and social transformation.

Implications

The scope of this paper is huge and there are many implications to my research. Below, I discuss the implications on entrepreneurship education. But there are so many other areas of interest. I believe my framework analysis and candidate theory are fecund enough that researchers could begin asking about the implications of biosphere entrepreneurship in other areas. For example, a study of implications for government policy prescriptions would be exceedingly interesting. In government policy, attention could be directed to policy that could change entrepreneurs’ mindset toward the biosphere. This discussion might start with the notion that the biosphere is a public good, one that might suffer from free-ridership leading to less than optimal number of entrepreneurs taking biosphere entrepreneurship seriously unless the incentive structure changes. Another area is the impact of ownership structure on level of biospheric altruism. For example, entrepreneurs with bigger stakes and control in their companies might be more supportive of biosphere entrepreneurship compared to companies owned by third-party (pension) funds, who would theoretically care less about the biosphere and more about stakeholder value. Another area of interest might be the political implications for political parties. In terms of macro-economics, everything in our economy may benefit / damage someone or something if we trace it from beginning to end. How do we calculate benefit created only to look further down the road and see it convert into harm or disenfranchise someone?
Implications for entrepreneurship education

That said, I’d like to comment in extensor on the implications of biosphere entrepreneurship on how we educate your entrepreneurs. Sadly, resource depletion and overpopulation are both products of the enterprising spirit. Climate change is the issue of the millennial generation. As the world’s greatest cities risk disappearing under water during their lifetimes, as the hottest summers in recorded history occur before their eyes, and they see that species alive during their parents’ lives are disappearing, the call to save the world has become compelling. Climate change will have a significant impact on our students’ incomes and wealth during their peak earning years. Already, Generation Z, those born 1995–2009, who never knew the pre-internet world, is entering universities. They will be followed by Generation Alpha, those born after 2010, who will fare even worse (Bailey, 2016; Demos, n.d.).

Every aspect of a good entrepreneurship course—from strategy and marketing, to business planning and intrapreneurship, and from mind-set to ethics—should deal in some way with the existential threats facing our young entrepreneurs. There is much more to say about “climate change entrepreneurship” and this author’s textbook covers climate change in every chapter (Frederick et al., 2016). Let’s review some of what teachers should be imparting to our young entrepreneurs.

- **Basics**: Students need to know that economic growth and entrepreneurial activity are inextricably linked to global warming. Safety on Earth is slipping away. The only option is innovation and enterprise to get it right. Entrepreneurs who understand the new climate reality—and are willing to invest in preparedness and risk management—are best equipped to seize opportunities. As Rajendra Pachauri, Nobel Prize winner and chair of the Intergovernmental Panel on Climate Change (IPCC), has said, “entrepreneurs who respond to the challenge will reap commercial success—while businesses which fail to do so face oblivion” (Wright, 2009).

- **Climate change economics**: Students need to understand the relationship of entrepreneurship to climate change economics. Market failures motivate environmentally degrading behavior. Entrepreneurs can cause negative externalities, where costs to the environment spill over onto the consumer and the public, leading to the ‘tragedy of the commons’. They need to know how to hedge against physical climate risk, mitigate regulatory costs or improve/repair corporate reputations through green business. They need to know how to manage climate risk in the supply chain, invest in low-carbon activities, and innovate new technology that sells while improving the planet. They need to understand climate-related revenue drivers (pass-throughs to customers; carbon credits; low-carbon substitute products; impact of weather patterns on revenue), as well as cost drivers (regulatory; emissions tax; price increase in materials; energy costs; insurance premiums).

- **Some entrepreneurs engage in environmental crime**: Most morally questionable entrepreneurs are environmental crime enterprises. These syndicates carry out illegal fishing, illegal trade in wildlife and timber, smuggling of ozone depleting substances, illegal disposal of asbestos, shipment of animal
parts for health remedies, illegal trade in charcoal, or trade in hazardous waste—all to benefit the
criminal entrepreneur and his syndicate. They can relate environmental crimes that have occurred
near them, including strip mining, damming of rivers that drive out people, atomic energy failures,
industrial pollution, etc.

- **Innovation in the era of climate change**: There are already a myriad of wind and solar technologies
that are cost-effective. Ultimately, the green revolution is going to be carried by engineers and
entrepreneurs who can break down the barriers to the market and commercialize existing
technologies. We need innovators to team up with entrepreneurs to produce and market all sorts of
breakthroughs by creating and responding to demand. Only entrepreneurs can take this much
innovation to the marketplace. Only entrepreneurs can generate and allocate enough capital fast
enough to commercialize them. The candidates for top sustainable 21st century innovations include:
genetic engineering; artificial trees; species preservation; geo-engineering; carbon sequestration; free
non-fossil fuel power systems; gene sequencing; hydrogen-powered cars; methane-fueled rockets;
waste management; weather prediction. In its product planning a business should include methods of
manufacturing and distribution which ensure a minimal environmental impact. And consider creating
products with significantly longer life spans. By creating products, which can be upgraded, retro-
figured or are simply indestructible, we can communicate to consumers the inherent environmental and
cost benefits of purchasing a product which will last a generation.

- Design thinking for the environment

- **Family business in the age of environmental sustainability**: Environmental sustainability is
relevant to family-controlled businesses. This is because family businesses are oriented towards
preserving wealth and ensuring success for future generations. Climate change and global warming
are affecting the fortunes and longevity of family businesses. A crop failure may mean bankruptcy. A
new pollution regulation can put a family business into debt or make it uncompetitive. On the reverse
side, some families can take advantage of this by positioning themselves in eco-tourism. Long-term
stewardship is generally a core value at family firms.

- **Social intrapreneurship**: Social intrapreneurs demonstrate that business and social values can be
aligned. This is nowhere as true as in the field of environmental sustainability by delivering solutions
or products that both add value to the company's bottom line as well as to society and the planet.
Social intrapreneurs see businesses as part of the Earth ecosystem and needing to add value to society
and the environment as well as to the bottom line.

- **Green entrepreneurial marketing**: Recyclability, re-usability, biodegradation, and positive health
effects are definitely in. Marketing can decouple material consumption from consumer value and can
facilitate both innovation and choice for sustainable consumption. It can help consumers to find,
choose and use sustainable products and services, by providing information, ensuring availability and
affordability, and setting the appropriate tone through marketing communications. Green marketing
has become an important marketing strategy for entrepreneurial companies that aim to help improve the environment and position themselves as responsible organisations, all while attempting to drive sales. Global consumption patterns are unsustainable and efficiency gains and technological advances alone will not be sufficient to bring global consumption to a sustainable level. Changes will also be required to consumer lifestyles, including the ways in which consumers choose and use products and services.

- **Entrepreneurial strategy and sustainable development**: Entrepreneurial strategy involves the art of managing assets that one does not own. Now there is an increasing realization that the Earth’s resources also fall into this category. New millennial entrepreneurs have to confront the challenges of how to put a strategy in place that at the same time grows the company as well as protects those resources that we do not own. New strategy tools are important for young entrepreneurs to learn. The Sustainability Helix helps us understand how business can become more sustainable. Strategic backcasting is a methodology for planning under uncertain circumstances. BioDefinition guides decisions about creating or investing in a biodiversity business. BioSwot analyses strengths, weaknesses, opportunities and threats in the linkages between the business and the biodiversity. BioGovernance puts in place structures to preserve the biodiversity integrity of the business and to secure achievement of biodiversity performance. Product stewardship focuses on minimizing not only pollution from manufacturing but also all environmental impacts associated with the full life cycle of a product.

- **Legal framework regulating climate change**: Companies with international operations are today increasingly subject to various emissions regulations and standards in key markets. The Convention on Climate Change and the Kyoto Protocol embodied the core principles of a multilateral response to climate change. Given the increasing awareness of climate change and the role of business in bringing it about, entrepreneurs can expect the policy and regulatory environment to adapt and produce such policies as the introduction of carbon pricing schemes, providing support for research and development in zero carbon technologies and processes, imposing mandatory energy efficiency standards, and raising investment in network infrastructure such as public transport systems and smart electricity grids. A coordinated approach to policy measures will be critical in order to improve the productivity of energy and natural resource use, reduce ‘policy risk’ to create a conducive environment for private investment in clean infrastructure and encourage innovation in low/zero-carbon and environmental industries.

- **Sustainability performance measures for entrepreneurs**: Climate change has suddenly exploded onto the agenda of financial disclosure statements around the globe. Companies are now talking about climate change both positively (touting their own progress on emissions reductions) and negatively (disclosing the ways in which climate change can hurt the bottom line). Entrepreneurs can now find a variety of planning, strategy and performance tools to use in launching and evaluating new
sustainable ventures. Many companies are required to disclose sustainability performance measures on their progress toward sustainable development. These tools include: Life cycle assessment (LCA); Factor X; ISO 14 000; Environmental impact assessment (EIA); Material flow analysis (MFA); Triple bottom line performance measures; Carbon footprints; and Food or product miles.

- **The need for a sustainable business plan:** As entrepreneurs we are collectively reaching the tipping point where we have to change our business models to respond to sustainability issues. We can and must advance sustainable development initiatives taking into account the importance of mitigating and adapting to climate change. We now need to plan for every final impact of their business with sections on greenhouse gases, energy use, clean power and other emissions-reducing strategies.

**Epilogue**

At the top of this piece I quoted Ray Anderson, “What’s the business case for ending life on earth?” Since the Stern Reports, perhaps that should be turned on its head: “What is the business case for saving life on earth?” For too long entrepreneurs have been part of the problem – not part of the solution. Ray Anderson’ daughter, Harriet Langford, collected some of his quotes (Saporta, 2014) that might spark a brilliant discussion. Here are a few of them:

- **Status quo is a powerful opiate.**
- **Doing well by doing good.**
- **Doing business by respecting earth.**
- **Live mindfully of the need of all species and of each other.**
- **We only pass through this world once; we can either leave it a better or worse place.**
- **I am a recovering plunderer.**
- **I read Paul Hawken’s “Ecology of Commerce” and wept.**
Bibliography


THE PRICE TAG OF FAMILY BUSINESS INVESTMENTS:
TRADING ENTREPRENEURSHIP FOR SOCIOEMOTIONAL WEALTH

Giacomo Laffranchini
College of Business and Public Management
University of La Verne
1950 Third Street
La Verne, CA, 91750
Phone: (909) 448-1589
glaffranchini@laverne.edu

Michael R. Braun
School of Business Administration
The University of Montana
32 Campus Drive,
Missoula, MT, 59812

Si Hyun Kim
College of Business and Public Management
University of La Verne
1950 Third Street
La Verne, CA, 91750
Abstract

We integrate entrepreneurial orientation and socioemotional wealth perspectives in order to investigate investment decisions of family-owned firms in relation to environmental munificence and past performances. Using a panel of Italian firms (2006-2010) we show that family firms, unlike their nonfamily counterparts, are risk-seeking when environmental munificence is low and risk-averse when it is high. However, this result is conditioned on family businesses’ past performance; family firms making investments when environmental munificence is high and past performance is low, as well as those with a strong performance record but a poor resource environment, outperform their non-family counterparts. The implication for theory and practices are also discussed.

Extended Abstract

The present paper explores the role environmental munificence and past performances play on family firms (FOBs)’ willingness to pursue entrepreneurial activities (in the form of capital expenditures) that help the organization to thrive but that may nevertheless undermine a family’s socioemotional wellbeing. Calling upon components of the socioemotional wealth (SEW) perspective (Gómez-Mejía et al., 2013; 2015) and the entrepreneurial orientation (EO) our study delves into a more complex interaction of FOB characteristics and environmental factors, its impact on risky activities, and the subsequent performance outcomes of those activities. Specifically, we explore the role environmental munificence plays on family firms’ willingness to pursue entrepreneurial activities that help the organization to thrive but may nevertheless undermine a family’s socioemotional wellbeing. Environmental munificence refers to an environment’s capacity to support ongoing and sustained growth for an organization (Castrogiovanni, 1991; Dess & Beard, 1984; Zahra, 1996). The risk-return equation for family
and non-family businesses is expected to be dissimilar when taking into consideration resource availability or scarcity in light of past performance variability (Choi et al., 2015; Kotlar et al., 2014). With family managers already willing to take dissimilar business risk to preserve their SEW (Gómez-Mejía et al., 2015; Gómez-Mejía et al., 2013), the added stimulus of environmental munificence is bound to spur either the alignment or misalignment of family and business goals. Therefore, our research extends previous findings (e.g., Schepers et al. 2014) by addressing the following research questions:

How do environmental munificence and family management’s performance aspirations, in combination, influence strategic risk taking? And,

What is the performance outcome of family management’s decisions made under varying levels of environmental munificence and performance aspirations?

We tested our hypotheses on a panel (2006-2010) sample of 117 family and non-family firms (583 firm-observations). Our empirical analyses relied on Feasible Generalized Least Squares (FGLS) technique (Wooldridge, 2012) and controlled for the possible presence of endogeneity and reverse causality biases (Heckman, 1979). In partial conflict with our hypotheses, we observed FOBs becoming increasingly risk-seeking by raising the levels of capital expenditures both during good-times (i.e., high munificence and strong past performance) as well as bad-times (i.e., low munificence and low past performance). In effect, managing families seem to take advantage of these ‘good times’ to take risks without significant repercussions to either firm performance or SEW. In this way, external and internal influences in FOBs combine to align EO and SEW, thus driving higher resource allocations towards capital projects. Instead, low environmental munificence seems to drive the family to bank on its strong past performance to secure its position at the expense of future investments. Alternatively, FOBs
struggling with past performance may opt to make good-enough investments when environmental munificence is high in the hope that rising tides will lift all boats. When taking into account the performance impact of this tension, FOBs making investments under circumstances of resource abundancy and poor performance, as well as those with a strong performance record but a poor resource environment, showed better returns than their non-family counterparts.

Our study contributes to the field of research of entrepreneurship and family business in multiple ways. First, we shed light into the black box of the EO-performance link in family businesses by paying heed to potential tensions arising from threats to SEW. By doing so, our study adds to the ongoing dialogue exploring the repercussions of family involvement on the behavior and decision making styles in FOBs (Cruz & Nordqvist, 2012; Gómez-Mejía et al., 2014; Schepers et al., 2014). We also add to recent studies by supporting the case that a family firm’s willingness to engage in risky activities is not an either-or proposition, but driven by heterogeneous behavior arising from different internal and external dynamics and characteristics (Kraiczy et al., 2014; Chua et al., 2012). Second, unlike previous studies (e.g., Casillas et al. 2009; Kotlar et al., 2014; Westhead, 1997) that focus on environmental factors of dynamism and buyer-supplier relationships, we investigated the influence of resource availability or scarcity on decisions pertaining to necessary yet risky investments. Last, our use of capital expenditures as a measure for entrepreneurial activity and risk-taking differs from studies taking into account R&D investments (e.g., Gómez-Mejía et al., 2014; Kotlar et al., 2014; Patel & Chrisman, 2014). While partially a function of our dataset of Italian firms and related accounting practices in Italy, our reliance on capital spending may have some larger implications for both the theory and practice of risk-taking in family businesses. With R&D and investments in capital infrastructure
reflecting different levels of uncertainty, payback periods and associated performance variability (Kothari et al. 2002), the question of how family managers make decisions in light of these differences provides for an interesting research avenue.

Works cited


Title II of the Jumpstart Our Business Startups Act (JOBS Act) aims to make it easier for new ventures to raise funds from accredited investors. The goal of our study is to understand whether Title II crowdfunding represents an opportunity for women-owned companies (those that have one or more female owners/founders) to raise capital at rates similar to companies owned by men. To address this question, we explore a dataset containing 6,234 Title II crowdfunded offerings aggregated across 17 crowdfunding platforms between September 2013 and December 2015.

Our findings reveal that women-owned businesses are under-represented on Title II equity crowdfunding platforms (15.2%) as compared with their participation in angel investments (29.2%). However, an analysis of the Title II data indicates that, in most industries, women-owned businesses were as successful, if not more so, in receiving funding commitments as businesses owned by men. The two industries where women-owned businesses were less successful than
their male-owned counterparts in terms of receiving funding commitments were real estate and online and mobile gaming.

**INTRODUCTION**

A number of studies have shown that female business owners have difficulty gaining access to external capital (Brush, Carter, Gatewood, Greene, & Hart, 2001; Lee & Denslow, 2004; Lins & Lutz, 2016). In 2015, women-owned companies accounted for only 29.2% of entrepreneurs seeking angel investments (Sohl, 2015). In addition, only 15% of women-led companies were successful in raising capital, as compared with 22% for male-led companies (Stengel, 2015). While the number of female angel investors has increased dramatically over the past few years, they still represent only about 26% of all angel investors (Stengel, 2015).

The emerging area of crowdfunding presents the possibility of democratizing early-stage investment in startup companies. Mollick (2014) noted that the term “crowdfunding” has been applied in so many ways that “a broad definition of crowdfunding is therefore elusive, especially as crowdfunding covers so many current (and likely future) uses across many disciplines.” The Securities Act of 1933 and the Securities Exchange Act of 1934 (Securities and Exchange Acts) forbade public solicitation by new ventures without a prior registration of the offered securities and the provision of detailed audited financial statements (Foley & Paul, 2015). In response to the financial crisis of 2007-08, the Jumpstart Our Business Startups Act (JOBS Act) was passed in 2012. The financial crisis made it even harder for new ventures to raise capital. The JOBS Act was designed to address this challenge by relaxing the existing regulatory filing requirements for several types of new venture fundraising. Title II of the JOBS Act specifically exempts the requirement for detailed regulatory filings as long as the companies raising money limit the fundraising to accredited investors, and other requirements are met. Accredited investors include individuals with income in excess of $200,000 per year for the previous 2 years or net worth (excluding the primary residence) over $1 million.

The Title II provisions of the JOBS Act became effective in September, 2013. Title II offerings conducted through online platforms generated more than $1.27 billion in capital commitments through December 31, 2015, based on the data we reviewed. This is a rapidly growing area of practice, yet there is very little published research on Title II crowdfunding (Vogel & Moll, 2014).

The goal of our study is to understand whether Title II crowdfunding represents an opportunity for women-owned companies (those that have one or more female owners/founders) to raise capital at rates similar to companies owned by men. To address this question, we explore a dataset containing 6,234 Title II crowdfunded offerings aggregated across 17 crowdfunding platforms between September 2013 and December 2015.

The remainder of the paper is structured as follows. First, we present a brief introduction to the issue of funding for female entrepreneurs and examine the existing research in that area. Next, we provide an overview of crowdfunding in general and research related to this study. We address the methodology of our study and we present the emergent insights from the analysis. We conclude with the discussion of our contributions to entrepreneurial education.
Financing for Women Entrepreneurs: Overview and Related Research

According to the U.S. Census Bureau, in 2014 there were 7.8 million privately-held companies owned by women. These companies generated an estimated $1 trillion in sales and employed approximately 7.8 million people (U.S. Census Bureau, 2014). While women-owned companies play an important part in the economy, many still are met with challenges in a number of areas. First, according to the U.S. Census Bureau, women-owned companies tend to be smaller than companies owned by men. In fact only 11.7% of women-owned companies had salaried employees (U.S. Census Bureau, 2014). Second, although there are of course many exceptions, women-owned companies seem to be more prevalent in certain sectors; health and social assistance, educational services, and retail and wholesale trade are the most predominant (U.S. Census Bureau, 2014). Third, women-owned companies represent a small fraction of companies in high-growth technology areas (Morris, 2006).

A number of studies have shown that female business owners have difficulty gaining access to external capital (Brush et al., 2001; Lee & Denslow, 2004; Lins & Lutz, 2016). This problem holds true for both debt and equity financing. Treichel and Scott (2006) found that while women business owners were significantly less likely to apply for a bank loan, they were no more likely to be turned down for those loans than businesses owned by men. In addition, women-owned companies typically applied for smaller loans. According to Brush, et. al. (2001), between 1953 and 1998, less than 5% of all venture capital funding went to women-owned businesses. Coleman and Robb (2009) showed “that women used dramatically lower amounts of total capital, debt, and equity to start their firms than men.” (pg. 12)

Researchers have posited a number of reasons why some women-owned companies use less external funding than men-owned companies. As has already been noted, some women entrepreneurs start businesses in sectors that may not be seen as having high growth potential by certain investors. Morris (2006) found that some women entrepreneurs choose to follow a more modest growth strategy for their businesses. Studies have shown that some women entrepreneurs may be more risk adverse than men and less willing to give up control (Constantinidis, Cornet, & Asandei, 2006). Finally, some research suggests that women entrepreneurs and small business owners face discrimination from external funding sources (Coleman & Robb, 2009).

Crowdfunding Overview and Related Research

The core function of crowdfunding is to solve the need for capital among new business ventures and existing small businesses. Crowdfunding as a term covers a very broad range of practices that allow entrepreneurs and small businesses to raise capital. Four distinct types of crowdfunding projects are generally recognized, based on what the investors or donors receive in return for the funds that they provide to the entrepreneurs: donation-based, loan-based, rewards-based and equity- or securities-based (Marchand, 2016). Donation-based crowdfunding is not relevant to this research and is not further considered. To illustrate the differences among the three remaining types of crowdfunded projects, we will discuss some examples of the crowdfunding platforms corresponding to each type.
Peer-to-peer (P2P) or marketplace lending exemplifies loan-based crowdfunding. The P2P lending space encompasses both small business lending and loans to individuals. Companies such as OnDeck and Funding Circle allow individuals to invest in loans to small businesses. These loans are sometimes secured by the collateral in the business and a personal guarantee from the business owner. The authors could find no relevant academic research in the area of P2P lending.

Kickstarter exemplifies rewards-based crowdfunding. Entrepreneurs and artists can post their projects on Kickstarter and solicit funding. The rewards available to potential backers vary by project type but typically take the form of a gift or acknowledgement. The backers of an independent film may be acknowledged in the credits. The backers of a new electronics device or idea may be rewarded by getting a discount and an early delivery of the planned new product. Some rewards-based crowdfunding projects may also include royalty-based crowdfunding of artistic ventures. For example, BandBackers.com allows investments in music projects with a royalty on the proceeds as the reward to the backers.

A recent study (Marom, Robb, & Sade, 2015) used data from Kickstarter to examine gender differences of successfully funded projects. Of the projects they were able to classify by gender, women made up about 33%. This figure is largely in-line with the 2012 Census which found that 36.3% of businesses were owned by women (U.S. Census Bureau, 2014). When it comes to investors on Kickstarter, the statistics were more in line with population demographics, with women accounting for 43.3% of investors. In addition, female investors were more likely to back female entrepreneurs. The opposite was also true: males tended to invest in companies led by a male. The research also found that female entrepreneurs sought lower funding targets than male entrepreneurs.

The study also looked at gender differences across the various project categories on Kickstarter. Women comprised the majority of entrepreneurs in only three categories: dance; fashion; and food. In the “hot” areas of technology and games, women accounted for only 15.3% and 8.4% of projects, respectively. In addition, women investors were under-represented in the technology (23.6%) and games (17%) categories.

Equity-based crowdfunding is a relatively new form of crowdfunding in the United States. This is in part due to the legal restrictions imposed by the Securities and Exchange Acts that required companies seeking to raise capital from the general public to register the securities and file extensive financial disclosures prior to the fundraising effort (Foley & Paul, 2015). The securities laws and rules also impose periodic reporting requirements on the publicly-traded companies, creating a significant compliance cost and burden for these companies and erecting a barrier to public funding of certain entrepreneurial ventures.

Given the relatively recent emergence and rapid evolution of equity crowdfunding as a phenomenon, the body of research remains relatively limited (Brown & Davies, 2015). Much of the research on equity crowdfunding has been done outside of the United States. Australia, for example, was a pioneer in equity crowdfunding. The Australian Small Scale Offering Board was established in 2005 as the first platform of its kind brokering fundraising by small businesses (Sandlund, 2012). The United Kingdom legalized equity crowdfunding in 2011 which led to the emergence of several equity crowdfunding platforms (Ahlers, Cumming, Günther, & Schweizer,
2015). An analysis of 58 equity crowdfunded ventures on the Seedrs platform in the UK showed that female-led ventures were more likely to succeed in attracting equity financing (Vismara, Benaroio, & Carne, 2016.).

Crowdfunding was widely expected to democratize both access to funding and access to potential investment opportunities. There is an emergent stream of research that suggests that although the Internet may remove the barriers to sharing information, the due diligence that needs to be done on the potential investments still serves as a barrier to connecting geographically remote investors with potential investment opportunities. Syndicate investments may help to overcome these challenges because the due diligence is performed by the lead angel investor who is typically geographically proximal to the potential investment opportunities. This is a proposed reason for the success of syndicate-based investing (Agrawal, Catalini, & Goldfarb, 2014).

DATA AND METHODOLOGY

The dataset for this study was obtained from Crowdnetic Corporation (Crowdnetic), a technology and data company that aggregates and normalizes private-company data from 17 leading U.S. crowdfunding platforms targeting the opportunities created by Title II of the JOBS Act. The dataset contains information about 6,234 Title II offerings from these intermediaries, from inception through December 31, 2015.

An exploratory analysis of these Title II offerings was conducted to examine overall capital commitments by gender, distribution of commitments by industry and gender, and success of offerings by industry and gender.

More than $233 million in capital commitments was recorded in the last quarter of 2013 (Title II became effective in Sept. 2013). The total capital commitments increased from $473 million in 2014 to more than $570 million in 2015. Even more impressively, the average amount of capital commitments increased dramatically from $181,486 per successful issuer in 2014 to $493,659 per successful issuer in 2015.

Overall, women-owned businesses represent only 15.2% of all offerings. This is far below the percentage (29.2%) of women entrepreneurs that seek angel investments (Sohl, 2015). There was also a gender difference when comparing companies that received funding. 27.8% of women-owned businesses received some level of capital commitments, as compared to 33.2% for companies owned by men. For those offerings that received capital commitments, women-owned businesses received only 13% of the minimum target, as compared to 31% for non-women-owned companies. In addition, women-owned companies sought lower funding targets on average: $2.59 million vs. $4.49 million for non-women owned companies. Figure 1 summarizes the percent of companies that are women-owned and women-led in the dataset.
In the next step of our exploratory analysis, we examined the distribution of Title II offerings by industry and gender. 292 industries (covering 8 sectors) are represented among the Title II offerings in our dataset, spanning the range from accounting services to aerospace. Table 1 summarizes the number of offerings, gender distribution among those offerings, and the contribution to the total for the top 10 industries.

**TABLE 1. Top 10 industries by number and share of Title II offerings**

<table>
<thead>
<tr>
<th>Industry name</th>
<th># of Offerings</th>
<th>% of total</th>
<th># Women-Owned</th>
<th>% Women-Owned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Estate</td>
<td>453</td>
<td>7.3%</td>
<td>39</td>
<td>8.6%</td>
</tr>
<tr>
<td>Social Media</td>
<td>312</td>
<td>5.0%</td>
<td>40</td>
<td>12.8%</td>
</tr>
<tr>
<td>App Software</td>
<td>175</td>
<td>2.8%</td>
<td>28</td>
<td>16%</td>
</tr>
<tr>
<td>Digital Media/New Media</td>
<td>119</td>
<td>1.9%</td>
<td>20</td>
<td>16.8%</td>
</tr>
<tr>
<td>Education K-12</td>
<td>111</td>
<td>1.8%</td>
<td>29</td>
<td>26.1%</td>
</tr>
<tr>
<td>Specialty Retail, Other</td>
<td>104</td>
<td>1.7%</td>
<td>28</td>
<td>26.9%</td>
</tr>
<tr>
<td>Online &amp; Mobile Gaming</td>
<td>98</td>
<td>1.6%</td>
<td>10</td>
<td>10.2%</td>
</tr>
<tr>
<td>Entertainment, Other</td>
<td>93</td>
<td>1.5%</td>
<td>12</td>
<td>12.9%</td>
</tr>
<tr>
<td>Professional Services, Other</td>
<td>86</td>
<td>1.4%</td>
<td>11</td>
<td>12.8%</td>
</tr>
<tr>
<td>Business Software &amp; Services</td>
<td>83</td>
<td>1.3%</td>
<td>13</td>
<td>15.6%</td>
</tr>
<tr>
<td>Social Commerce</td>
<td>83</td>
<td>1.3%</td>
<td>14</td>
<td>16.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1717</strong></td>
<td></td>
<td><strong>244</strong></td>
<td><strong>14.2%</strong></td>
</tr>
</tbody>
</table>
Next, we examined the industry distribution of successful offerings. For the purposes of this study, a successful offering is not a percent-of-target test but is defined as one that has at least some level of capital commitments. The real estate industry holds by far the lion’s share of successful offerings. Table 2 summarizes the distribution of successful offerings for the top 10 industries by the total number of successful offerings and average success rates overall and for women-owned companies.

**TABLE 2. Top 10 industries by average success of Title II offerings**

<table>
<thead>
<tr>
<th>Industry name</th>
<th># of Offerings</th>
<th># of Successful Offerings</th>
<th>Overall Success Rate</th>
<th># Successful Women-Owned Offerings</th>
<th>Success Rate Women-Owned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Estate</td>
<td>453</td>
<td>274</td>
<td>60.5%</td>
<td>13</td>
<td>33.3%</td>
</tr>
<tr>
<td>Social Media</td>
<td>312</td>
<td>54</td>
<td>17.3%</td>
<td>7</td>
<td>17.5%</td>
</tr>
<tr>
<td>App Software</td>
<td>175</td>
<td>46</td>
<td>26.3%</td>
<td>10</td>
<td>35.7%</td>
</tr>
<tr>
<td>Digital Media/New Media</td>
<td>119</td>
<td>33</td>
<td>27.7%</td>
<td>7</td>
<td>35.0%</td>
</tr>
<tr>
<td>Education K-12</td>
<td>111</td>
<td>17</td>
<td>15.3%</td>
<td>4</td>
<td>13.8%</td>
</tr>
<tr>
<td>Specialty Retail, Other</td>
<td>104</td>
<td>36</td>
<td>34.6%</td>
<td>10</td>
<td>35.7%</td>
</tr>
<tr>
<td>Online &amp; Mobile Gaming</td>
<td>98</td>
<td>29</td>
<td>29.6%</td>
<td>1</td>
<td>10.0%</td>
</tr>
<tr>
<td>Entertainment, Other</td>
<td>93</td>
<td>40</td>
<td>43.0%</td>
<td>5</td>
<td>41.6%</td>
</tr>
<tr>
<td>Professional Services, Other</td>
<td>86</td>
<td>31</td>
<td>36.0%</td>
<td>4</td>
<td>36.4%</td>
</tr>
<tr>
<td>Business Software &amp; Services</td>
<td>83</td>
<td>33</td>
<td>39.8%</td>
<td>6</td>
<td>46.1%</td>
</tr>
<tr>
<td>Social Commerce</td>
<td>83</td>
<td>25</td>
<td>30.1%</td>
<td>4</td>
<td>28.6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1717</strong></td>
<td><strong>618</strong></td>
<td><strong>35.9%</strong></td>
<td><strong>71</strong></td>
<td><strong>29.1%</strong></td>
</tr>
</tbody>
</table>

**CONCLUSIONS**

The main goal of this study was to explore how women-owned businesses are using equity crowdfunding. The exploratory analysis of 6,234 offerings that were posted across 17 crowdfunding platforms in the period between September 2013 and December 2015 revealed that women-owned businesses are under-represented in Title II offerings (15.2%), as compared with their participation in angel investments (29.2%).

The study also revealed that online offerings in real estate development and real estate investments are more successful than those in other industries, based on the data from leading online Title II platforms. These two real estate industries represented 7.3% of all offerings and had a 60.5% overall success rate. The high success rate for real estate offerings may be caused by a number of factors – see (Mamonov, Malaga, & Rosenblum, 2017) for a complete discussion. However, this study has shown that women-owned companies are significantly under-represented (only 8.6%) in the real estate sector. In addition, women-owned companies have a lower success rate in the real estate industry (33.3%).
Women-owned companies are also under-represented in the next three most popular industries: social media; app software; and digital media/new media. The average success rate for women-owned companies in these three industries, though, is above average. This pattern demonstrates the potential benefits of Title II crowdfunding for women entrepreneurs.

There may be a number of possible reasons to explain the lower participation rate for women-owned companies in certain Title II offerings. This is a complicated issue with intersecting societal, social, cultural, economic, demographic, and other factors at play. These issues would provide a good opportunity for additional research and analysis.

**IMPLICATIONS FOR ENTREPRENEURIAL EDUCATION**

Venture financing is one of the key challenges in entrepreneurship. The passage of the JOBS Act has opened up new venues for financing early stage ventures, and data from online offerings shows that more than $1.27 billion in capital commitments were received in Title II offerings through December 31, 2015.

One of the central goals of entrepreneurial education is to build awareness of the resources that exist to support entrepreneurs and new ventures. The discussion of crowdfunding in general, and equity-based crowdfunding more specifically, merits inclusion in the entrepreneurial education programs. Studies of rewards-based crowdfunding platforms have shown that certain entrepreneur-, project-, and presentation-related factors are correlated with the success of the projects (Etter, Grossglauser, & Thiran, 2013; Mitra & Gilbert, 2014). Research on equity crowdfunding platforms in Europe and Australia has similarly suggested that third party signals, e.g., the existence of patents and advisory boards, are correlated with venture funding success (Ahlers et al., 2015). In contrast, relatively little is known about the factors that influence the success of equity crowdfunding under Title II in the United States (Mamonov et al., 2017), and this presents both a research opportunity and the opportunity to educate all entrepreneurs about the best practices in equity fundraising.

Our results suggest that women-founded ventures are under-represented among certain Title II offerings, and the empirical evidence suggests that the situation is even more imbalanced than the observations from traditional small business entrepreneurship and venture funding research may suggest. This presents an additional opportunity to help promote and advance women’s participation in equity crowdfunding as both entrepreneurs and investors.

Pedagogically, expanding the awareness of equity crowdfunding opportunities for both male and female entrepreneurs and investors would follow the teaching model advocated by Béchard and Grégoire (2005). The teaching model is “the representation of a certain type of setting designed to deal with a pedagogical situation in function of particular goals and objectives, that integrates a theoretical framework justifying this design and giving it an exemplary character” (Béchard & Grégoire, 2005) and it must address the content, the audience, the learning objectives, the learning assessment method and the discussion of the specific pedagogical techniques that can be employed in the pursuit of the learning objectives. The development of the full teaching model to support entrepreneurial education as it relates to crowdfunding opportunities is beyond the scope of the current work, however we would expect that examination of active projects that seek equity
crowdfunding may provide a useful pedagogical method that would likely yield a high level of student engagement and allow students to learn directly from practice.

CONTRIBUTIONS

This study makes a number of contributions to theory and practice. Our exploratory analysis of a dataset covering 17 leading securities-based crowdfunding platforms in the United States provides empirical evidence that crowdfunding has had limited impact on democratizing access to capital for woman-owned startups and small businesses. According to the data reviewed, woman-owned companies had greater representation in angel investing than in Title II offerings. Success rates, however, were greater for women-owned companies seeking funding through Title II offerings than from angel investors. The exact reasons for these trends are not clear and should drive future research in this area.

One unexplored possibility lies in the theory of gender homophily. Homophily refers to the idea that people tend to associate with those that share similar characteristics, such as gender (Ruef, Adrich, & Carter, 2003). This tendency has already been noted when it comes to reward-based crowdfunding. As was previously discussed, female backers on Kickstarter were more likely to back women-led projects, and male backers were more likely to support projects led by men. The dataset explored in this study only contained data about the offerings (demand side), not about the investors. It would be useful in future research to explore the supply side of equity crowdfunding.

Based upon the dataset studied, the percentage of Title II offerings involving women-owned companies (15.2%) is nearly half the comparable percentage (29.2%) in the angel investing space. This may represent an opportunity for equity crowdfunding platforms to seek to attract more women-owned companies. On the demand side, we see that women-owned companies have had good success raising funds via Title II, especially within certain industry sectors. More women-owned companies should consider equity crowdfunding as part of their overall funding strategy.

Finally, no research is without limitations. In this study, we have explored a dataset of over 6200 Title II offerings from 17 leading online platforms. Those offerings cover all 50 states and 292 industries. However, there are also a significant number of offline Title II offerings that were not examined as part of this dataset. These would likewise present a good opportunity for further research and analysis, including a possible comparison of women-owned companies’ participation and success in online vs. offline raises.
REFERENCES


Fiction and Fact? A Revisited Metaphorical Approach to Understanding the Entrepreneur

Diana Walsh, New Jersey Institute of Technology, diana.walsh@njit.edu
Katia Passerini, St. John’s University, passerik@stjohns.edu

Metaphorical thinking is the common first attempt at redefining ambiguous ideas, situations, or persons by looking at the unknown and finding a shared characteristic with something known. When it is the only method and is logically extended beyond scientific observation, and judged only by its plausibility or fit with local values, it can establish misleading theories and policies. To show the “power” of metaphorical thinking, the confusions caused by popular managerial metaphors in which humans are referred to as “animals” have been exaggerated and become guiding myths.

Metaphors, however, should not be abandoned. When combined with close observation of social situations, especially those that are not obviously related to the subject at hand, insights can be revealing. Two vintage metaphors are mined for insights into successful entrepreneurial traits: the “Diddler” or the con artist, by Edgar Allan Poe (Poe 1843); and the “Gambler” in "Where the Action Is" by Erving Goffman (Goffman 1969). These stories guide the journey into the complex mind of the entrepreneur. From Poe we learn that our humanity may include the urge to find a better way, even if deviant, to re-define opportunities in a situation. From Goffman we redefine “risk taking” as a common everyday behavior and come to appreciate the true consequentiality of proposing the “new”.

This approach leads to conclude that: (1) Individual traits cannot be deduced from models, they must be observed in the context where they are created; (2) Social context,
situations and interactions, support bringing out success skills. Such skills can be taught, are not only innate peculiarities, and we can support them through entrepreneurial education.

**Animal Metaphors Extended to Myths: Hedgehog Leadership**

The original analogy defining an entrepreneur as the “hedgehog” focused on the irony that, though the hedgehog was an ignorant animal, compared to the innovative fox, the one thing it knew saved its life. From this tiny comparison was built the edifice of “hedgehog leadership,” which includes confident, stalwart, and skeptical of the new, single-minded, and stubborn leadership, not to mention the order-seeking belief that ideologically sees the world connected by simple relationships. This is astonishing since the hedgehog is a small animal only interested in defense, nothing is aggressive or risk-taking about it. In fact, we know of no other characteristics it might have. And, its one skill is not unassailable, foxes have been known to roll the balled up hedgehog down a hill into water, where it has to uncover or drown. This exemplifies how far and erroneously social definitions can be elaborated beyond the first comparison, and proves W.I. Thomas's theorem, (Merton 1995) warning that once an idea is thought to be real, it will be real in its consequences.

**First Useful Human Metaphor: The Diddler**

"Man is an animal that diddles, and there is no animal that diddles but man ... A crow thieves; a fox cheats; a weasel outwits; a man diddles. To diddle is his destiny." (Edgar Allan Poe) (Poe 1843)

Poe's classic description of the “Diddler” includes his statement that what distinguishes humans from other animals is a fondness for the hustle: finding the hole in an ambiguous
situation that can be exploited for personal gain. Though his examples tend toward the illegal, his description of the undefined loopholes highlights a special way of thinking.

Poe's simplest example is the “lost item ad” diddle (Poe 1843). A Diddler watches the newspapers for an expensive lost item advertised in only one paper. The ad is then duplicated in all the other papers, but with his address. The fact that the original ad may appear only in one newspaper increases the odds that the Diddler will get the prize for a small outlay of the reward. As long as the owner does not read ads in other papers, the loophole creates a way for continuous profit. Poe's list of the Diddler's traits is comparable to lists of entrepreneurial traits, but deviates by including emotional characteristics and motivations:

*Minuteness, Interest, Perseverance, Ingenuity, Audacity, Nonchalance, Originality, Impertinence, and Grin.*

Some differences raise questions, especially impertinence and grin. Certainly a part of present day entrepreneurial presentations, and often necessary for being seen as "special", but seldom mentioned in official lists of traits.

"He sneers in your face. He treads on your corns. He eats your dinner, he drinks your wine, he borrows your money, he pulls your nose, he kicks your poodle, and he kisses your wife." (Poe 1843)

The trait “grin” is also instructive. When the day is done, it is the grin of self-satisfaction that completes the transaction. This coupled with Poe's idea of originality: "He would return a purse, I am sure, upon discovering that he had obtained it by an unoriginal diddle," are an introduction to the next important questions not yet answered in most studies of entrepreneurial
behavior. Why do they do it? For the hope of becoming a Unicorn of some size or other? What about the thousands of ambiguous situations that do not promise untold wealth?

**Second Human Metaphor: The Action Seeker**

Goffman's (Goffman 1969) insights are based on insights gathered through participant observation in casinos where he observed the action of gamblers. His concept of "action" begins with the observation that many situations called risky are really uncertain. In risk, the odds and profit/loss are at least approximately calculable: relatively simple to define and accept or reject. Uncertainty demands an entirely different mode of disambiguation and behavior. The initial situation is baffling and must be defined and re-defined numerous times and each re-definition is done within a social context that gets more complex as understanding develops through following one false path after another.

When we say that entrepreneurs are not "risk averse", we are really saying that they are beyond gamblers: they attempt opportunities whose potentials are not really "odds", but "unknown futures". In entrepreneurial situations the real risk is an exaggeration of everyday life. We all risk our social characters whenever we make a social “bet”, i.e., attempt a new idea or action can be accepted by the audience, or seen as outrageous. Rarely is action an end in itself, even in pure gambling, and never in more social contexts.

Goffman's method is social anthropology, participant observation, or ethnomethodology, but its importance is in orientation. Bottom-up not top-down; observation, not logical deduction. How to invent the initial breakthrough idea cannot yet be specified, but a main clue is provided by Mark Twain’s lament that fiction is much harder to write, because it must be plausible. Truths or rules that appear logical should be the first to be examined. Opportunities occur during
inductive redefinition of apparently simple explanations. Top-down explanatory paradigms are often based on metaphors or other conventional assumptions that have the side-effect, or sometimes the overt goal, of inhibiting redefinitions. It may just be that entrepreneurs are “created” by the context, not just discovered.

**Using metaphors as pedagogical tools**

The reflections in this review contribute to the teaching of entrepreneurship by offering an opportunity to inventory the various ways in which “animal” and other metaphors have been used to explain the complex world of the entrepreneur. Such metaphors can be deconstructed to illustrate typical characteristics, and can be criticized and analyzed with the idea of identifying more cogent comparisons that best represent the multi-faceted variations of the entrepreneurial world. The approach used herein becomes both an instrument of better pedagogy and a tool for message simplification, which we encourage current and future research to adopt.

**References**


Poe, E. A. (1843). "Raising the Wind; or, Diddling Considered as One of the Exact Sciences." *Saturday Courier* **13**(1).
Literature on entrepreneurship has produced evidence showing that strong ties are socially constraining for the development of entrepreneurs’ economic activity (Barr, 2002) while weak ties are often considered to be beneficial for the economic development of entrepreneurship (Hoang & Antoncic, 2003). However, this paper critically examines this assumption in the context of informal entrepreneurship. Some authors (Jack 2005; Berrou & Combarrous 2012) have started to call for a review to this assumption, because now it is believed that strong ties could also be important in the entrepreneurs’ economic activity.

Besides that, few empirical studies in the area of informal entrepreneurship have been done (Williams & Nadin, 2010), but even less literature is found in the informal context of developing economies. Most of the literature about the strength of ties, only measures their impact in the economic performance; this research also measures what is happening in the social performance in order to add more information to the field. Mexico City was chosen for conducting this research because one of the most observable behaviors during the past decades in Mexico is the increase of the informal economy (Samaniego, 2008) where at least 64.3% of the economically active population is involved. (Niño, Garza & Palacios, 2008).

This paper is organized as follows: in the first section, literature about informal entrepreneurship and the strength of ties is reviewed. In the second section the methodology of the paper is addressed, introducing the 50 face-to-face interviews performed. The third section analyzes the findings and results of the empirical work, showing how Mexican informal entrepreneurs tend to build strong ties with their primary stakeholders. Finally, the conclusions are presented in the fourth section.
Informal Entrepreneurship

An informal entrepreneur is defined as the owner/manager of a business which engages in paid work that is legitimate in all aspects apart from the fact that it is not declared to the state for tax, social security and/or labor law purposes (Williams, 2009). They are considered as rational economic actors that have chosen to work in the informal market -which is characterized by the presence of excessive competition and instability (Berrou & Combarnous, 2012)- to avoid the costs, time and effort of formal registration (Williams, Nadin, & Rodgers, 2012). A profile of this group of entrepreneurs include that they are clustered in lower-income, marginalized populations, and excluded from the formal labor market (Williams & Nadin, 2010). Entrepreneurship in the informal economy seems to be perceived as a trivial and not ambitious practice (Bureau & Fendt, 2011); nevertheless, recent studies have provided evidence that the informal sector is associated with positive changes in human development, especially in countries with weak or incongruent institutions (Amorós, Couyoumdjian, Cristi, & Minniti, 2016).

Today, a large proportion of the global labor force is employed off-the-books: 48% in North Africa, 51% in Latin America, 65% in Asia, and 72% in sub-Saharan Africa (ILO, 2002). According to specialists this economy is not disappearing, on the contrary, it is becoming extensive and it is even growing in the richest developed countries such as the USA (Bureau & Fendt 2011; Adom & Williams, 2012).

It is important to mention that Colin Williams is an author that has been promoting research in informal entrepreneurship in recent years, mainly in Europe. However, despite his admirable efforts, there are not enough studies about this issue, and it is more worrying when we realize that these kind of workers represent a large proportion of the labor force in developing regions such as Latin America (ILO, 2002). As scholars established in Mexico, we are aware of the challenge of
informal entrepreneurship and that is why we join the efforts of Colin Williams trying to understand the informal entrepreneurship in the context of a developing country, and help institutions to face this challenge. To create a stronger literature of informal entrepreneurship we invite scholars, especially scholars of developing nations, to start to replicate studies and compare their results in order to give solutions to this situation, and have a better understanding of informal entrepreneurship.

**Theoretical Foundation for the Study**

*Networking theory.*

Entrepreneurship has embraced networking theory for exploring the development of new ventures (Dod & Patra, 2002). The entrepreneurial networks are defined as the total sum of relationships in which an entrepreneur participates and provides an important resource for his, or her, activities (Dod & Patra, 2002). These networks also are described as a complex blend of social and professional ties, bonded by trust (Adom, 2015) that can be articulated through the mechanism of membership in formal organizations, through the links an entrepreneur develops with suppliers, distributors and customers, or through the utilization of social contacts, including acquaintances, friends, family and kin (Dod & Patra, 2002). Networks are perceived to be important because they open up entrepreneurial possibilities, provide access to useful, reliable, exclusive information, and also provide moral and psychological support to reduce anxiety experience during business start-ups for new entrepreneurs (Anderson & Jack 2002; Kuada, 2009).

Social networks are composed of three salient dimensions: 1) network structure –that could be about an individual’s family network or a business network-, 2) member’s attributes and 3) content of ties. Content of ties of a business network is described in turn, by other three factors: strength of
ties, social role and exchanged resources. The strength of ties in a simple way is measured by the degree of trust between two parties, and it can be divided into weak and strong ties (Berrou & Combarrous, 2012; Dubini & Aldrich, 1991; Sequeira, Mueller, & McGee, 2007). This social networks’ classification is shown in Figure 1 (see Appendix A).

**Strong and weak ties.**

Granovetter's work is the most used by scholars referring to the strength of ties, which he describes as the combination of the amount of time, emotional intensity, intimacy, and reciprocal services (Granovetter, 1973).

The strength of a tie has been measured with the closeness of contact (Lin, Dayton & Greenwald, 1978), for example, weak ties are characterized by infrequent and distant relationships between units (Hansen, 1999). If they interact less than twice per week, it is identified as a weak tie; meanwhile strong ties consist of frequent interaction occurring at least twice a week (Granovetter, 1973). The strength of a tie has also been measured with the reciprocity between participating actors, and according with Kilkenny, Nalbarte, & Besser (1999) to be reciprocated, support most both given and received. Weak ties are identified with unreciprocated relationships that provide benefits flowing in only one direction, and strong ties with reciprocated relationships whose benefits flow in both directions (Krackhardt, 1992; Schechter & Yuskavage, 2011). Networks with two-way flows should exhibit high levels of support (Jackson, Rodriguez-Barraquer, & Tan, 2012). Besides that, Jack (2005) identified the strength of a tie by: 1) the type of information provided, 2) the usefulness and applicability of the relationship to the entrepreneurial situation at a particular point in time, and 3) the extent to which respondents were prepared to trust the information provided by the tie for economic purposes.
Within the entrepreneurial context, people are likely to have greater trust in the competence and the information provided by their strong ties (Jack, 2005; Levin & Cross, 2004) and it is easier to ensure a higher quality in the transmission of this knowledge between people who can readily interact in a well-coordinated fashion (Cummings & Teng, 2003). Strong ties are also useful in the initial phase of a new firm’s development, and also for vulnerable actors and individuals in an insecure position (Berrou & Combarnous, 2012; Pool, 1980). These networks frequently include family members and friends who are the most important source of resources, information and support (Birley, 1986).

In terms of information relating to opportunities, strong ties are perceived to be less helpful than weak ties because they provide redundant information that comes from the same social network; whereas, weak ties enable access to other social circles playing a crucial role in the circulation and access to new information (Granovetter, 1973). Strong ties can constrain the extent of business activity, lead to tensions within the network and can also be problematic (Jack, 2005). In table 1, some of the mentioned characteristics are shown.

Table 1. Characteristics of strong and weak ties

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Strong ties</th>
<th>Weak ties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction among its members</td>
<td>Frequent and close (Granovetter, 1973)</td>
<td>Infrequent and distance (Hansen, 1999)</td>
</tr>
<tr>
<td>Resources of information</td>
<td>Redundant (Granovetter, 1973)</td>
<td>Nonredundant (Burt 1992: Granovetter, 1973)</td>
</tr>
<tr>
<td>Type of tie</td>
<td>Homogeneous</td>
<td>Heterogeneous</td>
</tr>
<tr>
<td>Trust level</td>
<td>High (Levin &amp; Cross, 2004)</td>
<td>Low (Levin &amp; Cross, 2004)</td>
</tr>
<tr>
<td>Useful for:</td>
<td>• Vulnerable actors</td>
<td>• Diffusion processes</td>
</tr>
<tr>
<td></td>
<td>• Initial phase of a new firm</td>
<td>• Mobility opportunity (job changes)</td>
</tr>
<tr>
<td></td>
<td>• Individuals in an insecure position (Berrou &amp; Combarnous, 2012; Pool 1980)</td>
<td>(Granovetter, 1973)</td>
</tr>
</tbody>
</table>

Source: Own elaboration
Nevertheless, few studies have been done to understand the relevance of the strength of ties in the informal entrepreneurship. Recently, Berrou and Comarnous (2012) made a quantitative analysis in the context of informal urban African economies, and their results show that the strength of ties has a significant impact on economic outcomes. However, more investigation about the nature of informal entrepreneurship and the study of this hidden enterprise culture in different context is still necessary (Williams & Nadin, 2012).

**Social and economic performance.**

Most of the research about the strength of ties focuses on its impact in economic performance (e.g. Barr, 2002; Hoang & Antoncic, 2003; Jack, 2005; Berrou & Comarnous, 2012). However, as Wettstein (2012) arguments, it is opportune to rethink and reconfigure moral responsibility and more in a society where the corporative form is broken (Metcalf & Benn, 2012). For this purpose, analyzing issues that go beyond economic performance is necessary, therefore, we decided to include in this research the impact that strength of ties has in the social performance. It is important to mention that as Montiel (2008) established, the correlation between economic and social performance is still unclear. That is why we first studied the impact of strong ties in the economic performance and second, in an independent way, the impact of strong ties in the social performance.

Venkatraman and Ramanujam (1987) define economic performance as the sales growth, net income growth and return on investment; however, for this research business economic performance is understood as the growth of sales and income. It is important to mention that most of Mexican informal entrepreneurs do not follow an accounting system, so the measure of this dimension is done through their own perception of their business activity.
Social performance is understood as the fairness and balances in the distribution of wealth to its primary stakeholder groups and to unduly avoid favoring one group at the expense of other groups (Clarkson, 1995). Attention to social performance improves relationships with key stakeholder groups (Waddock & Graves, 1997) for example, the good employee relations might enhance productivity; positive perceptions of the firm by outside stakeholders may lead to increased sales or reduced management cost (Waddock & Graves, 1997). For this research the primary stakeholders are the customers, employees, suppliers, leaders, other informal entrepreneurs and close community.

**Research Design**

**Methodology.**

To achieve the aim of this article, a 2015 study involving face-to-face interviews of 50 informal entrepreneurs in Mexico City is analyzed. The research employed interpretive methodology of qualitative basis because we wanted to study this phenomenon in its natural context and as Denzin and Lincoln (2000) establish, qualitative research is based in a set of interpretations of material practices that perform social actors (in this case informal entrepreneurs) in their natural environment to achieve making sense of the phenomenon under study. The researcher becomes an instrument who studies a limited number of persons or particular cases, allowing in-depth and detailed analysis, which is important for us.

The selection of a place for a study is an important decision because it has to have representativeness of the phenomenon, thus Mexico City was chosen because one of the most observable behaviors during the past decades in this country is the increase of the informal economy. The following three percentages clearly show the magnitude of this phenomenon in
Mexico: 1) informal sector produces 30% of the Mexican GDP (Samaniego, 2008), 60% of the total economy is informal (Castanon, 2014), and 3) 64% of the labor force works in this economy (Niño et al., 2008). That is why Mexico is an ideal place for studying the assumption of this research.

**Data analysis.**

Great care was taken in collecting the data; we sought to holistically understand the nuances and the idiosyncrasies of the phenomenon being studied. During our time in the field, (summer 2015) we tried actively to acquire exposure to the “social realities” that are manifested among informal entrepreneurs. We visited two of the biggest informal markets in Mexico City, at least once per week. We even made some purchases there in order to understand the dynamic of the informal entrepreneurs. Besides that, photos, notes and spontaneous conversations were held as a way to support the findings.

In the interviews, we first asked informal entrepreneurs about their socio-demographic data, e.g. gender, age, employment situation, and followed with questions focused on the relationships with their stakeholders and their economic and social performance. The interviews were conducted in Spanish and all of them, were recorded and later translated into English. We interviewed mainly people who sell commodities as well as carpenters, mechanics, masons and even an actor. The output of data collection efforts consisted of 317 pages that compile the translation of the interviews, handwritten notes of the observations, and fifty photographs. As Penaloza (1994) did, interview summaries were developed as a data reduction technique to facilitate comparisons among types of informants and themes; we also used member checking and memos as comparative techniques to obtain credibility in this research.
The composition of our sample is shown in Table 2, and the major lines of business activity of the informal entrepreneurs interviewed are shown in Table 3.

Table 2. Socio-demographic characteristics of the sample.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Age 20 to 29</th>
<th>Age 30 to 39</th>
<th>Age 40 to 49</th>
<th>Age 50 to 59</th>
<th>Age 60+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>21</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Men</td>
<td>29</td>
<td>8</td>
<td>7</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>10</td>
<td>10</td>
<td>7</td>
<td>16</td>
</tr>
</tbody>
</table>

Source: own elaboration

Table 3. Main business activity of informal entrepreneurs’ sample.

<table>
<thead>
<tr>
<th>Small restaurant</th>
<th>Small grocery stores or related</th>
<th>Mason or carpenter</th>
<th>Sale of fruits and vegetables</th>
<th>Mechanic</th>
<th>Beauty and clothes shops</th>
<th>Flowers shops</th>
<th>Other services</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>16%</td>
<td>12%</td>
<td>12%</td>
<td>8%</td>
<td>8%</td>
<td>4%</td>
<td>32%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Source: own elaboration

**Findings**

According to the literature section, a strong tie in this study was observed when some of the following events or commentaries arose: 1) frequency of interaction (at least twice a week) among the informal entrepreneurs and their stakeholders, 2) a reciprocated relationship, 3) the relationship was useful and applicable in a particular business situation of the informal entrepreneur, 4) the extent to which respondents trust the information provided by the stakeholder.

**Strong ties with customers.**

In the informal context we studied, we noticed that informal entrepreneurs are likely to have strong ties with their customers, who spend a considerable amount of time talking about issues that have nothing to do with the process of buying and selling: such as sports, TV programs, news, and even
their personal lives. Those topics are hardly related with the purchasing process, the latter occurs with some customers more than twice a week, and perhaps even for more than ten minutes.

When we talked to informal entrepreneurs about their stakeholders, they told us that the customers are the most important part of their business, because they trust them for buying a product/service and spend their money with them; subsequently that money becomes the informal entrepreneurs’ income. As an informant expressed:

Well obviously, the customer is an important person; they are the most important people because they buy from you, and you, in turn give them a product that is valuable for them; they trust you and you trust them.

We realized that informal entrepreneurs tend to create a close relationship with their customers because they think that, having a good relation with them will make them feel comfortable and then customers will return, that will make their sales and profits grow. Even when the informal entrepreneur is tired, he tries to offer a smile and to have small conversations with his customers. In the long run, some of these relationships become friendships, so they have to put even more effort to please them. As an informal entrepreneur who sells fruit commented:

In my case, I get up at 4 am in order to be able to arrive to the wholesale market early and get quality products, and at the same time cheaper for my customers.

If customers have a problem with the product, the informal entrepreneur looks for the way to solve the situation with dialogue in order to keep the customer. As an informal entrepreneur who sells clothes pointed out when we asked her how she solved these situations:
Fortunately, I have not had any really bad situation with my customers, but if it happens that something is not to their liking, I try to fix it. I want to deliver quality, if something is wrong, I explain the reason to them, and if it is necessary, I accede to their demands. In this way I assure that the customer will come back.

In fact, we observed that informal entrepreneurs have more problems with infrequent customers (weak ties), and even sometimes, informal entrepreneurs sell the worst products to the occasional customer. They prefer to lose this kind of customers specially if the process of sales is uncomfortable and brings problems to them.

**Strong ties with employees.**

Informal entrepreneurs build strong ties with their employees, which was observed during the time spent with them. Most of the businesses in informal markets work from 5 am to 8 pm every day, there is plenty time to have constant conversations between them, not only about work, but also about their personal lives. In our field research, we observed that informal entrepreneurs and their employees are constantly laughing and joking, their favorite issue of conversation is soccer, and this topic is useful for “breaking the ice” when they have a new employee. As an informal entrepreneur told us when we asked him about his relationship with his employees:

*I treat my employees as friends because as I told you about my schedule, we spend a lot of time together, 4 or 5 days a week, we live together even more than with our family, so I must be thankful and treat them with dignity.*

In some cases, we realized that when an informal entrepreneur has covered his basic necessities, he starts to hire more employees that in some cases are his own relatives. He is flexible with them, tries to provide a fair payment and creates a trust environment. As a mason explained:
I like to create a very friendly environment, I try to be just in my payment, and nobody can say that I do not pay them well. Of course, this is in exchange for hard work and loyalty from them.

**Strong ties with suppliers.**

There are two types of informal entrepreneurs’ suppliers: the formal suppliers and informal entrepreneurs. In both cases, we observed that informal entrepreneurs tend to create strong ties with them; this was identified for the kind of useful information provided by the supplier and the extent to which informal entrepreneurs trust the information provided. As an informant said:

*I know the person that supplies me well; the salesman always recommends to me what is best for my customers and myself.*

The informal entrepreneur believes that trust among he and his suppliers is important to solve any problem. For example, sometimes suppliers want to sell him more products than he really needs, but the latter converses with his supplier and explain him why he cannot buy that amount of product: As an informal entrepreneur who has a grocery store described:

*I try to dialogue, and explain to my suppliers why I cannot have these particular products because we need products that move quickly. There are times when they do not understand, when you are stressed, but we always try to solve the problem pacifically. In some cases, it may be necessary to talk with the supervisor or even with the manager, but always in a cordial way.*

**Strong ties with leaders.**

When we finished our data collection, one of the first issues we could identify is that within informal economy in Mexico City, there are two different groups of informal entrepreneurs according to the place they work; the entrepreneurs who work in private property and the
entrepreneurs who work in public thoroughfare. In the case of the informal entrepreneurs who work in the public thoroughfare, there is a particular procedure to put up a business because they need a “leader”. Once they have elected the place they want to work at, the first thing they have to do is investigate who the leader is. These leaders are the persons who solve any problems with legal authorities, trying to reach an agreement which will allow them to continue selling in the public thoroughfare. So, the informal entrepreneur asks the leader for permission and if he/she accepts and gives the permission, the second step is to pay him/her a fee for the space the informal entrepreneur will occupy. This fee may be per week, per month or per year. As an entrepreneur who sells vegetables told us when we asked him about the function of a leader:

*He (the leader) is the person who makes arrangements with the government; the leader is in charge of those issues.*

When we asked informal entrepreneurs about the relationship with their leaders, informants reported to us that they trusted them mainly because the leaders protected them in two ways; 1) solving any problem with authorities and 2) trying to balance the number of similar businesses in the zone. These leaders evaluate the viability of the business and ensure that a new one does not harm other informal entrepreneurs.

Informal entrepreneurs’ leader is the person who faces the problems in the first place, and at some point, exposes his integrity, so leaders are seen as protectors and that is why informal entrepreneurs try to establish a close relationship with them. We noticed that informal entrepreneurs even take care of their leaders, for example, when they need food, water, or ask them to participate in a fight, they do it. In some way, they are thankful for all the things that leaders have gotten for them. As an informal entrepreneur who sells flowers commented:
I do not have permission, I am with a leader and the leader is the one who protects me. Any trouble with the authority, I call the leader, and the leader solves it.

We observed that most of the leaders, usually (at least one every 15 days) have a meeting in order to assess the situation of their neighborhood, and they also like to receive feedback from the informal entrepreneurs. Most of these meetings end in a party, where entrepreneurs and leaders share several hours together. All of these facts confirm that informal entrepreneurs have strong ties with their leaders.

Strong ties with other informal entrepreneurs.

Talking about the strength of ties with other informal entrepreneurs in their surrounding area, we observed that they also create strong ties among themselves. They spend more than 8 hours per day cohabiting in a relatively small area, so trust and friendship are also important for them. In most cases, they take care of the others, as an entrepreneur that sells tacos commented:

Yes of course, we take care of each other (other informal entrepreneurs).

Informal entrepreneurs reported that they are very supportive, especially with the new ones because they know that their business context is not easy. With these kinds of actions, new informal entrepreneurs start to behave respectfully and take care of those who have been there a longer time; they become a business community with strong ties. As an informant commented:

Well, firstly, when we started to sell clothes, my daughters were tiny, we did not have an established place and because of the economic situation, I started this business because it gave me the opportunity not to neglect my daughters. We went near the church of “Tulyehualco” and also to the market of “Milpa Alta” where we sold clothes. It was a good experience; the people there,
were kind and supportive, gave me a life lesson: all the people of the other businesses helped me and gave me food. It was a beautiful thing.

**Strong ties with close community.**

In the case of Mexican informal entrepreneurs, we observed that most of them live in zones where informal activity is very common, so the families of their communities live similar situations; they trust the other families and create strong ties. For example, they organize parties where the community eats, drinks, dances, talks, and friendship is built. Although informal entrepreneurs work most of the time, in their communities it is very important to celebrate religious holidays or special days such as mothers’ day, and organize big parties which are enjoyed and shared by all.

Informal entrepreneurs commented that they feel part of a community and are willing to help its members, for example, by supporting their soccer or basketball teams, as an informant reported:

*We buy their jerseys, shorts, tennis, pay the referee and sometimes when the work is relatively relaxed, we also go to the games; these kinds of activities are common in informal context and in this way, it is easier to have environments where everybody cares about each other.*

We observed with all this evidence that strong ties are built between informal entrepreneurs and their community.

**Discussion**

In the findings section, this research showed that in the context of Mexican informal economy, entrepreneurs create strong ties, not only as a way of doing business, but also as style of life, but the question to be solved is if those strong ties are beneficial for their economic and social performance and this is what we are going to discuss in this section of the paper.
The relevance of strong ties in economic performance.

According to the information provided by the informal entrepreneurs and the information collected through observation, even participation, it is possible to assert that they tend to build strong ties with customers, employees, suppliers, leaders, other informal entrepreneurs and close community, but we also realized that these ties have beneficial impact in their economic performance.

Informal entrepreneurs consider that having strong ties with customers increase the frequency of purchases because customers feel confident and will certainly return. We observed that when there is friendship and trust between the seller and the customer, problems related to the quality or price of a product are easier to be solved, avoiding any type of additional costly claim. Actually, these problems do not rise very often, because when an informal entrepreneur has customers as friends, he tries to put more effort when he is selling the merchandise, and when an informal entrepreneur knows that a product is not the best regarding quality and price, he explains the reason. The main income of the informal entrepreneur comes from the customers who have strong ties with him; therefore, the sales and profit growth depends on his ability to create strong ties with new customers and maintain the current ones.

Informal entrepreneurs, who also create strong ties with suppliers, consider that having a close relation with them, will allow negotiating better prices, spending less time on merchandise verification, and at the same time maintain the quality in order to attract more customers. This represents more income and more profit in the long run.

Regarding employees, we noticed that one reason that informal entrepreneurs have for creating strong ties with them is because they want to prevent pilfering. Having these strong ties allows informal entrepreneurs to know where the employees live, what other activities they have, and also
to know their families, and with all these knowledge, informal entrepreneurs prevent the reduction of their income and profits. Besides that, informal entrepreneurs consider that creating a trusty labor environment, will generate better labor performance that will be reflected in their income and profits.

Strong ties with leaders also affect economic performance of informal entrepreneurs due to the fact that leaders can take decisions that may increase their income and sales, e.g. placing them in a more visible place for customers, or reducing the fee that the informal entrepreneur has to pay, or giving him special protection against authority, and avoiding potential competition.

In the case of other informal entrepreneurs and close community, when informal entrepreneurs help them, protect them, support them with money and with actions, the strong tie is created. The other informal entrepreneurs and the close community feel committed to buy from them, the result being an increase in income and profit. Besides that, financial organizations like banks, have strict rules for lending money to informal entrepreneurs; this suggests that alternative networks may have to be created to obtain sources of financial support, and this particular strong tie with other informal entrepreneurs and their community plays a vital role to achieve it. So, in the end, we can assert that strong ties between informal entrepreneurs and their stakeholders are beneficial for their economic performance.

On the other hand, it is important to mention we observed that strong ties also have negative implications, such is the case when informal entrepreneurs are “working”, sometimes spending a great amount of time talking, while they could be doing a productive task; so, it could be interesting to research which could be the optimal time to spend with a stakeholder. Other negative point is that when a stakeholder feels so much trust with the informal entrepreneurs, he sometimes abuses
and wants more benefits that he really deserves; but in the end, in this context, we assert that strong ties are more beneficial than weak ties for having a better economic performance.

**The relevance of strong ties in social performance.**

Social performance is understood as the fairness and balance in the distribution of wealth to its primary stakeholder groups and to avoid favoring one group unduly and at the expense of other groups (Clarkson, 1995). For this research the primary stakeholders are the customers, employees, suppliers, leaders, other informal entrepreneurs and the close community. According to the information provided by the informal entrepreneurs and the information collected through observation it is possible to affirm that the strong ties built with the main stakeholders, allow the informal entrepreneurs to have a better social performance; this means that in some way they are trying to balance the interests for everybody.

For example, customers require merchandise on time, at the best possible price and quality. Informal entrepreneurs are used to getting up at 4 or 5 am to go to the large markets so that they can offer what their customers demand. Employees are interested in good work environment and fair salaries that informal entrepreneurs give them, although it does not include social security. During our time in the field, we observed that when entrepreneurs have strong ties with other informal entrepreneurs, their leaders and close community feel supported by each other and the group of informal entrepreneurs works as a whole, taking care about their interests, and facing authorities together.

On the other hand, a negative aspect we noticed, is the fact that informal entrepreneurs sometimes consider that they are indestructible and any group that does not share their interests is seen as a threat. For example, when authorities go for inspection in an informal zone, they are sent to talk
with the leader, but if they do not reach an agreement, authorities can even be assaulted by informal entrepreneurs. These entrepreneurs consider the authorities a rival group that do not share their interests and informal entrepreneurs know that the power they have as a group, is difficult to be broken by any authority, even the government. We observed that this sensation of power that some groups of informal entrepreneurs have, may damage the rest of the society, because, even we agree that informal entrepreneurship has its positive impacts and helps to cover the lack of formal jobs, too much power accumulated in a group could bring negative consequences. So, we call for further research, in this sense, to measure to what point these strong ties can have negative consequences.

**Conclusions and Implications**

This study has presented the results of a qualitative research that analyzes the relevance of strong ties between informal entrepreneurs and their primary stakeholders. It presents an interesting extension of Granovetter’s (1973) work, although the results are not in accordance with his argument of “strength of weak ties”, nor with Jack (2005) who asserted that strong ties constrain the extent of business activity and can lead to tensions within the network. Our findings point that, contrary to the theory of Granovetter (1973), Mexican informal entrepreneurs’ strong ties do not appear to reveal a social constraint, on the contrary, these strong ties, stimulate the approachability to resources required to develop their business activity (e.g. access to information, vendor support, loyal customers, engaged employees, financial and nonfinancial support, etc.) helping them to reduce the instability of their context and having a positive impact in their economic and social performance.

These results are in the same line with his reviewed work (Granovetter, 1983) and also with other authors who claim that strong ties contribute to secure resources (Elfring & Hulsink 2003) and
become especially important in a context of uncertainty for vulnerable people that are in an insecure position (Pool, 1980). Such is the case of immigrants (Marger, 2001; Rajman 2001; Yoo, 2000) and informal African entrepreneurs (Berrou & Combarnous, 2012).

Comparing informal entrepreneurs with other Mexican entrepreneurs operating in the formal economy, who may have access to institutional networks that offer them mainly financial support (for example the angel financial networks, Productive Chains Program,¹ and other programs implemented by government institutions) informal entrepreneurs are at a disadvantage. They depend on the strong ties built between themselves and their primary stakeholders in response to this lack of institutional support.

Nevertheless, strong ties can bring certain risks for this group of entrepreneurs such as isolation or lose access to new business contact information or feedback; maybe the ideal entrepreneurial network includes a mix of strong and weak ties. Future research should look to determine what level of strong ties is needed, and examine the effect of a particular mix of strong and weak ties in the informal entrepreneurial networks.

**Implications for entrepreneurship education.**

This article provides evidence of the benefits that strong ties bring for the economic and social performance of informal activity that occurs in a developing country. Strong ties must not be seen as enemies of the weak ties, but as a complement, and entrepreneurship education should show to the student the complementarity of these ties. Besides that, entrepreneurs who operate in the informality are also part of the entrepreneurial ecosystem, and the conditions that allow them to be

---

¹ Mexican government program whose objective is to facilitate the first contact between small and medium-size enterprises with the large companies established in Mexico and with the sectors of the public administration in order to conduct businesses (Garcia & Paredes, 2001).
more efficient should also be treated in classroom in order to obtain a more holistic understanding of this ecosystem. It is extremely relevant that students turn to observe what is happening in the informal economy, not only because of its contribution to GDP or the employments generated in this sector, but also because it has positive and negative lessons to learn. For example, even though informal entrepreneurs do not declare taxes or pay social security contributions, there are benefits to an economic flow that connects stakeholders in innovative ways. Maybe the first idea could be to help them to become formal entrepreneurs, and some authors have already proposed different ways to achieve this: e.g. too much growth of the informal entrepreneur increases the potential for authorities’ detection, removing economic barriers, pressure large formal economy firms to sever ties with suppliers using illegal means (Webb, Tihanyi, Ireland, & Sirmon, 2009). Nevertheless, we consider that before proposing any public policy, students should really understand the role that this little known form of entrepreneurship plays in the economy.

**Implications for governmental policies.**

As a result of the previous analysis it would be worth considering that future research analyzes the actions that the state should apply to enforce formal regulations. First of all, it would be important to objectively review if the actual laws and regulations are more adequate for large firms rather than informal and starting entrepreneurs. It is important for the government to realistically evaluate their regulations and search for a more appropriate road to motivate starting entrepreneurs and informal entrepreneurs to find opportunities in the legal economy. The previous effort should be considered due to the constant growth in developed and developing countries of the informal economy and its impact on the country’s GDP.
Limitations and Future Research

This research has its own limitations as it is a fact that the impact that strong ties have in the economic and social performance was only measured by qualitative aspects built from the interviews and direct observation of 50 informal entrepreneurs that conform the sample. Even though they were carefully selected to present a wide diversity, no claims are made to their representativeness of all Mexican informal entrepreneurs.

Despite these promissory outcomes about the relevance of strong ties on informal entrepreneurship, we realized that strong ties may also have negative implications that future research could address more deeply. We hope that this study encourages further research about this hidden culture not only in Mexico but also in other developing and developed economies and attracts the attention of the governments, academia, private institutions and civil society, because until now, it seems that there is not an effective strategy on the short and long run about the challenge of informal entrepreneurship.


References


Appendix A

Figure 1. Social networks’ classification

Social networks

- Network structure
- Member’s attributes
- Content of ties

  Strength of ties
  Social role
  Exchanged resources

- Weak ties
- Strong ties

Source: Own elaboration based on Berrou and Combarrous (2012).
Just act like an entrepreneur: Surveying literature on effectuation education

Abstract
Todd Fernandez and Nathalie Duval-Coetil

Sarasvathy’s theory of effectuation identifies thinking patterns and heuristics of successful entrepreneurs. One proposed use of effectuation theory is as a framework for entrepreneurship education. In this paper, we survey the literature on effectuation as it relates to entrepreneurship education. Through a systematized literature review, we identify existing work and analyze it using Bloom’s taxonomy and Pellegrino’s assessment triangle. Our findings show that more thoughtful, research connections may help realize the effectuation’s educational potential. We suggest an opportunity to re-contextualize the role of effectuation in entrepreneurship education from serving as content to serving as a cornerstone of assessment.

Executive summary

Simply increasing our understanding of effectuation as a theory is insufficient to build effective educational practice. Researchers and educators continue to work towards refining approaches that link entrepreneurship to entrepreneurship education. In this paper, we systemically review existing literature at the intersection of effectuation and entrepreneurship education to understand what is known, what is unknown, and where the field of effectuation education should go next.

Existing evidence indicates that students use less effectual logic than expert entrepreneurs use, but can shift towards more effectual thought through entrepreneurship education. From a more nuanced perspective, which we build using Bloom’s taxonomy, experts use effectuation and causation together in more evaluative and complex ways than students do. Experts use of effectuation and causation together supports arguments for teaching both effectuation and
causation to aid in building metacognitive understanding and fluency in approach, a suggestion which exists in literature (Mäkimurto-Koivumaa & Puhakka, 2013).

From another perspective, built on a framework of effective assessment, the typical approach in effectuation research has been to look for more or less occurrences of effectuation. Such an approach has limited as effectuation education moves forward. Instead, of being the behavior that is observed, effectuation fits more effectively as a way to interpret the behavior of entrepreneurship students.

We conclude this paper by proposing a set of research questions, and a role for effectuation in entrepreneurship education: Use effectuation as a means of framing programs and assessment rather than as the cornerstone content of entrepreneurial classes and programs. Instead of content (i.e., teaching effectual heuristics), effectuation becomes a tool to assess students’ understanding, application, and evaluation of predictive and non-predictive techniques.

**Introduction**

Researchers and educators continue to work towards refining approaches that link entrepreneurship research and practice, to entrepreneurship education (Fayolle, 2013). Both historical and contemporary approaches to entrepreneurship education use experiential, project-based learning heavily, but disagree strongly on what entrepreneurship content educators should include within those approaches (Pittaway & Cope, 2007). Many programs focus on skill and knowledge acquisition through entrepreneurship-related projects, others simulate or require the formation of a new or simulated venture, and still others focus on students’ acquisition of the habits and ‘mindsets’ of successful entrepreneurs (Purzer, Fila, & Nataraja, 2016). This search for the “right” approach is occurring within a context where researchers have called for more theoretically-driven pedagogy and curricular choices (Fiet, 2001a, 2001b). Both educators and
education researchers recognize a need for establishing distinct boundaries of curricular content, assessment, pedagogy, and ensuring the alignment of these components through existing learning models as a means to move entrepreneurship education forward (Fayolle, 2013).

The theory of effectuation (Sarasvathy, Simon, & Lave, 1998; Sarasvathy, 2008), has risen to prominence by formally identifying thinking patterns and problem solving heuristics that are common to successful entrepreneurs. While the theory is not without its detractors, who argue that effectuation is impractical or abandons the scientific method detractors (e.g., Arend, Sarooghi, & Burkemper, 2015, 2016), interest in it is strong as it provides a new lens through which to examine entrepreneurship.

Sarasvathy and others have suggested that effectuation is key to framing entrepreneurship education because it establishes a ‘rational’ (but not predictive) basis for the behavior of expert entrepreneurs (Nelson, 2012; Sarasvathy, 2008). That suggestion has come to pass through a significant and growing presence of effectuation as a core component of entrepreneurship education programs (Nelson, 2012; Read, Sarasvathy, Dew, & Wiltbank, 2016).

However, we perceive that this uptake has not been supported by a significant growth in educational research or research that shows an empirical understanding of how expertise develops, both of which are crucial to effective educational praxis. While posited here as a ‘problem’ with effectuation education, concerns of this nature exist in entrepreneurship education more broadly (Fayolle, 2013; Fiet, 2007a). It has also trouble fields such as engineering education (Streveler & Smith, 2006; Vest, 2008) that are defined by complex and highly integrated manifestations of expertise.

Without such research, the result are educational approaches that focus on teaching students the surface level behaviors of experts, focusing on replication of decision making
processes rather than understanding and truly integrating the critical thinking and adaptiveness that surrounds expertise (Lawson & Dorst, 2013; McKenna, 2007). Returning to the ties between entrepreneurship and design, such approach, analogous to ‘downloading’ content into students has been shown to be problematic if it does not sufficiently appreciate or enculturate students in the process of learning from experience that underpins expertise (Crismond & Adams, 2012).

To wit, the purpose of this manuscript is to survey the work on effectuation to date and propose pathways to develop effectuation’s educational potential to move students towards the often quixotic goal of developing expertise. Through a multi-stage process, we (1) map existing research that influences effectuation education to Bloom’s theoretical model of knowledge and ability; (2) explore potential appropriate roles for effectuation in entrepreneurship education using Pellegrino’s content-assessment-pedagogy triangle; and (3) suggest paths for entrepreneurship and effectuation education and scholarship that are critical to the future. The motivation of this work is not to review or comment on effectuation theory. Instead, it is to provide a roadmap of questions that must be answered to properly position effectuation within educational theory (e.g., pedagogy, assessment, and framing) and to fully realize effectuations’ value as a link between expert entrepreneurs ability and students’ entrepreneurial interest. As such, our manuscript attempts to answer the following questions:

1. What do we know about effectuation as it relates to education?

2. How does existing effectuation research align with educational theory and frameworks?

3. With current knowledge, how can effectuation inform entrepreneurship education?

4. What eventual role might effectuation play in entrepreneurship education?
Background

The theory of effectuation (Sarasvathy, 2001, 2008) proposes that expert entrepreneurs approach problem solving in ways different than typical managers. It characterizes a way of thinking that eschews attempts or approaches that focus on predicting and evaluating the likelihood of outcomes, a fundamental contrast typical business approaches. Effectuation builds from a premise that predictive approaches, which rely on markets behaving solely from known and static distributions, are not just less productive but are also fundamentally inappropriate for entrepreneurship (Knight, 1921).

Through studies of expert entrepreneurs, Sarasvathy defined the boundaries of effectuation theory and identified five heuristics (i.e., process steps or mental shortcuts) that expert entrepreneurs are more likely to use than “traditional” business experts in fields such as investment banking (Sarasvathy et al., 1998). These approaches to problem solving and decision-making are known as effectual (i.e., non-predictive or controllable) and vary from the causal (i.e., predictive or searching for a causal relationship) that investment bankers were more likely to use. These heuristics comprise a toolset at effectuation’s core (Sarasvathy, 2008) and eschew prediction. A review of the five effectual heuristics, and their contrast with predictive thinking, are available from the Society for Effectual Action (Sarasvathy, 2011).

Since the initial establishment of effectuation theory, an extensive, but still emergent body of research on effectuation has appeared (Perry, Chandler, & Markova, 2012; Read et al., 2016; Read, Song, & Smit, 2009). Literature reviews and meta-analyses focused on effectuation have detailed what the field knows, what gaps remain in the development of theory, and paths for research (e.g., Perry et al., 2012; Read et al., 2009). These reviews have sought to inform the future research on effectuation as a theory whether at the individual or firm level. The growing
attention paid to effectuation theory has been fueled by its appearance as a behavioral explanation, which crystallizes from basic conceptions of reasoning, uncertainty, and the limits of tools designed to make prediction driven decision (i.e., inferences).

A few studies have also begun to address what the role effectuation can or should play in the broader field of entrepreneurship, especially effectuation’s role in entrepreneurship education (Nelson, 2012). By extension, there are strong suggestions that effectuation theory can or should play an important role entrepreneurship education (Fayolle, 2013; Mäkimurto-Koivumaa & Puhakka, 2013; Read et al., 2016; Sarasvathy, 2008), including efforts to operationalize effectuation as educational interventions (Read et al., 2016). To date, this has taken the form of textbooks and the use of effectuation as the cornerstone content of entrepreneurship course and program design (Read et al., 2016).

However, existing work has limited ties to well-established educational theories, a common problem which is often noted in entrepreneurship education research (Fayolle, 2013; Fiet, 2001b). As a result, effectuation remains a theory that is poised to offer ways of rethinking entrepreneurship education but is still developing. The intent of this manuscript is to propose pathways that will result in more rigorous links between effectuation and education.

**Literature review methodology**

A literature review was conducted to create a systematized mapping of effectuation scholarship from the perspective of, or within the context of, education research (Grant & Booth, 2009). Systematized reviews follow a structured process but, for practical reasons, do not adhere to all of the structure present in a formal systematic literature review. In other words, systematized reviews seek to be transparent but do not predefine and structure each step prior to beginning work. Mapping reviews assess the current state of a field and seek to identify gaps. All
literature reviews generally consist of four phases, search, appraisal, synthesis, and analysis. We conducted our review in four stages: search, appraisal, synthesis, and analysis. The four phases serve the following purposes:

- **Search stage** – we identified a body of research that is relevant or significant to the field and research questions. The goal of the search phase is not total exhaustion of the research, but thorough and well-planned identification of relevant work.

- **Appraisal stage** - the collected papers are evaluated for their contribution to the field and their contribution to answering the study’s research questions.

- **Synthesis stage** - the identified papers are used to form a narrative that weaves together their conceptual contributions to develop a map or broader understanding of a body of research.

- **Analysis stage** - the research is used to identify major conceptual contributions as well as identify gaps in research or areas of research that have not yet been explored.

Because the body of literature comprising effectuation is developing rapidly, is multidisciplinary, and generally has not focused on education, this flexible search strategy is appropriate. It is more likely to identify papers that have the potential to influence, rather than merely those that actively engaged in, effectuation education efforts. Our goal was to ensure that we identified papers that performed effectuation research from an educational perspective, as well as papers that provided useful information to effectuation education efforts more broadly.

While optimally, this would take the form of a *systematic review of literature approach* (Grant & Booth, 2009), based on pre-defined search terms and methods, initial searches for literature on effectuation education turned up few results. Therefore, we modified the process to include literature that others had found relevant to education in addition to what matched our search terms. This resulted in using an iterative process of identifying relevant studies via citation
chains rather than database searches using keywords. This means the starting point was key literature within effectuation (e.g., Sarasvathy, 2008) and we then looked to papers cited by or citing those papers that mentioned education.

For each paper, we performed an appraisal step to include or exclude it from the study. This appraisal consisted of two criteria: 1) Whether the piece uses effectuation as a framework for studying or discussing entrepreneurship; and 2) whether the piece informs a discussion of entrepreneurship education. If included, we then reviewed literature cited by or citing the new paper. The search process continued until we failed to identify any further relevant literature.

Selected papers were then synthesized and analyzed. Synthesis and analysis occurred iteratively and guided by the frameworks described below. Synthesis involved reading the papers, note taking, extraction of relevant quotes, and summary or key points and methods. Analyzing focused on using the information extracted from literature to build a narrative response to each question and involved repeated outlining, ordering and reordering of evidence, and drafting to ensure a coherent structure and argument.

**Educational frameworks used in analysis**

As stated previously, within the field of entrepreneurship education there are ongoing calls to bring educational theories and frameworks to bear on the challenges educators face in defining the content of entrepreneurship education, selecting appropriate pedagogies, and defining methods of assessment (Fayolle, 2013). Fayolle noted the usefulness of considering teaching and learning models as a guide to understanding approaches to entrepreneurship education. While noting that many educational models exist, for this review we chose to examine the effectuation education literature through two of the most widely-known and well-established, the revised Bloom’s taxonomy (Anderson & Krathwohl, 2001) and the assessment triangle (J.
Pellegrino, Chudowsky, & Glaser, 2001). These frameworks provide a rigorous basis for exploring and synthesizing education research into a coherent structure of knowledge transmission or creation. Through the frameworks, we can make sense of student learning and provide context for research on education. Below, we summarize each framework and explain how they can and cannot assist in growing our understanding of the connection between effectuation theory and entrepreneurship education.

**The revised Bloom’s taxonomy**

The revised Bloom’s taxonomy (Anderson & Krathwohl, 2001), shown in Figure 1, provides a structured way of speaking about the progression of student ability on given tasks. The revised version of Bloom’s taxonomy was developed in the early 2000’s to better align the language of Bloom with modern approaches to outcomes-based assessment of learning. It builds on foundational work on hierarchical organization of knowledge and understanding conducted by Benjamin Bloom in the 1950s (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956).

Bloom’s taxonomy sorts the ability of students to use a particular piece of knowledge into a series of stages. These begin with the ‘remember’ stage, wherein students are able to recall a
piece of knowledge as necessary (e.g., recall the spelling of a specific word). The taxonomy then progresses through a set of series of intermediate stages including ‘analyze’ (e.g., a student can explain that adding an s to many words makes them plural), before ending with the ‘create’ stage which is representative of students producing new knowledge (e.g., a student usefully coining a phrase or term for something they wish to describe). For the sake of specificity, the version of Bloom’s taxonomy presented here is intended for the cognitive domain (i.e., knowledge based learning and development). Separate versions of Bloom’s taxonomy exist for affective (i.e., emotive or attitude based understanding) and psychomotor (i.e., physical skill) developmental domains as well. While a taxonomy is typically used to interpret or map learning outcomes in a course, it is also possible to use it as a framework to analyze cognition (Duncan, Dieffes-Dux, & Gentry, 2011) or, in our case, a field of research.

**The assessment triangle**

The second educational framework is the assessment triangle (J. Pellegrino et al., 2001). It demonstrates the components and relationships associated with effective educational measurement and assessment activities. The three corners of the triangle represent cognition, observation, and interpretation (Figure 2); which Pellegrino et al. argue must be align effectively to ensure effective assessment. Cognition refers to the characteristics of thinking that we wish to observe including characteristics of the population and the level that we expect or hope to see within learning taxonomies such as Bloom. Observation refers to the specific activities or tasks that students engage in which provides evidence that instructors can use to understand a student’s cognition.
Interpretation refers how we understand the collected evidence about a student’s cognition. Education literature (Bransford, Brown, & Cocking, 2000; J. Pellegrino et al., 2001; Pellegrino, 2006) often refers to ‘effective assessment,’ meaning assessments or measurements where the three corners are aligned so that the observations collect evidence of the cognition we wish to observe, the interpretations make sense of the evidence, and the interpretations align to improve understanding of student cognition.

Results: What we know, what we don’t, and what we need to

To address the research questions, we outline what the field currently knows about effectuation as it relates to education as our results. In this section, for each research question, we review the current scholarship associated with effectuation and education, we assess that knowledge using the educational framework, and then identify and describe gaps in the body of knowledge.
1. What do we currently know about effectuation as it relates to education?

The first research that addressed the effectuation-education relationship was a comparison of the use of effectuation by MBA students and experienced entrepreneurs (Dew, Read, Sarasvathy, & Wiltbank, 2009). Using a shortened version of the Sarasvathy’s (2008) original research protocol, Dew et al. found significant and large differences between the two groups. MBA students used significantly more predictive approaches than did experienced entrepreneurs. Students looked at problems less holistically, and more often attempted to decompose or deconstruct the situation into a series of smaller problems or decisions. Most importantly, experienced entrepreneurs were able to draw from their prior professional experience, which was apparent in their more frequent use of analogical reasoning (i.e., concretely drawing from prior experiences to answer questions posed during the study).

Beyond work grounded in Sarasvathy’s original protocol, other work on effectuation and education takes varying forms. One study conducted on corporate managers enrolled in an entrepreneurship program (Bureau & Fendt, 2012) observed a ‘drift’ (i.e., shift) towards effectuation during the course. Bureau and Fendt used case studies of project groups’ course deliverables to show how teams solved problems, and how a drift from causal/predictive to effectual/non-predictive approaches occurred during the semester. The levels of drift varied among the teams. Bureau and Fendt attributed this drift to components of the learning environment that encouraged experimentation and other entrepreneurial behaviors. As part of this study, the authors also identified ways in which entrepreneurship education activities do not simulate real world entrepreneurship authentically or realistically.

1 Bureau and Fendt’s article appears in French. Our study utilized a manually refined machine translation.
Outside of empirical studies, Mäkimurto-Koivumaa and Puhakka (2013) described a method of teaching effectuation and causation side-by-side in an entrepreneurship education learning environment. In their conclusion, the authors detail a list of educational tools and how those tools align with components of effectuation theory. From their review of literature, they identify projects and other activities that are active, experiential, and adaptive a reasonable path forward for teaching effectuation.

The authors’ argument aligns effectual logic in decision-making with prior work on entrepreneurial behaviors and mindsets. They argue that learning entrepreneurship is best done in an experiential, active, and information rich way and involves teaching both effectual and causal approaches to business decision making, whether or not the course is an entrepreneurship course. To make clear how they view entrepreneurship education as a process the authors explain:

*Therefore, entrepreneurship education is not only a pedagogical issue but an ontological and epistemological issue of how to approach the creative and constructive behaviour of human beings in truly uncertain business environments.* (Mäkimurto-Koivumaa & Puhakka, 2013, p. 2)

Their goal is to situate effectuation and causation as situated within the problem, rather than purely an entrepreneurial and non-entrepreneurial approach. By teaching the two methods side-by-side, the authors suggest that students will have more opportunities to practice the selection of appropriate problem-solving techniques, rather than just practicing the material they have been taught in closed form ways.

Another interesting connection is between effectuation education and design thinking. Glen, Suciu, and Baughn (2014) suggest that design thinking holds a place in entrepreneurship and business education, because of the similar nature of problems in both fields. Uncited in Glen et al. is another study by Dorst (2011) which also suggests such a tie, specifically noting the
conflation of problem types and solution processes of design and effectuation. Dorst suggests that both effectuation and design thinking expertise arise from the use of a specific subtype of abductive logic that values building understanding of a problem over finding solutions.

In summary, the empirical research conducted to date provides some understanding about differences in the use of heuristics at varying ends of the expertise spectrum (Dew et al., 2009), in specific groups (Authors; Sarasvathy, 2008), or within a single class (Bureau & Fendt, 2012). The non-empirical body of work on effectuation offers little explicit knowledge about how students learn or become users of effectuation, and provides only minimal discussion or evidence supporting specific educational approaches. However, the work does offer important, albeit sometimes implicit, insights into how to create learning environments that build students’ effectual abilities.

Aspects missing from the literature are a strong understanding of how expertise progresses, the process by which students build organized and intentional uses of the effectual heuristics, and how experiences that do or do not call for effectual logic affect students’ (and experts) decisions. The last point is especially pressing to understand how students and experts intentionally or unconsciously choose effectual techniques. Preliminary research by the authors has identified a subgroup of students who are highly likely to choose effectual techniques, like the expert entrepreneurs in Sarasvathy (2008). However, as it stands, there is little way for the field to make collective sense of that observation within the body of research that exists.

2. How does the current effectuation knowledge align with existing educational frameworks?

The second way of synthesizing the literature on effectuation is by mapping it to existing frameworks from educational theory. These frameworks represent accepted ways of looking at components of learning and education that build on bodies of evidence in those fields.
**Effectuation literature and Bloom’s taxonomy**

To understand how effectuation research maps to Bloom’s taxonomy we assessed the research questions, purposes, and methods of studies that we identified for this paper using our previously described search process. The goal was to understand, through an educational lens, at what level the resulting knowledge about effectuation gives us.

Because Sarasvathy provides significant quotes from study participants in her original work, it is also possible to map some expressions of effectual logic of expert entrepreneurs to the revised Bloom’s taxonomy framework as well. In the verbal protocol data quoted by Sarasvathy (2008) are expressions of knowledge at the higher-level end of the taxonomy (i.e., analysis, evaluation, and creation). Examples of *analysis* would involve experienced entrepreneurs using effectual heuristics to compare, classify, connect, or differentiate information when making a decision or a conscious effort to do the same on the choice of effectual or causal approaches. Examples of *creation* in effectuation would include the creation of new methods (e.g., the effectual heuristics themselves) to respond to perceived or actual failure of other methods. From the quotes from experienced entrepreneurs in Sarasvathy’s work, such behavior is perceptible.

“Traditional market research says, you do very broad based information gathering possibly using mailings. I wouldn’t do that. I would literally target, as I said initially, key companies who I would call flagship, do a frontal lobotomy on them. The challenge then is really to pick your partners, and package yourself early on before you have to put a lot of capital out. (Sarasvathy, 2008, p. 34)

What is apparent in this quote, beyond the use of effectual logic, is that the experienced entrepreneur has a clear understanding of both approaches. The participant *not only understands* how market research occurs, he makes a decision to reject that causal approach (i.e., the ‘textbook’ approach as Sarasvathy calls it) and choose an effectual approach. That understanding of both approaches and the selection of one over the other is a classic trait of evaluative thinking
The ability to situate or articulate both the causal and effectual approaches and call out strengths and weaknesses of each is representative of more advanced users of effectuation. However, we have not found any research exploring this nuance in students, and preliminary results from our own study strongly suggest that it is not present in students. Instead, both students’ causal and effectual statements are representative of the lower levels of Bloom’s taxonomy, typically understanding or applying. A representative student statement from our preliminary analysis of student data is “I guess I'd have to look at the target market and I guess where we'd want to start our launch. It is a virtual game, but you're going to have to have some basis for your initial market.” This example is representative of causal logic (i.e., market definition), as well as an example of the understand level of Bloom. The student is explaining what they could do with the data that they were presented. However, despite the protocol asking them to do so, they did not actually apply the causal logic to the data, data that the experienced entrepreneurs analyzed, evaluated, and dismissed. Similar examples appear when students use effectual logic. In our preliminary analysis, we noted the following exchange between a participant and the interviewer:

Participant: “I mean, I know there's marketing classes here [at the university] that you do simulations for markets. I feel like you could talk to classes like that…”

Interviewer: “And who would be your potential competitors?”

Participant: “I guess existing books or programs that are in place to help people learn about entrepreneurship. So normal courses, universities, if you're not going through them as your clients…”

As with the causal example, the student is choosing a path. In this case, the path uses partnering, one of the five effectual heuristics that Sarasvathy (2008) identified. Despite being effectual rather than causal, the behavior again falls into the understand level in Bloom’s
taxonomy. The application of effectual logic at the lower levels of Bloom’s taxonomy are not limited to college students. Bureau and Fendt (2012), working with experienced business executives who are novice entrepreneurs, identified teams that progressed to levels of *applying*. While Bureau and Fendt do provide empirical evidence that effectual behaviors are broadly speaking ‘teachable’. A similar set of observations appear in Dew et al.’s (2009) comparison of MBA students and experienced entrepreneurs. As with Bureau and Fendt, Dew generally focuses on how often students and experts applied effectuation, performing statistical tests on the use of each heuristic by each group. The focus on application extends beyond educational studies to work on effectuation as a whole, with quantification or ‘more’ and ‘less’ effectual as a common comparison among groups of people or other core units of analysis (Brettel, Mauer, Engelen, & Küpper, 2012; Sarasvathy et al., 1998; Wiltbank, Read, Dew, & Sarasvathy, 2009).

Mäkimurto-Koivumaa and Puhakka (2013) suggest that effectuation education programs should focus on teaching both effectual and causal approaches side by side. They argue that this approach will help students build metacognitive habits representative of higher levels of knowledge. They specifically note that such an approach would aid students in practicing how to analyze information, use that analysis to evaluate the appropriateness, and create unique processes to achieve the intended goal using effectual and causal approaches, as well as blended approaches that optimally use both (i.e., Bricolage), as suggested in other theoretical developments of effectuation (Fisher, 2012). Similarly, the educational activities and case studies shared by the Society for Effectual Action (2016) and the effectuation textbook (Read, Sarasvathy, Dew, Wiltbank, & Ohlsson, 2010) advocate for reflective space that has been shown in other educational studies to aid the development of higher level skills (Turns, Sattler, & Borgford-Parnell, 2014).
**Effectuation research and the assessment triangle**

The assessment triangle framework suggests that most efforts begin with a definition of the cognition (e.g., long division or how perform a value chain analysis) that researchers or educators wish to assess. As effectuation education research advances, a key question will be how the field chooses to measure and interpret the behavior of students to understand educational impact. The assessment triangle provides a framework for planning and articulating what is being measured, how it is being measured, and how those measures are interpreted. The framework is intended to, and has been, applied broadly too many types of educational measurements. Similar to our analysis of literature using Bloom’s taxonomy, we assessed the research questions, purposes, and methods of the effectuation-related studies identified in our search against the assessment triangle.

However, the use of the assessment triangle is often oversimplified in literature. Despite being presented as a way of understanding entrepreneurial thinking or cognition, making effectuation the cognition ‘corner’ of the triangle is not always the simplest or the most effective path. As described above, the manifestation of effectual or causal behavior occurs at various levels of learning (i.e., the levels of Bloom’s taxonomy). Assessment techniques for each level must be distinct and intentionally tied to those specific levels. In other words, an attempt to assess students’ evaluation of whether to use or not use effectual thinking will differ from the assessment of a students’ ability to apply effectual cognition. Further, suggestions of effectual cognition as an integrated ‘process’ rather than a set of individual heuristics or actions must be taken into account (Garud & Gehman, 2016).

Methods used to measure cognition vary with the details of the cognition that researchers and educators wish to assess. Some of the research to date (e.g., Authors; Dew et al., 2009; J.
Wheadon & Duval-Couetil, 2016) has used the original verbal protocol analysis developed by Sarasvathy (2001). Verbal protocols collect rich data from study participants, which are then analyzed to examine participants thinking patterns and processes. Other observations for creating educational assessment data about effectuation include project reports, interviews, and observations (Bureau & Fendt, 2012) as well as individual assignments, reflections, and case studies that mirror typical assessments in business classrooms (SEA, 2016). In addition to the qualitative data collection tools, one group created a survey intended to measure the use of effectuation (Chandler, DeTienne, McKelvie, & Mumford, 2011). In this case, however, the survey focuses on the actions that individual entrepreneurs (i.e., founders) did during the early stages of a venture (Chandler et al., 2011), which is not applicable to a student population.

Shared among all the methods of observation and analysis are two characteristics. First, they capture data strictly about decisions individuals (e.g., students or expert entrepreneurs) make in entrepreneurial situations. While this aligns with the pragmatist goals described in the development of effectuation (i.e., understanding how entrepreneurs behave in entrepreneurial scenarios [Read et al., 2016; Sarasvathy, 2008]) it may have limitations in educational environments where students have little real-world entrepreneurial experience. Observing the choice between effectual and causal heuristics in entrepreneurial situations may help separate how expert entrepreneurs (Sarasvathy, 2008) and students (Wheadon & Duval-Couetil, 2016) apply effectuation. However, current methods do not provide an understanding of the use or non-use of heuristics at more nuanced educational levels (e.g., Dew et al., 2009). Assessment or observations that do not rely solely on entrepreneurial scenarios, and instead seek to understand students’ behavior in both entrepreneurial and non-entrepreneurial scenarios, an extension of Mäkimurto-Koivumaa and Puhakka's (2013), would better align interpretation and cognition.
The opportunity is in collecting data on how and when students select causal or effectual approaches as opposed to assuming conscious choice based on what students do in a single context.

The second shared characteristic among the studies about effectuation emerges from how researchers interpret their observations. The published empirical analysis to date generally focus on quantification of which heuristics are applied. Typically, this builds from qualitative coding, with the evidence that drives coding schemes sometimes included (e.g., Bureau & Fendt, 2012; Sarasvathy, 2008) and sometimes not (e.g., Dew et al., 2009). While evidence within Sarasvathy’s original work (2008) suggests skills at the higher-levels of Bloom’s, the focus in research has been on application of heuristics and their frequency, with no research looking specifically at interpreting that behavior.

The ways in which observations are interpreted, and the way in which those interpretations align to the intended model of cognition, are critical to effective assessment. The interpretation (i.e., analytical methods of sense-making) evident in the studies discussed above focus on quantification, and look simply for more or less effectual action by study participants (e.g., Dew et al., 2009; J. Wheadon & Duval-Couetil, 2016). While this may prove useful as a comparative measure, it is far from a complete interpretation of effectual or causal cognition in students or experts.

In summary, the available evidence indicates that students use effectual logic less than expert entrepreneurs and can progress towards using more effectual logic through entrepreneurship education. However, some students appear to be highly effectual at an early stage for yet unexplained reasons. One potential way to make sense of this dichotomy is by viewing the progression of knowledge using Bloom’s taxonomy. While experts use effectuation
and causation in an evaluative way before applying the appropriate logic, students appear to focus on applying their knowledge. Such a perspective aligns with arguments for teaching both effectuation and causation to aid in building metacognitive understanding and fluency in approach, an existing suggestion in literature (Mäkimurto-Koivumaa & Puhakka, 2013). However, the evidence for this perspective is very limited and requires further development.

3. With current knowledge, how can effectuation inform entrepreneurship education?

Since the initial formulation of effectuation theory, interest in the manner in which it can influence entrepreneurship education has become evident (Read et al., 2016). As entrepreneurship education researchers have argued for years (Fiet, 2001b), it is critical that well-developed theories inform entrepreneurship education. As such, effectuation provides a set of behaviors that are common in in expert entrepreneurs, and links those behaviors to ideas that have long held a significant amount influence in entrepreneurship research (e.g., Knight, 1921; Nishimura & Ozaki, 2004). While the goals of entrepreneurship programs, and even definitions of entrepreneurship vary (Fayolle, 2013; Wheadon & Duval-Couetil, 2015), prioritizing the teaching of decision making methods employed by successful entrepreneurs seems to be a reasonable goal.

There are examples of organizing learning environments in a way that effectuation is the key content (Mäkimurto-Koivumaa & Puhakka, 2013). In these cases, the course is organized around the effectual heuristics, their use, and the reasoning behind their use being presented as the primary focus. Such an approach assumes that students have been educated using predictive approaches on most topics and focuses on adding tools from the non-predictive space. While the lack of research on effectuation pedagogy limits our knowledge of concrete strategies for doing so, initial arguments supporting active learning and project-based approaches (Mäkimurto-
Koivumaa & Puhakka, 2013) seem reasonable given the clear process of mimicking learning from experience as experts have.

However, within this potential role for effectuation within the context of education, we must acknowledge a paradox: The experts in Sarasvathy’s original study did not learn effectuation within a structured learning environment but instead built it from experiences and situations that challenged their predictive knowledge. Further, it is important to include in research the reality that experts know and understand causal techniques because they have used them, repeatedly, often over a period of many years. Therefore, their evaluation of causal techniques is heavily integrated with their effectual thinking (Sarasvathy, 2008; Wiltbank et al., 2009), a point that is present in some (e.g., Mäkimurto-Koivumaa & Puhakka, 2013) but not all (e.g., Bureau & Fendt, 2012) effectuation education research.

The limitation of effectuation as curricular content is buried in two questions that currently have no answer in literature: How is effectual expertise developed? And, how interlinked is the development of effectual thinking, causal thinking, and the process by which a student learns, and learns to employ, each? Further, these two questions do not address whether effectual logic is appropriate in all entrepreneurial scenarios that students are likely to encounter (Wheadon & Duval-Couetil, 2015).

In summary, as Fiet (2001a) suggests, the inclusion of theoretical content in entrepreneurship is important. Within current modes of thinking, effectuation makes sense as a key piece of content to include in entrepreneurship education because it provides a rigorous theoretical explanation of entrepreneurial expertise. However, the lack of studies of how students develop entrepreneurial expertise and the reality that expert effectuators did not learn effectuation in organized learning environment, leave that approach open to question. While one
study shows that a shift towards effectual behavior may occur, that should not be considered
evidence of students developing effectual expertise. Therefore, we posit the current answer to
this research question as follows: Effectuation is currently treated as primarily content or
cognition because of the field’s limited knowledge on the first two research questions. The
content use manifests through the focus of research in the effectuation research that answers
questions about applying effectuation or casuation. However, the potential for effectuation
education likely involves looking at how other fields teach theory derived from experience.

4. What eventual role might effectuation play in entrepreneurship education?

Efforts to introduce effectuation into entrepreneurship education assume that effectuation
has a purpose and value. While we that assumption seems reasonable, we also believe that it is
important to articulate what the value is and what its limitations are. According to its core
adherents (e.g., Bureau & Fendt, 2012; Dew et al., 2009; Mäkimurto-Koivumaa & Puhakka,
2013; S. Read et al., 2016; Sarasvathy, 2008), effectuation should serve as the content of
entrepreneurship education. That is, teaching students to act effectually will garner behavior that
is equivalent to Sarasvathy’s core expert population. By extension, pedagogical approaches and
assessment methods are then built that align to effectuation as content.

However, there are very real limitations of organizing teaching such that the actions of
experts are used as a direct analog for expertise. Other researchers have found that approach, and
the mindset that it arises from, common to entrepreneurship as well as unsatisfying (Ogbor,
2000). If we assess the available data on effectuation more closely, it is apparent that expertise is
more nuanced than simply applying effectual approaches. Among the research populations, the
students at a novice level and the entrepreneurship and bankers at a more expert level, are aware
of predictive theories and problem solving approaches (Sarasvathy, 2008). Yet only the
entrepreneurs chose to use non-predictive approaches. Further, what differentiates the experts is not only that they apply effectual ways of thinking (Wheadon & Duval-Couetil, 2016), but that they apply them with understanding, deft, and critical evaluation. For example, the effectual expert uses language that is referenced against real-world, prior experiences (i.e., analogical reasoning) within the context of entrepreneurial activity at a much higher rate than students with little experience (Dew et al., 2009). The experts in Sarasvathy’s study, never formally “learned” effectuation, having gained that knowledge before the theory existed. Their path to understanding effectual techniques, then, is inherently different from the path of students taught effectuation in formal learning environments. Most students do not have an experiential basis on which to draw, and to date there is no research that demonstrates that effectual strategies gained through experience are equivalent to those that are taught in the classroom.

It is unclear whether teaching students the actions of experts will replicate expertise. Therefore, it will be important as effectuation education moves forward to understand the different paths to teaching and learning effectuation (e.g., experiential, project-based, lecture-based, etc.) and how these affect students understanding, knowledge, and use of effectuation.

A long term role for effectuation begins to emerge as a result: Instead of content (i.e., teaching effectual heuristics), effectuation becomes a tool in assessments of students’ use of predictive and non-predictive techniques (Mäkimurto-Koivumaa & Puhakka, 2013). An assessment-focused role provides flexibility around three problems observed in the content focused approach: 1) effectuation is not inherently appropriate for all types of entrepreneurship (Wheadon & Duval-Couetil, 2015); 2) effectuation is not solely useful for problems defined as entrepreneurship (Brettel et al., 2012; Dorst, 2011); and 3) each effectual heuristic mirrors a
causal heuristic summarizing research in a specialized subfield, eliminating an incalculable amount of knowledge for a summative and generalized rule (Fayolle, 2013; Fiet, 2001b).

Defining the value of effectuation theory in this way exploits the foundation of effectuation as a rejection of predictive approaches by asking integrating effectuation with inextricably linked concepts from knowledge taxonomies, such as Bloom. It understands that decision making may not take a purely convergent form where rules are applied, and may instead be predictive, non-predictive, or a mix of the two (Fisher, 2012). In an assessment frame, educators would look for evidence of analysis, evaluation, and creation of personally meaningful predictive and non-predictive approaches. Further, it supports giving students multiple scenarios or situations where they are evaluated and receive feedback on the approach that they select. Such an approach avoids simply privileging non-predictive approaches over predictive approaches. It enables higher-level skills and metacognition in the planning of course content by not defining the learning environment through teaching a set of heuristics.

Similarly, the assessment focused approach addresses gaps in effectuation literature. First, the underpinning, limitations, and operationalization of the individual heuristics have only been minimally explored (Perry et al., 2012). Research has not yet presented a solid grasp of whether the way in which individuals gain effectual expertise affects that expertise (i.e., do Sarasvathy’s (2008) expert entrepreneurs use effectuation differently from students such as Bureau and Fendt’s (2012) experienced managers or Dew et al.’s (2009) MBA students). Other ill-structured fields (i.e., design thinking) have seen large differences in how people along the spectrum of expertise apply the same ‘expert’ principles, even when students are taught the expert methods and show an abstract understanding of them (J. Crismond & Adams, 2012).
In summary, while the critique of effectuation research as ‘non-replicated’ (Arend et al., 2015) seems unfounded (Read et al., 2016), a strong understanding of the progression from novice to expert is missing and at times contradicts commonly employed explanations of effectuation. However, teaching effectual actions as an analog for expertise is problematic. The underlying expertise goes beyond teaching both effectual and causal approaches thoroughly (Mäkimurto-Koivumaa & Puhakka, 2013) and into creating environments that intentionally teach metacognitive aspects of evaluation and analysis intentionally. In such a frame, effectuation fits as a broad framework for interpreting actions, but not as an underlying model of cognition. That role of effectuation somewhat parallels models of novice progression in fields like design (Crismond & Adams, 2012) and give a path to identifying heuristics representative of intermediate heuristics that may show nuanced transitions. Such an adjusted interpretation will work against the presumption that teaching students to replicate the behavior of experts is replicating experts, with the further benefit of (Ogbor, 2000)

Conclusion and implications for entrepreneurship education

At times, it is important to restate the obvious: Education is not as simple as downloading material into students’ brains. By extension, simply increasing our understanding of effectuation as a theory is insufficient to increase its power in education. In order to teach effectuation, we must understand how effectual thinking is learned, an area that our literature review shows is lacking. We close by summarizing our findings and proposing next steps would benefit effectuation education research. We note that the amount of literature specifically focused on studying novice use of effectual logic is small. However, as we summarize what literature does exist, and gaps remain, the small number of studies becomes germane to the discussion.
From the literature to date, we can see that there is a small but useful body of work at the core of effectuation education research. We know that students can learn effectual techniques in classrooms. We also know that, overall, students use effectuation less and in ways representative of lower levels of knowledge than do expert entrepreneurs. In parallel, early evidence suggests high variation in effectuation usage between students, which could be compared to the variation we see when comparing expert entrepreneurs to experts in different fields (e.g. investment bankers (Sarasvathy et al., 1998)). Research also indicates that experts and novices use effectuation differently, including in ways that seemingly align with taxonomies of knowledge and cognition. As it stands, the gaps in effectuation research reflect gaps that have long existed in entrepreneurship education research as a whole. The gaps include the integration and operationalization of entrepreneurship theory in entrepreneurship education. The immediate observation that such a gap exists is not new (Fayolle, 2013; Fiet, 2001b).

However, we have gone beyond identifying that a gap exists between entrepreneurial theory and entrepreneurial education and have sought to outline the specifics of that gap. Delineating what we know and what we do not through the lens of rigorously developed widely used educational frameworks provides an outline for future work in both fields. Obviously, filling in the gaps that we have identified, has the potential to increase educators’ ability to foster the entrepreneurial learning by students. In addition, however, the structure of the gaps and how what we know leads towards education has the potential to impact effectuation research beyond education. Because effectuation is based on a group of individuals who experientially learned a new way of solving early stage business problems, understanding that development through educational models may provide significant contributions to our understanding of effectual expertise, as has occurred in other fields like design (Dorst, 2011). The result might even be
confirmation of Dorst’s proposed generalization of these types of ill-structured problems, and effectuation viewed as a version of that is refined for entrepreneurship.

Most urgently, there is a need for broader ways of observing and interpreting effectual behavior. Existing observations of effectuation are limited; relying on the use of rich but complex data such as verbal protocols or course artifacts (e.g., reports) where effectuation and causation are counted. Interpreting those methods primarily through counting effectuation comes with additionally limited ways of interpreting observations. They do not capture, or at least do not analyze, markers of how individuals choose to use effectual or causal technique or more complex cognitive behavior such as metacognition (McKenna, 2007). Such behavior is critical to learning, especially at the higher levels of Bloom (Bransford et al., 2000). New measurements will involve new ways of making sense of effectuation in students. Research on methods of observing the process nature of effectuation rather than merely counting coded heuristics, and doing so over time as students’ progress, are areas of research currently reflected in only a single piece of published literature (Bureau & Fendt, 2012).

The answer that we are proposing is not simply better measures, but a discussion of how effectuation and education intersect and how that intersection influences both fields. Many questions about the interplay of effectuation and education remain not only from literature that does not yet exist, but also from the approaches in existing literature. Because we simply know how experts act, and seek to drive students towards that behavior, a prescriptive approach is a start. However, the complexities of expertise, especially the highly adaptive and integrated expertise of the causal effectual dichotomy make content a minimum not a maximum for effectuation education. In the future, that role should change, and we suggest that this process begins by actively bringing the power of educational research to bear on effectuation education.
References


Predictors of early-stage entrepreneurial activity before and during the economic crisis: A comparative analysis between Southern and Nordic European regions

Susana C. Santos
University of Florida
susana.santos@warrington.ufl.edu

António Caetano
Instituto Universitário de Lisboa (ISCTE - IUL); Business Research Unit (BRU - IUL)

Paola Spagnoli
Second University of Naples

Sílvia Fernandes Costa
University of Groningen, The Netherlands

Xaver Neumeyer
University of North Dakota

EXTENDED ABSTRACT

Entrepreneurship activity leads to economic growth, both at the local and national levels (Kreft and Sobel 2005), and research has been showing that different levels of entrepreneurial activity explain a significant part of the differences in the economic growth rates across countries (Reynolds, Hay, and Camp 1999). Nevertheless, changes in the macroeconomic systems impacts entrepreneurial intentions, activities and the creation of new ventures.

In 2008 Europe started to face a severe crisis, which affected systemically the European countries causing great uncertainty and instability in political, economic, financial, and social systems. To what entrepreneurship is concerned, the European crisis triggered disturbance in the level of entrepreneurial activities (number of self-employed persons or new business start-up), as national markets were instable, venture capitalists more cautious and individuals in general were more concerned with their own savings (e.g, Williams and Vorley 2015). However, there is also prior evidence that crisis can boost the emergence of new opportunities and the need to find disruptive
solutions and leverage resources (e.g., Wan and Yiu 2009). In fact, when individuals face severe restrictions, they are elicited to find alternative paths to supplant the gradual loss. So, according to the literature, the impact of the European economic crisis in entrepreneurship is not linear, as it can both boost and buffer the emergence of early stage entrepreneurial activities.

The conversation about the predictors of entrepreneurial activity has not yet considered the impact of the first 21st century European crisis. We don’t know yet how micro and macro level predictors impact entrepreneurial activity during the economic crisis. For example, the disturbance during the financial crisis could be different in countries economically weaker (such as the European Southern countries: Portugal, Italy, Greece and Spain) than other countries which were less affected by the crisis (e.g., European Nordic countries - Sweden, Finland, and Norway). Hence, for the European economic crisis, the question of which micro and macro level predictors influenced early stage entrepreneurial activity has not been explored yet.

The purpose of this paper is to analyse the influence of micro and macro level predictors towards early-stage entrepreneurial activity before and during the European crisis. In this regard, we specifically consider individual characteristics as a specific case of micro level factors (including self-efficacy, role model, risk perception and perceptions of opportunities); and social norms as a specific case of macro level factors (including desirability, respect and media coverage). Our focus is on two European regions that had experienced differently the crisis: Southern countries (Greece, Spain, Italy and Portugal) which have been severely affected by the financial crisis, having high monetary debt and fragile bank systems; and Northern countries (Sweden, Norway and Finland) which were mostly resistant to the effects of the crisis, avoiding the financial crunch and keeping top ratings from the major credit rating agencies (Glover,
To capture the impact of the crisis, we analyse data in four years: before (2007) and during (2010, 2012 and 2013) the European crisis.

**Determinants of entrepreneurial activity: Individual characteristics**

Individual characteristics perform an important role on entrepreneurial activities, being part of the entrepreneurship nexus (Shane and Venkataraman 2000). Grounded on the literature review on the significant role of individual characteristics to the entrepreneurial activities, we put forward the following hypothesis:

\[ H1a: \] Individuals with a high self-efficacy, who perceive opportunities and who know a role model in starting a business, will be more likely to be engaged in the total early-stage entrepreneurial activity.

\[ H1b: \] Individuals who perceive risk will be less likely to engage in entrepreneurial activities.

Besides the individual characteristics, entrepreneurship activity is also determined by other type of factors, such as the social norms.

**Determinants of entrepreneurial activity: Social norms**

The entrepreneurship process is embedded in an institutional environment that affects the economic development and entrepreneurial activity, explaining how country conditions and cultural values affect its changes. Social norms captures not cultural values per se, but their manifestations. In general, societies in which entrepreneurship is a valuable, recognized and a respected activity or career choice, in which there are several initiatives and activities that promote entrepreneurship, can have a greater possibility to increase their entrepreneurial activity rates. Thus, we put forward the following hypothesis:

\[ H2: \] Social norms, representing the desirability of the career choice, status and respect of entrepreneurs and media coverage on entrepreneurship topics, will have a positive significant association with total early-stage entrepreneurial activity.
Determinants of entrepreneurial activity: Time and regional effects

In line with the purpose of this study, we analyse four different time moments that are capable to depict fluctuations happening before (2007) and during (2010, 2012 and 2013) the European crisis in the entrepreneurial activity. The three years that comprise the ‘during the crisis’ stage have different levels of severity: 2010 was characterized by severe financial and economic constrains, high austerity, with strict series of financial support measures requiring assistance from the European Central Bank or the International Monetary Fund (McClain 2012); 2012 and 2013 were years that revealed small recovery and positive signs, with minor contractions of economy, and policies to stimulate economic development and employment, while keeping the financial debt under surveillance and growing with discipline (e.g., Lichfield 2012). Taking into account the cultural and economic differences between both European regions, it is expected that there is a clear difference in the influence of key predictors of the entrepreneurial activity in both regions. Yet, it is very likely that the European crisis will provoke significant changes on the total early-stage entrepreneurial activity and its predictors, for the countries that were more affected by the crisis – the Southern countries-, when compared to the countries that were less affected by the crisis – the Nordic countries.

Method

This study used the Global Entrepreneurship Monitor (GEM) Adult Population Survey (APS) at the individual level from Portugal, Italy, Greece, Spain, Sweden, Finland and Norway in 2007, 2010, 2012 and 2013. The total sample included 39905 individuals in 2007, 39890 individuals in 2010, 34439 individuals in 2012 and 37166 individuals in 2013. These are all country representative samples. To test our hypothesis
we used the following variables referring to the individual characteristics: Self-efficacy was measured by respondents answers if they believed they have the required skills and knowledge to start a business; Role model was assessed by the respondents perceptions whether they personally knew someone who had started a business in the two years preceding the survey; Risk perception referred to the assessment whether fear of failure would prevent individuals from setting up a business or not; Perceptions on opportunities referred to respondents statement if they think there would be good opportunities to start a firm in the area where they live in the six months following the survey. The social norms were measured by three variables: Desirable career choice which measured respondents perception that in their country, most people consider starting a new business a desirable career choice; Status and respect referred to the agreement with the statement that in their country, those successful at starting a new business have a high level of status and respect; Public media was measured by the agreement with the statement that in their country, they will often see stories in the public media about successful new businesses. Region was computed including the 2 categories: Nordic region included Sweden, Norway and Finland, and Southern region included Greece, Spain, Italy and Portugal. The dependent variable was total early-stage entrepreneurial activity (TEA), referring to the individuals aged between 18-64 who are either a nascent entrepreneur or owner-manager of a new business - Involved in Total early-stage Entrepreneurial Activity.

Results

To test our hypothesis, we used logistic regression analysis. Main results show that the individual characteristics (self-efficacy, role-model, risk perception and perceptions on opportunities) reported a significant effects on the total early-stage
entrepreneurial activity on the different time periods. Self-efficacy showed consistently positive and significant effect in the four models, across the four time moments. Both role model and perceptions on opportunities showed consistently positive significant effects on the TEA, evidencing that people with near entrepreneurial role models and who perceive the existence of opportunities, were more likely to engage in total early-stage entrepreneurial activity. These results support our hypothesis 1a. Risk perception showed always, as predicted, a negative significant effect, showing that the perception of risk influences negatively the probability of being involved on the total early-stage entrepreneurial activity. In other words, individuals with a high risk perception are less likely to be involved in the total-early entrepreneurial activity, giving support to the hypothesis 1b. The social norms variables showed a variation in the pattern of effects on the TEA across the four time moments. In 2007 and 2010 only desirable career choice showed a significant effect on the TEA. More specifically, the effect of desirable career choice was negative, showing that individuals who perceive that in their country people who consider starting a new business as not a desirable career choice had an influence on the total-early entrepreneurial activity. In 2012, the social norms showed a different pattern, with a negative and significant effect of status and respect in the total-early entrepreneurial activity. In 2013, the three social norms showed a negative and significant effect, which reveals a greater but negative relevance for the social norms in the involvement in the early entrepreneurial activity. This pattern of results shows that the effect of social norms is not consistent, and thus rejects hypothesis 2.

The effect of region changed across time. In 2007, region had a negative and significant effect on the influence to TEA, showing that Southern countries were more likely to be involved in the total early-stage entrepreneurial activity, than Nordic countries. In 2010, the pattern was reversed and region had a positive and significant
effect, showing that the Southern countries were less likely to be involved in the total early-stage entrepreneurial activity than Nordic countries. In 2012 and 2013, region revealed a non-significant effect, showing that Southern and Nordic regions had no differences in predicting the likelihood to be involved on the TEA.

Discussion

This study presents three main contributions. Firstly, we contribute to deepen our understanding on the impact of the present economic situation on the entrepreneurial activity of different European countries, which is relevant to describe how the environmental and economic conjuncture affected the pace of entrepreneurial activity. Secondly, we contribute to the understanding of the entrepreneurial activity predictors, taking into account both individual and social norms perceptions, which is relevant for the future strategic decisions regarding entrepreneurship promotion and policies decision making in Europe. Thirdly, our study contributes to the research on the predictors of entrepreneurial activity (e.g., Burton, Sørebsen, and Dobrev 2016) and adopts a comparative perspective over time and between two European regions. This is a distinctive characteristic of this study that allows to capture the evolution of the entrepreneurial activity predictors over time.

Limitations, implications for practice and future research

Despite the interest of this study, there are also several limitations, mainly related to the characteristics of the GEM database and survey. GEM APS data includes mainly one item measures and yes or no answers, which constraints the statistical procedures that are possible to use. GEM questionnaire includes specific questions that constrained our research model to the variables that are included in the survey. Plus, the analysis is circumscribed to the available data. Future research on this line will benefit
from updated data in the upcoming years which will allow to outlook a complete picture for before, during and after the European financial crisis.

This study is especially informative to European policy makers who are attempting to understand the dynamics of entrepreneurial activity in Europe, and how to promote the creation of new ventures. As individual characteristics emerged as the most important predictor of entrepreneurial activity, policy makers and stakeholders should invest resources in training individuals and promoting the entrepreneurial mindset. Policy makers should also be aware of the fluctuations on the importance of social norms towards entrepreneurship activity rates. Yet, particular social norms have a significant effect on early-stage entrepreneurial activity for specific time and regions, showing that desirability, respect and media coverage influence how individuals engage in entrepreneurial activity. Thus, policy makers should promote entrepreneurship initiatives both national and regionally, by endorsing and recognizing the benefits of being an entrepreneur, sharing entrepreneurship stories and examples in the media channels, and endorsing the respect of those how launch new businesses.

As future research, it would be interesting to extend the comparison to other European regions, and other critical time moments, namely in the apparent aftermath of the crises. In addition, future research should consider different aspects of the total early-stage entrepreneurial activity, as the opportunity versus the necessity based entrepreneurial activity. The driver of the entrepreneurial activity before, during and after the crisis should have important implications for practice. Recovering from the European crisis is an urgent demand, and entrepreneurial activities, new venture ideas and actors have their critical role (Williams and Vorley 2015).

References


Entrepreneurial Risk-taking for Internationally Oriented SMEs

Artur Baldauf (University of Bern, SUI) / Olaf Rank (University of Freiburg, GER)

Entrepreneurial risk-taking orientation has been a central construct in business research. We develop a framework focusing on effects of an entrepreneurial risk-taking orientation on competitive strategies and performance for companies operating in foreign markets. Moreover, we identify the resource availability for foreign activities as well as environmental uncertainty as antecedents of an entrepreneurial risk-taking orientation. We also investigate for potential moderating effects of environmental uncertainty on the relationship between entrepreneurial risk-taking, competitive posture and performance. To test our hypotheses, we draw on the responses of 108 top-level managers from small and medium-sized Swiss enterprises operating internationally. Our research findings reveal that entrepreneurial risk-taking, competitive posture and the resources available for foreign market activities influence performance. Competitive posture is affected by a risk-taking orientation. In addition, an entrepreneurial risk-taking orientation is impacted by a company’s resource availability and the level of environmental uncertainty.

Introduction

Entrepreneurial risk-taking orientation, an organization’s propensity to engage in risky projects and to prefer bold decisions for goal achievements has traditionally been considered as a central facet within entrepreneurial research (Lumpkin & Dess, 1996; Miller, 1983). Entrepreneurial risk-taking is critical in a variety of decision contexts such as entering into new ventures or markets (Dickson, 1992) or introducing new products (Devinney, 1992). From a firm level perspective, risk-taking has been considered as a central dimension of strategic orientation (e.g., Hart 1992; Venkatraman 1989) and regarded as a component for elaborating on strategic typologies (e.g., Miles & Snow, 1978). Engaging in somewhat risky ventures provides the potential for achieving above-average profit and growth (e.g., d’Amboise & Maldowney, 1988; Lumpkin & Dess, 1996; Norton & Moore, 2006; Palich & Bagby, 1995). Indeed, rapidly changing environments with uncertainties stemming from consumer and competitor responses force firms to assess and understand risk-related contexts when making decisions (Forlani & Mullins, 2000).

Through this study we seek to contribute to the extant knowledge base on entrepreneurial risk-taking orientation. First, we will consider risk-taking as a strategic orientation and investigate its role within constructs such as environmental uncertainty, resource availability, competitive posture and performance. In many SMEs corporate and business level strategies are usually not organizationally separated. We study risk-taking from a firm perspective and focus on top managers responsible for overall strategy making. These executives are highly committed to and interconnected with their firms. Second, considering recent macro-environmental developments, we explicitly direct our investigation towards the entrepreneurial risk-taking orientation of SMEs in an international context. Specifically, we examine SMEs located in Switzerland because these firms are especially prone to challenges and threats caused by recent developments. Indeed, Switzerland is a small country (e.g., in terms of population and surface) but has constantly ranked among the world’s top nations in terms of economic power (e.g., purchasing power, competitive strengths, high-quality products).
Conceptual Foundations and Research Hypotheses

On the basis of Baird and Thomas (1985) we conceptualize environmental and organizational determinants of an entrepreneurial risk-taking orientation, which we relate to an organization’s competitive posture (cf. Dess & Davis, 1984) and performance. We take into account that the relationships between firm performance and the conceptualized antecedents may be contingent upon how managers perceive the environment.

Referring to the notion of “constructive risk-taking” (Miller, 1983, p. 770) entrepreneurial risk-taking has been defined as the willingness of an entrepreneurial firm’s management to engage in calculated business-related risks (Baird & Thomas, 1985). Hence, an entrepreneurial risk-taking is a company’s willingness to break away from tried-and-true strategies and venture into the unknown (Wiklund & Shepherd, 2003, 2005). The higher performance of risk-taking firms is due to their seizing of opportunities in the marketplace (Lumpkin & Dess, 1996; MacCrimmon & Wehrung, 1986). Empirical research findings reveal that the effects of risk-taking on outcome variables such as firm performance, product performance or customer performance are mixed with positive, negative and no associations being found (Avlonitis & Salavou, 2007; Covin & Slevin, 1998; Gupta & Govindarajan, 1984; Hughes & Morgan, 2007; Orlando et al. 2004).

Competitive posture is a firm’s basic business strategy that reflects the management’s scope and resource commitments to achieve success (Hofer & Schendel, 1978). Porter (1980) proposed differentiation and cost leadership as two generic strategic options for companies to achieve a competitive advantage. A “stuck-in-the-middle position” will harm firm performance. Both viable strategies can lead to increased firm performance but require scale, scope and resource commitments which are associated with a firm’s willingness to engage in risk. Hence, risk-taking is connected with a firm’s competitive strategies (Baird & Thomas, 1985). Differentiation and cost leadership strategies can be related with the flexibility and efficiency issues (Ebben & Johnson, 2005) with flexibility (e.g., targeting segments or quickly responding to customers) more closely associated with the former and efficiency (e.g., meeting prespecified operational standards) more related to the latter. Interestingly, form a SME perspective no performance differences were found between the two strategies (Ebben & Johnson, 2005). Firms pursuing a differentiation strategy (Porter, 1980) seek to offer unique products and services to their customers. Constituting aspects of marketing differentiation are extensive advertising, image enhancing activities and offering attractive features, convenience, and service guarantees (Covin 1991; Dess, Lumpkin, & Covin, 1997). Firms with a focus on marketing differentiation typically aim at achieving a unique position in the market, which allows them to become more independent from their competitors. Entrepreneurial firms are more likely to emphasize advertising, product quality and customer service than conservative firms (Covin, 1991). However, a marketing differentiation strategy requires substantial and risky investments into projects such as research and development or product and process development. A cost leadership strategy (Porter, 1980) is characterized by an orientation towards product and operating efficiencies and cost control in order to achieve lower costs than competitors. The advantage originating from a cost leadership strategy is ascribed to both economies of scale and the experience curve (Makadok, 1999). Ideally, companies pursuing this type of strategy may benefit from a virtuous circle: The cost advantage over competitors enables a firm to produce and sell higher volumes thereby achieving higher economies of scale than competitors. This will finally further increase the firm’s cost advantage (Coeurderoy & Durand 2004; Hitt, Ireland, & Hoskisson 2001). Cost leadership may be achieved through minimizing expenditures on innovation and advertising as well as offering no-frills products to customers seeking cost savings rather than brand image; allowing firms to offer competitive prices. Though pursuing a cost leadership strategy may lead to more competitive cost structures
considerable investments into product and process technologies are required (e.g., to achieve minimum efficiency scales). Such investments may be exceptionally challenging to SMEs as financial resources are particularly scarce. Consequently, the acquisition of such technologies may require firms to undertake risks in a sense that not only considerable financial resources need to be allocated but also uncertainties such as underutilized capacities have to be handled.

We consider resources available for foreign market activities and environment uncertainty as antecedents of a risk-taking orientation. Indeed, resource availability for foreign market activities refers to an internal environmental dimension, which under control of management, indicates what a firm can do. In contrast, the environment which is not considered as being directly under the control of management also constraints a firms opportunity set.

Compared to large, multinational companies SMEs frequently lack financial, human, organizational, and time related resources (Lu & Beamish, 2001; Schoonhoven, Eisenhardt, & Lyman, 1990; Shrader & Simon, 1997). The availability of resources, however, is particularly important for SMEs when expanding their market scope internationally (Preece, Miles, & Baetz, 1998). Moreover, available resources (e.g., “slack resources”) allow firms to pursue somewhat risky projects and/or to take risk-related (information incomplete) decisions. Slack can be used as a “venture stock”. Resources are vital for SMEs success as, for instance, financial resources are important because of the high costs of entering new markets. Indeed, for money SMEs to borrow money (debt financing) from capital markets is frequently not possible (e.g., very often only with excess interest rates or offering specific securities). Ireland, Hitt, & Sirmon (2003) argue that financial resources form the basis for the acquisition of other important tangible (e.g., production facilities and technology) and intangible resources (e.g., human capital). Likewise, available human capital impacts a firm’s potential to acquire financial resources. Hence, resources – especially financial ones – provide firms with independence and allow long-term thinking instead of being forced to constantly (in short time horizons) report to financial institutions. Moreover, adopting a risk-taking orientation should be nurtured when there are “securities” based on available resources.

We suggest a direct positive relationship between a firm’s resource endowments and its performance. Roberts and Hauptman (1987) provided evidence that “under-financed” biomedical firms pursuing significant technological breakthroughs endured significantly lower performance. If, however, such firms are well endowed with resources they might be able to undertake higher investments in the areas of new product development, advertising, marketing, and the recruitment of valuable human capital (cf. Preece, Miles, & Baetz, 1998). Hence, we suggest that firms which have resources available for foreign activities will also achieve higher performance.

The external environment is a critical determinant and/or contingency in organization theory and strategic management (cf., Baird & Thomas, 1985; Child, 1972; Duncan, 1972; Khandwalla, 1977; Lawrence & Lorsch, 1967; Lumpkin & Dess, 2001; Porter, 1980). Dess and Beard (1984) refer to the environment as a source of information and stock of resources and conceptualize munificence, complexity, and dynamism as environmental dimensions. In this study we focus on the rate of unpredictability and dynamism of a firm’s environment encompassed in our environmental uncertainty construct (Child, 1972; Duncan, 1972; Lawrence & Lorsch, 1967). Uncertainty reduces the ability of managers to predict future events and hence, to forecast the environment’s impact on the organization (Khandwalla, 1977). Given the limited resource bases, high levels of environmental uncertainty aggravate doing business for SMEs, particularly in an international setting. However, risk-takers constantly seeking for opportunities and ready for risky decision making will perceive uncertain environments more
positive, indeed considering them as challenges. A firm’s risk-taking orientation in this context plays an important role of how risks inherent in the environment are framed (Dickson & Weaver, 1997).

The environment has been conceptualized as a construct directly affecting strategic orientations (e.g., risk-taking) but also as a moderator of the strategy orientation-performance relationship (cf. Miller, 1988; Venkatraman & Prescott, 1990). From a strategic fit (or coalignment) perspective, it is essential that firms align with their environments. Following suggestions to analyze the context in which such orientations occur (Dess, Lumpkin, & Covin, 1997), environmental uncertainty acts as a moderator impacting the magnitude and/or form of our strategic orientations and export performance relationships (Sharma, Durand, & Gur-Arie, 1981). We argue that environmental uncertainty moderates the relationships between risk-taking, competitive posture (i.e., marketing differentiation and cost leadership) and performance.

**Research Methodology**

To test our hypotheses, we conducted a cross-sectional mail survey collecting information from firms selected from the Swiss Export Directory. Given that small and medium-sized firms are the backbone of the Swiss economy (more than 90% of all firms in Switzerland are SMEs) and our interest in examining attitudes and behaviors specifically related to the success of internationally operating entrepreneurial firms, we restricted our sampling procedure to firms with 250 and less employees. Based on the Swiss Export Directory and after considering industry specific aspects we drew a sample of 225 SMEs distinguishing between firms in the industrial and consumer goods industries.

Utilizing this approach and also relying on snow-ball effects (e.g., relying on personal contacts) we received responses from 115 executives. Because of data incompleteness and inconsistencies some questionnaires had to be eliminated from further analyses, resulting in a final sample size of 108 respondents. Thus, the overall firm-level response rate was 48%. Our sample contains 88 owner-firms and 20 business units. The median age of the firm is 46 years and the median firm employs about 50 people, with a minimum of 3 and maximum of 240 employees. 58% (n = 63) of the firms in our sample produce industrial goods (e.g., chemicals) whereas the remaining 42% (n = 45) are in the field of consumer goods industries (e.g., food and beverages). Most of the companies (98%) are active in the European Union but a considerable percentage of them also do business in North America (56%) or Asia (52%).

Non-response bias does not appear to be a major concern as the analysis of early versus late respondents (Armstrong & Overton, 1977) of the main constructs examined in this study does not indicate any significant differences. Moreover, we compared respondents and non-respondents on industry affiliation and firm characteristics (e.g., sales, age). The chi-square test and the t-tests reveal no significant differences (at p < .05) between the two groups.

We operationalized the constructs of our conceptual framework both through single indicators (e.g., firm size) and multi-item scales with all the latent constructs being measured with at least three indicators. Scales from prior research were utilized to measure the constructs. Indicators of constructs which were viewed as attitude measures were also reverse stated considering recommendations to reduce potential biases obtained through response styles (Steenkamp & Baumgartner, 2001). To examine the dimensionality, reliability, and validity of the constructs (subjective, multi-item measures) we followed the recommendations of Gerbing & Anderson (1988).
Research Results

To test our direct effect hypotheses, we applied structural equation modeling and regression analyses. Considering the potential of confounding effects we incorporated in an initial model the control variables (e.g., age) as covariates, setting paths to the risk-taking and export performance constructs. From these, age (experience), size and international scope intensity significantly impacted risk-taking and a significant impact on performance was found from international scope intensity. As the substantive findings between the model in which we considered the control variables and those of the model without the controls were not different we subsequently report the model estimates of a ‘trimmed’ model.

Outcomes of risk-taking orientation and competitive posture. Consistent with our predictions, risk-taking orientation is significantly related with firm (export) performance ($\beta_{41} = 0.23, t = 1.78, p < 0.10$) indicating that higher levels of entrepreneurial risk-taking orientation are directly linked with increased performance. An entrepreneurial risk-taking orientation also influences a company’s intended competitive posture as the positive relationships between entrepreneurial risk-taking orientation and marketing differentiation ($\beta_{21} = 0.39, t = 3.00, p < 0.01$) and between entrepreneurial risk-taking orientation and cost leadership ($\beta_{31} = 0.25, t = 2.05, p < 0.05$) document. Significant positive relationships are also found between marketing differentiation and export performance ($\beta_{42} = 0.22, t = 1.96, p < 0.05$) and cost leadership and firm (export) performance ($\beta_{43} = 0.20, t = 1.97, p < 0.05$).

Antecedents of risk-taking orientation and competitive posture. Environmental uncertainty ($\gamma_{11} = 0.31, t = 2.53, p < 0.05$) and resource availability for foreign activities ($\gamma_{12} = 0.33, t = 2.78, p < 0.01$) significantly affect risk-taking orientation. The results also support a positive relationship between resource availability for foreign market activities and export performance ($\gamma_{42} = 0.18, t = 1.76, p < 0.10$). Hence, a better endowment with resources being important to operate internationally results in higher export performance.

We find only some support for a moderating effect of environmental uncertainty within our conceptual model. The only relationship between risk-taking orientation and export performance is stronger under higher environmental uncertainty. Environmental uncertainty does not influence the relationship between competitive posture (i.e., marketing differentiation and cost leadership) on export performance. To consider potential confounding effects in our analysis, we controlled for the effects exerted by several characteristics on the firm level on export performance.

Conclusions, Limitations, and Future Research Directions

Investigating the role of a firm level entrepreneurial risk-taking orientation in an international context has been the central research interest of this study. Our results reveal that an increased willingness of management to accept business-related risks by pursuing risky projects when internationalizing the company’s business activities is rewarded by higher performance. Although business approaches reflecting higher levels of entrepreneurial risk-taking may be associated with an increased variance in the success of the individual projects compared to more conservative approaches, a company’s long-term performance seems to benefit from seizing risky opportunities and pursuing new ventures. The relationship between entrepreneurial risk-taking and firm (export) performance is contingent on the environmental uncertainty a company faces. We predicted that the influence of entrepreneurial risk-taking orientation on firm (export) performance would be stronger for highly uncertain environments and found empirical evidence for a moderating role of environmental uncertainty on the risk-performance relationship. Moreover, we found evidence that the performance of a company’s international operations depends on the level of resources. From this we may conclude that besides the
willingness to undertake business-related risk, a sound endowment with resources is important to pursue foreign market activities. Indeed, financial and human resources form the basis for succeeding internationally.

Interestingly, our results contain significant effects as far as competitive posture is concerned. Assuming that Swiss SMEs are forced to “maneuver” themselves into a position to choose “outstanding” marketing differentiation, our findings also reveal that for the firms in our sample it is obviously less feasible to choose a cost strategy. Marketing differentiation may be overridden by a strong country-of-origin effect, which typically suggests a high quality for Swiss products, and cost leadership seems to have become an inevitable imperative for all companies. Moreover, Swiss companies may not truly have the ability to pursue a cost leadership strategy in the sense of Porter (1980) because of high labor costs in their home market. In addition, many of the companies in our sample may be simply too small to achieve the high production and sales volumes that form the basis for a cost leadership strategy; this might also be a reason for the non-significant relationship between cost leadership and international propensity when cross-validating the findings.

A limitation that may have influenced the findings on the influence of the environment on the relationship between entrepreneurial risk-taking and firm (export) performance is that our environmental uncertainty construct refers to an aggregate of all foreign markets a company conducts business activities in. However, a more refined approach might be to distinguish between different levels of environmental uncertainty as internationally active firms normally have to deal with multiple uncertainties stemming from the specific characteristics of single markets. Hence, future research should consider multiple levels of uncertainty within the individual foreign markets. Another limitation of this study is the use of cross-sectional data with strong reliance on perceptual information gathered from a single informant. The cross-sectional data base does not allow us to infer causality. Also the potential of common method bias is inherent in our findings. Though we considered the suggestions made by Zahra and Garvis (2000) and tried to cross validate the primary data with secondary data, we had to learn that for most firms in our sample access to public data was not possible. In this study we examined linear relationships recognizing that some of the relationships might be curvilinear.

Controlling for several firm level characteristics, we only found international scope intensity to significantly influence export performance. We ascribed this effect to the level of learning and the amount of experience a company has gained when operating internationally. Particularly interesting is the fact that age and size do not constitute differences neither with respect to entrepreneurial risk nor as far as export performance is concerned. Our results are in line with the findings of McDougall and Oviatt (2000) who have suggested that age and size are not defining characteristics in the context of entrepreneurship. To our understanding, this puts the necessity into perspective to differentiate between established companies that have been in business for a considerable period of time and young start-up companies often denoted as new ventures (Zahra, Matherne, & Carelton, 2000).

References, Figures and Tables

can be obtained from the authors
A Decade of Cross-Campus Entrepreneurship Education:
Revisiting Old Findings and Asking New Questions
Nathalie Duval-Couetil

Introduction

At universities across the United States and increasingly across the world, intense attention has been paid to delivering entrepreneurship education to a wider audience than ever before. Historically directed primarily at business students, today significant investments are being made in delivering entrepreneurship education to both undergraduate and graduate students in disciplines such as engineering, science, and liberal arts. This movement is grounded in the reality that many entrepreneurs and innovators come from non-business disciplines (Roberts & Eesley, 2009) and overwhelming consensus that students in all majors can benefit greatly from exposure to the skills and mindset associated with entrepreneurship education (Kuratko, 2005; Morris, Kuratko, & Cornwall, 2013; Solomon, Duffy, & Tarabishy, 2002). On a more practical level, entrepreneurship education is an efficient way to inspire and teach non-business students how to create economic and social value from their knowledge, while providing a practical business context for their learning.

Since universities are responsible for developing the human capital necessary to respond to these trends, the result is more entrepreneurship courses and programs than ever before. These take the form of entrepreneurship majors for undergraduate business students; concentrations for MBAs; campus-wide minors and certificates programs; entrepreneurship courses embedded in particular disciplines such as computer science and engineering; and even courses for PhD students and faculty. Today, entrepreneurship education is administered through business schools, free-standing entrepreneurship centers, offices of the provost or president, or within
particular academic units (Shartrand, Weilerstein, Besterfield-Sacre, & Golding, 2010; Streeter & Jacquette, 2004)). Some universities including Oklahoma State and Bradley University, have established entrepreneurship “schools,” emphasizing the important role entrepreneurship plays at these institutions. Many others are investing heavily in technology transfer expertise; co-working and makers’ spaces; business incubators and accelerators; and events that engage alumni, entrepreneurs and investors, as a means of responding to demands for real-world educational experiences and the economic needs of their communities.

The purpose of this paper is to examine important aspects of entrepreneurship education that are emerging in this environment, in order to revisit and reframe questions related to its delivery and administration. While the move to multidisciplinary programs has increased the prominence of entrepreneurship on university campuses, it has also intensified long-standing issues within the field having to do with the well-being of the academic discipline, the scope of the pedagogy and research, individuals best suited to teach it; methods to define and measure outcomes; and how to fund and administer it (Nwaogu, 2014; Thorp & Goldstein, 2013). The full paper summarizes topics that administrators and faculty should consider as they implement, refine, or grow cross-campus entrepreneurship initiatives. A series of questions are posed after each topic that are intended to spur realistic discussions of goals, activities and outcomes. The topics are the following:

**Topic 1: What is the role of the business school in cross-campus entrepreneurship programs?**

While the growth in cross-campus entrepreneurship education programs offers new opportunities for students and stakeholders, it can be a double-edged sword for business schools. On one hand, since business schools have been at the forefront of teaching and academic
research in entrepreneurship the strong interest in it serves to raise their profiles. On the other, the discipline of entrepreneurship has strived for legitimacy within business schools where some have questioned its theoretical underpinnings (Béchard & Grégoire, 2005), the limitations of it being studied primarily by business faculty (Landstrom, 1999), and whether it can be taught at all (Gorman, Hanlon, & King, 1997).

**Topic 2: What are realistic outcomes for cross-campus entrepreneurship education?**

An expectation that is inherent in entrepreneurship education is that the outcome should be short-term venture creation, and if it is not, it is somehow a failure. This is very different than the expectations we have of other academic disciplines.

**Topic 3: Is entrepreneurship “hype” a blessing or a curse?**

Public awareness of the role of entrepreneurship in the economy has grown significantly since the dot-com era. The accomplishments specific individuals such as Mark Zuckerberg, Elon Musk, Bill Gates, and Jeff Bezos are touted in the media, and viewers watch “everyday” entrepreneurs pitch their wares to “real” investors on Shark Tank. Promoting venture creation offers excellent public relations opportunities for a university, however, there may also be some unintended consequences and can be in direct opposition to those of the university and parents.

**Topic 4: Is entrepreneurship education subject to fads?**

Over the past decade, entrepreneurship has seemed particularly subject to fads as are business fields in general (Ponzi & Koenig, 2002). Universities and communities are following the latest “recipes” believed to create entrepreneurs and foster entrepreneurial activity by supporting coworking spaces, makers’ spaces, meet-ups, startup weekends, and business competitions. Entrepreneurship education as it existed for many years, has been displaced by the “Lean Startup Movement” involving “Lean Launch Pad” methodologies and tools such as the
“Business Model Canvas” (Blank & Dorf, 2012; Osterwalder & Pigneur, 2010; Ries, 2011). The problem is that these investments are being made with little empirical data demonstrating their effectiveness or return on investment relative to other programming or initiatives.

**Topic 5: How do we serve the many entrepreneurship student archetypes?**

As entrepreneurship programs have exploded across campuses, so have the multitude of interests, backgrounds and goals of the students and faculty involved in them. Whereas ten years ago, students may have been satisfied with a single, one-size-fits-all class in entrepreneurship, today there is demand for a portfolio of entrepreneurship offerings. This has led to the emergence of entrepreneurial student archetypes, representing groups of students who want different things from the entrepreneurial ecosystem.

**Topic 6: Where are the boundaries between learning and doing?**

As a public university, just as few years ago there was a very distinct line between education and for-profit, startup activity. University resources were not to be used by students or faculty for for-profit activity, and students were reprimanded if there was an inkling they were running a business out of their dorm room. The lines between “educational activity” and “real startup activity” are becoming blurred.

**Topic 7: Can we make entrepreneurship more inclusive?**

Many have written about the gendered nature of entrepreneurship and factors limiting women (and minority) participation such as limited access funding, mentors, networks and social capital (Brindley, 2005; Carter, Brush, Greene, Gatewood, & Hart, 2003; Coleman & Robb, 2012; De Bruin, Brush, & Welter, 2007). Broadening the appeal of entrepreneurship education to more diverse groups does not happen spontaneously and requires deliberate changes in policy and practices (Gatewood, Brush, Carter, Greene, & Hart, 2004).
Implications for Entrepreneurship Education

The purpose of this paper is to revisit old questions in entrepreneurship education and to highlight new ones that have emerged within the context the growing movement to cross-campus that has emerged over the past decade. Rapid growth and expansion has led to a number of educational and administrative challenges associated with deploying resources across the university, defining learning outcomes for a wide variety of populations, identifying appropriate pedagogical approaches, managing expectations and balancing traditional academic goals with “real world” activity. This means that long-standing pedagogical models have been disrupted, outcomes and expectations have expanded, and faculty and practitioners from a wide variety of academics backgrounds beyond business are involved in teaching. A push for startups by students and faculty is blurring the lines between education and practice. At some universities, the academic discipline of entrepreneurship has been on the periphery of this movement without the resources or incentives to play a leading role.

It is clear that in this new economy, students in all academic disciplines need to understand how to generate economic and social value from their knowledge to be successful. The university is increasingly viewed as a driver of economic development and responsible for developing the human capital for the new economy. Given the importance of entrepreneurial activity, to get the highest returns on university investments it is necessary to find efficient ways to integrate education and practice, while expanding the discourse surrounding entrepreneurship to make it accessible to a wider audience. More realistic discussions of university entrepreneurship goals, activities and outcomes, as well as empirical research could advance best practices in this area.
References


Byers, T., Seelig, T., Sheppard, S., & Weilerstein, P. Summer issue of The Bridge on Undergraduate Engineering Education.


Dohrman, R. L. (2010). Making sense of high-tech entrepreneurial careers: The meaning (s) and materialities of work for young adults.


Examining women entrepreneurial firms: Understanding the factors which impact growth orientation

Emma Fleck

1. Introduction

The last thirty years have seen significant attention to understanding entrepreneurial behavior and organizational growth. From a governmental standpoint, investment to stimulate entrepreneurship has reached billions of dollars in the hope that these new organizations will achieve regional development and growth through increased employment (Carree and Thurik, 2003; Lundström and Stevenson, 2005; Xavier et al., 2013). However, Dalborg (2015) brings to our attention the paradox that most new businesses, if they survive the first years, remain small and will most likely only employ its founder (Daunfeldt and Halvarsson, 2014; Storey, 2011).

Consequently, academics have turned their attention to the development of models which seek to capture the nature of the growth process as in trying to determine why, how and if small growth can be determined given that there still ‘lacks a body of theory capable of explaining the growth of small businesses’ (Dobbs and Hamilton, 2007 Pg 296). Vinnell and Hamilton (1999) contend that the idiosyncrasy of the growth process means that we should not expect to find the same universal stages of growth in all trajectories, and yet the conceptualisation of such stages has been the main objective of much of the growth literature in the past (McGuire, 1963; Greiner, 1972; Churchill and Lewis, 1983; Gibb and Scott, 1985; Scott and Bruce, 1987; Masurel and Van Montfort, 2006).

A growing number of authors have started to challenge the traditional notion of growth as a naturally occurring phenomenon (Levie and Lichtenstein, 2010), especially among women-owned firms, proposing that the growth of an organisation hinges on entrepreneur’s motivations and intentions for the business (Cliff 1998; O’ Reilly and Hart 2004; Manolova et al., 2012) and that women’s motives and intentions may differ from those of men. Indeed,
whilst both regional and global evidence presents a positive picture of increased entrepreneurial activity among women, it appears that a significant percentage of women-owned organisations remain small in size with little ambition for growth (Still and Timms 2000; Mitra 2002) and traditional models seem unable to account for this phenomenon. This is particularly important as policy makers tend to assume that women-owned firms would follow the same growth trajectories as male-owned firms (Still and Timms, 1997) therefore implying that they require the same support mechanisms.

Further to this, some notable research has been conducted to analyse and understand the competencies of the entrepreneur needed to achieve organisational growth (Chandler and Jansen, 1992; Markman et al., 2002; Mitchelmore and Rowley, 2013). Brinkman (2008) believes that this analysis is still at the early stages of development, but in gaining understanding of competencies which are demonstrated by entrepreneurs who start growth orientated firms, successful business growth can be predicted, emulated and supported.

In addition, an underlying assumption in research on organisational growth is that growth, and the competencies needed to achieve growth, can be understood in gender-neutral terms i.e. there is no need to separate and study male versus female entrepreneurs. Consequently, only limited attention has been devoted to understanding business growth from a ‘female perspective’ (Morris et al., 2006) which further supports the need for the current study.

Finally, methodological inconsistencies may be limiting our understanding of business growth among female entrepreneurial firms. For example, the traditional focus on quantitative measures such as turnover, number of employees and profit may not provide adequate descriptions of the situation nor insight into the causal factors surrounding the growth of female-owned organisations, particularly as it has been established that these factors are often of less importance to women as they set out with different motivations, goals and objectives.
for their business (O’Reilly and Hart, 2004; Lerner and Almor, 2002). While Carter et al. (2001) concluded that explanatory theories were still lacking in examining the female entrepreneur, De Bruin et al. (2007) questioned the adequacy of the predominantly quantitative research methods dominating this area, calling for rigorous in-depth studies which focused on subjective measures as well as objective measures of business growth. This paper addresses that call through in-depth case analysis of 32 female entrepreneurs and their organisations and contributes to the methodological consideration that female entrepreneurs should be examined in isolation (Ahl, 2006) without the use of a male comparison.

This paper specifically examines the factors that can impact business growth through an investigation of women owned businesses in Ireland at various levels of business growth. In identifying these self-reported factors, the author then maps them against an objective growth measurement in order to ascertain which factors may lead to various growth trajectories. In doing so, it is hoped that further understanding can be gained from the factors which influence and impact business growth in order to further stimulate high growth businesses among female entrepreneurs both within Ireland and across similar countries.

2. Literature Review

The nature of organisational growth and development

Significant in-depth research has been carried out over the last 70 years to investigate the nature of organizational growth and development. Many frameworks have been considered; from the economic models stemming from the work of Gibrat (1931), to evolutionary models that have sought to describe the growth process and in particular, the stages through which an organization passes from start-up to maturity [notably Greiner (1972); Churchill and Lewis (1983) Masurel and Van Montfort, 2006]. In illustrating organizational growth, these models have most often used economic measurement scales; whereby business size (i.e. no. of
employees, turnover, revenue) is measured against business maturity (i.e. age, business development). Some of these models were synthesised by Poutziouris (1993), who highlighted that most of these models had not been tested using empirical evidence and where empirical evidence was provided, it was predominantly based on investigation of large firms, which cannot account for those businesses that have not grown to become ‘large’ (Gray, 2002; O’Farrell & Hitchens, 1988). Thus, whilst understanding the growth of large firms remains an important area of investigation, it is also imperative to increase the knowledge base with regards to the growth of small organisations, as they contribute more to innovation and employment than large organisations (Dobbs and Hamilton, 2007). Indeed, some argue that the most fundamental problem in understanding small firm growth is that they are exceptionally different from large, developed firms and that “in many ways it is hard to see that they are of the same genus” (Penrose, 1959). Given that women are more likely to have small firms in the service sectors, the call is even greater to gain an understanding of these firms and their growth.

The resource-based theory of the firm (emerging from the work of Penrose, 1959) is influential in understanding the growth of small firms as it considers managerial resources and competencies as a precursor of growth (Burns and Dewhurst, 1996). Numerous authors contend that owner-manager psychology and personal wishes may override strict business considerations and that personal characteristics, aspirations, propensity for growth, and the choices entrepreneurs make, will have a direct impact on the growth rate and innovativeness of the small firm (Wiklund and Shepard, 2003b; Slevin and Covin, 1997). However, the small business models which emerged from this understanding [see Vozikis (1984); Gibb and Scott (1985); Scott and Bruce (1987); Kazanjian and Drazin (1990)], although confirming the significant differences from the large firm in their characteristics and their stages of development, did not explain the underlying mechanisms that produce growth (Dobbs and Hamilton, 2007), the actual sequence of issues predicted by the models (Burns, 2001). In
addition, these models have disregarded other measures of attainment or performance such as
ownership, control and rate of innovation, key factors shown to be important in entrepreneurial
business growth (Storey, 1994; O’Farrell & Hitchens, 1988).

In examining entrepreneurial growth, Gray (2002) noted that a reluctance to grow was
a significant factor not previously considered in the traditional growth models. Indeed, the
primary motives were not financial; but rather reflected a wish to retain autonomy and
independence. Furthermore, it has now been recognised that the majority of entrepreneurial
firms have only modest growth aspirations (Storey, 1994; Carter and Ram, 2003; Reichborn-
Kjennerud, and Svare, 2014) and that few progress through the growth continuum to become
large, managerially decentralised organisations (Gray, 2002). This is particularly true for
female-owned firms where the motivations for the entrepreneurs for business ownership often
differ significantly from those of their male counterparts in terms of traditional growth
measures (increased firm size as measured through increased fixed capital or in the number of
employees (Mitra and Pingalli, 1999). Hanks et al., (1993) took account of this in developing
a sequential model for venture growth, which highlighted that non-growth as a valid and
strategic choice for small business operators. They identified two additional configurations to
the traditional stage growth process in their taxonomic life-cycle model of small businesses,
namely ‘lifestyle’ and ‘capped’ growth, which they described as legitimate “non-growth”
alternatives in the business life cycle. These life-cycle models have been investigated in many
further studies (Masurel and Van Montfort, 2006; Dalborg, 2015), which noted that unless the
entrepreneur has a propensity for growth, many of these firms do not experience traditional
growth at all (Wiklund and Shepard, 2003). This research illustrated that female-owned firms
opting for non-organic growth strategies could grow in terms of profit or sales but they may
choose not to reinvest these revenues in fixed asset expansion or in employing more people.
Attempting to clarify the rationale behind this, Cliff (1998) found that women–owned
businesses were more likely to establish a maximum business size threshold beyond which they preferred not to expand. These thresholds ‘represent the size that the entrepreneur is comfortable managing; the size that enables her to maintain control of the organisation, devote a reasonable amount of time and energy to the firm and/ or balance work and personal life’ (p. 523). Still and Timms (2000b) asserted that due to women’s multiple societal roles in life, it cannot be assumed that they will follow the traditional growth trajectories of current business models and, therefore, there is a need to develop newer models, which identify and accommodate the various factors which condition business trajectories and offer flexible work styles for women.

Consequently, various authors have also called for an understanding of growth and a restatement of general growth stage models to reflect alternative growth paths for women using alternative measures to include perception, attitudes and experiences and accommodate for gender differences (Morris et al., 2006; Mitra and Pingali, 1999; Gray, 2002).

Although women’s business ownership has been widely investigated (Marlow et al 2009), for a long time this research has neglected the issue of gender as a key factor in understanding the practices of entrepreneurial behaviour among women. Much entrepreneurship research does not recognise that entrepreneurial discourse and behaviour is represented as a masculine gendered form, which means that it takes male behaviour as the standard, the norm or the benchmark (Marlow 2002; Ahl 2006). Thus, in gaining an understanding of the growth process of women entrepreneurial organisations, we identify which factors influence this process to develop an inclusive model, reflective of the true practices of women, rather than their inability to live up to a masculine gendered model. Consequently, the emphasis of this research is on the heterogeneity of women and their entrepreneurial business growth choices as a result of
their motivations and inspirations as independent factors rather than on structural or institutional limitations or barriers or cultural norms (Halrynjo and Lyng, 2009).

3. Aim of the Study

This current research aims to identify the determining factors of growth orientation demonstrated by female entrepreneurs in Ireland. In doing so, this research will examine the organisational and entrepreneurial factors that can be used as predictors of potential business growth.

Context to the study:

Welter and Lasch (2008) argue that in developing the scholarly field of entrepreneurship, research must be grounded within a national context, as this can enrich future scholarship in the field (Zahra, 2007, p. 445). The Irish context of this study provides a lens through which to view entrepreneurship within an institutional context that provides data for comparison and convergence within the academic field.

Approximately 10 years ago, a number of key reports (The Small Business Forum Report, 2006); (Forfas, 2007) recommended that the Irish government should formally adopt a national entrepreneurship policy which would optimise the number of start-up businesses and maximise the number organisations achieving business growth. They recognised women as pools of untapped entrepreneurial potential, and thus directed significant funding towards them. In 2013, the Ireland GEM Report suggested that some of these recommendations were achieving the desired results as Ireland saw an increase in the level of early stage entrepreneurship among women grow from 3.9% (2010) to 6.4% (2013) respectively (GEM, 2013). Indeed, by 2013 approximately 13,450 women were starting businesses every year, the highest level since 2010. The 2013 report also highlighted that cultural and social norms
towards entrepreneurship were positive in Ireland when compared to other EU and OECD countries and that the rate of women starting a business was significantly higher than the average across both the EU (4.6%). However, stimulating entrepreneurship, particularly among women, remains a significant challenge, particularly compared to the US where the level is 15.1%.

The 2013 Ireland GEM report noted that certain individual factors correlate strongly with entrepreneurial activity amongst women in Ireland. (1) There is an increased perception that opportunities exist to start a new business; (2) Confidence, although highly important, remains low (33%) compared to men; (3) Fear of failure is a significant inhibiting factor to this process (49% of women); (4) Entrepreneurial role models are an important factor. However, in using this report, we must acknowledge that it primarily focuses on the start-up activity and propensity for business start-up and does not acknowledge the factors which support business growth. Indeed, this report acknowledges that while entrepreneurial activity is fundamental for the creation of employment and exports, only 12% of women have ambitions for growth beyond the micro level (<5 employees) or to enter new markets. In fact, it would appear that the future is not as optimistic for the long terms success of women entrepreneurial organisations in Ireland given that only 3.6% of female owned businesses are considered established, a decline from previous years.

**Study approach**

As part of a larger study into female entrepreneurship in Ireland, a two-stage process involving both quantitative and qualitative research was undertaken. A quantitative survey was employed to identify a suitable sample for in-depth investigation and to glean a basic descriptive view of the sample. Qualitative interviews were then undertaken with 34 women entrepreneurs to deepen our understanding of the growth their organisations and the factors which impacted upon this process. Welter and Lasch (2008) argue that using a qualitative
design to deepen results from a quantitative approach provides valuable insights in the field of entrepreneurship.

Stage 1: Given that no database existed, which clearly identified women–owned organisations in Ireland, a database had to be constructed. Using purposive sampling based on the criteria outlined below, enterprise agencies and other relevant government bodies holding publically available records facilitated the process resulting in the identification of 224 women-owned organisations across Ireland within a diverse range of sectors.

Criteria for sample selection:

- The organisation was founded (or part-founded) by a woman;
- The organisation is at least 50% owned by one or more women, or, in the case of any publicly owned business, at least 50% of the stock is owned by one or more women; and the management and daily business operations are controlled by one or more women;
- The organisation must be trading for a minimum of three years to exclude start-up growth behaviours.

Case Study Methodology

Stage 2: The factors influencing venture growth were investigated using a multiple case methodology. A multiple case research methodology is considered more robust than a single case study as the potential benefits of data richness and quality compensates for any shortcomings of limited representativeness and generalizability (Ibeh et al., 2006) and was deemed appropriate as existing knowledge in this area is still poor (Yin, 2008; Weick, 2007). Neergaard (2007) argues that the case selection process has a profound effect on the quality of research findings, therefore the process surrounding the sampling of cases for in-depth analysis was rigorous and case selection was carried out on multiple levels as suggested by Yin (2008). Maximum variation strategy was employed as the case selection technique as this is useful in
identifying patterns among a heterogeneous group (Patton (1990) and increases the robustness of results (Herriott and Firestone, 1983). This strategy requires a large number of cases in order to try and reach saturation (Neergaard, 2007), therefore, 34 cases were identified from the questionnaire respondents (n=57) who all indicated that they would be prepared to participate further. In purposively choosing the cases for analysis, Patton (1990, p.181) argues that it is important to select ‘information rich cases’, that is, organisations worthy of in-depth study. Given this, the thirty-four entrepreneurs (and their organisations) were chosen for inclusion not on their typicality of a company experiencing growth, but rather because the entrepreneurs offered a chance to better understand diverse experiences in a range of contexts (Neuman, 1997). Twenty-three firms were rejected for two reasons; (i) some were deemed to be displaying characteristics of firms still within the start-up phase of business and; (ii) access to some entrepreneurs was not sufficient for the level of analysis needed.

Data Collection from Case Participants

Shaw (1999; 63) contends that “the subjective epistemology of the qualitative research paradigm views social reality as constructed by humans” thus, the researcher must become the instrument for data collection as this allows them to get close enough to the data in order to “interpret and understand the participant’s perspectives of social reality” (Shaw, 1999). Consequently, the data collection was undertaken by the primary member of the research team who carried out one to one semi-structured in-depth interviews with the female entrepreneurs from the thirty-four case companies, who were regarded as an ‘elite informant’ (Gillham, 2000).

Based on the extant literature, the interview guide consisted of 13 open-ended questions where the entrepreneurs were asked to self-identify their core competencies and the organizational factors which led to business growth or non-growth. This method has been used by Lerner and Almore, 2002 and Chandler and Hanks, 1994 thus was deemed to be
appropriate in an investigative research process. This process provided a framework within which the researcher used pre-developed questions, but made decisions on an individual interview basis on the sequence of those questions and which information to pursue further (Patton, 2002). Shaw (1999) advocates that the collection of social data should occur in the environment in which the social phenomena occurs in order to have an empathetic understanding of participants’ experiences thus, the interviews were carried out within the organisation at the lasted approximately 60-90 minutes.

**Data Analysis of Case Studies**

Qualitative data must be analysed methodically and rigorously (Attride-Stirling, 2001) thus thematic content analysis was considered appropriate (Easterby-Smith et al., 2002) using constant comparative method (Autry and Anderson 2007) as all interviews were carried out by one researcher who was extremely close to the data and would be able to use a formal approach to the data analysis. The interviews were taped and transcribed verbatim which enabled the researcher to verify the consistency of information collected (advocated by Carter et al. 2007) and develop an appropriate coding system. During the data collection process, data analysis had already begun (Ticehurst and Veal, 2000), which allowed for the emergence and development of important themes and patterns. To illustrate, a number of key themes were identified using the interview transcription. (Table 1)

“I would like to **earn lots of money**!.. but I would be **happy with flexibility** in my life, to take as many orders that I can **cope with** and not be swallowed **up by the business**. I **don’t want to employ anyone as it is too risky** in case it (the business) doesn’t work out long terms and I have to deal with **redundancy**” (ROI 11)
Table 1: Data Analysis Process

<table>
<thead>
<tr>
<th>Interview data</th>
<th>Core Code</th>
<th>Theme</th>
<th>Emerging Data/Category</th>
<th>Organisational Factor</th>
<th>Entrepreneurial Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ideally the entrepreneur would like to earn lots of money</td>
<td>Entrepreneurial Factor</td>
<td>Motive</td>
<td>Motivated to earn money</td>
<td>Management of Employees</td>
<td>Entrepreneurial Factor</td>
</tr>
<tr>
<td>But money is not the most important issue, flexibility is.</td>
<td>Entrepreneurial Factor</td>
<td>Motive</td>
<td>Desire for flexibility</td>
<td>Risk</td>
<td></td>
</tr>
<tr>
<td>She does not want the business to fill all her life</td>
<td>Entrepreneurial Factor</td>
<td>Lifecycle/ family</td>
<td>Work-life balance</td>
<td>Aversion to Risk</td>
<td></td>
</tr>
<tr>
<td>Does not want the problems associated with making people redundant</td>
<td>Organisational Factor</td>
<td></td>
<td>No intention to employ staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only wants to take orders she can cope with</td>
<td>Entrepreneurial Factor</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Next, the author independently grouped data into categories and sub-category themes and codes, which were then compared to ensure converging results. This process was repeated a number of times until a thorough understanding of the situation was achieved. Following the work of Miles and Huberman (1984) a procedural method of data coding, using a matrix format, was implemented. This matrix identifies the constructs or codes along one axis and the respondents along the other and this was used to demonstrate the occurrences of key themes. During this time, some themes were discarded, and others explored key relationships in the data. In so doing, this procedure generated transparency ensuring that content analysis remained an objective method of analysis (Bryman and Bell, 2003). In allowing the richness of the data to remain (Easterby-Smith et al., 2002), evidence is provided in the form of quotations (Note: In order to identify the 34 organisations, they were assigned a number based on their location).

4. Findings

Although there was heterogeneity among the sample, the majority of women were found to be married with children, have small-medium sized organizations (as measured by no. of employees) and own businesses within the service sector.
Identifying the Determinants of Growth of Women-owned Ventures

In analysing the data, the following five entrepreneurial factors were identified as having an impact on business growth. These were:

- Previous experience
- Lifecycle
- Motives
- Self-efficacy
- Risk Propensity

In addition, three organisational factors were found to have an impact on business growth:

- Ability to manage employees,
- Networks (social capital)
- Organisational Strategy

Further to this, seven distinct categories of organisational growth emerged from the findings. These have been categorized using industry standards for growth as outlined in table 2:

**Table 2: Understanding the Growth Orientation of the Sample**

<table>
<thead>
<tr>
<th>Level of Growth</th>
<th>Abbreviation</th>
<th>Growth determined by % increase in turnover and/or in no. of employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shrinking Organisations</td>
<td>SH</td>
<td>Evidence of reduction of employees and turnover</td>
</tr>
<tr>
<td>Non-Growth organisations</td>
<td>N</td>
<td>Shows no growth in employees or turnover</td>
</tr>
<tr>
<td>Low-Moderate Growth Organisations</td>
<td>LM</td>
<td>Less than 2-3% annually and no/ few new employees</td>
</tr>
<tr>
<td>Moderate-Medium Growth organisations</td>
<td>MM</td>
<td>Average 2-3% growth annually and 1-2 new employees</td>
</tr>
<tr>
<td>Medium-High Growth Organisations</td>
<td>MH</td>
<td>Average 7-8% growth annually and 3-6 new employees</td>
</tr>
<tr>
<td>High-Growth Organisations</td>
<td>H</td>
<td>Up to 20% growth annually and over 6 new employees</td>
</tr>
<tr>
<td>Born Global Organisation</td>
<td>BG</td>
<td>Organisations trading internationally with first 2 years of operation</td>
</tr>
</tbody>
</table>
Finally, the two constructs (level of growth and factors of growth) were mapped in tables 3 and 4 to identify any strong trends which emerged from the analysis. The following sections outline the core findings highlighted in table 3.

Table 3: Entrepreneurial Factors as Indicators of Business Growth

<table>
<thead>
<tr>
<th>Level of Growth</th>
<th>Previous Experience</th>
<th>Lifecycle</th>
<th>Motives</th>
<th>Self-Efficiency</th>
<th>Risk Propensity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH</td>
<td>Industry experience</td>
<td>ages 55 not willing to sell</td>
<td>Proactive to shrink</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>N</td>
<td>Industry experience only</td>
<td>Mothers w/ children under 14</td>
<td>Reactive approach to ent</td>
<td>Low</td>
<td>None</td>
</tr>
<tr>
<td>LM</td>
<td>Industry experience only</td>
<td>Mothers w/ children under 14</td>
<td>Proactive approach</td>
<td>Low / High</td>
<td>Low</td>
</tr>
<tr>
<td>MM</td>
<td>Mix</td>
<td>Various</td>
<td>Proactive Approach</td>
<td>Low / High</td>
<td>Low / High</td>
</tr>
<tr>
<td>MH</td>
<td>Business and/or industry experience</td>
<td>Young, no family responsibilities</td>
<td>Proactive approach</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>H</td>
<td>Business and/or industry experience</td>
<td>W/ children ≥ 14yrs, motivated by profit</td>
<td>Money, achievement, Proactive approach personal/ business development</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>BG</td>
<td>Industry experience</td>
<td></td>
<td></td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

**Previous Experience**

The results illustrated that the majority of women had some form of previous experience (industry vs business) and a small minority had both. Most significantly, the women with experience within a particular industry were using these specialist skills acquired to create small businesses e.g. dress making, financial advisors, consultancy services and as such, had limited growth ambition. However, those found to have more general business experience did not necessarily own a business in an industry where they had previous experience. They were also found to have the ability and skills necessary to develop and grow their own ventures and were found predominantly in the high growth categories (MH, H).
Lifecycle

A woman’s position in her lifecycle was found to have a significant impact on how willing she is to enter into business growth. For those who were young and had no family responsibilities, time dedicated to organisational growth was a key priority and these women were found in the (MH) growth category. For the women who had entered a phase where motherhood was the priority (n= 23), entrepreneurial activity was viewed as a method to bring flexibility into their lives, as opposed to full time employment. To illustrate, one entrepreneur stated, “I want to have a family and this business will allow me to do that- creating balance in my life is what is important to me” (N.I.-8.) and these women were clearly found in the (N/LM) growth categories. Interestingly, many of these businesses were once MH organisations but the entrepreneur reduced business capacity purposefully; which illustrates the entrepreneur’s inability to delegate responsibility to others as she consciously reduces the output of the business during a time that she cannot control.

Many of these women were also looking to the future and planning for growth when their children are independent e.g. “I am already thinking about how I can develop my business once my son goes to high school” (NI 5). Indeed, the results indicated that women who had children over the age of 14 and those who had no children, had higher growth firms. These women were found to be highly motivated by profit and were clearly mapping a path towards, or already achieving high growth.

Finally, firms owned by older entrepreneurs (55+) who have developed successful, large scale organisations over a long period of time were seen to be shrinking. The women were ready to reduce the time and energy spent within the business to enjoy hobbies and interests outside the organisation. “Now, work is all about having fun and taking on a few contracts to keep the business ticking over” (NI 1). The findings showed that these women are not willing to sell their business and enjoy the profit that this strategy could have brought.
Instead, they have chosen to shrink the business (SH), thus keeping control to the final stages before closing the business.

**Motives**

Women, specifically within the N growth category, had reactive approach to becoming an entrepreneur due to, for example, redundancy, unemployment, illness or motherhood where employment was not an option. In these cases, sustainability of the business is significantly more important than growth e.g. “I was made redundant and after a year being out of work I starting toying with the idea of starting a small business. Now, I just take on what I can manage. I have no major plans for the future” (ROI 3). For these women, business ownership was often about maintaining an income or having the opportunity to ‘try new things’. However, a number of these women, although not growth orientated, expressed a desire to being recognised as successful on a local level. This calls into question the traditional notion of success being linked with growth or profit. Indeed, having financial independence, considering themselves an ‘entrepreneur’; or being known as a ‘business woman’ within their local community is considered ‘successful’ in the eyes of these women.

The women found to take a proactive approach to business start-up were found in numerous categories (ML, MM, MH, H, SH). However various motivations were revealed by the entrepreneurs in the sample. Some women were found to be motivated by the ability to have flexible lifestyle which was not necessarily linked to motherhood. These firms were found to reach a particular level of growth (most often LM) and then limit their expansion but they do not see their business as a hobby and they set achievable goals for themselves and the future of their business. These women, confirm that the growth of their organisation is a woman’s choice, as a result of her motivations and inspirations as independent factors, rather than on structural or institutional limitations or barriers or cultural norms (Halrynjo and Lyng, 2009).
This non-growth, or capped growth state was identified by Hanks et al., (1993) when they established that a ‘lifestyle’ business was a legitimate alternative for many entrepreneurs. To illustrate, one young entrepreneur with no dependants commented, “I would like to develop this idea, but whatever I do, I want my business to fit around my lifestyle, I don’t want to change my lifestyle for my work” (NI 6).

In contrast, some women were found to be motivated by money. One entrepreneur argued that “the big push for me was watching consultants come into the business and charge huge amounts of money and walk away while people like me did all the work. I thought to myself, there is no reason that I couldn’t do the same” (NI 3). These women, classified as opportunity recognisers and innovators, strive for both personal and business development and were found only in the MH and H growth categories. Many of them have overcome major setbacks during their career which has only motivated them further to achieve. For example, “In 2002, we lost 3million euro overnight due to a major change in legislation. I should have had a nervous breakdown but for my strong willpower and sheer dedication. I was very determined and very positive and I never take no for an answer. I had a strong mind and a strong heart to say that the people who worked for me and who grew with me must not be let go” (ROI-15).

Self-Efficacy and Risk

The majority of women who lacked confidence in themselves were found to be risk adverse. “It has taken me a long time to think of myself as a real business. Sometimes I look at them (products) and think they are fantastic... other days, I wonder why people would spend all that money” (N.I.12). These firms were found predominantly it in the NG category although this trait was also evidenced among women in the LM and MM categories. It is argued that the ability to control the risk factors is a key element in the growth process. If the entrepreneur
feels she can manage this process, the business may develop at a gradual pace however, the inability to ‘let go’ will eventually bring this process to a halt e.g. “I don’t want to grow too quickly- I won’t be able to manage the business. I like to be in control of every aspect and make the decisions” (ROI 3).

Within the MM, MH, H and BG categories it was noted that the women with high confidence have the ability to manage risk as they have the desire to seek new business locally and internationally, even when they have no knowledge of these new locations. “I think that growth has come easily to us because we can recognise a good opportunity when it comes to us. We fly by the seat of our pants and we tend not to worry too much about the financial viability of things.... We just go for it.” (ROI 12). However, the majority of these businesses have only grown because of re-investment of profit rather than any other financial means such as a loan or re-mortgage which suggests that they are unwilling to risk their assets. However, this was found to be a dynamic process. A risk cycle was identified which was closely linked to the business cycle and the women’s life cycle, whereby the high growth entrepreneurs were willing to take significant risks at the early stages of business development when they had no family responsibilities, but made more calculated decisions as the business grew and matured. This indicates that in order to grow, the entrepreneur must be willing to take risks, but she does not have to continue to do this in order to develop a high growth organisation.

Finally, in examining the women from MH firms further, it was noted that many of the were previously in the MM category and have successfully made the transition through confidence building to address this internal barrier. This was achieved through a variety of mechanisms to include business related training (e.g. undertaking an MBA to develop their knowledge and managerial capabilities), business advice, and mentoring.
Table 4: Organisational Factors as an Indicator of Business Growth

<table>
<thead>
<tr>
<th>Level of Growth</th>
<th>Manage Employees</th>
<th>Networks</th>
<th>Organizational Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>SH</td>
<td>Yes</td>
<td>High level of acquired networks</td>
<td>Reactive approach, no strategy</td>
</tr>
<tr>
<td>N</td>
<td>View employees as a liability</td>
<td>Use contacts via prior jobs</td>
<td>Reactive approach, no strategy</td>
</tr>
<tr>
<td>LM</td>
<td>View employees as a liability</td>
<td>Use contacts via prior jobs</td>
<td>Not significant</td>
</tr>
<tr>
<td>MM</td>
<td>Important</td>
<td>Important</td>
<td>Implement growth strategies, w/o business plans</td>
</tr>
<tr>
<td>MH</td>
<td>Transitional growth period</td>
<td>Important</td>
<td>Implement growth strategies, w/o business plans</td>
</tr>
<tr>
<td>H</td>
<td>Delegates responsibilities</td>
<td>Important</td>
<td>Implement growth strategies, has business plan</td>
</tr>
<tr>
<td>BG</td>
<td>Various</td>
<td>Informal &amp; Formal</td>
<td>Implement growth strategies, w/o business plans</td>
</tr>
</tbody>
</table>

Management of Employees

As expected, ventures with limited growth intention had no employees and no intention to hire. Notably, these entrepreneurs viewed potential employees as a liability to the firm. “I don’t have any staff. I take on enough work so that I can manage myself. What would happen if I couldn’t get the work but had to pay someone? It is just too risky” (ROI 3). Some of the women who had aspirations for business growth argued that they were unable to find trained staff but more significantly, many women admitted that they were unable to delegate to employees. To illustrate, one entrepreneur commented, “…I have found it very difficult to hand responsibility to my staff… And that’s really difficult when there is only one of you” (ROI-7). This suggests that control is key factor for these women and the inability to ‘let go of their baby’ is limiting their potential for growth.

Interestingly, the results illustrated that when the business has more than 5 employees, the entrepreneur must make a transition from small scale entrepreneur to owner-manager. “In 1999 we moved premises and began to grow quickly so I took on more staff. I was good at juggling tasks and I enjoyed being a part of every aspect of the business but I was taking on
too much and everyone was dependant on me. I had reached the stage where I was sinking and I realised that I was holding the company back” (N.I. 14). If successful in this transition, the entrepreneurs begin to consider their staff as assets or “keys to success” (Brush and Hisrich, 1991). They invest heavily in training during this period and are reliant on them to help drive the business forward. During this period, a formalisation process is implemented and the organisational structure changes although it remains relatively flat with only a small number of departments (see MH category). However, as the business grows and staff levels rise, the entrepreneurs make a final transition in terms of managing staff and putting a management structure in place. Their employees become a ‘number’, and people who fulfil a role within the organisation. The entrepreneurs rely less on personal interaction and are able to delegate responsibility so that they can focus on making strategic business decisions. “I have never had a problem in delegating responsibility. My role is to look to the future direction of the company, not to the day to day operations” (N.I. 15). At this stage, a hierarchy is emerging and the entrepreneur no longer feels she must control every aspect of the business. This structure is only apparent among the high growth organisations indicating that in order for the business to grow, women entrepreneurs must find a way to let go and manage their issues of control.

Networks (Social Capital)

The results indicated that the use of both formal and informal networks assisted the women in business growth. This was particularly evident among women in the MM, MH and H growth categories as they use their networks in a strategic manner to glean information, make influential connections and learn from other, predominantly female entrepreneurs. “I think it is so important to get involved in networks and in terms of growth and I always make a concerted effort to drive my networking activities.” (NI 16). They argue that these have proven to be more successful, particularly among high growth organisations. “As a hobby I own race horses that
have won a lot of races which has earned me a lot of respect. My customers tell me that they back my horses so I have been able to combine business and pleasure really well. Formal networking on its own, I have never really thought about it, but of course networking has made a big difference in my career” (ROI-15). For the majority of the entrepreneurs in the LM and NG category, using contacts from previous jobs was a positive form of networking which was very important during the start-up phase in their business. Many of these women continue to be involved in networks which they argue helps them in decision making as they seek advice.

Organisational Strategy

Formalising their short term and long terms business strategies was noted as a precursor for growth among the sample. The entrepreneurs who considered strategic positioning as important were clearly more able for growth than those who did not. Many of the small, non-growth firms commented that they took a reactive approach to business development and did not have a strategy for business development in place. For example, “I started the business completely by accident and that’s the way it is run. I just take every day as it comes” (N.I.12). The key problem for these women in the future in using this strategy will be sustainability. This reactive approach was also found among the shrinking group, although sustainability is not necessarily an issue for these women who are unwilling to sell the business and have no succession strategy in place.

The organisations in the MM, MH and BG categories were found to implement some strategies for growth but business plans were not always adhered to; thus these ventures were found to grow and shrink on a regular basis. Moreover, if particular strategies were found to be unsuccessful, these women will attempt to grow via an alternative strategy. To illustrate, “I set up a website to sell my good in the US market and I was doing quite well in sales, however about 6 months later, I decided that the best move for the business was to attend the large trade
shows because of the nature of my product. Unfortunately, I didn’t keep pushing the website and now these sales have fallen drastically so this is something I will work on again” (ROI-11).

On the other hand, the women who owned high growth firms understood the importance of implementing a business plan to provide direction and focus for the company. “There has to be a business strategy in place for the organisation to grow” (NI 18). “It is important to have the right processes and procedures in place” (NI 15). These are high profile market leaders in their industry and the organisation is very structured with a ‘business plan implemented and updated on regular basis’ (ROI 1).

5. Discussion

The analysis of the data has revealed that high growth is most likely to be achieved when the following conditions apply. The female entrepreneur:

- has a high level of general business experience before starting a business;
- is within the period of her lifecycle were children are not the main priority or she has no children;
- is motivated by money, achievement and she has proactively chosen to start the business;
- has a high level of self-efficacy and propensity for risk;
- has the ability to delegate responsibility
- has the ability to implement and follow a business plan which priorities business growth.

The women categorised high growth are contrary to much existent research which argues that women-owned businesses are not growth-orientated (Cliff, 1998). Moreover, contrary to many
previous studies which argue that women business owners tend to be risk adverse (Reibe, 2003), these women actively embrace change and demonstrate a willingness to take leaps of faith in their business. Indeed, a high propensity for risk was noted and set as one of the main criteria for being ‘high-growth’ which concurs with the study by Morris et al (2006). A further distinguishable characteristic of these women was the ability to recognise and seize opportunities. These characteristics were also identified by Brush and Hisrich, (1991) who noted that high growth entrepreneurs have a strong desire for achievement and autonomy. Morris et al (2006) also noted that female entrepreneurs with high growth organisations view the external environment more in terms of challenges and opportunities than obstacles which was an element confirmed in the current study. However, it is strongly recommended that these assumptions are applied to a large sample where hypothesis can be tested and confirmed. The results have also revealed interesting finding about other sub-categories which previously have not been explored.

To being, the current literature fails to address shrinking organizations as a legitimate, final stage of organisational development. However, this research illustrates that these organisations play a significant role in understanding the full cycle of growth and development, particularly from a female perspective. These entrepreneurs expose how identity is strongly linked to being an entrepreneur as per the work centred innovators (Hakim, 2000; Goffee and Scase, 1985) and more research is needed with these organizations.

Secondly, Sexton and Smilor (1997) argued that “growth is the very essence of entrepreneurship” (p.97), however contrary to this, the women who own non-growth or lower-growth businesses (ML, M) have shown that they can still be entrepreneurial in their approach to business even if they are not growing continuously. As long as they remain profitable, they can co-exist with high growth organisations (Davisson, 1989) as they often fill a niche in the market. These women have made the decision to trade at a manageable level that provides them
with an income and a lifestyle which is suitable for them. Maintaining their businesses at this level is often due to the entrepreneurs’ decision to run her business alongside her family. However, we have to question whether these women truly chose how can we chose freely when we are within regimes of gender power – clearly the key point of development is that gender is a key factor here not to grow or whether their lack of confidence and strong aversion to risk has a significant impact on this decision. These women do not hire because they do not want to fire employees thus is this a consequence of their ‘nurturing’ tendencies or as a result of their low self-efficacy which limits their growth aspirations as they believe they lack the necessary skills to succeed (Anna et al., 2000; Wilson et al., 2007; Kickul, 2010)? Where does this come from? How do we theorise it? What are the effects of how we theorise it? Further investigation of this sub-group is required to answer these questions.

Third, Reibe (2003) noted that successful women run their businesses with an emphasis on a personal, engaged and relationship based approach to management using a transformational leadership style encouraging and rewarding employees to create mutual respect in the workplace. This was found to be a key element particularly pertinent among the MH organisations where these entrepreneurs are investing significant capital into developing and training their staff because they view their employees as key to business growth and success. It can therefore be concluded that Irish women are identifying the need for a relationship approach to business, with an emphasis on training and development, much earlier in the growth cycle than previously noted in US studies and this early recognition may prove beneficial in the long term in terms of organisational growth. The author recommend that this group is investigated more thoroughly as they would provide a successful model for female entrepreneurs who are growth orientated but limit their business because of the potential uncertainty and risk associated with high growth.
Finally, there is a fundamental need to re-examine women within the MM and MH categories. It is the authors belief that these women are within a transitional period, both in personal lives and that of their businesses; and as such, have huge propensity for high growth if they can be mentored and supported through this process. They require the formalization of their business strategy, determination of long term goals and the financial support to achieve growth. In fully understating the needs of these women and their businesses and implementing the appropriate support strategies, it is argued that high growth could be achieved by more women.

6. Conclusions, Limitations and Implications for Policy, Research and Education:

In order to fully understand the growth of female-owned ventures, we must first understand the practices of these women before theoretically defining what these practices mean. Following the work of Morris et al., (2006), this research confirms that “growth is a complex phenomenon which may well be influenced by gender” (p.238). However, many of the factors which were considered important in the past i.e. choice of business sector, educational background and barriers to growth, appear to be less important than entrepreneurial factors such as motives, confidence and individual decisions regarding growth propensity. Indeed, growth appears to be a deliberate choice were the women ‘have a clear sense of the costs and benefits … and that they make careful trade-off decisions’ (Morris et al., 2006).

Although this research has limitations in that generalizability is limited due to the small sample. However, that was never the intention of the study. This research brings to light new evidence with regards to the entrepreneurial and organizational factors which can used as predictors of business growth. As such, it has significant practical implications for policy-makers once further research has been conducted to support these initial assertions. For example, although government agencies in Ireland are making considerable efforts to increase
the level of entrepreneurship (with some visible success), increasing the number of women-owned, high growth organisations who can make a contribution to employment growth appears to be a more difficult task. The indications suggest that policy makers, in developing support mechanisms for businesses, do not fully understand the complexities of organisational growth, particularly within women-owned firms. Indeed, it is clear that in many countries, including Ireland, women entrepreneurs are missing out on public funding and support opportunities because their businesses are not deemed legitimate in the eyes of policy makers. The results of this study clearly illustrate that growth has many facets which need to be identified in order to develop inclusive policies which understand the needs of women before determining the legitimacy of female-owned businesses. Moreover, in providing training mechanisms, the literature provides evidence that competencies are changeable, learnable and attainable through experience, training or coaching (Man et al., 2002; Volery et al., 2015) and in examining the needs of women, policy makers can encourage competency development and thus organisational development at all levels, not just high growth organisations.

Finally, this research has implications for entrepreneurship education. In examining the textbooks and materials used within entrepreneurship classes, it is evident that business growth is taught as a linear trajectory where alternative options such as non-growth and low-growth are deemed as failure. Given that the majority of women will choose these ‘growth’ options as legitimate options within their lifecycle, it is imperative that we re-examine the notion of growth for a more inclusive model.

Finally, in terms of theoretical contribution, there are several key research issues emanating from the findings of this study which brings new empirical evidence of female entrepreneurial growth and development into the existing body of literature. In an attempt to address the important issue of organisational growth, an area which has suffered from a lack of academic attention, eight factors of organisational growth have been identified which now
require further investigation and testing for rigor with larger samples and in other countries. In terms of further research, the significance of developing these comprehensive categories, which distinguishes each level of entrepreneurial venture growth, is that it will facilitate replication of the study on a larger scale to test the model. Ahl (2006) suggests that one way forward in the area of women’s entrepreneurship is to take an objective epistemology and consider expansion in terms of the research objective and to consider factors outside the individual entrepreneur and her business i.e. legislation, social norms, family policy which would give further context to the study. This could be achieved through international comparative studies on a larger scale, utilising the criteria from the categories identified as a benchmark, which is a consideration for the development of this research.

7. References:


**The author wishes to express special thanks to Olivia Lexo for her support in finalizing the paper for this conference**
Semi-structured Interviews with 30 Founders: How Socially-Mediated Cognition Explains Entrepreneurs’ Shifting from Biases and Heuristics to Deliberate Thinking

Andrew Herrity

Abstract

How do founders successfully use biases and heuristics yet shift to deliberate thinking to overcome the potential problems of bias while pursuing opportunities? A developing literature suggests it is not well understood how such a shift is accomplished, so more needs to be known. To explore the question, 30 successful founders participated in semi-structured interviews, each lasting an average of two hours. Consistent with existing theorizing, uncertainty helps trigger a shift. In contrast to most existing theorizing, though, participants report shifting cognition as more socially mediated than socially situated. A conclusion provides examples of the author’s implementation of these findings.

Introduction

An apparent paradox in understanding how successful entrepreneurs think about opportunities is that biases and heuristics tend to account for both success and failure. On the one hand, biases and heuristics often account for entrepreneurial success (Busenitz and Barney, 1997; De Carolis et. al., 2009). On the other, biases and heuristics often account for entrepreneurial failure (Wickham, 2003). This raises the question: How do some founders successfully use biases and heuristics yet shift to deliberate thinking to overcome the fatal problems of bias while pursuing opportunities? To paraphrase Haynie et. al., (2010: 218), what cognitive processes enable entrepreneurs to think beyond bias and heuristics?

Haynie et. al (2010) propose more needs to be known about adaptable cognition in entrepreneurs because how it is actually accomplished is not well understood. To explore the
questions above, 30 successful founders participated in semi-structured interviews each lasting an average of two hours. To address the question extensively, the founders responded to four open-ended questions informed by existing theory. The literature review that follows briefly surveys the theory informing each question.

Following Kahneman (2011), the study adopts the view there are two systems of thinking: Intuitive and deliberate. In this view, both heuristics and expertise from prolonged practice utilize intuitive thinking. Here, intuitive thinking is a form of cognition that bypasses deliberate thinking and depends on pattern recognition.

Consistent with existing theorizing, the study finds uncertainty helps trigger a shift from intuitive to deliberate thinking. In contrast to most existing theorizing though, the participants report a shift from intuitive to deliberate thinking as a consequence of socially-mediated cognition more than socially-situated cognition.

These findings imply that aspiring entrepreneurs will be served well with coaching to accept questions from those they trust, especially under uncertain conditions. Teaching and personal coaching need to include real-world network-building, as well as practice in asking and receiving assumption-challenging questions from trusted people. The paper’s conclusion provides narrative illustrations of the author’s own experimental classroom assignments implementing these findings.
Literature Review

Entrepreneurial Expertise

Expert Intuition. Entrepreneurs become experts through practice (Baron and Henry, 2006; Mitchell et. al., 2007). Kahneman (2011) proposes that this type of expertise is exercised through a type of thinking he calls expert intuition: Expert because it is acquired though prolonged practice; intuitive because its use bypasses deliberate thinking and depends on pattern recognition (Simon, 1992) acquired from experience. Kahneman further clarifies that the experience needs to involve prolonged practice in an environment sufficiently regular to be predictable (2011: 239-241).

Tacit Know-How

Experience-based intuition utilizes tacit knowledge, and is a process in which the individual is not consciously aware how pattern recognition occurs (Hodgkinson et. al., 2008). Not a lot is known about the tacit knowledge that entrepreneurs use when founding new ventures that ultimately succeed (Ambrosini and Bowman, 2001; Smith et. al., 2009). Polanyi (1962) is widely credited with introducing the concept and labeling it as a form of knowledge. Importantly, Polanyi notes that people possessing tacit knowledge cannot explain the decision rules informing their performance:

\[
\text{\ldots the aim of a skillful performance is achieved by the observance of a set of rules which are not known as such to the person following them.} \quad \text{(Polanyi, 1962:49)}
\]

At the same time, because it is performance based and practical, many authors propose that “know-how” is a better term than knowledge for fitting the concept, because the latter includes explicit knowledge that is more readily codified and communicated (Nonanka, 1991; Kogut and Zander, 1992; Sternberg, 1994; Ambrosini and Bowman, 2001; Smith et.al., 2009). So, for
conceptual clarity, the term tacit know-how is used here for whatever it is that entrepreneurs tacitly know how to do at the time of founding that causes the new venture to be successful.

**Semi-Structured Interviews**

Tacit know-how is learned by experience (Smith et. al., 2009) and, as noted above, difficult and sometimes impossible to communicate. This suggests it would be ineffective to ask entrepreneurs directly what tacit know-how they used at the time of founding that caused them to be successful. To overcome this problem, Ambrosini and Bowman recommend semi-structured interviews in which the interviewer tells the subject the objective is to know the causes of success and then asks the actions they took to achieve success (2001). So, for the project described in this paper, the approach is the semi-structured interview, guided by two methodological perspectives. First, the phenomenological approach guides the interview process because this methodology:

….provides a constructive and accessible methodology for deeply exploring and revisiting different topics from the perspective of the entrepreneur’s meaningful lived experiences (Berglund, 2007: 89)

Second, the grounded theory approach (Glaser and Strauss, 1967) guides the search for a theory, or a relatively abstract statement that unifies the observations.

Qualitative methods can be critiqued in two interrelated ways: First, they focus on experiences of individuals; second, they rely on interpretation (Berglund, 2007). Some of the problems with individuality and interpretation may be minimized by using consistent theoretically-informed questions. Ultimately, the underlying meta-question for the project is: How do some founders successfully shift from intuitive to deliberate thinking while pursuing opportunities? Recognizing the concern inherent in the critiques noted above, the remainder of
this literature review concisely surveys extant scholarship to develop theoretically-grounded questions for the actual semi-structured interviews.

Ambrosini and Bowman (2001) recommend asking what each entrepreneur did, because tacit know-how underpinning expertise is difficult to communicate and best revealed when people are asked to describe what they did. As tacit know-how is learned on the job (Sternberg, 1994:28), and experience is widely cited as an important predictor of founder success with a new venture (Shane, 2008), to learn if founders believe this themselves about experience, the first question in this study is to ask what the interviewee did prior to founding:

1. Tell me what you did before starting the business that might have prepared you to be successful.

Importantly, this question reveals no prejudice in favor of experience in case extant theory about the link between experience and tacit knowledge is faulty.

**Heuristics**

Research evidence suggests that decisions involved in founding a new venture require heuristics (Arend et. al., 2016; Busenitz and Barney, 1997), which are simplifying shortcuts people use for problem solving (Kahneman and Tversky, 1982; Baron, 2007; Kahneman, 2011: 98). Because heuristics simplify, however, they tend towards bias: Systematic departure from deliberate rational thinking (Kahneman and Tversky, 1982; Zhang and Cueto, 2015).

As with expertise, heuristics use intuitive thinking (Kahneman, 2011: 12). Once again, though, because the tacit know-how underlying heuristic intuition is difficult to communicate, such know-how is likely to be revealed only when someone is asked to talk about what they did more than what they knew (Krueger, 2007). This leads to the following as the second question:

2. Tell me what you did to be successful in starting and initially operating the business, and how you knew to do those things.
Social Capital

Social capital contributes to entrepreneur success (Aldrich and Kim, 2007; DeCarolis et al., 2009). It is the good will created through social relations that can be mobilized to facilitate the attainment of needed resources, influence and sponsorship (Putnam, 2000; Adler and Kwon, 2002).

Social Cognition

Social cognitive theory suggests that social environments help shape individuals’ cognition and, ultimately, behavior (Wood and Bandura, 1989). In particular, relational capital situated in the entrepreneur’s environment has an effect on his or her cognition (DeCarolis et al., 2009).

Socially-Mediated Cognition

Daniel Kahneman’s (2011) work suggests that cognition shifts from intuitive to deliberate thinking may be facilitated more by cognition that is socially mediated than socially situated. He proposes that others are more likely to detect our errors than we are; he consistently discusses error recognition as occurring primarily in social interactions (e.g., 2011: 418).

This is consistent with theories of socially-mediated cognition. These theories hold that cognitive change tends to require a dialectical process, in which the individual learns to develop or adapt thinking through shared problem solving experience with others whom they trust (Goor et al. 2002; Wertsch, 2007; Edwards, 2007). Although this theoretical tradition in psychology appears mostly unexplored in entrepreneurship research, socially-mediated cognition theory suggests cognition shifts may occur through more direct interaction with social networks than has been postulated up to now.
Yet, terms like social network or social capital likely do not have consistent meanings to practicing entrepreneurs, based on this author’s experience with practitioners as classroom speakers. So the term “stakeholder” is introduced instead for the next question in an effort not to bias the interviewees’ responses. This leads to the following as the third question:

3. Tell me anything about your various initial stakeholders and your relationships with them that may have contributed to your success in starting an operating the business.

Deliberate Thinking

Kahneman notes that the effort to think deliberately “is justified only when the stakes are high and when you are particularly keen not to make mistakes” (2011: 192). Deliberate thinking may be most likely in founders when considering how to measure early results. New venture performance results are difficult to obtain because startups are usually privately held. Growth is often assumed as the most critical early indicator of success (Hmielski and Baron, 2008; Hmielski and Baron, 2009; Hmielski et. al, 2012). Founders are usually advised to focus on cash flow when starting a new venture (Zacarias et. al., 2011). Taken together, though, these authors reveal not much is known about what successful founders actually focus on. So the fourth question was:

4. Tell me if there were critical early results that you focused on, how that focus may have contributed to your success in starting and operating the business, and how you knew to focus on them.
Method

Following Gartner, entrepreneurship is here defined as “the creation of new organization” (1989:62, italics in original). Thus, in this study an entrepreneur is someone who starts a new organization and the focus of the study is on entrepreneurship as occurring at the time of creating a new organization. The term entrepreneur is further operationalized following Baum, Locke, and Smith (2001) and Baum and Locke (2004), as someone who started a business venture that is at least one year old, growing, and profitable at the time of the study.

The methodology chosen to learn directly from entrepreneurs is phenomenological, roughly following but more intensive and extensive than the example provided by Berglund (2007:83-87). In contrast to Berglund, the project here is conducted by only one researcher. Because the phenomenological approach does not necessarily result in a relatively abstract statement of theory, however, the grounded theory methodology is chosen for analyzing the resulting narratives (Glaser and Strauss, 1967).

The method involves the author personally conducting semi-structured interviews (Ambrosini and Bowman, 2001; Berglund, 2007) with thirty successful founders, all located within one Standard Metropolitan Statistical Area (SMSA). Using a database provided by the state government, firms between one and 15 years old are identified. From that group of several thousand in the SMSA, between two and ten firms from each standard industry group at the 2-digit level are selected. This results in a list of 100 people to contact who would represent a cross section of individuals in the SMSA and whose contact information was available. After working through scheduling and availability challenges, 30 interviews are achieved with founders of firms representing a cross section of the SMSA. The interviews last an average of two hours each and are conducted over a four-month period. The 30 interviewees started their respective
companies between one and fifteen years prior to the interview. The mean age at founding was 27 and all are male.

As each of the four questions is asked, the interviewer probes for more with questions like: “would you please tell me more about that?” (Spradley, 1979). Aware of the potential for faulty attributions, based on his own experience as a business founder and educator, as well as some doctoral program training in phenomenology (Schutz, 1967) and ethnomethodology (Garfinkel, 1967), the interviewer sometimes asks challenge questions such as: “was it really that simple?” In addition, to get the interviewee to reflect on possible tacit know-how, questions such as the following are posed: “what leads you to believe it was what you just said that led to success?” The word “entrepreneur” is not used in any of the interviews because it may be subject to significant variation in interpretation (Drucker, 1985).

All interviews are conducted personally by the author. Using an electronic recording of each interview and interview notes, the author codes the statements that interviewees make as reasons for success (Strauss and Corbin, 1988).
Findings

Question number one was: “Tell me what you did before starting the business that might have prepared you to be successful.” Four insights emerged, with some respondents mentioning all four and others mentioning only one or some combination of two or three. Some respondents changed their minds several times in response to the interviewer’s probing; this is true of the responses to all four questions.

Table 1

<table>
<thead>
<tr>
<th>Question 1: Tell me what you did before starting the business that might have prepared you to be successful.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry Experience</td>
</tr>
<tr>
<td>Failed in prior venture</td>
</tr>
<tr>
<td>Grew up in home in which family owned a business</td>
</tr>
<tr>
<td>Completed a university education</td>
</tr>
<tr>
<td><strong>Note:</strong> responses add to more than 100% because they are not mutually exclusive.</td>
</tr>
</tbody>
</table>

Question number two was: “tell me what you did to be successful when actually starting and operating the business, and how you knew to do those things.” Five insights emerged, again with respondents mentioning various combinations of the five; no-one mentioned only one. All mentioned past experience as how they knew what to do. Ninety percent talked about relying on a variety of friends, cofounders, family, and other professional associates for advice and counsel. This trusted network was fluid and temporary, consistent with the proposal by Alvarez and Barney (2005) that many firms organize themselves in a clan-like structure during early stages in order to cope with uncertainty and ever-changing organizational requirements. Of those who mentioned this factor, some were quick to do so and others mentioned other things first and then gradually arrived at the people who provided advice and counsel.
The next two most dominant responses were each mentioned by 43%: Finding the right team, and going on “gut feel” (all 13 respondents used that exact phrase). For most, some or all of the founding team were members of a trusted advice and counsel network at the time of founding but, for a few, none of the founding team came from that valued network. Those who mentioned “gut feel” all had difficulty explaining it but seven of the thirteen said they also relied on trusted friends and family members, etc., when the situation was too confusing to get a “gut feel” for it.

| Table 2 |
|-----------------|-------|
| **Question 2:** Tell me what you did to be successful when actually starting and operating the business, and how you knew to do those things. |       |
| Relied on personal network for advice | 90%   |
| Went on “gut feel” from experience | 43%   |
| Found the right team | 43%   |
| Marketing | 20%   |
| Watched cash flow carefully | 10%   |
| **Note:** responses add to more than 100% because they are not mutually exclusive. |       |

Question number three was: “Tell me anything about your various initial stakeholders and your relationship with them that may have contributed to your success in starting and operating the business.” The dominant insight was that all interviewees talked about a supportive family network, often extending to grandparents, aunts, uncles, cousins, and even ex-wives.

| Table 3 |
|-----------------|-------|
| **Question 3:** Tell me anything about your various initial stakeholders and your relationship with them that may have contributed to your success in starting and operating the business. |       |
| Family network was supportive | 100%   |
| Suppliers who were supportive | 40%   |
| Success came after firing founding partner | 20%   |
| Local government was helpful | 10%   |
| **Note:** responses add to more than 100% because they are not mutually exclusive. Responses 2-4 are mutually exclusive. |       |
Question four was: Tell me if there were critical early results that you focused on and how that focus may have contributed to your success.” This question required the most probing. A typical initial response was something like: “sales growth,” “profit margin,” or “positive cash flow.” After receiving that type of response, the author reminded the interviewee of other metrics stated or implied in responding to question two about starting activities, such as attempting to gauge customer response to a new product or service. Such probing typically a generated response like: “Oh yes, the main thing I tried to measure was that!” with the word “that” referring to whatever was their key focus at launch. Even then, though, most changed their minds to something else. In response to probing, all thirty interviewees had different things on which they focused and attempted to measure, including: identifying customers, customer opinions of their service, product development benchmarks, the extent to which the product line catered to a wide variety of potential customers, the extent to which people were using the product in ways intended by the business founder, the speed at which accounts receivable were collected, and so on. Initially, the author was able only to identify four dominant responses, but their levels of frequency were low in comparison to patters for the first three questions. Twenty percent settled on positive cash flow, but none of these mentioned the other three most frequent responses: sales growth (10%), profit margin (10%) and positive customer satisfaction (10%).

<table>
<thead>
<tr>
<th>Question 4: Tell me if there were critical early results that you focused on and how that focused may have contributed to your success.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive cash flow</td>
<td>20%</td>
</tr>
<tr>
<td>Sales growth</td>
<td>10%</td>
</tr>
<tr>
<td>Profit margin</td>
<td>10%</td>
</tr>
<tr>
<td>Positive customer satisfaction</td>
<td>10%</td>
</tr>
<tr>
<td>Results unique to situation</td>
<td>100%</td>
</tr>
<tr>
<td>Note: responses add to more than 100% because they are not mutually exclusive.</td>
<td></td>
</tr>
</tbody>
</table>
**Relationship between Social Network and Experimenting with Results**

An initial overall review of the findings suggested a relationship between responses to question 2 about founding and question 4 about results. As reported above, in response to question 2, ninety percent talked about their informal network. In response to question 4 about results, the same people who talked about their informal network in response to question 2 brought up that network again when talking about results. Taken together, all responses to both of these questions suggested an interactive consultation with the network while measuring early results. The changing and varied responses about the exact results measured revealed a clear pattern of experimentation with what results to measure and regular discussions with network members to explore how to think about results and continue experimenting. No-one ever used the actual word “experiment” in any interview, but phrases like “I tried different things” were in 25 (83%) of the question 4 interview transcripts, but only in response to a third or fourth layer of probing by the interviewer.

The 25 who both experimented and discussed the experimenting with their network, talked about network members as people they trusted highly. The word trust was not always used but, instead, they invoked terms like “reliable” due to the advisor’s knowledge and/or integrity, and/or demonstrated past dependability to look out for the entrepreneur’s interest as well as their own. All of this suggested the interviewees has cognition-based trust in the people in their network with whom they interacted (Smith and Lohrke, 2008) in deciding how to measure results and experiment with how to move the venture forward.
Cognitive Shift from intuitive to Deliberate Thinking

The responses to question 2 were particularly intriguing, as all who mentioned “gut feel” from experience also talked about relying on their personal network at times. All relied on experience to guide them at the time of founding, but interaction with their social network informed them when to use “gut feel” or “experience” and when at other times to recognize the situation so new to them they could not engage these uses of intuitive thinking.

Socially-Mediated Cognition. Once willing to ask trusted network members for advice, most of the entrepreneurs found themselves being asked questions like: “How do you know?” or “Tell me what led you to that conclusion?” or “What assumptions are you making?” Once they self-recognized decision-making was in conditions of uncertainty, the questions they got from trusted network members caused them to move from heuristic or expert intuition to deliberate thinking. As Herbert Simon noted, expert intuition occurs when an expert has learned to recognize familiar elements in a new situation and act in a manner appropriate to it (1992). Kahneman clarifies, though, that expert intuitions learned through prolonged practice are likely to be skilled only when the environment is sufficiently regular to be predictable (2011: 240-1).

The cognitive ability revealed by almost all interviewees was how to recognize when the conditions had become sufficiently irregular to be unpredictable. With the conditions so recognized, the interviewees allowed trusted people to ask them questions which, in turn, led to shifting from intuitive to deliberate thinking. Deliberate thinking appeared to be mostly an unintended consequence of allowing questions from a trusted informal network once the entrepreneur recognized he was in conditions of uncertainty. Thus, the shift from intuitive to deliberate thinking was not an inherent ability of the founders but, instead, it was mediated by relational social capital. This suggests that, for successful entrepreneurs, socially-mediated
cognition accounts for the ability to shift from intuitive to deliberate thinking under conditions of uncertainty over measuring results provides. A graphical depiction of this is shown below in Figure 1.

FIGURE 1: IN SITUATIONS OF RISK, DECISIONS ARE MADE USING INTUITIVE THINKING; IN SITUATIONS OF UNCERTAINTY, DECISIONS ARE MADE USING DELIBERATE THINKING ENABLED BY SOCIA LLY-MEDIATED COGNITION RESULTING FROM SOCIAL CAPITAL. DIAMONDS REPRESENT DECISIONS.
Conclusions and Implications

Conclusions

Cognitive shifts in this study appear not to come from self-recognition of the need for a cognitive shift but, instead, due to self-awareness that uncertainty in a decision situation requires conversations with trusted members of the entrepreneur’s social network. In the study, this is uncovered by addressing the question: How do some founders successfully use biases and heuristics yet shift to deliberate thinking to overcome the fatal problems of bias while pursuing opportunities? This question is operationalized with four semi-structured, open-ended questions asked of 30 founders in interviews lasting an average of two hours each. The apparent effectiveness of this method in uncovering patterns consistent with extant theory suggests room for other entrepreneurship researchers to engage in carefully designed qualitative studies on entrepreneurial thinking.

The resulting theoretical proposition about cognitive shifts as an apparently unintended consequence suggests that heuristics (Zhang and Cueto, 2015), relational social capital (DeCarolis et. al., 2007) and uncertainty (Haynie et. al., 2007) are important for the ongoing study of entrepreneurial cognition. As Kahneman notes, organizations are better than individuals at avoiding errors because it is easier to recognize others’ mistakes than our own (2011:417-418). This study suggests before successful founders are able to coalesce a formal organization, the organization serving this error-avoiding problem at founding is a clan-like network (Alvarez and Barney, 2005).

Some strengths of the method used here are the relatively large number of extensive interviews, the variety of firms (founded over a 14-year span in 12 industries and ranging from $1 million to $30 million annual revenue in the year of the interviews), the theoretically-
informed yet relatively unbiased and open-ended questions, and the lengthy analysis incorporating the qualitative methodologies of phenomenology and grounded theory.

Nonetheless, the study has limitations. Although many founders participated, they are all in one SMSA, so there may be a regional bias unrecognized by the interviewer. Also, as this is a study of only successful founders there is no “control” group of “unsuccessful” founders whose responses could be compared and contrasted. Unfortunately, the author sees no way around this latter limitation, as it would be a questionable pursuit to try and learn tacit know-how that people did not know or did not know to use. In other words, asking people to describe what they failed to do would be completely speculative.

**Implications for Entrepreneurship Education**

**Learning to Develop a Network.** This study found that interactive questions from one’s formal and informal network are central to entrepreneurs’ shifting from intuitive to deliberate thinking. So a central implication for entrepreneurship education is in helping people learn how to do this. To apply these findings and learn what works, the author has started using a course assignment designed to address this; the reader may wish to consider and evaluate such an assignment for his or her own use. It is adapted from an exercise suggested by Dyer, Gregerson, and Christensen (2011). The assignment is for each learner to become better connected to six people, each one different from the learner.

The assignment begins with an interactive discussion about trust propensity, affective-based trust, and cognition-based trust, because 20 of the founders interviewed clearly cognition-based trust (Smith and Lohrke, 2008) in the people in their network with whom they interacted. This is followed by a discussion on the importance of a diverse network of people in whom each
assignment participant either has trust already or has reason to believe they could trust the individual. Then the learners form into small groups to begin the process of identifying the people with whom each learner might become better networked. Each learner eventually writes a paper in some detail on the development of six relationships with people not like them (dissimilar by sex, ethnicity, etc.). The assignment concludes several weeks later with each learner presenting to classroom peers how two of the relationships developed. The author conducted this assignment once, with 26 learners and very positive feedback. It is too soon to determine the impact this assignment might have on long-term network development.

**Socially-Mediated Cognition.** For helping learners accept questions that may mediate a shift from intuitive to deliberate thinking, the author has started using another assignment in a separate course; once again, the reader may wish to evaluate and consider this. The course is loosely built around the process depicted by Bill Aulet (2013). In teams of three, learners test an idea on the market and make regular reports back to the class on their findings and what they will do with those findings. The instructor models the posing of questions challenging potential bias by querying with something like: “Would you please tell us more about the assumptions you make that cause you to believe your market information confirms your hypotheses about this product idea?” After several sessions, learners in the audience begin to pose these types of questions on their own. Most importantly, though, the presenters learn without getting defensive to shift from intuitive to deliberate thinking, based on questions from their peers. The author has conducted this assignment with a total of 68 learners, receiving very positive feedback about the experience. As a result of this learning experience, five participants report making significant progress on ventures they are developing outside this learning experience.
**Asking and Accepting Questions about Experimentation.** An additional value of this learning experience built on Bill Aulet’s (2013) ideas is that participants develop the ability to ask and accept questions about an experimentation process. As they report on quasi-experiments on real consumers, they experience mini-failures when the questioning process might reveal their market testing might not go as well as hoped. The mini-failures provide a learning context with a high level of uncertainty, in which the learners recognize the value of trusting their team as well as the broader network of course participants.

**Experience.** All this encourages learners to value experience. The importance of experience is well-known to entrepreneurship researchers (e.g., Shane, 2008). As do many other entrepreneurship educators, the author regularly has successful practicing entrepreneurs come to class to talk about their experience. Beyond hearing from these potential role models, though, the extra value to the Aulet-inspired assignment is that learners engage experientially in testing their ideas with real consumers. For many, it is an eye-opening experience to discover how people who are not their friends or relatives respond to their market-oriented ideas.
References


Entrepreneurial intention-behavior translation among university students: do institutions matter?¹

Karina Bogatyreva  
Assistant Professor  
St. Petersburg University  
Graduate School of Management  
3 Volkovskiy perulok  
St. Petersburg, 199004, Russia  
Tel. +7 981 830 33 67  
e-mail: k.bogatyreva@gsom.pu.ru

Galina Shirokova  
Professor  
St. Petersburg University  
Graduate School of Management  
3 Volkovskiy perulok  
St. Petersburg, 199004, Russia  
Tel. +7 812 323 84 64  
Fax: +7 812 329 32 34  
e-mail: shirokova@gsom.pu.ru

Oleksiy Osiyevskyy  
Assistant Professor of Entrepreneurship & Innovation,  
D’Amore-McKim School of Business, Northeastern University &  
Research Fellow,  
St. Petersburg University Graduate School of Management  
St. Petersburg, Russia,  
479 Dodge Hall, 360 Huntington Avenue  
Boston, Massachusetts 02115, USA  
Tel. +1 781 454 52 53  
Fax: +1 617 373 62 01  
E-mail: o.osiyevskyy@neu.edu

¹ Research has been conducted with financial support from Russian Science Foundation grant (project No. 14-18-01093).
Extended abstract

Principal topic

Formation of entrepreneurial intentions represents one of the key stages of entrepreneurial process. While the theory of planned behavior (Ajzen, 1991) suggests a direct link between intentions and subsequent behavior, in practice, however, not every declared intention is eventually transformed into an operating venture, creating in this way an intention-action gap. A growing body of research is aiming to address the issue of intention-behavior translation in entrepreneurship (e.g., Kautonen, Van Gelderen & Fink, 2015; Kautonen, Van Gelderen & Tornikoski, 2013; Van Gelderen, Kautonen & Fink, 2015). However, the specific contingencies of this relationship still remain to be identified (Liñán & Fayolle, 2015).

Entrepreneurship is traditionally viewed as a vocational choice that allows independence and personal freedom, becoming more and more attractive for young people (Martinez, Mora & Vila, 2007). Empirical evidence suggests that, even though young people are becoming more educated, levels of youth unemployment is increasing worldwide (Schøtt, Kew & Cheraghi, 2015). As a result, fostering entrepreneurial activity among youth is regarded as a paramount development strategy, as it allows involving young people - an extremely prominent population group in terms of their economic potential – into the labor market (Kvedaraite, 2014). Entrepreneurial activity is embedded in an institutional context. Formal institutions, comprising laws, rules, and regulations, are the regulatory pillars that marshal individual and firm behavior (North, 1990; Peng, 2009). Examples of formal institutions include property right protection, the judiciary system, business regulations, and investment laws. Their function is to reduce uncertainty, thereby facilitating business interactions and development (Li & Zahra, 2012; North, 1990). Ceteris paribus, individuals are more likely to translate their entrepreneurial intentions into start-up activities in a
country with strong institutions and low uncertainty, as this reduces the overall risk of doing business (Wan & Hoskisson, 2003).

Thus, drawing on the theory of planned behavior and institutional approach, with a piece of cross-country data derived from the Global University Entrepreneurial Spirit Students’ Survey 2011 and 2013/2014, we address the following research question: do country-level institutional peculiarities affect the entrepreneurial intention-action translation and what are the directions of their impact?

**Theoretical framework and research hypotheses**

Entrepreneurial start-up activities are the events and behaviors of individuals who are engaged in the process of starting a new venture (Gartner, Carter, & Reynolds 2004). These activities are important since engagement in them is a necessary condition for developing a viable venture (Shepherd, 2015). Empirical findings demonstrate that a high level of engagement in start-up activities increases the probability of eventual organizational emergence (Brush, Manolova & Edelman, 2008).

The power of entrepreneurial intentions to predict involvement into start-up activities is theoretically underpinned by the theory of planned behavior (Ajzen, 1991), its predecessor – theory of reasoned action (Fishbein & Ajzen, 1975), Rubicon model of action phases (Achtziger & Gollwitzer, 2008), and causal theory of intentional action (Davidson, 1963). In the entrepreneurship context, this relationship is corroborated by empirical evidence (Kautonen, Van Gelderen & Fink, 2015; Kautonen, Van Gelderen & Tornikoski, 2013; Liñán & Rodriguez-Cohard, 2015; Van Gelderen, Kautonen & Fink, 2015). However, the link between entrepreneurial intentions and actions may be hampered or triggered by a large variety of environmental contingencies. Focusing attention on the role of institutional peculiarities, this study scrutinizes
the role of country-level financial institutions and strength of property rights protection in the process of entrepreneurial intentions-behavior transformation. The hypothesized relationships are described below.

**Hypothesis 1**: Entrepreneurial intentions are positively associated with the scope of subsequent startup activities among youth.

**Hypothesis 2**: The country-level financial market institutions reinforce the relationship between entrepreneurial intentions and start-up behavior among youth, so that in countries with well-developed financial institutions the relationship becomes stronger.

**Hypothesis 3**: The country-level property rights protection reinforces the relationship between entrepreneurial intentions and start-up behavior among youth, so that in countries with well-developed property rights system the relationship becomes stronger.

**Method**

To address the issue of intention-action translation, we employ two waves of the Global University Entrepreneurial Spirit Students’ Survey (GUESSS), from 2011 and 2013/2014. We detected 1434 answers to the GUESSS questionnaire in both indicated waves of GUESSS survey belonging to respondents from 9 different in terms of institutional development countries - Germany, Switzerland, Austria, Netherlands, Estonia, Russia, Hungary, Brazil, Singapore.

The entrepreneurial behavior was measured in the second wave of survey (2013/2014) by calculating the aggregated index of individual actions that constitute the behavioral category of starting a new venture – the scope of start-up activities that a student has already carried out on his or her way to the new venture creation. This represents a count variable reflecting number of actions a student has already undertaken on his way to venture creation. Students’ entrepreneurial intentions variable was captured using a specific question in the 2011 GUESSS questionnaire.
regarding the future career aspirations of the respondent: “Which career path do you intend to pursue right after completion of your studies?” The dummy variable for Entrepreneurial Intentions assumed the value of 1 if the answer to the question was “As a founder” and 0 otherwise. The moderator variables in this study were taken from external sources. The country-level financial market institutions were assessed as a sum of two indices from the Global Competitiveness Report 2013-2014: (1) Ease of access to loans (“How easy is it to obtain a loan in your country with only a good business plan and no collateral?” (1 = impossible, 7 = easy)), and (2) Venture capital availability (“Entrepreneurs with innovative but risky projects can generally find venture capital in your country” (1 = not true, 7 = true)). The country-level property rights protection was assessed using the 2013 International Property Rights Index (IPRI², comprising three sub-indices: Legal and Political Environment, Physical Property Rights, and Intellectual Property Rights), measured on a scale from 0 (lowest level) to 10 (highest level).

To capture other possible effects able to influence the entrepreneurial intention-behavior translation, we have also introduced a number of individual- and country-level control variables.

Results

Since our dependent variables is continuous, we used the negative binomial estimation for predicting the scope of startup activities. The results suggest that, even though there is a direct positive relationship between entrepreneurial intentions and scope of start-up activities, there is a significant impact of institutional dimensions on entrepreneurial intentions-behavior transformation. Namely, the strength of property rights has a positive impact on entrepreneurial intentions-actions relationship. Contrary to our expectations, well-developed financial institutions

---

² Provided by the Property Rights Alliance: http://internationalpropertyrightsindex.org/
have a negative impact on intentions-actions translation which represents an extremely unexpected finding.

**Contribution and implications**

This paper aims to make several district contributions. First, we extend the existing knowledge within the entrepreneurial cognition domain by specifying the external factors that might affect the actual shift from entrepreneurial intentions to start-up activities (Liñán & Fayolle, 2015). Second, having assessed the impact of country-specific institutional conditions on the process of entrepreneurial intentions-behavior transformation, we contribute to the stream of comparative international entrepreneurship literature (Terjesen et al., 2013). Finally, having addressed the focal relationships in a very specific context of student entrepreneurship (on average our respondents are around 25 years old), we introduce new insights to the youth entrepreneurship literature stream (Hulsink & Koek, 2014).

**References**


THE INFLUENCES OF SOCIAL MEDIA ON ENTREPRENEURIAL PROCESS: THE
THEORETICAL UNDERSTANDING FROM EFFECTUATION THEORY

Atthaphon Mumi
Department of Marketing Entrepreneurship & Innovation
Manning School of Business
University of Massachusetts Lowell
Email: Atthaphon_Mumi@student.uml.edu

Michael Ciuchta, PhD
Department of Marketing Entrepreneurship & Innovation
Manning School of Business
University of Massachusetts Lowell
Email: Michael_Ciuchta@uml.edu

Yi Yang, PhD
Department of Marketing Entrepreneurship & Innovation
Manning School of Business
University of Massachusetts Lowell
Email: Yi_Yang@uml.edu
THE INFLUENCES OF SOCIAL MEDIA ON ENTREPRENEURIAL PROCESS: THE THEORETICAL UNDERSTANDING FROM EFFECTUATION THEORY

ABSTRACT

Social media are the popular networking platforms that enhance people’s communication with billions of active individuals who engage in these online venues. The current literature provides theoretical and empirical arguments supporting the benefits of using social media for both individuals and firms. However, limited studies have been found to emphasize social media in an entrepreneurship context. This study contributes to the entrepreneurship literature by looking at the influences of social media toward the entrepreneurial process. Specifically, we develop a conceptual framework showing the relationships between an entrepreneur’s attachment to social media and various constructs of the entrepreneurial process derived from effectuation theory.
EXECUTIVE SUMMARY

A variety of organizations have been utilizing social media as one of their main tools for communicating with stakeholders. Existing literature, especially in marketing, provides theoretical and empirical arguments supporting the benefits of using social media for individuals and firms. Despite the ample literature on social media in marketing, social media research has been under-investigated in the entrepreneurship domain, especially in relation with entrepreneurial process. This study, therefore, investigates the possible impacts of social media toward entrepreneurial thinking and behaviors. Drawing from effectuation theory, expert entrepreneurs utilize the available means to identify the possible goals. From the effectuation theoretical framework, we therefore propose conceptual arguments to support how social media may influence an entrepreneur’ level of means as it related to the entrepreneurial process. More specifically, we posit the conceptual relationships between an entrepreneur’ attachment to social media and social capital—both bridging and bonding, with further effects on opportunity recognition. Furthermore, opportunity recognition is expected to result in higher pre-commitment. Finally, we argue that these relationships can be moderated by affordable loss and “who I am” recognition (entrepreneurial experience, entrepreneurial passion, and entrepreneurial self-efficacy). The theoretical understanding from this study extends social media phenomena into the entrepreneurship literature and provides a conceptual understanding of how social media could be beneficial for entrepreneurs.
INTRODUCTION

Social media are the existing platforms that enhance people’s communication. They have become extremely popular as billions of individuals are actively engaging in these online platforms (Smith, 2016). According to Kalan and Haenlein (2010), social media are the web tools that stimulate public content generated by people. Regarding the extensive use for information sharing, social media has become a new set of organizational communication in terms of reaching out to existing and potential customers (Hanna, Rohm, & Crittenden, 2011). Therefore, an increasing numbers of scholars are exploring how social media can be beneficial for business activities. For example, prior studies have predominantly investigated firms and people’s behaviors on social media through various marketing perspectives (e.g. Nam & Kannan, 2014; Naylor, Lamberton, & West, 2012). More specifically, prior studies on social media research often rely on word of mouth phenomena in understanding the effectiveness of communication through social media. Many studies reveal the positive relationships of social media toward sales (Dewan & Ramaprasad, 2014; Gopinath, Chintagunta, & Venkataraman, 2013; Nam & Kannan, 2014; Rui, Liu, & Whinston, 2013; Yu, Duan, & Cao, 2013), building customer relationships (Laroche, Habibi, & Richard, 2013) and brand evaluation (Naylor et al., 2012). Furthermore, social media has been studied in the fields of information systems and finance for its advantages toward a firm’s value and stock performance (Jiang, Chen, Nunamaker, & Zimbra, 2014; Luo, Zhang, & Duan, 2013; Schniederjans, Cao, & Schniederjans, 2013).

Despite the tremendous recognition of social media in various business literatures, limited studies were found to investigate the use of social media in an entrepreneurship context (e.g. Fischer & Reuber, 2011, 2014). This statement is rather surprising as social media have been extensively utilized by various entrepreneurs in driving their businesses’ growth (Weiss, 2014).
For example, an entrepreneur may use social media for their marketing and communication purposes, as well as for the introduction of their product prototypes to the market. According to an article by Weiss (2014), a survey done by LinkedIn shows that among 1,000 North American entrepreneurs, 81 percent use social media, and 9 percent intend to use it in the future. Among these entrepreneurs, 94 percent utilize social media for marketing purposes, while 49 percent use it for education (Weiss, 2014). Besides marketing and educational purposes, entrepreneurship scholars also argue that social media could stimulate an entrepreneur’s effectual thinking and behavior (Fischer & Reuber, 2011). According to the existing entrepreneurship literature, this thinking and behavior may enhance the success of entrepreneurs in the early stage of business development (Dew, Sarasvathy, Read, & Wiltbank, 2008; Sarasvathy, Simon, & Lave, 1998; Wiltbank, Dew, Read, & Sarasvathy, 2006).

Drawing from the effectuation framework (Sarasvathy et al., 1998; Sarasvathy, 2001), this article extends Fischer and Reuber (2011)’s study and proposes the conceptual framework of the social media effects on the entrepreneurial process. Effectuation is the emerging theory of entrepreneurship that focuses on an understanding of how entrepreneurs utilize means as given in allocating opportunities under uncertainty. The effectuation process begins with a general aspiration (e.g. wanting to be rich, wanting to own a business) followed by the realization of available means and networks to identify opportunities (Sarasvathy et al., 1998; Sarasvathy, 2001). It is more of a pragmatic approach to understanding entrepreneurial actions based on a practical implication rather than theoretical consideration (Read, Sarasvathy, Dew, & Wiltbank, 2016). In contrast to a goal-driven process—or causation—which utilizes business plans and various strategies to achieve pre-defined objectives, the effectuation process relies on the resource-driven notions of “who I am”, “what I know” and “whom I know” through four principles: affordable
loss, strategic alliances, contingency and controlling the unpredictable future (Sarasvathy, 2001). Based on the effectuation theory, we propose that social media would enhance an entrepreneur’s social capital (as the available means) in influencing their effectual thinking and behavior. The social capital, therefore, interplays with an entrepreneur’s affordable loss and the recognition of “who I am” that impacts entrepreneurial propensity to identify an opportunity. We further argue that opportunity recognition has a positive relationship with pre-commitment since an entrepreneur would want to control uncertainty by having stakeholders’ pre-commitment toward the possibility of their idea. The opportunity-commitment relationship is also moderated by affordable loss and “who I am” recognition drawing from the theory of effectuation (Sarasvathy, 2001). Overall, we conclude from our arguments that the utilization of social media can be beneficial for early stage entrepreneurs.

This study makes several contributions to the literature. First, it extends social media phenomena into the entrepreneurship literature and provides a conceptual understanding of how social media could be beneficial for entrepreneurs, especially in their early stages of business development. As many scholars of diverse business related disciplines are investigating the importance of social media, this study would be among the few studies that shed light on the use of social media in influencing entrepreneurship activities. Second, this study broadens effectuation theory by applying it to the entrepreneurial use of social media. The theoretical viewpoint from the effectuation theory would provide better insights into how entrepreneurs can utilize social media for their business development purposes. We discuss the current literature on social media and the effectuation process in the next section before applying them to our proposed model in the following sections. Finally, we highlight the potential contributions, practical implications and future research directions in our discussion and implications.
SOCIAL MEDIA RESEARCH: AN OVERVIEW

Social media has been a topic of interest among managers and research scholars due to its ability to enhance people’s interaction and connectivity. This study defines social media as “a group of Internet-based applications that build on the ideological and technological foundation of Web 2.0, and allow the creation and exchange of user-generated content” (Kaplan & Haenlein, 2010). The communication between people, communities and/or organizations has substantially changed due to the advancement of social media. People can easily create, share, and exchange information in online communities to express their opinions and knowledge on various topics of interest. Thus, social media have been the crucial platforms to enhance user-generated content which is very powerful for modern social communication. People participating on social media can also build reputations and find career opportunities, and/or even earn monetary revenue (Tang, Gu, & Whinston, 2012). Thus, social media have affected people’s communications and behaviors.

Organizations have also recognized social media as a new set of business processes and operations (Hanna et al., 2011). Prior literature reveals that social media help firms achieve marketing activities such as sales (Dewan & Ramaprasad, 2014; Gopinath et al., 2013; Nam & Kannan, 2014; Rui et al., 2013; Yu et al., 2013), building customer relationships (Laroche et al., 2013) and brand evaluation (Naylor et al., 2012). Particularly, scholars in the marketing domain have also emphasized the social media phenomena regarding the effects of online word of mouth (eWOM) (Kimmel & Kitchen, 2014) in analyzing communication between customers. Social media also appear in information systems and finance literatures for its advantages toward building a firm’s value and stock performance (Jiang et al., 2014; Luo et al., 2013; Schniederjans et al.,
2013). Therefore, there are an increasing number of business activities that depend on unique communicative functions available on social media.

Nonetheless, the study of social media in entrepreneurship literature is still limited. To the best of our knowledge, only two studies were found on the topic of social media among the major entrepreneurship journals. This finding is remarkably unexpected since social media have been involved in many entrepreneurial activities (Weiss, 2014). These two studies provide the sound basis for the importance and the implication of social media for entrepreneurship research. The first study was published in the Journal of Business Venturing, authored by Fischer and Reuber (2014). They developed the theoretical insights from the data on eight entrepreneurial firms and suggest that entrepreneurial communication via online social media channels could lead to the audience affirmation of a firm’s quality and distinctiveness. Furthermore, another study by the same authors in the Journal of Business Venturing, collected interview data from twelve entrepreneurs and claim that entrepreneurs could gain effectual thinking and behavior from using social media. They also provide the theoretical understanding based on the effectuation theory to shed lights on the use of Twitter (Fischer & Reuber, 2011). Additionally, the second study serves as the foundation of this study in applying effectuation theory to the relationships of social media and entrepreneurial activities. Therefore, we discuss the related literature on the effectuation framework in the following section.

EFFECTUATION THEORY: AN OVERVIEW

The effectuation theory lays its framework on the utilization of available resources in recognizing opportunities, rather than acquiring resources for specific goals. That is, expert
entrepreneurs in their early stages of business development do not typically specify goals and objectives through strategic planning (Sarasvathy, 2001). Instead, expert entrepreneurs perceive available means through the notions of “who I am,” “what I know” and “whom I know” and pursue their entrepreneurial actions using four principles: affordable loss, strategic alliances, contingency and controlling the unpredictable future (Sarasvathy, 2001). According to Sarasvathy (2001), affordable loss indicates the limitation of risky actions from available means toward a loss level that can be affordable. Also, strategic alliances are often favored by entrepreneurs in comparison with the competition that are perceived to be of higher uncertainty. Contingency emphasizes alternative options if a goal could not be achieved. Controlling the unpredictable future provides the logic for contrasting with the future prediction, as the future can be controlled, thus, there is no need to predict it. The effectuation concept is framed as an entrepreneurial process that is pursued by expert entrepreneurs in their early venture creation. The process is conceptualized to reflect the pragmatic aspect of entrepreneurial action and is thus centered on the dynamic and interactive process toward the new artifacts (Sarasvathy, 2009). Figure 1 manifests the effectual process found in the existing literature (Wiltbank et al., 2006). Entrepreneurs start with the means as given through the realization of “who I am”, “what I know” and “whom I know” in generating a number of possible goals. Then, they carry on the ideas derived from the given means to interact with other people hoping to learn more from their experience or to find other entrepreneurs who are willing to commit themselves to their ideas. The outcomes of the effectuation process are the generating of new means and new goals which may influence the creation of new firms, new products, and new markets (Read, Dew, Sarasvathy, Song, & Wiltbank, 2009a).
Prior literature has provided both conceptual and empirical evidence that effectuation is embedded in the entrepreneurial process. For example, Dew et al. (2008), in their conceptual paper, proposed that during the development of a new venture, entrepreneurial companies engage in more effectuation-related behaviors than established firms. It is crucial for entrepreneurs with limited resources to act entrepreneurially and undertake any recognized opportunities. Similarly, Wiltbank et al. (2006) propose that a control-oriented approach (effectuation) would lead to more successful outcomes in comparison with a predictive approach (causation), and further emphasized the concept of effectuation even in the setting of established firms. Among the limited empirical evidence, Harting (2004) found that effectuation logic accounted for over 60% of semantic chunks during the earlier stages of CarMax’s development. In addition, Wiltbank et al. (2009) empirically investigate one facet of effectuation—controlling an unpredictable future rather than predicting one—in the context of angel investors and found that under uncertain environments, investors could perform better if they emphasize control rather than adopting a predictive strategy. Overall, the effectuation approach seems promising for earlier stage entrepreneurs, and it is argued to be one of the successful frameworks that lead to positive entrepreneurial outcomes (Read et al., 2009a).
SOCIAL MEDIA AND THE EFFECTUAL ENTREPRENEUR: A CONCEPTUAL FRAMEWORK

Despite a limited understanding of how social media could be beneficial to entrepreneurial activities, Fischer and Reuber (2011)’s article provides a solid conceptual foundation of social media activities and the consequences for entrepreneurs. In particular, the study provides theoretical insights from the qualitative data that social interactions using Twitter can trigger a cognitive assessment of the means available to an entrepreneur, as well as the effects of those means (Fischer & Reuber, 2011). These perceived means triggered by the use of social media can be anything that entrepreneurs could potentially find useful that could lead to an opportunity. Although the interaction via social media leads to the realization of oneself and what s/he knows (Fischer & Reuber, 2011), we also believe that social media will lead to the acquisition of the new means. Social media platforms provide a great opportunity for entrepreneurs to connect with other people. They may utilize social media to keep in touch with their friends and relatives or to learn more about market trends. The more they find social media useful, the more attached to it they become. Drawing from existing marketing literature, we are convinced that the attachment to social media would reflect how entrepreneurs use social media (VanMeter, Grisaffe, & Chonko, 2015). Therefore, it is plausible that their attachment to social media can influence an entrepreneur’s level of means or resources.

We further argue in the more specific context that an attachment to social media would lead to an entrepreneur’s social capital as being a new mean. This assumption is in line with a study by Ellison, Steinfield and Lampe (2007) that provides the evidence of how connections in the social media community could lead to social capital. In their study of 286 participants, they found a strong association between the use of Facebook and social capital (Ellison et al., 2007).
Therefore, it is possible that an entrepreneur’s attachment to social media may influence the social capital. Furthermore, we also argue from the effectuation framework (Sarasvathy, 2001) that social capital—as the available means for an entrepreneur—may lead to opportunity recognition, and this relationship is moderated by the affordable loss and “who I am” recognition. This study argues that the ability to recognize new opportunity can be derived from the means generated and the affordable loss (Arend, Sarooghi, & Burkemper, 2015). Hence, the interaction of means such as social capital, a recognition of “who I am” and an affordable loss may influence an entrepreneur’s opportunity recognition. In addition, we also propose the relationship of opportunity recognition and pre-commitment based on the effectuation theoretical lens (Sarasvathy, 2001; Wiltbank et al., 2006), moderated by the “who I am” recognition and affordable loss. Figure 2 reveals the conceptual framework proposed in this study. The discussion of these proposed relationships are provided with details in the following sections.

-----------------------------

Insert Figure 2 about here

-----------------------------

**Attachment to Social Media and Social Capital**

Although prior studies highlight various opportunities for using social media (e.g. Hanna et al., 2011; Tang et al., 2012), many studies argue that people might not be as active on social media as it is believed (Jones, Ravid, & Rafaeli, 2004; Joyce & Kraut, 2006). Particularly, the existing literature proposes that people are either active as social media contributors or passive as consumers of social media content (e.g. Schlosser, 2005; Shang, Chen, & Liao, 2006; Shao, 2009). Drawing from a study by VanMeter and colleagues (2015), people’s attachment to social media
could help to explain various activities on social media platforms. They found eight dimensions that particularly reflect how people can be attached to social media platforms: influence, advice, informed, connecting, enjoyment, nostalgia, affirmed and enhancing life (VanMeter et al., 2015). These dimensions reflect various types of activity one can do on social media categorized by their attachment. Relying on a study by VanMeter et al. (2015), this study also proposes that an entrepreneur would also utilize social media based on their level of attachment. More specifically, an entrepreneur may utilize social media for: connecting—use of social media to stay connected to others, nostalgia—use social media in order to remember things from the past, informed—use social media in keeping an individual informed, enjoyment—use social media in helping an individual to experience relaxation and enjoyment, advice—use of social media to seek advice from others, affirmation—use social media to feel assured and supported, enhances my life—use social media to enhance a person’s life and influence—use social media to encourage, influence, and help others (VanMeter et al., 2015). As a consequence, a better understanding of an individual’s attachment to social media would provide a sound basis for what the potential consequences could be.

In this study, we argue that an entrepreneur’s attachment to social media will influence the level of social capital. Typically, two types of social capital could arise from social media activities: bridging social capital and bonding social capital (Putnam, 2001; Williams, 2006). “Bridging” social capital occurs when individuals from various backgrounds make connections between social networks, which leads to new opportunities, information, and resources (Putnam, 2001). However, “bonding” social capital happens when individuals are connected with strong ties such as family and close friends (Putnam, 2001). Although bonding social capital may provide limited views of new opportunities, it utilizes these stronger personal connections for various
purposes. A prior study also highlights the positive relationship between social media community and social capital (Ellison et al., 2007). In their study drawing from the survey data of 286 participants, Ellison and colleagues (2007) provide the evidence showing that the use of Facebook would influence the formation and maintenance of social capital. Therefore, we posit the hypotheses as follows:

**Proposition 1:** The attachment to social media will be positively related to bridging social capital.

**Proposition 2:** The attachment to social media will be positively related to bonding social capital.

**Social Capital and Opportunity Recognition**

In entrepreneurship research, opportunities are a crucial domain consisting of ideas and beliefs that lead to future goods and services (Venkataraman, 1997). Many successful entrepreneurs significantly rely on creating and recognizing all opportunities as their initial steps in business development (Stevenson, 1998). We define opportunity recognition, in this study, as a cognitive process whereby individuals connect the dots between changes, events, and potentials to come up with new product or service ideas (Baron, 2006). In the social media context, the ease of accessibility and low-cost advantage will provide entrepreneurs with larger and broader informal networks so that they could receive more information from other people they interact with (Johansson, 2000) and in turn may help other entrepreneurs identify new opportunities (Ozgen & Baron, 2007). For example, a study by Hills et al. (1997) provides the evidence supporting that
entrepreneurs who have larger networks discover more opportunities due to the ties in the network, especially weak ties (Granovetter, 1973) that lead to more information. Similarly, Putnam (2001) points out that “bridging” social capital indicates people’s intention for more connections in the networks leads to new opportunities and information. Thus, we argue that entrepreneurs could utilize their “bridging” social capital through social media participation as the source of information for their opportunity recognition.

On the other hand, “bonding” social capital manifests long-term relationships such as stronger ties within networks. It is possible that the benefits from a strong tie network in the formation of bonding social capital could potentially influence new opportunities as well. For example, De Koning and Muzyka (1999) proposed a socio-cognitive framework of opportunity recognition and emphasized the entrepreneur’s inner circle (e.g., entrepreneur’s networking with long-term and stable relationships) to influence opportunity recognition. Furthermore, the effectuation theory also suggested that the expert entrepreneurs realize their opportunities from their available means (Goel & Karri, 2006; Sarasvathy, 2001). We argue in this context that social capital derived from the use of social media could be one of the important means for an entrepreneur in recognizing their opportunity. Moreover, the prior literature manifests the stronger effectiveness of weak ties toward opportunity recognition over strong ties (De Koning & Muzyka, 1999). Singh et al. (1999) also assert that individuals with a higher number of weak ties tend to identify more opportunities regarding new ventures. Therefore, bridging social capital which consists of the larger networks as similar to the weak ties may be more efficient in their association with opportunity recognition in comparison with bonding social capital. Thus, we posit the next propositions for bridging social capital and bonding social capital in a social media context that would influence an entrepreneur’s opportunity recognition as follows:
**Proposition 3**: bridging social capital through social media will be positively related to opportunity recognition.

**Proposition 4**: bonding social capital through social media will be positively related to opportunity recognition.

**Proposition 5**: the positive relationship between bridging social capital and opportunity recognition will be stronger than the positive relationship between bonding social capital and opportunity recognition.

**Opportunity Recognition and Pre-commitment**

The effectuation theory suggests that expert entrepreneurs prefer strategic alliances and pre-commitment from stakeholders over competitive actions (Sarasvathy, 2001). Entrepreneurs under high uncertainty may consider competition as too risky that and that it could lead to a loss that they may not be willing to afford. The aspect of pre-commitment from the effectuation approach would reduce or eliminate uncertainty and make things more controllable. Pre-commitment comes from various types of stakeholders such as investors, suppliers, customers, or even competitors (Chandler, DeTienne, McKelvie, & Mumford, 2011). These stakeholders may provide the signals in showing their efforts to commit themselves to the emerged opportunity. For example, in the crowd funding context, entrepreneurs try to convince others of their idea by using online platforms such as Kickstarter or Gofundme to get the commitment from potential stakeholders. The varieties of activities offered in these crowd funding platforms share the same objective – to acquire a pre-commitment from public users to take part in their idea. The pre-
commitment related activities could vary from purchasing the products they hope to be delivered in the future, investing in the business and hoping for a portion of future profits, or just donating in the hopes of improvements for society. The pre-commitment is central to effectual logic as it enables a co-creative relationship (Read et al., 2016) and brings the emerged opportunity closer to reality. In this context, we believe that once an entrepreneur recognizes the opportunity, they would seek the partnerships or alliances to pursue their ideas and to control for any uncertainty (Wiltbank et al., 2006). Through the effectuation theoretical lens, we, thus, argue that the higher an entrepreneur’s propensity to recognize opportunity (Ma, Huang, & Shenkar, 2011), the more a pre-commitment approach will be utilized.

The existing literature argues that the stakeholders in a successful entrepreneurial venture are self-selected into the entrepreneurial process (Read et al., 2016). Therefore, there is a better likelihood an entrepreneur will recognize the opportunity, and a higher chance of getting more involvements from other entrepreneurs through various entrepreneurial actions. The entrepreneur may share the information about their recognized opportunity with those they trust (Goel & Karri, 2006) to see whether other people would want to commit something to make their idea possible. This argument is in line with an article by Wiltbank et al. (2006) which supports an entrepreneur’s transformative approach in talking with potential stakeholders, friends, family or random people to find individuals who want to participate in the effort of new venture creation. Therefore, we posit the next proposition as follows:

**Proposition 6:** Opportunity recognition will be positively related to pre-commitment.
The Moderating Roles of Effectual Principles: Who I Am and Affordable Loss

The seminal article by Sarasvathy (2001) proposes that the principle of effectuation consists of affordable loss, strategic alliances, contingency and control of an unpredictable future. As aforementioned, affordable loss emphasizes the condition of risky actions from the given means toward a loss level that one can afford. In addition, strategic alliances are the tendency toward the acquisition of partnership that is often favored by entrepreneurs in comparison with competition, which is perceived to be of higher uncertainty. Contingency emphasizes the variety of options if a goal could not be achieved or if things turn out in an unexpected way. Furthermore, controlling the unpredictable future provides the logic for contrasting with future predictions; it assumes that if the future can be controlled, there is no need to predict it. These principles are the phenomena that build on the entrepreneur’s determination of “who I am,” “what I know” and “whom I know” (Sarasvathy, 2001).

In our conceptualization, we mainly focus on the interplay of the selected principles in the effectuation theory; “who I am”, “whom I know” (social capital) and the affordable loss for three main reasons. First, under the social media context, a greater emphasis can be linked to the “whom I know” concept due to social media’s function in enhancing communication (Kaplan & Haenlein, 2010). Therefore, we argue that social capital that has a similar aspect to the “whom I know” principle may also be implied and embedded in the effectuation process. Second, the effectuation theory highlights that expert entrepreneurs would consider the level of their affordable loss before identifying what can be done (Arend et al., 2015). We believe that affordable loss plays a major role in a social media context where we argue that opportunities can be recognized. Third, along with the “whom I know” concept that we refer to as the social capital, the “who I am” concept...
reflects the entrepreneurial identity orientation which serves as the foundation of the effectuation theory (Sarasvathy, 2001).

The recognition of “who I am” in this study refers, but is not limited, to the entrepreneurial identity assessment. Therefore, we define “who I am” recognition as the determination perceived by an entrepreneur in assessing who s/he is and what s/he knows as an entrepreneur. Particularly, we narrow the scope of the broader “who I am” recognition and focus on the three constructs we believe may represent the “who I am” in an entrepreneurship context. The three focused constructs are entrepreneurial experience, entrepreneurial passion, and entrepreneurial self-efficacy. Entrepreneurial experience refers to the prior business ownership experience of the entrepreneur (Ucbasaran, Westhead, Wright, & Flores, 2010) which may shape their entrepreneurial cognition and reflect who s/he is. For example, Landier and Thesmar (2009) assert that repeated entrepreneurs are more optimistic than novice entrepreneurs. Furthermore, entrepreneurial passion can be defined as the positive feeling related to the activities of entrepreneurship that are meaningful and salient to entrepreneurial self-identity (Cardon, Wincent, Singh, & Drnovsek, 2009). Passion represents the identity as it provides the relevance and motivation toward the desired activities (Cardon et al., 2009; Vallerand, Mageau, Elliot, Dumais, Demers, & Rousseau, 2008). Finally, we define entrepreneurial self-efficacy as an individual’s self-confidence in his or her ability to successfully manage the roles relating to entrepreneurship (Chen, Greene, & Crick, 1998; Zhao, Seibert, & Hills, 2005). Entrepreneurial self-efficacy is arguably one of the key elements in driving the entrepreneurial behavior (Wilson, Kickul, Marlino, Barbosa, & Griffiths, 2009).

Prior studies emphasize the positive relationships between networks and opportunity recognition (Kontinen & Ojala, 2011; Ma et al., 2011). Besides, some studies also suggest that
network-opportunity relationships can be moderated by other factors (Li, Chen, Liu, & Peng, 2014; Ma et al., 2011). For example, a study by Ma and colleagues (2011) found that the cultural context of individualism and collectivism moderates the relationship between weak ties and opportunity recognition. Their findings interestingly reveal that cultural context that shapes individual orientation and beliefs that, in association with network ties, influence the level of opportunity recognition. Following the logic above, we argue in this study that “who I am” as a recognition that represents various entrepreneurial identities may also moderate the relationship between social capital and opportunity recognition. Furthermore, we also reckon that the “who I am” recognition would also enhance the next stage relationship after the opportunity is recognized and the pre-commitment is established. This argument is also in line with a study by Clark (2008) in supporting that stakeholders would carefully consider an entrepreneur’s personal attributes when making their investment decision. Therefore, we posit our propositions regarding the moderation effects as follows:

**Proposition 7:** The relationship between bridging social capital and opportunity recognition will be positively moderated by a) entrepreneurial experience b) entrepreneurial passion, and c) entrepreneurial self-efficacy.

**Proposition 8:** The relationship between bonding social capital and opportunity recognition will be positively moderated by a) entrepreneurial experience b) entrepreneurial passion, and c) entrepreneurial self-efficacy.
**Proposition 9:** The relationship between opportunity recognition and pre-commitment will be positively moderated by a) entrepreneurial experience b) entrepreneurial passion, and c) entrepreneurial self-efficacy.

Affordable loss also plays a crucial role in defining the opportunity (Arend et al., 2015). As one component in the effectuation theory, affordable loss can be defined as an individual’s estimation of what can be risked and the determination of what can be lost in responding to a particular course of action (Dew, Sarasathy, Read, & Wiltbank, 2009). It is related to the psychological orientation of entrepreneurs when accepting a level of risk. It is argued in previous literature that effectual entrepreneurs would invest only if they can afford to lose (Sarasvathy & Dew, 2008). Therefore, the affordable loss may influence their decision making as well as their behavior, especially in relation to entrepreneurship activities. Affordable loss is based on the behavioral theory and focuses more on psychology and cognitive aspects and is likely to be more commonly used by expert entrepreneurs (Dew et al., 2009).

Although few studies were found that empirically investigated the effects of affordable loss (Read, Song, & Smit, 2009b; Wiltbank et al., 2009), it was found that affordable loss could influence better entrepreneurial decisions (Wiltbank et al., 2009). More specifically, Wiltbank et al. (2009) provide the results from a scenario survey method analyzing angel investors about their use of prediction-oriented (as opposed to control-oriented/affordable loss) strategies. The study reveals that angel investors who emphasize control-oriented strategies such as affordable loss would experience fewer investment failures (Wiltbank et al., 2009). Therefore, we argue in this study that affordable loss, together with social capital, may also affect an entrepreneur’s propensity to recognize opportunities. Entrepreneurs may develop an improved opportunity recognition
ability from their social capitals and, together with the mindset of an expert entrepreneur, be oriented toward the use of affordable loss. Further, affordable loss may also influence entrepreneurial behavior in choosing the pre-commitment approach. Relying on the effectuation theory that introduces the concept of affordable loss in the entrepreneurial process (Sarasvathy, 2001), we argue in this study that affordable loss, together with opportunity recognition, may affect an entrepreneur’s decision regarding co-created actions and choosing the pre-commitment approach. Therefore, our propositions are as follows:

**Proposition 10**: Affordable loss will positively moderate the relationship between bridging social capital and opportunity recognition.

**Proposition 11**: Affordable loss will positively moderate the relationship between bonding social capital and opportunity recognition.

**Proposition 12**: Affordable loss will positively moderate the relationship between opportunity recognition and pre-commitment.

**DISCUSSION AND IMPLICATIONS**

Social media are effective communication methods that have been utilized by many organizations (Hanna et al., 2011). Despite ongoing social media research in relation to many business disciplines, few studies were found that focused on entrepreneurship (e.g. Fischer & Reuber, 2011, 2014). This study, therefore, is one of the earlier studies in the entrepreneurship domain that provides a conceptual understanding of social media that arguably may influence
entrepreneurial thinking and behavior. Building upon the existing study on social media interactions and effectual thinking and behavior (Fischer & Reuber, 2011), we provide the extended conceptualized framework that emphasizes attachment to social media as well as its relationships with the entrepreneurial process. More specifically, we suggest that attachment to social media may influence effectual thinking (opportunity recognition) through the available means (social capital) with other effectual principles as the moderators. We conclude our conceptual model and argue that opportunity recognition may lead to the various levels of a pre-commitment approach, and again this relationship is moderated by the effectual principles focused on in this study.

This study makes several contributions to the existing literature. First, it extends social media research into the entrepreneurship literature and provides insights into how social media would enhance an entrepreneur’s opportunity recognition as well as the further commitment from stakeholders. The conceptualized framework proposed in this study may be further utilized as the foundation of social media related entrepreneurship research, especially in a study that focuses on the individual entrepreneur. Second, the study broadens the effectuation theory and generalizes its framework into a social media context. Particularly, we respond to the recent call for more effectuation research (Perry, Chandler, & Markova, 2012) especially in investigating each dimension of its framework. In this study, we show that the effectuation framework can be used as a solid foundation in realizing entrepreneurial activities. Scholars may particularly draw from the effectuation framework and argue that various types of means could serve as valuable sources for an entrepreneur’s opportunities (Arend et al., 2015). Third, we highlight the effectuation theory as an entrepreneurial process (Sarasvathy & Dew, 2005) and also introduce the interaction relationships within the framework. The emphasis on the process may seem to be an alternate
effectuation research when compared with other empirical studies on effectuation that focus on effectuation as the stand-alone construct (e.g. Brettel, Mauer, Engelen, & Küpper, 2012; Chandler et al., 2011).

This study also highlights the practical aspect of how social media may be beneficial for entrepreneurs and potential entrepreneurs for recognizing the new opportunities. The study argues that the effectuation related perception would enhance the pre-commitment approach. We encourage the entrepreneur to consider their affordable loss level as well as the “who they are” assessment, as it may influence their opportunity recognition as well as their pre-commitment. For this reason, we recommend that entrepreneurs use social media as it could contribute to entrepreneurial thinking and behavior (Fischer & Reuber, 2011).

The conceptual understanding proposed in this study would also shed light on the social media approach in entrepreneurship education. Although social media may serve as the communication tools utilized by entrepreneurs for their marketing purposes (Weiss, 2014), social media also enhances entrepreneurial cognition in relation to opportunity recognition through their social capital. Therefore, the topic of social media can be uniquely taught in entrepreneurship education as one of the influential factors for the entrepreneurial process rather than only as a marketing tool. Of course, various dimensions would be needed in order to provide a better understanding of how social media would distinctively impact entrepreneurial activities other than the advantages that appear in the marketing literature, such as sales (e.g. Gopinath et al., 2013; Nam & Kannan, 2014) or customer relationships (Laroche et al., 2013). This study provides an early emphasis for social media in the entrepreneurship context through the effectuation framework. Future research may be carried out to investigate social media in entrepreneurship
education especially in relation to how students could recognize opportunities from their available means through the use of social media.

The current study proposes a conceptual framework that hopefully could be the foundation for future empirical investigations, which are crucial for testing this model in the entrepreneurship context. Furthermore, the study underlines social capital as the means to emerge from personal attachment to social media. Future studies may extend this conceptualization and introduce other types of means that could be possibly derived from social media. For example, one may argue that social media can enhance a user’s learning environment (Dabbagh & Kitsantas, 2012). Therefore, an entrepreneur can also develop the necessary knowledge from social media as the means to generate new opportunities. Also, this study emphasizes the framework that leads to the pre-commitment approach that may be utilized by an entrepreneur but nothing has been conceptualized beyond this point. We highly encourage future research to investigate and conceptualize the relationship after the pre-commitment has been acquired. According to the effectuation framework, the pre-commitment is argued to lead to more means and more opportunities (Fischer & Reuber, 2011; Wiltbank et al., 2006). Scholars may emphasize the importance of co-created means and opportunities from a group of entrepreneurs as we believe that these steps may be closer to successful venture creation.

CONCLUSION

We develop the conceptual framework and provide a better understanding of how social media could be beneficial for the entrepreneurial process. Drawing from the effectuation framework, we argue that entrepreneurs who are more attached to social media may lead to the
higher level of social capital. Social capital, therefore, can be realized as the entrepreneurial means to enhance an entrepreneur’s opportunity recognition. Furthermore, this relationship is proposed to be moderated by the recognition of “who I am” and the associated affordable loss. Regarding our conceptualization, we further argue that opportunity recognition would influence the level of pre-commitment chosen by an entrepreneur within the interactive relationships with a “who I am” recognition and the affordable loss. The insights from this study will shed light on an understanding of social media in the relationship with entrepreneurial phenomena.

REFERENCES


Weiss, G.; This is how small businesses are using social media; https://www.entrepreneur.com/article/231515.


Figure 1: The dynamic and interactive process of the effectuation approach

Figure 2: A conceptual framework of social media in the entrepreneurial process
A Competency-Based Approach to Bachelor’s Degree Entrepreneurship Programs

Abstract

This paper is devoted to competencies in entrepreneurship as learning outcomes in higher education. These competencies are crucial for an entrepreneur’s success, but have still been insufficiently explored. This paper examines existing approaches to competencies in entrepreneurship, including their nature and classification, and defines a list of competencies relevant to entrepreneurship, consisting of general professional, special professional, additional professional and universal competencies. Each group of competencies is related to a definite area of the entrepreneurial process. This paper also explores what entrepreneurship education model would be appropriate for a bachelor’s degree program.

Executive Summary

Successful entrepreneurship requires a number of competencies in entrepreneurship. This paper proposes a practice-oriented approach to understanding competencies in entrepreneurship, their character, and their types. One objective of this paper is to develop a model of competencies in entrepreneurship based on professional entrepreneurial tasks. The second objective is to study the nature of competencies in entrepreneurship as learning outcomes. The structure of competencies in entrepreneurship is described in detail, attending to four categories: special professional, additional professional, general professional and universal competencies. This list of competencies
is based on a matrix of competencies for bachelor’s degree entrepreneurship programs, which has already been successfully used at the Moscow University for Industry and Finance "Synergy"\textsuperscript{1}.

As a sample of special professional competencies, this paper will consider competencies in the field of competitive actions. Examining the process of competition and competitive actions as one of entrepreneurial activity, this paper differentiates the types and methods of competitive actions. This paper then defines and describes a group of entrepreneurial competencies in the field of competitive actions (here called competitive competencies), which is related to a diverse range of competitive activity, tactics, and strategies.

The impact of an entrepreneur’s personal characteristics and capabilities on the development of their competencies is apparent from the inseparable nature of professional tasks and professional competencies.

Normally the most effective way to obtain competencies in entrepreneurship is through life-long learning and adult education programs. This paper explores the process, through which these competencies are learned and develops an entrepreneurship education model for bachelor’s degree programs, including a description of the key competencies (knowledge, understanding and skills), professionally significant personal characteristics and capabilities of a successful entrepreneur. The conclusions made in this paper have theoretical and practical implications for entrepreneurship theory and could have potential use for educational institutions.

The subject of the study and its unique challenges made it necessary to use a combination of several methods. These include: an inductive approach that involves a description of reality and an interpretation of its results; a deductive approach, in which the explanation transitions from simple to more complex and richly detailed content; a structural approach, which combines analysis (division of the content into its component parts) and synthesis – integration of identified parts of the whole; and the case study method, which, due to the deep-understanding

\textsuperscript{1}Since 2011 the Moscow University for Industry and Finance also goes by the name – «Synergy University». 
of the studied object and context, provides an opportunity to identify the causal relationships of processes in a given context (George, Bennett, 2005).

These methods, applied within a competence-oriented approach to the study of education, lead to the establishment of competencies in entrepreneurship as the most significant outcomes of an entrepreneurship bachelor's degree program and the creation of competency matrices, such as the matrix in this paper, which was created for the Moscow University for Industry and Finance "Synergy".

Introduction

Competencies in entrepreneurship have been the subject of numerous studies (e.g., Morris and Kaplan, 2014; Baron & Markman, 2003; Man et al., 2008; Rauch et al., 2007; Robles et al., 2015). According to Siwan Mitchelmore and Jennifer Rowley, “the search for entrepreneurial competencies to support business success and growth … is akin to the pursuit of the Holy Grail” (Mitchelmore & Rowley, 2010). Prior research has stated that entrepreneurs and, more specifically, their competencies are central to the success of small and medium-sized organizations.

One of the core contemporary activities is on-going participation in different levels of education (Bachelor’s and Master’s Degrees, Postgraduate study, Vocational learning and training, etc.). Prior research indicates that successful entrepreneurs take part in various educational programs to develop the competencies they need. It would follow that competencies in the field of entrepreneurship are crucial and desirable for any entrepreneur. Nevertheless, this category of competencies in entrepreneurship is still not given due attention in academic studies.

To fill this gap in accordance with a conceptual understanding of entrepreneurship as a process, real life entrepreneurial activity, and a practice-oriented approach, this paper will explore competencies in entrepreneurship according to four categories – “special professional, additional
professional, general professional and universal competencies” – with a further discussion of how they can be implemented.

**Research of Competencies in Entrepreneurship**

The terms “competencies”, “competence” and “competency” often have different meanings (Hoffmann, 1999). “Competency” is commonly understood as a behavior when an individual demonstrates minimum standards of performance. So there is a difference between “competence” (aspects of a job that an employee is able to perform adequately) and competency (innate human behavior that enables skilled work). Sometimes the term «competence» is used as an equivalent to the term «competency», but some view this as incorrect usage (Teodorescu, 2006). This paper will maintain the distinction between these terms.

A competency can be defined as something that is valuable in someone’s personality. In turn, competencies are closely linked with personal abilities, which include knowledge, skills, attitudes, values, behavior, and properties that are necessary for people to perform well at their job (Bryant & Poustie, 2001). Lathi (1999) summarizes competencies as a set of knowledge, capabilities, personal specifics and attitudes as they relate to or are necessary for good performance. They are directly related to quality of performance and can be measured relative to working standards.

Competencies are inseparable from activities and tasks and form a relationship with them (Bergevoet, Mulder & Van Woerkum, 2005). Competencies can be developed through training and study. They are necessary for all professional activity, and they distinguish one business from another. Each separate business has its specific competencies.

The concept of competencies in entrepreneurship has its foundation not only in publications related to competency, but also in the literature dedicated to entrepreneurship (Mitchellmore & Rowly, 2010) and entrepreneurship education.
These competencies have different meanings and different classifications in the literature. This is because of different approaches to explaining the nature of competencies and describing their components, and also because terms like “entrepreneur”, “entrepreneurship”, and “entrepreneurial business” have such diverse interpretations.

Extant research that examines competencies in entrepreneurship and their development has distinguished various aspects of the nature of competencies, such as knowledge, experience, motives, attitudes, traits, self-image, social roles, personal characteristics, skills, capabilities, and desires (Boyatzis, 1982; Bird, 1995; Bartlett & Ghoshal, 1997; Stuart & Lindsay, 1997; Driessen & Zwart, 1999; Man et al., 2002, 2008).

Different authors have proposed different frameworks for competencies in entrepreneurship. For example, Morris (2013) proposed two main groups: managerial and entrepreneurial competencies. Then he defined 13 key entrepreneurial competencies: opportunity recognition, opportunity assessment, risk management, conveying a compelling vision, tenacity, creative problem solving, resource leveraging, guerrilla skills, value creation, maintaining focus while adapting, resilience, self-efficacy, and building and using networks. Man et al. (2002), drawing on the literature, divided all entrepreneurial competencies into 6 areas: opportunity, relationship, conceptualization, organization, strategic, and commitment competencies.

Mitchelmore and Rowley (2010) took key competencies from entrepreneurial competency frameworks proposed by different authors and consolidated them into four groups: entrepreneurial competencies, business and management competencies, human relations competencies, and conceptual and relationship competencies.

Due to Russia’s communist history, in which Russian law strictly prohibited any entrepreneurial activities until 1990, research on competencies in entrepreneurship was non-existent in Russia for most of the 20th century. Such research only became possible at the beginning of the “Perestroika” period. For this paper, discussions were examined in Russian publications from the Perestroika period, when entrepreneurship had become an extremely popular topic of discussion in Russia. Two competing approaches were developed: 1) competencies are the knowledge and skills of an entrepreneurship at the startup stage, and 2) competencies are the knowledge and skills of an entrepreneurship at all stages of business from startup until the venture’s end (Rubin, 2015, 2016, et al.; Klyuev, 2016).

Unlike many countries, Russia adheres to standardization as the best way to classify competencies, applying state-approved professional and educational standards. Federal government educational standards direct universities and colleges in their approach to teaching students, dictating which professional knowledge and skills should obtained. However, in Russia there are no state-approved professional and educational standards in the field of entrepreneurship. As a result, in state-run education, competencies in entrepreneurship can be formed only in the process of teaching students engineering or other professions.

There exists only a short list of entrepreneurial competencies in the federal government educational standards on “Management” that was accepted in 2016. This standard is targeted to bachelor’s students with “Management” qualification. Entrepreneurship, however, by its specific nature requires a list of competencies that are necessary for all entrepreneurs, but not necessarily for all managers.

In fact, entrepreneurship is a professional activity completely unique to all others. Entrepreneurship was first treated as a separate field of study from “management” in 1975 by Karl Vesper as a result of his research aimed at cataloging university programs in entrepreneurship.
Howard, 2012: 1243). He determined that entrepreneurship must have its own specific competencies. An entrepreneur ought to have a wide range of competencies, depending on what concrete activities are involved in his business, but there is no doubt about the existence of competencies specific to entrepreneurs.

The Russian Association for Entrepreneurship Education (RUAEE), established in 2007, formed its view on this subject using a competency-based approach to bachelor’s degree entrepreneurship programs. This paper examines this point of view and puts forward competency models and matrices that reflect this approach.

**Competencies in Entrepreneurship as Learning Outcomes: Prerequisites for Classification**

Current discussions concerning components of entrepreneurship contain an extremely broad array of explanations, ranging from the aggregate of a person’s psychological particularities (capabilities and personal propensities) that are useful for entrepreneurship to a macroeconomic synthesis, where entrepreneurship is seen as an extra factor added on top of various other spheres of human activity. The latter approach was popular 20-30 years ago when researchers were examining the place and role of management in the world and management was considered to be only an added factor in human professional activity.

However, entrepreneurs themselves, by virtue of their own everyday and long-term professional interests, consider entrepreneurship to be a specific type of professional activity that is significantly different from other professions. This reality has since been acknowledged by scholars, notably Frank Knight in his classic book Risk, Uncertainty, and Profit (2003), one of the first works to discuss entrepreneurship as a unique profession.

According to well-known concepts established previously (Shadrikov, 2010: 133-134), every profession usually includes the following features: specific types of labor and their scope (1); specific objectives of labor, including its results (2); specific tools for contributing labor, including workplaces (3); an orientation of professional activity that provides competitive advantages and the
opportunity for professional success (4); a need for professional employment (5); specific competencies necessary for the profession (6); and specific professional interests (7).

Entrepreneurs are a certain group of people that serve the community by professionally creating and running businesses, producing and selling various goods and services to develop the economy, and helping life move forward (Global Entrepreneurship monitoring, 2009).

Running a business is a legally protected entrepreneurial activity, where an entrepreneur makes use of their company’s resources and profits. Every entrepreneur consolidates various resources to serve their individual business.

The essence of entrepreneurship as a profession is to create, maintain, and develop a business, and then scale it back, exit or liquidate it if needed. Each of these processes should be carried out independently, pro-actively, at the entrepreneur’s own risk, and under their own responsibility, all in an effort to overcome competitors.

Just as every labor may or may not have professional status, an entrepreneur can work as a professional or a non-professional. It should be noted that not all entrepreneurial thinking persons are interested in starting or developing businesses as professional activities – some of them view their activity as a personal hobby or are interested only in making money on the side.

The desire to operate on a professional level, rather than as an amateur entrepreneur, is driven by the understanding that a business is not a toy – the entrepreneur’s personal and family welfare depends on their business’s success. Entrepreneurial activity becomes professional in character when people: voluntarily and proactively associate their fundamental vital interests with entrepreneurship (1); independently, conscientiously and responsibly involve themselves in their business’s creation, maintenance, development, and liquidation (2); independently provide for their employees via their business (3); direct and guide their business on a regular basis (continuously) or systematically in their own manner (4); run their business rationally and purposefully, orienting themselves towards preplanned goals, comparing projected results with
projected costs and actual results with actual costs (5); do business for income generation, for the benefits of developing and making the most of their personal labor, and for the sake of developing their own lives, as well as the lives of their loved ones (6); receive recognition for their work and its resulting value from consumers, clients, or the state (7); strive to meet a high professional level in their activities and seek to obtain recognition as a high professional in their area of business (8).

At the end of 20th century Marilyn L. Kourilsky characterized entrepreneurship education in the following manner: “Current entrepreneurship education tends to migrate towards its natural focus of ‘least resistance’- the traditional management process areas” (Kourilsky, 1995: 14). In the early 21st century many researchers consider entrepreneurship education to be a specific activity requiring special skills (Kuttima Merle, Kallastea Marianne, Venesaara Urve, Kiisb Aino, 2006: 186). Creating a new venture, supervising it, developing it, and executing an exit plan are typical professional goals that differentiate entrepreneurship from other professions. Consequently, entrepreneurship can’t be limited to a mere type of management (Howard, 2012: 1243), and entrepreneurship can’t be successfully taught by following curricula for management education. It must be based on professional entrepreneurial practices.

It seems reasonable to differentiate the formation of competencies in entrepreneurship at bachelor’s and master’s degree levels while preparing educational programs in universities. The area of professional activity of bachelor entrepreneurship graduates could cover:

- the creation, maintenance, development, exit and liquidation of a business;
- ensuring the production and implementation of new value-creation that meets the needs of society and its citizens;
- the creation, use, and development of jobs to involve people in professional work;
- ensuring revenues for federal, regional, and local budgets, as well as for social funds by paying taxes and other obligatory payments;
– ensuring income for hired employees and the entrepreneurs themselves.

Graduates who have successfully completed an educational program on entrepreneurship would be proficient in professional activity such as:

– entrepreneurship and respective business projects created and implemented by entrepreneurs;
– tangible and intangible assets, labor, and other resources used in entrepreneurial activities, including the personal labor of entrepreneurs;
– enterprises, organizations, partnerships, associations, private businesses and other organizational forms of business units in an entrepreneurship;
– business processes and business communication relating to the creation, maintenance, development, and liquidation of a business;
– business risks;
– technical, technological, organizational, and managerial innovations used by entrepreneurs;
– the results of business activities: newly produced and implemented value-creation;
– jobs; innovations; employee income; the entrepreneur’s personal income;
– assessing the required level of competitive actions/response effectiveness in doing business.

Entrepreneurship program graduates should be prepared for a range of professional activity such as founding, incorporating, and creating new businesses, maintaining a venture’s development and overseeing its liquidation, organizing and operating business projects, cultivating innovation, ensuring communication, and maintaining competitive actions (for example, Mitchelmore & Rowly, 2010; Rasmussen et al., 2011).

When developing and implementing entrepreneurship education programs, universities could focus on specific areas of entrepreneurial activity for which they are preparing a bachelor’s student, depending on the industrial orientation of the educational organization as well as its research, material, and technical resources.
The Structure of Competencies in Entrepreneurship

There is a broad discussion in the literature on entrepreneurship about the meaning of the term "entrepreneurial competencies" (Morris and Kaplan, 2014:134-151).

For instance, there is a widespread view that entrepreneurial competencies are a compound of an entrepreneur’s basic characteristics that allow him to reach sustainable success, namely their life position (i.e., their perception of the world), their personal value orientations, beliefs, knowledge, skills, abilities, experience, as well as mental and behavioral tendencies (Mitchelmore, S. & Rowley, J., 2010: 92-111).

A number of publications contend that the most important substantive points that must be present in entrepreneurship education are simply the most crucial issues associated with doing business, such as the sales process, financial growth, cash flow management, and hiring and training staff. However, several authors have indicated that entrepreneurship education must be much wider in scope (Morris and Kaplan, 2014: 137-149; A Global Perspective on Entrepreneurship Education and Training. Global Entrepreneurship Monitor Special Report. 2010: 11).

A desire for achievement and autonomy, a desire to influence others and guide their behavior, self-efficacy, and high endurance are also specified as key entrepreneurial competencies (Hessel Oosterbeek, Mirjam van Praag, Auke Ijsselstein. 2010: 446).

At the same time in much of the literature entrepreneurial competencies are considered the most important pre-requisite only for creating a business (HervéLebret, 2007: 42-43).

In Russian research conducted on the methodology of the Global Entrepreneurship Monitor (GEM), competencies in entrepreneurship were considered to be a combination of knowledge, understanding and skills (Global Entrepreneurship Monitor, 2009: 79).

After reviewing various international publications (Morris, 2013; Morris and Kaplan, 2014: 134-151) and carrying out a number of studies on competencies in entrepreneurship (The
A graduate of an entrepreneurship bachelor’s degree program can achieve success in entrepreneurship only when he has learned how a modern business works and what is recognized as good practice, understands the logic of professional actions and professional relationships that arise while doing business, is able to take these actions, and knows the tools necessary to execute them. A competent entrepreneur shouldn’t and can’t afford to allow a situation to developing which he knows "how to do business", but can’t achieve results because he doesn’t understand "how others are doing business."

Necessary competencies for successful entrepreneurship include the following components: special professional, additional professional, general professional, and universal competencies.

In this paper these components are determined in accordance with the Russian tradition of detailed classification. These categories should not be seen as contradicting the broader grouping found in the sources quoted in this paper.

Special professional and additional professional competencies in entrepreneurship can be referred to as entrepreneurial competencies. It seems reasonable to divide the entrepreneurial competencies of bachelor’s degree graduates into certain groups according to the professional tasks entrepreneurs must carry out. Therefore, this paper establishes a list of special professional competencies (SPC) necessary for carrying out specific tasks, which can be viewed in Table 1 (App. 1).

It is necessary as well to form additional professional competencies, such as knowledge of various industries and local, regional, and/or international markets, with an emphasis on
understanding how to act in accordance with the relevant national, religious, and business-related customs and traditions. These competencies should also be recognized as additional group of entrepreneurial competencies. For example, while teaching students entrepreneurship in the Far East or in South America, it should be kept in mind that they will have to actively cooperate with businesses in these areas and will need knowledge of the national economy, local languages, and a strong understanding of the national mentality. Additional as well are competencies in various types of businesses, for example, in social or innovative entrepreneurship. These examples of additional professional competencies (APC) are presented in Table 2 (App. 2).

Entrepreneurial competencies could be also considered important for other bachelor’s students, regardless of their major field of study.

Along with the formation of special professional and additional professional competencies, a bachelor’s degree program in entrepreneurship should include the formation of the following general professional competencies (GPC) in management, finance, accounting, applied microeconomics, ICT, as soft skills. These competencies, which are necessary for carrying out general tasks for each entrepreneur, are provided in Table 3 (App. 3).

Often general professional competencies are considered the most important when preparing students for careers in entrepreneurship. It is believed that teaching them these skills amounts to creating the ideal portrait of a fully formed modern entrepreneur.

Undoubtedly, such competencies should be represented in an entrepreneurship program to some extent (Hood and Young, 1993; Vesper and McMullan, 1998; Freel, 1999; Smith and Morse, 2005; Colombo and Grilli, 2005; Orster and Riding, 2003). However, their presence is necessary not only to entrepreneurs, but also graduates of management and economics programs (Küttima Merle, Kallastea Marianne Venesaara Urve, Kiisb Aino, 2014: 658; Effects
and Impacts of Entrepreneurship Programs in Higher Education/The Report of European Commission. Brussels, 2012). These competencies can’t be considered specific to entrepreneurship. As Morris and Kaplan have shown, the competencies of an entrepreneur should be strictly distinguished from those of a manager (Morris and Kaplan, 2014: 134-151). Therefore, this paper will refer to them not as special professional (entrepreneurial), but as general professional competencies in entrepreneurship. The essential difference is that the above listed special professional (and additional professional) competencies are required to perform entrepreneurial tasks.

In addition, graduates of bachelor’s degree programs in entrepreneurship have to possess certain universal competencies (UC), which are necessary for carrying out tasks, common for people receiving higher education, for example, knowledge of foreign languages, the understanding of historical laws and social processes, and others. Universal competencies are displayed in Table 4 (App. 4). Thus, the structure of competencies can be represented as follows (Fig. 1):

![Competencies in Entrepreneurship Diagram](image_url)
As can be seen in Figure 1, competencies in entrepreneurship are divided into 3 groups: entrepreneurial competencies, general professional competencies (GPC) and universal competencies (UC). Conversely, entrepreneurial competencies are divided into another two groups: special professional competencies (SPC) and additional professional competencies (APC).

Each competency is formed by studying certain courses. As an example can be seen in the implementation of a competency-based approach at the Moscow University for Industry and Finance «Synergy». The following matrix of competencies, which has been designed for bachelor’s degree students in entrepreneurship in this university, can be examined as a special case.

**Matrix of Competencies**

In 2013-2016 the approach described above was implemented at the Moscow University for Industry and Finance "Synergy" for teaching entrepreneurship in bachelor’s degree programs. A matrix of competencies was designed for application in baccalaureate entrepreneurship education programs. The matrix enabled even distribution of the study load between the teaching courses of the program and provided a plan for setting up a curriculum for four years of study (Russian bachelor’s programs always have four years of study). The basic principle was to provide a consistent formation of special professional, additional professional, general professional and universal competencies required for graduates to advance their successful activity as entrepreneurs.

Our matrix of competencies within the bachelor educational process has the following form (App. 5):

- the first vertical column lists the teaching courses that students study in the Bachelor’s Degree of Entrepreneurship;
- the first horizontal row indicates the codes of competencies that should be formed in the process of studying these teaching courses.
The matrix of competencies defines the stages of competency formation, allowing education programs to adapt rapidly to external market changes. This tool provides an answer to the questions: What teaching courses are necessary for the student to master certain competencies and in what sequence should they be studied?

**Competitive Competencies as a Set of Special Professional Competencies**

Among the special professional competencies required for an entrepreneur, entrepreneurial competitive competencies are a significant example.

Competition is an essential part of any entrepreneurial activity. Competing for one’s own business interests is among the most integral challenges for every entrepreneur, so it is important to identify which competencies are relevant to competition. Competitive competencies can come into play at any stage of the entrepreneurial process. Because competition is a crucial business task, this paper uses a competitive approach when researching entrepreneurship, examining its character and respective competencies from the perspective of competition.

As can be seen above, competencies in this area are not conventionally included among entrepreneurial competencies. This paper argues that this should be corrected because success in competition is crucial for any entrepreneur, and special competencies are essential for meeting that challenge. Besides knowledge, an entrepreneur should understand the logic behind professional activity, and the relationships that arise while doing any kind of business, especially in different areas of competition.

According to well-known concepts established previously in these areas of competition (Porter, 1980, 1985, 1986, et al.), special professional competencies help with choosing appropriate competitive actions and strategies, evaluating one’s own competitive position, and deciding whether or not to use competitive maneuvers and tricks.

Russian entrepreneurs usually marked competitive competencies as among the most valuable ones (Panikarova, Ivanova, Rubin, Matvienko, Shishkin, Polbitsin, 2014). This confirms
our assertion that participation in the process of competition is crucial for entrepreneurs and requires mandatory competencies.

Thus, this paper defines competencies in this field as “entrepreneurial competencies in the field of competitive actions” or briefly “competitive competencies”. In our previous work (Rubin, 2010, No. 3) a model of necessity for competitive competencies within the entrepreneurship framework was proposed (Fig. 2).

![Fig. 2. Necessity for Competitive Competencies within the Entrepreneurship Framework](image)

Different types, methods, and styles of competitive actions as described must correspond to respective competencies. These competencies are related to all the main aspects of competition in a company’s life cycle (Porter, 1980; Rubin, 2010, No. 3), such as competitive positions and positioning; competitive management activity on strategic, tactical, and situational levels within local, national, and global markets; competitive strategy design and development;
the design and development of competitive operation models; conducting competitive analyses; antitrust law obedience; and competitive status choice and management.

Competencies in different types, methods, and styles of competitive activity are linked with skills for performing appropriate, relevant, and timely competitive actions within the process of competition. Competencies in competitive activity allow an entrepreneur to choose, effectively carry out, and evaluate the results of different competitive actions.

Competencies in competitive positioning and repositioning make it possible to evaluate and manage a company’s position relative to rivals in the market.

Competencies in competitive activity management help an entrepreneur successfully employ different competitive actions and oversee this process. This constitutes the competitive approach of a company. The competition process is managed at 3 levels: strategic, operational and situational. Each level is specific and requires individual competencies.

Competencies in competitive strategy, design, and development give an entrepreneur an understanding of different possible competitive strategies, the details of their execution, and possible combinations of strategies (Porter, 1980). Competencies in the design and development of competitive operation models help an entrepreneur manage the process of competition on an operational level using tactical models.

Competencies in conducting competitive analyses allow an entrepreneur to estimate both their own competitive potential and that of their rivals in the market, while also evaluating the surrounding environment with different analytical tools.

Competencies in antitrust law obedience allow an entrepreneur to follow the law and consider probable actions of state authorities in their area of business.

Competencies in competitive status choice and management enable entrepreneurs to define its status in a competitive environment - such as “leader”, “average performer”, “contender for leadership”, “outsider”, “debutant”, etc. – and take appropriate competitive actions.
The Impact of Personal Characteristics and Capabilities of Entrepreneurs on their Professional Activity

As stated in previous works (Rubin, 2014:227), it is advisable to distinguish between competencies in professional activity on one hand, and the personal characteristics and capabilities of people, which have professional importance on the other hand. Therefore entrepreneurship education at a contemporary bachelor’s degree program should include the identification and development of professionally significant capabilities and personal characteristics along with the formation of necessary competencies in entrepreneurship.

Each entrepreneur needs something more besides competencies formed by his knowledge, understanding, skills. They also need some traits contributing to successful performance. These traits are sometimes even considered competencies, but they are not competencies by their nature.

In the XIX century W. Sombart (1913) started to use the term «entrepreneurial spirit» to divide people into “common” and “special” groups, each having a specific set of characteristics, motives, and manners. The latter group consists of entrepreneurs.

There are also a number of characteristics allowing people to (1) be entrepreneurs; (2) be successful entrepreneurs. Entrepreneurs must have some specific personal characteristics and capabilities.

Capabilities help people complete necessary activities. An entrepreneur must have the capability, for example, to manage their own business, to delegate authority, to hire and dismiss employees, to cooperate with clients, partners, competitors, etc. He must be able to make timely management decisions about the creation, maintenance, development, scale back, and liquidation of his business. He must have the capabilities to cooperate, compete, develop competitive advantages, etc.
Each person is born with a number of different capabilities, but not all of them are professionally significant. Capabilities are professionally significant if they help to perform work in accordance with professional requirements and to achieve significant results.

Professionally significant entrepreneurial capabilities enable people to be entrepreneurs in accordance with the requirements of entrepreneurship as a profession.

Entrepreneurial capabilities can be classified in accordance with the ability to complete each of the professional entrepreneurial tasks, such as creative capabilities, innovative capabilities, leadership capabilities, communicative capabilities, managerial capabilities, organizational capabilities, self-education and self-management capabilities, capabilities to perceive entrepreneurial risks, competitive capabilities (Rubin, 2014:228).

Morris and Kaplan outline the necessity of the ability to evaluate the content structure of opportunities, the ability to conceive an image of a future organizational state, an ability to sustain goal-directed action and energy, the ability to relate previously unrelated objects or variables, the ability to balance an emphasis on goal achievement and the strategic direction of the organization, the ability to cope with stresses and disturbances, capabilities for developing new products, the ability to maintain a sense of self-confidence, the abilities to estimate, isolate, and mitigate the level of risk, the abilities to find opportunity in failure, generate multiple opportunities from a given stimulus, grasp and hold onto ideas as they occur, draw associations, and assess customer needs (Morris and Kaplan, 2014: 143-146).

Capabilities combine with personal characteristics. Each person has a unique combination of personal characteristics that, along with capabilities, can help them become a successful professional entrepreneur.

For instance, in the field of competition there is the term «competitiveness». Competitiveness could be seen as an innate personal characteristic i.e. some people who becomes entrepreneurs have some natural characteristic that helps them successfully compete in a business
environment.

On the other hand, entrepreneurs may have competitive capabilities that can be developed through entrepreneurial experience and study. Competitive capabilities make a person better adapted for possible competitive actions. But they don't replace competitive competencies.

Competitive competencies, personal characteristics affect the completion of an entrepreneur’s competitive tasks (Fig. 3).

![Diagram of competitive competencies and personal characteristics](image)

**Fig. 3. The Impact of Personal Characteristics on the Implementation of Competition**

Many personal characteristics and propensities also have professional significance for entrepreneurial activity (Shadrikov, 2007: 86-122).

Professional context is needed to clarify and explain what is effective or ineffective in combinations of personal characteristics and propensities of entrepreneurs, as well as what is suitable and not suitable to ensure an entrepreneur’s successful practical activity.

For example, manipulativeness, honesty, kindness, peacefulness, energy, courage, rancor-can be expressed through an entrepreneur's inclination to assess their businesses and respond to those assessments – in that degree the presence of these personal characteristics contributes to successful professional activity.

Obviously, such personal characteristics as generosity, willingness, awareness of reality, reason, memory, logical thinking, receptivity to innovation, determination, competitiveness, responsiveness, perception of the new, propensity for routine, and pragmatism are necessary...
for business owners in the same way they are for other people. It follows that smart, strong-willed, susceptible, alert or pragmatic people could equally be either entrepreneurs or those who are not interested in business.

Another group of personal characteristics is especially crucial for entrepreneurs, because they manage their businesses themselves, under their own responsibility, and at their own risk. The presence of such characteristics isn’t always needed to hire an employee.

Personal characteristics such as courage, vitality, aggressiveness, prudence, optimism, composure, leadership, administrative or innovative drive, mental consistency and flexibility, intuition, vision, orderly internal thinking with respect to design, and others are obviously useful and necessary qualities for business owners more often than for many employees. Their presence in the arsenal of entrepreneurs allows them to improve their efficiency in doing business and contributes to the successful execution of their entrepreneurial activity.

Important personal characteristics such as an entrepreneurial spirit and an entrepreneurial mindset should not be ignored (McGrath and MacMillan, 2000; White R.J. and D'Souza R.R., 2014).

As previously mentioned (Rubin, 2014: 237-239), an entrepreneurial spirit have the following elements, which can be applied by entrepreneurs with great benefits to their business: shrewdness \( (1) \), a critical attitude towards one’s own mistakes and those of others \( (2) \), creativity \( (3) \), innovative thinking \( (4) \), communicativeness \( (5) \), initiative \( (6) \), agility and flexibility in managing one’s business \( (7) \), workaholism, a desire to think about one’s business 24/7 \( (8) \), a desire to adapt any information towards solving their own problems \( (9) \), a desire to constantly overcome direct competitors and the whole competitive environment \( (10) \), a permanent drive to succeed and the will to win \( (11) \), a vision of opportunities \( (12) \).

All components of competencies in entrepreneurship as well as personal characteristics and capabilities professionally significant for entrepreneurship should be incorporated into the
entrepreneurship education process. The next part of this paper will describe a model showing how they work in combination.

The Entrepreneurship Education Model in a Bachelor’s Degree Program

A simplified model of competencies generation, the identification of professionally significant capabilities, the conversion of these capabilities into abilities (entrepreneurs are ready to act), and the development and implementation of personal characteristics in bachelor’s degree students was composed at the University for Industry and Finance «Synergy» (Rubin, Synergy-press, 2016: 117) (Fig. 4).

Fig. 4. Model of Entrepreneurship Education (chart)

This model of entrepreneurship education represents a description of the key competencies (knowledge, understanding and skills) and professionally significant personal characteristics and capabilities that are necessary for successful entrepreneurial activity. The chart illustrates the interrelation of competencies in entrepreneurship, professionally significant personal characteristics and capabilities, and the external environment.

The model’s layout shows how simply it can be applied. It allows us to concentrate on what an entrepreneur should know and understand, what skills he should have, and what personal characteristics and capabilities will have a positive effect on his success.
Discussion

Competencies are essential prerequisites of entrepreneurial activity and therefore for man essential part of entrepreneurship education. A number of competencies were defined in this paper, based on a particular vision of entrepreneurship and real case from one of Universities in Moscow. This list of competencies in entrepreneurship may be incomplete. On the other hand it might be too detailed. It depends on the level of process being examined. This question should be explored and discussed more broadly, and the classification of competitive competencies should be developed further.

Another important issue is to determine the most effective tools and methods for developing competencies in entrepreneurship. Various competencies are formed due to the ratio of academic classes on campus, practice-oriented trainings and simulation games, individual sessions with mentors or tutors, and mandatory personal entrepreneurial practices included in the curriculum. Accordingly, universities have to make available a wide range of entrepreneurship facilities and be attentive to the proportion in which different types of courses are offered.

Our more open questions are related to teaching technology. What teaching courses should be studied within a bachelor’s degree? This paper argues that it depends on the methodology of the university. How should the education process be organized and accessed?

Another important issue is how to use student’s personal characteristics in the process of competencies in entrepreneurship formation. It could be that dividing students according to their characteristics would be necessary.

Requirements for lecturers and other staff members should be also reviewed based on results in practice.
Conclusions and Implications

This paper investigated the link between the entrepreneurship process and competencies in entrepreneurship, examining both areas. Studying the nature of competencies in entrepreneurship has enabled the development of a competencies framework for a successful entrepreneur, which was tested in practice.

This paper reviewed different approaches and classifications for competencies in entrepreneurship. As an example, this paper explored the competitive process and the forms of entrepreneurial participation within it, examining different types, kinds, methods, and styles of competitive actions as a base for competition. Given this, several types of competitive competencies were distinguished, covering all the main points and areas of competition in a competitive environment. An entrepreneurship education model for a bachelor’s degree was also reviewed in this paper. This model links personal capabilities, characteristics with competencies in entrepreneurship.

One question that arose from giving competencies in entrepreneurship a separate classification is: how can they be developed? This paper focused on formal study as a faster and more effective way for entrepreneurs to obtain competencies in entrepreneurship. It defined specific points for teaching entrepreneurship in bachelor’s degree programs and presented a matrix of competencies that has proved its merit in practice.

Certain conclusions in this paper could contribute to the theory of entrepreneurship and could be practically used for future research as well as for the learning process.

References


Knight, F. (1921) Risk, Uncertainty and Profit. Chicago.


Küttima, M., Kallastea, M., Venesaara, U., Kiisb, A. Entrepreneurship Education at University Level and Students’ Entrepreneurial Intentions. Procedia – Social and Behavioral Sciences, no. 110, P. 658


Rubin, Yu.B. (2016). Obrazovatel’naya Programma po Predprinimatel’stvu v Bakalavriate i Usloviya ee Realizacii. [Educational Program on Entrepreneurship for Bachelor’s Degree and Conditions for its Implementation]. Higher Education in Russia. No. 2.(In Russ.)


<table>
<thead>
<tr>
<th>Code</th>
<th>Competencies</th>
<th>Tasks</th>
</tr>
</thead>
</table>
| SPC-1 | Competencies in the field of establishing new businesses | - initiate and generate the structure of participation in the business;  
- search for potential business partners;  
- develop and approve the founding documents of the business unit;  
- register the business;  
- join the founders list by purchasing shares in the business or receiving shares through inheritance, as a gift, or in another legal way. |
| SPC-2 | Competencies in the field of creating new businesses | - generate and approve business ideas;  
- formulate goals, objectives, and a roadmap for the deployment of a new business project;  
- design a business model and business plan for a new business;  
- build a team for a new business;  
- design an organizational structure for a new business and its management system;  
- outfit a new business and establish its resource support;  
- develop and organize a market launch for products and/or services;  
- promote a new business. |
| SPC-3 | Competencies in the field of maintaining a business day-to-day | - maintain the sustainability of a business’s commanding heights in conducting affairs and delegating authority.  
- provide resource support for the daily operations of a business;  
- ensure the efficiency of intra-firm and inter-firm business processes and business communications;  
- maintain workplaces in their proper conditions;  
- fulfill social and other contractual obligations to hire workers, partners, suppliers, customers and other counterparties, including the government and society;  
- accumulate and distribute income from entrepreneurial activities;  
- evaluate a business. |
| SPC-4 | Competencies in maintaining self-employment and self-management | - select the proper type of entrepreneurship and its organizational form;  
- develop a personal workspace and maintain personal entrepreneurial competitiveness;  
- plan the creation and development of professionally significant competencies and improve entrepreneurial qualification;  
- identify and evaluate one’s professionally significant capabilities, personal characteristics;  
- accumulate and systematize one’s professional experience and use the professional experience of others to implement entrepreneurial activity; |
| SPC-5 | Competencies in the field of business development | – organize one’s personal work and manage one’s own entrepreneurial actions, while cultivating self-motivation and self-control. |
| SPC-6 | Competencies in the field of scaling back, exit and liquidating businesses | – manage business growth;  
– reorganize a business;  
– diversify a business;  
– upgrade a business’s technology;  
– completely change the staff of a business unit;  
– rebrand and introduce changes to the image of the business unit;  
– reengineer a business, business-processes, business-communications;  
– reposition of company in competitive environment;  
– reframing or revitalize a business;  
– change the management in a business. |
| SPC-7 | Competencies in the field of business project organization | – sell a business;  
– sell a business through an IPO;  
– transfer a business to new owners without compensation;  
– eliminate business units;  
– participate in bankruptcy procedures. |
| SPC-8 | Competencies in the field of innovative activities | – create and renew specialized project teams, team spirit, and team mode of thinking;  
– analyze and forecast the effect of future benefits of business projects;  
– provide the project team with proper quality support. |
| SPC-9 | Competencies in business communication routines | – identify the need for innovations (related to products, management, technology and organization) and evaluate their value to consumers;  
– organize the development and implementation of innovative solutions;  
– analyze and assess the assumed risks of a new business project;  
– invest in business activity related to the integration of the innovations. |
| SPC-10 | Competencies in competitive actions/responses (competitive competencies) | – ensure the competitive sustainability of a business;  
– take competitive actions/responses of numerous types, methods, styles on growing, mature, stagnating and shrinking markets; |
| SPC-11 | Competencies in providing marketing resources and achieving marketing results | – acquire, maintain, and strengthen competitive advantages, while overcoming competitive disadvantages;  
– participate in competitive actions/responses on strategic, operational, and situational levels of interaction with competitors;  
– secure a business’s competitive positioning and ensure its results. |
| SPC-12 | Competencies in the field of ensuring business security | – approve and implement the marketing mix in business units;  
– define and approve topics of marketing research and their relevant reports in business units. |
| SPC-13 | Competencies in the field of positive perception and understanding of social context of modern entrepreneurship | – prevent abuse of monopoly positions in the market and other non-legal actions, mitigating risks to operations, commercial assets, finances, information, personnel, and other areas of a business;  
– apply counter-pressure on the surrounding competition (by collecting open and confidential information and attracting staff from competitors for cooperation, etc.);  
– provide organizational support for a business’s security measures. |

<p>| Competencies in providing marketing resources and achieving marketing results |
| Competencies in the field of ensuring business security |
| Competencies in the field of positive perception and understanding of social context of modern entrepreneurship |</p>
<table>
<thead>
<tr>
<th>Code</th>
<th>Competencies</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>APC-1 Competencies in Social Entrepreneurship</td>
<td>– create and conduct business based on inventing and selling new social values; – develop a positive attitude towards entrepreneurship; – develop a positive attitude towards entrepreneurship; – manage social business projects; – ensure corporate social responsibility; – employ persons with disabilities; – implement social innovations.</td>
<td></td>
</tr>
<tr>
<td>APC-2 Competencies in Innovative Entrepreneurship</td>
<td>– create and conduct business based on design and innovation in the fields of technological and organizational entrepreneurship; – maintain innovative activities at the firm; – manage innovative business projects; – managea venture business.</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Competencies</td>
<td>Tasks</td>
</tr>
<tr>
<td>------</td>
<td>--------------</td>
<td>-------</td>
</tr>
<tr>
<td>GPC-1</td>
<td>Competencies in the fields of theoretical and applied microeconomics &amp; macroeconomics</td>
<td>– identify macroeconomic environment factors and the regularities of the functioning of a modern economy at the micro level; – establish one’s involvement in the firm and use resources for the implementation of business projects.</td>
</tr>
<tr>
<td>GPC-2</td>
<td>Competencies in the fields of accounting, taxation, budgeting, financial analysis, financial management and investment</td>
<td>– pay taxes in a timely manner; – adopt effective measures for organizing and managing finances and accounting at the firm; – conduct financial analysis to evaluate the company’s performance, its financial situation, and its financial and operational capability; – increase revenues and improve market stability and investment attractiveness, maintaining the financial stability of the business unit.</td>
</tr>
<tr>
<td>GPC-3</td>
<td>Competencies in the fields of general management, staff management, innovation management, quality management, strategic and operational management (planning, directing, delegation, controlling, supervising)</td>
<td>– make managerial decisions at both operational and strategic levels; – manage human resource development at the company; – manage total quality at the company.</td>
</tr>
<tr>
<td>GPC-4</td>
<td>Competencies in the field of selling and pricing</td>
<td>– set prices for goods and services.</td>
</tr>
<tr>
<td>GPC-5</td>
<td>Competencies in the field of obtaining, securely storing, processing, and transmitting information by means of modern IT technologies</td>
<td>– provide and protect secure information flows at the company.</td>
</tr>
<tr>
<td>GPC-6</td>
<td>Competencies in the field of providing social and interpersonal communication during the process of professional activity</td>
<td>– maintain social and interpersonal communications.</td>
</tr>
<tr>
<td>GPC-7</td>
<td>Soft skills</td>
<td>– maintain project activity skills, teamwork, professional leadership, goal-setting, time-management, creative development, persuasion skills, healthy responses to research and constructive criticism, stress management, and logical understanding of and responses to events.</td>
</tr>
<tr>
<td>Code</td>
<td>Competencies</td>
<td>Tasks</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>UC-1</td>
<td>Competencies in philosophical, social, political, and historical knowledge, as well as a positive perception of world cultural values; students should be encouraged to invest in a justified ideological position, an understanding of social responsibility, and future development, both professional and personal</td>
<td>– make use of philosophical, social and historical knowledge to develop a realistic perception of environment activities and determine one’s place in them.</td>
</tr>
<tr>
<td>UC-2</td>
<td>Competencies in obeying government regulations as well as restrictions within society, economics, and entrepreneurship</td>
<td>– comply with legal standards/norms in the field of economy and entrepreneurship.</td>
</tr>
<tr>
<td>UC-3</td>
<td>Competencies in the field of ethics, public morality, moral obligations toward society and nature, and the rules of social conduct</td>
<td>– comply with ethics and public morality; – fulfill moral obligations to society and nature; – comply with the rules of social behavior.</td>
</tr>
<tr>
<td>UC-4</td>
<td>Language skills in one foreign language at a level ensuring effective professional activity</td>
<td>– maintain business, social and interpersonal communications in a foreign language.</td>
</tr>
<tr>
<td>Teaching Courses</td>
<td>Competencies</td>
<td>Semester 1</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------</td>
<td>------------</td>
</tr>
</tbody>
</table>
Entrepreneurship Elsewhere
Examining the Entrepreneurial Characteristics of Eastern Kentucky Adolescents

David Snow, DM., University of Pikeville and the Kentucky Innovation Network
Justin Prater, MBA, University of Pikeville and the Kentucky Innovation Network

Abstract

Entrepreneurship is known as a legitimate academic discipline and significant contributor to economic development. Eastern Kentucky is known for its high levels of poverty and unemployment. This research examines the entrepreneurial attitudes of high school seniors and their preferences to remain in or leave Eastern Kentucky. Findings indicate few students scored in the high level of enterprising tendency and the entrepreneurial characteristics of need for achievement, calculated risk-taking, and creative tendency. Findings also indicate those with a high level of enterprising tendency are more likely to leave Eastern Kentucky for education and career with no intention of returning.

Executive Summary

Introduction

“Entrepreneurship Everywhere” is the current slogan for the United States Association for Small Business and Entrepreneurship (USASBE). This is one of the premier organizations for post-secondary teaching, research, and experiential learning in the entrepreneurship discipline. The reason for this motto is obvious. In many parts of the U.S. and the world, entrepreneurship is thriving. In 1975, only one hundred formal majors, minors, and certificates existed, but over the last twenty years entrepreneurship has emerged as a mainstream discipline (Lee et al., 2005; Torrance et al., 2013). According to Kuratko (2014), over 1,000 schools offer majors in entrepreneurship and over 2,200 universities teach at least one course in entrepreneurship. Along with this growth, an increase in business plan competitions, technology commercialization programs, product development activities, and startup company internships has occurred (Duval-Couetil, 2013).
Entrepreneurship education is now also widely offered in secondary schools. With organizations such as Junior Achievement (JA), the Kauffman Foundation, the Young Entrepreneurs Academy (YEA), the Network for Teaching Entrepreneurship (NFTE), and university-based programs, millions of students each year are taught entrepreneurship (Frazier, 2014; Hamilton, & Hamilton, 2012; Lorz, Mueller, & Volery, 2013). Entrepreneurship education at the secondary and post-secondary levels has been shown to positively impact students’ self-efficacy, desire to attend college, academic success, attitude toward entrepreneurship, intention to become entrepreneurs, business skills, and desirability by employers (Abu Talib et al., 2012; Brown, Bowlus, & Seibert 2011; Hernandez & Newman, 2009; McNally, Martin, & Kay, 2010; NFTE, 2011; Studdard, Dawson, & Jackson, 2013).

It is known entrepreneurship is integral in the efforts of innovation and economic development (Acs & Audretsch, 2003; Audretsch & Keilbach, 2004; Baumol, 2002; Hessels & van Stel, 2011; Morris, Neumeyer, & Kuratko, 2015). Research has specifically examined entrepreneurship as an effective strategy for economic development in rural areas as well (Jaafar, Dahalan, & Rosdi, 2014; Mojica, Gebremedhim, T., & Schaeffer, 2010; Robinson, Dassie, & Christy, 2004). Entrepreneurial startups are typically born as small businesses. The majority of small business creations remain classified as small businesses throughout their lifespan (Clayton et al., 2013). Even though these organizations employ less than five hundred employees each, the economic contribution is significant. In 2011, there were 28.2 million small businesses. Small businesses comprise 99.7 percent of U.S. firms, are responsible for 63 percent of net new private-sector jobs, and employ 49.2% of all private-sector workers (Audretsch & Link, 2012; SBA, 2014).
Eastern Kentucky

Eastern Kentucky sits in the central region of the Appalachian Mountains. Consisting of such a vast area, the Appalachian Mountains run from southern New York to northern Mississippi in eastern North America and include 420 counties in 13 states. Appalachia is classified into northern, southern, and central regions. Historically, communities in Appalachia have lagged behind the rest of the country and Central Appalachia is the poorest performing of the three regions (Bauman, 2006; Stephens and Partridge, 2011). Fifty four counties in Kentucky are classified as Appalachian (see exhibit 1). The easternmost of these are well known for their high levels of economic distress, unemployment and poverty (Heflin & Miller, 2012; Tickamyer & Tickamyer, 1988; Ziliak, 2015). Coal has been the major industry in the area for over one hundred years. However, the coal industry has experienced many booms and busts over the decades.

The instability of coal demand and the lack of industry diversification have contributed to the depressed economy of the region (Black, McKinnish, & Sanders, 2005; Epstein et al., 2011). In 1964, President Lyndon Johnson famously declared his “War on Poverty” from a home in Eastern Kentucky’s Martin County (Lowrey, 2014; Torstensson, 2013). Although Central Appalachia is one of the poorest regions in the country, it is not from a lack of monetary infusion from state and federal agencies. In fact, over the past five decades Eastern Kentucky has received over 9 billion dollars in financial aid and remains behind in economic development, educational attainment, wages, employment levels, and standard of living (Baumann, 2006; Gebremariam et al., 2012; Hansen & Yukhin, 1970; Jung, Cho, & Roberts, 2015; Santopietro, 2002).
Because of the perceived lack of opportunity for each younger generation as it reaches early adulthood, and the factual conditions of a poorer performing economy, Eastern Kentucky has and continues to see an outward migration (Green, 2015; Hansen & Yukhin, 1970; Lichter et al., 2005; Pugel, 2016; Sanders, 1969). From the period between 2010 and 2015, some counties in Kentucky have seen an increase in population as high as 8%. However, some counties in Eastern Kentucky have seen declines higher than 6% with many of the counties in the 4-5% range (US Census Bureau, 2015). As a means of reversing this trend and improving the future prospects of this region, it is proposed a committed effort to entrepreneurship education at all levels needs to occur.

Given that Eastern Kentucky does not have a thriving entrepreneurial ecosystem, there are a couple possibilities offered as explanations. One reason may be residents of this region are not inherently or educated to be entrepreneurial. Entrepreneurship education is not mandated by the Kentucky Department of Education. Also, this region does not have any active chapters of Junior Achievement or the Young Entrepreneurs Academy, which are available elsewhere in the state. One reason may be entrepreneurial intentions do exist in these citizens. However, those possessing the wherewithal choose to move to more prosperous communities. Therefore, the purpose of this exploratory research is to (A) measure the enterprising tendency of high school
seniors to see if they currently possess the mindset to be entrepreneurial, and (B) determine what proportion of these adolescents plan to move away from Eastern Kentucky.

**Methodology**

The instrument used for this research was the GET2Test created by Sally Caird (Caird, 2013). This is a revision of the original GET Test created to measure enterprising tendency (Caird, 1991). This instrument is well known and has been used by other researchers (Caird, 1991; Ishiguro, 2014; Katundu & Gabagambi, 2014; Mayer et al., 2014; Mazzarol, 2007; Pizarro, 2014; Sethu, 2012). This instrument reliability (Cronbach $\alpha = .7$) is sufficient for the purposes of this study. The survey examines five characteristics shown to be important qualities for entrepreneurs: need for achievement, creative tendency, calculated risk taking, locus of control, and need for autonomy (Caird, 1991). The GET2 Test includes 54 items. The need for achievement, creative tendency, calculated risk taking, and locus of control are measured by 12 items each. The need for autonomy is measured by 6 items. Half of these items represent positive entrepreneurial statements, and the rest of them represent negative entrepreneurial statements (Ishiguro, 2014).

The survey was administered to 287 seniors attending Eastern Kentucky high schools. The survey was administered in four Eastern Kentucky high schools from four separate counties. This was done to acquire a sample more representative of the region and not one specific school in one particular county. The method used may be considered convenience sampling. At the time this research was conducted an attempt was made to elicit participation from additional schools to generate a larger sample size. However, the four high schools were the only ones immediately available to participate.
A generalization may be made that rural high schools are poorer performing than urban or suburban high schools. However, the four schools in this study rank favorably in the state of Kentucky (see table 1) ranging from the 77th percentile to the 97th percentile. Fifty four surveys were eliminated from analysis because they were not completed in full. The remaining 233 surveys were analyzed. Demographic data was collected to make the connection between student’s enterprising tendency levels and their preferences to begin employment and/or seek a college education. Questions asked if students planned to attend college immediately after high school, planned to seek employment immediately after high school, and if they planned to pursue these activities outside of eastern Kentucky.

<table>
<thead>
<tr>
<th>County</th>
<th>School</th>
<th>Overall Score</th>
<th>Percentile in KY</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pike</td>
<td>Pikeville Independent</td>
<td>80.4</td>
<td>97</td>
<td>Distinguished</td>
</tr>
<tr>
<td>Floyd</td>
<td>Allen Central</td>
<td>79.1</td>
<td>96</td>
<td>Distinguished</td>
</tr>
<tr>
<td>Johnson</td>
<td>Johnson Central</td>
<td>73.2</td>
<td>82</td>
<td>Proficient</td>
</tr>
<tr>
<td>Martin</td>
<td>Sheldon Clark</td>
<td>72.4</td>
<td>77</td>
<td>Proficient</td>
</tr>
</tbody>
</table>


Results

Measurements for each of the five criteria and for the composite score of enterprising tendency are classified into three levels: low, medium, or high, based upon survey scoring. For the measure of enterprising tendency, scores from 44-54 are high (very enterprising), 27-43 medium (somewhat enterprising), and 0-26 low (likely prefer guidance from superiors). For the individual characteristics of Need for Achievement, Creative Tendency, Calculated-Risk Taking, and Locus of Control, the maximum score is 12 with 10-12 the high range and 0-6 the low range. For Need for Autonomy, the maximum score is 6 with the high range 4-6 and 0-2 the low range. Table 2 and Exhibit 2 display the results of the students.
As you can see, only 5 of the 233 respondents scored in the high range for enterprising tendency. This equates to only 2.15% of the entire sample. Other noteworthy scores of low proportion of the sample in the high range include Need for Achievement at 9.44%, Creative Tendency and 11.16%, and Calculated Risk-Taking at 9.44% of the sample. Also important to recognize are the proportion of scores in the low range for Need for Achievement at 40.34%, Need for Autonomy at 36.05%, and Creative Tendency at 43.78% of the entire sample. It is pertinent to take note of the creative tendency scores. Timmons and Spinelli (2004) argue that creativity is integral to the concept of entrepreneurship and is particularly relevant in the teaching of entrepreneurship. Personal creativity is the precursor of innovative behavior and thus a central dimension of enterprising potential (Athayde, 2009).

The mean score for Enterprising Tendency is 31.9223 with a standard deviation of 5.4235. The distribution is uni-modal and fairly symmetrical, displaying a nearly normal condition (see exhibit 3 and table 3).
Concerning the demographic information, of the 233 respondents, 114 were male and 119 were female. The ages ranged from 17 to 19 with 17 = 64 students, 18 = 145 students, and 19 = 24 students. When asked if they planned to attend college after high school, 201 answered Yes. When asked if they planned to go to work after high school, 94 answered Yes. Overlap was present concerning these two questions in that 77 plan to find employment and go to college after high school. Also interesting is that 14 answered No to both the question of going to work after high school and going to college after high school. It appears these individuals plan to do neither.

One of the primary goals of this research was to determine if and how many of the participants desire to move away from Eastern Kentucky. When asked if they planned to leave Eastern Kentucky after high school, 98 answered Yes, 107 answered No, and 28 answered maybe. This is up to 54% who may leave the area after finishing high school. When asked if they planned to return to Eastern Kentucky, all 98 answered No. Another statistic of note is of these 98 who do not intend to return, 4 were from the high enterprising tendency group of 5, 89 from the medium range group of 195, and 5 from the low enterprising group of 33. This is 80%, 46%, and 15% respectively of each group (high, medium, and low) who plan to leave and not...
return. This appears to indicate those with higher enterprising tendencies (medium to high) are more likely to want to leave eastern Kentucky than those with lower (low to medium) enterprising tendencies. Therefore, an ANOVA was performed to test this assumption. When comparing the group of 98 who plan to leave with the group of 107 who want to stay, the results indicate a significant difference is not present (see Table 4). A p-value less than .05 indicates there is a significant difference among the groups. The students who answered “maybe” in regard to leaving the region were not included.

<table>
<thead>
<tr>
<th>SSB</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between:</td>
<td>0.716</td>
<td>1</td>
<td>0.716</td>
<td>0.025</td>
</tr>
<tr>
<td>Within:</td>
<td>5,758.375</td>
<td>203</td>
<td>28.366</td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>5,759.090</td>
<td>204</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4

Since data was collected to record the number of males and females taking the survey, and information was gathered to ascertain the respondents’ propensity to leave (see table 5), comparisons were made among the two major categories of groups (stay or leave) and their subsets (male or female). Enterprising tendency was higher for the group wanting to leave Eastern Kentucky than the group wanting to stay. Enterprising tendency was higher for the males from both groups than for the females from both groups.

<table>
<thead>
<tr>
<th>Number</th>
<th>233</th>
<th>114</th>
<th>119</th>
<th>98</th>
<th>50</th>
<th>48</th>
<th>107</th>
<th>50</th>
<th>57</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>Entire Group</td>
<td>Male</td>
<td>Female</td>
<td>Plan to Leave</td>
<td>Male</td>
<td>Female</td>
<td>Plan to Stay</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Enterprising Tendency</td>
<td>31.92229</td>
<td>32.04002</td>
<td>31.77682</td>
<td>32.26409</td>
<td>32.64524</td>
<td>31.8829</td>
<td>32.14572</td>
<td>32.5787</td>
<td>31.71279</td>
</tr>
<tr>
<td>Need for Autonomy</td>
<td>2.98004</td>
<td>2.97054</td>
<td>2.98317</td>
<td>3.02302</td>
<td>3.10060</td>
<td>2.94544</td>
<td>3.10613</td>
<td>3.17130</td>
<td>3.04097</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>8.04939</td>
<td>8.07117</td>
<td>8.07869</td>
<td>8.10804</td>
<td>8.12381</td>
<td>8.09225</td>
<td>8.22454</td>
<td>8.27454</td>
<td>8.17454</td>
</tr>
</tbody>
</table>

Table 5
However, these scores are not statistically significant and simply indicate the group as a whole does not rank highly in the five characteristics of enterprising tendency or enterprising tendency itself. The only significant difference in scores occurs in the category of creative tendency. This is evident when comparing the mean score of males who plan to leave (7.51310) to mean score of females who want to stay (6.69560). ANOVA was performed to test for significance between these groups (table 6). A p-value less than .05 indicates there is a significant difference among the groups. The p-value is .035. There appears to be a difference between the males who plan to leave (7.51310) and the females who plan to leave (6.75397). ANOVA was also performed to test for significance between these groups (table 7). A p-value less than .05 indicates there is a significant difference among the groups. The p-value is .055.

![Table 6](image)

**Discussion**

The other primary goal of this research was to measure the entrepreneurial attitude of high school seniors in Eastern Kentucky. The results of the survey show the majority of the respondents are in the medium range with very few in the high range. Some of the contributing factors to this are the rather high proportions in the low ranges of Need for Achievement and Creative Tendency, and low proportions in the high ranges of Need for Achievement, Creative Tendency, and Calculated Risk-Taking. The high range for enterprising tendency is 44-54, the medium range is 27-43, and the low range is 0-26. The mean for this sample is 31.9223 which is in the lower end of the medium range. The standard deviation is 5.4235. These findings indicate
the enterprising tendency (entrepreneurial mindset) of high school seniors, at least the participants in this study, is not high.

However, entrepreneurship can be taught. Recognizing an opportunity, solving a problem, developing an appropriate solution for the problem, constructing a business model, acquiring the necessary resources, starting the venture, and growing the business are skills (i.e. competencies) anyone can learn (McGuigan, 2016; Morris et al., 2013). Research has shown an entrepreneurial mindset and entrepreneurial abilities can be fostered through education (Martin, McNally, & Kay, 2013; Rauch & Hulsink, 2015; Schenkel, D’Souza, & Braun, 2014).

An important distinction to state here is the difference in business education, knowledge and skills, versus entrepreneurial education, knowledge, and skills. All the participating high schools are rated as either proficient or distinguished by the Kentucky Department of Education. Two of the schools are in the 96th and 97th percentile. All of these schools teach business courses. However, business education and entrepreneurship education are not synonymous (Morris et al., 2013; Morris & Kaplan, 2014). Entrepreneurial experience has been shown to contribute to the development of human capital and enhance skills and abilities which positively impact future career opportunities (Burton, Sorensen, & Dobre, 2016; Parker, 2013; Toft-Kehler, Wennberg, & Kim, 2014).

So, what can be done to ameliorate this condition? It seems prudent to suggest that entrepreneurship education should become an integral component of the K-12 curriculum because it is action-oriented and contributes to the development of capabilities which serve to enhance one’s ability to navigate the world and are beneficial throughout one’s career (Krueger, 2009; McEwen & McEwen, 2010; Studdard, Dawson, & Jackson, 2013). This already occurs in
metropolitan areas. The rural areas, especially Central Appalachian Eastern Kentucky, need to adopt similar practices and policies in order to prevent further population and economic decline.

Limitations and Future Considerations

An increase in sample size, including a larger selection of high schools, may provide a more accurate representation of the attitudes of high school seniors in this region. Another relevant demographic question to ask is if the respondents have considered starting a business. Additional research may be conducted by teaching an entrepreneurship program to a group of high school students including pre and post surveys to see if enterprising tendency increases and by how much. Additional research may be conducted comparing the survey results of a group of Eastern Kentucky high school students to the results of a group of metropolitan Kentucky high school students for possible differences. Many instruments exist to measure entrepreneurial attitude. Research utilizing other surveys and tests could yield different results.

So What

The results of this study affirm the observations and assumptions of the researchers. The majority of high schools seniors tested do not possess an entrepreneurial mindset and do desire to leave the region. These insights have been considered a call to action. It has been proven entrepreneurship education affects students’ entrepreneurial attitudes, entrepreneurial competencies, and desire to become entrepreneurs (Abu Talib et al., 2012; Harris et al., 2008; Morris et al., 2013). It has also been proven entrepreneurship positively impacts economic development, even in rural areas (Ghio et al., 2015; Mojica, Gebremedhim, T., & Schaeffer, 2010) and is a powerful driver of job growth (Decker et al., 2014). Therefore, an entrepreneurship program has been constructed, partnerships developed, and resources allocated to teach a ten-week entrepreneurship program to seven high schools in far Eastern Kentucky.
Ideally, entrepreneurship curriculum will become compulsory throughout K-12 education. This is not thought to be a panacea, but it is a start in a positive direction for this region. Many other policies and changes must be enacted to support education, entrepreneurship, and economic development if long-term substantive improvement is to be achieved.

**Conclusions and Implications**

To summarize the findings of this research: entrepreneurship contributes to economic development. Eastern Kentucky is desperate to implement measures to stimulate economic development. The region has highly ranked high schools teaching business courses, but they do not teach entrepreneurship. The students surveyed do not rate highly for enterprising tendency, need for achievement, creative tendency, calculated risk taking, locus of control, or need for autonomy. Entrepreneurship education is shown to positively impact academic success, attitude toward entrepreneurship, intention to become an entrepreneur, business skills, and desirability by employers. It is logical to teach entrepreneurship in Eastern Kentucky at the K-12 level as one initiative in an attempt to improve the mindset of the youth. This will aid in the formation of an entrepreneurial ecosystem to enhance economic development in the region by enlightening each successive generation to the possibilities of creating their own opportunities for career in their home towns, as opposed to the continued migration of young adults to other communities for education, career, and contributions to society.

In conclusion, this research has provided results important to the fields of entrepreneurship, education, and economic development as they pertain to rural areas with traditionally non-diverse economies, similar to the conditions of Central Appalachian Eastern Kentucky.
References


Informal Entrepreneurship and Past Experience in an Emerging Economy

Cory R.A. Hallam, University of Texas at San Antonio
Gianluca Zanella, University of Texas at San Antonio
Jhonny D.A. Lijerón, Universidad Autónoma Gabriel René Moreno, Santa Cruz

Abstract: Informal economies account for up to 70% of GDP in developing countries, but few studies have explored informal entrepreneurship. To fill this gap, an exploratory study involving 855 University students in an emerging economy applies the Theory of Planned Behavior (TPB) to study the cognitive process of informal entrepreneurship. The effect of Past Experience and Necessity Entrepreneurship on the intention to start a business are also explored. Our findings provide evidence that the decision to start a business in the informal economy reinforces the effect of subjective norms on entrepreneurial intentions. Implications for education programs and for theory are discussed.

Keywords: informal economy, entrepreneurship education, entrepreneurial cognitive model, necessity entrepreneurship, real-world experience

Introduction

The Informal Economy, also known as the shadow or hidden economy, has been studied for decades in macro-economic literature (Helberger & Kneipel, 1988; Portes, Castells, & Benton, 1989; Schneider, 2011), mainly to understand the disappointing performances of economic and social policies of the OECD countries. There is general agreement on the size of informal economy, accounting for up to 70% of economic activities in developing countries, providing for the livelihood of billions of people around the world (Schneider & Enste, 2013). However, there is little consensus about the role it plays in entrepreneurial economic development. The academic
judgment on shadow economy fluctuates between two extremes: either it is blamed for harming economic development through unfair competition, low productivity, and tax avoidance (Farrell, 2004), or it is regarded as a crucial mean for countering poverty in developing countries (Collier, 2007). Literature points out that the basis of the analysis of increasing the shadow economy are too narrow (Schneider & Enste, 2013), thus exposing the need for a comprehensive approach and scientific analysis to explain the phenomenon.

While economics and sociology literature on informal firms is relatively well developed, entrepreneurship and management journals offer articles that focus on informal ventures from theory-building perspective and macro-level analysis through panel data (Bruton, Ireland, & Ketchen, 2012; Thai & Turkina, 2014; Webb, Bruton, Tihanyi, & Ireland, 2013). Very few studies have adopted the cognitive or behavioral point of view to study entrepreneurship in an informal setting. Past research explored informality as an voluntary individual choice to pursue an opportunity (Neuwirth, 2012) depending on industry conditions (Siqueira, Webb, & Bruton, 2014). The present study aims to contribute to informal entrepreneurship literature by building on the cognitive Theory of Planned Behavior (TPB). In particular, we test for differences in the cognitive process between formal and informal entrepreneurs, and investigate the potential effect of past experience and necessity on the intention to start a business in either type of economy.

Theoretical background and hypotheses

Entrepreneurial action is a planned behavior that has been widely studied in literature through a reliable proxy, namely intention (Ajzen, 1985). The Theory of Planned Behavior (TPB) model proposes that the combination of three motivational factors, namely Attitudes Toward
Behavior (ATB), Social or Subjective Norms (SN), and Entrepreneurial Self-Efficacy (ESE), leads to the formation of a behavioral intention (Ajzen, 1991). The ATB refers to the degree to which a person has a favorable evaluation of the behavior, and is a multidimensional construct that aggregates instrumental (e.g. desirable–undesirable, valuable–worthless) and experiential (e.g. pleasant–unpleasant, interesting–boring) aspects (Ajzen & Fishbein, 2005). The SN capture what important people in the individual’s life think about the behavior in discussion, and in this case, entrepreneurial behavior. Empirical studies identified that the most important social influences come from family, close friends, and significant others, including role models or mentors. The ESE represents the perceived ability to execute a target behavior and reflects an individual’s capability to exercise control over their actions and over events that affect the behavior (Bandura, 1977). It is important to realize that the three TPB predictors are influenced by a wide variety of cultural, personal, and situational factors, as well as exposure to information or to the physical, social, and economic environment. In this study we explore how the decision to start an informal business may affect the TPB’s predictors, and if Past Experience (PE) and motivation to start a business (Necessity versus Opportunity) predict or interact with this decision.

**Entrepreneurship and Informality**

Informal or Shadow Economy refers to economic activities that are outside of formal institutional boundaries, but provide products and services which remain legitimate for a large portion of the society. Informal Entrepreneurship operates within the informal economy in order to avoid sunken costs related to registration, regulatory costs and taxes, and compliance with policies and regulations (Becker, 2004). There is no consensus about the effect of shadow economy on a nation’s economic growth. At one extreme, macro-economic literature depicts
informal firms as parasites that erode economic development through unfair competition, taxes and regulation avoidance, and operate with low levels of efficiency (Williams, 2005). At the other extreme, a new school of thought proposes informal entrepreneurship as a mean to provide livelihood for millions of people in developing countries (De Soto, 1989, 2000; Schneider, Buehn, & Montenegro, 2010). As a result, academics have proposed conflicting policies aimed at shifting informal businesses out of the shadow economy. The first point of view calls for enforcement of laws and regulations, while the second calls for less regulations to pull informal firms out of the shadows. This gap exposes the need for a more comprehensive approach to the problem, and a clearer understanding of the underlying entrepreneurial phenomena (Schneider & Enste, 2013).

Entrepreneurship results from individuals’ ability to detect and exploit opportunities (S. Shane & Venkataraman, 2000). The first phase of this process requires the entrepreneur to recognize an opportunity bridging knowledge to envision a potential source of value (R. A. Baron & Ensley, 2006). The second phase requires the entrepreneur to acquire and leverage resources to deliver value for society (S. A. Shane, 2003; Sirmon, Hitt, & Ireland, 2007). In this effort, entrepreneur interacts with the socio-economic environment, that shapes the diversity of demand and industrial supply, thus creating valuable opportunities (S. A. Shane, 2003; Thai & Turkina, 2014). Within this complex process, entrepreneurs voluntary chose to pursue opportunities in the formal or informal economy (Neuwirth, 2012), although is not clear yet if the choice of informality versus formality interacts with the decision to start a business. Literature proposes a range of diverse motivational theories to explain the decision to operate informally. Resource allocation theory proposes that individuals choose to operate informally to acquire and manage resources avoiding the costs derived from bureaucratic and regulatory controls (Guirkinger, 2008). Economic and social motivations, such as tax avoidance and income gap explain informality
Finally, institutional theory proposes that institutions influence entrepreneurship process by setting rules and policies, defining opportunities, and facilitating interactions among actors. For example, bureaucracy and stringency of policies can push entrepreneurs to operate informally (Webb, et al., 2013). Although different theories and frameworks have studied the motivations behind the choice to operate in the informal economy, how this choice interacts with the entrepreneurship process has not yet been explored. This is the focus of our research.

In our study, we tackle the problem drawing from cognitive models. Informal entrepreneurship is a voluntary individual decision to pursue opportunities (Neuwirth, 2012), and as a planned behavior can be analyzed through the TPB (Ajzen, 1985). In particular, the focus of our research is the interaction between the predictors of entrepreneurial intentions and the decision to start an informal business.

**Entrepreneurial Intent and Informal Entrepreneurship**

Entrepreneurship belongs to the category of planned behaviors that has been studied by social psychologists through different frameworks and cognitive models (Ajzen, 1985; Bentler & Speckart, 1979, 1981; Shapero, 1975). Among many explored predictors, literature provides evidence that intent is the best proxy to predict the final behavior (Ajzen, 1985; Bagozzi, Baumgartner, & Yi, 1989; Bird, 1988). To explain why some individuals are more entrepreneurial than others, scholars have suggested and empirically explored a large number of determinant of entrepreneurial intentions utilizing a variety of alternative models and frameworks (Ajzen, 1985; Bagozzi, et al., 1989; Bird, 1988; Boyd & Vozikis, 1994; Krueger & Carsrud, 1993; Shapero, 1975). The theory of planned behavior (TPB) is a contemporary and widely accepted cognitive
framework of intentions that has been successfully used to explore entrepreneurial activity (Ajzen, 1985; Bagozzi, et al., 1989; Bird, 1988). TPB identifies three antecedents of intention. The first factor, ATB, represents the “the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question” (Ajzen, 1991, 2001). In an economy with pervasive levels of informality, we expect more favorable beliefs related to the informal entrepreneurship, because of the costs and regulations associated with formal entrepreneurship. Thus, we predict that:

H1a: The decision to be an informal entrepreneur moderates the relationship between ATB and EI.

The second factor, Subjective Norms, represent the social pressure toward a behavior (Karlsson & Honig, 2007). In an economy with high levels of informality, the shared common norms, beliefs, and expectations among informal entrepreneurs lead to a group-level institution that exerts influence on the intentions of nascent entrepreneurs (Webb, Tihanyi, Ireland, & Sirmon, 2009). Consequently, we expect that the social pressure is more favorable towards informal entrepreneurship. Thus, we expect a stronger effect of SN on EI when entrepreneurs chose to operate informally:

H1b: The decision to be an informal entrepreneur moderates the relationship between SN and EI.

The last factor of the TPB model, ESE, represents the perceived ability to successfully accomplish the tasks related to the final behavior (Bandura, 1977, 1993). In this case, we expect that this factor is not affected by the choice to go informal, as it is an introspective factor of one’s own skills. Thus, we propose:
**H1c:** The decision to be an informal entrepreneur does not moderate the relationship between ESE and EI.

The intention to start an informal business may be influenced by several factors. In particular, we consider past experience and necessity entrepreneurship.

**Past Experience and Informal Entrepreneurship**

There is no consensus about the role of past experience in the TPB model. While some scholars have argued against the predictive role of past experience with TPB (Ajzen, 2002), entrepreneurship research shows that past experience exerts a positive effect on entrepreneurial intentions (Krueger Jr, 1993; Peterman & Kennedy, 2003). Further, past experience and knowledge are also crucial for entrepreneur’s success (Bird, 1988) and new firm survival and performance (J. N. Baron, Burton, & Hannan, 1996; Dencker, Gruber, & Shah, 2009), although some scholars recognize that prior knowledge may strongly constrain entrepreneur’s strategic choices and limit long-term growth (Fern, Cardinal, & O'Neill, 2012). Rerup (2005) proposes that past experience can have a mixed effect on opportunity discovery and exploitation, because the . Considering these differing perspectives and findings, our empirical study is a helpful addition to the literature. Consistently with the theory of reasoned action (Ajzen & Fishbein, 1975), we expect that past experience facilitates the cognitive processes related to perform the behavior. In the presence of high levels of shadow economy, we also expect that this effect will be enhanced for informal entrepreneurship. Thus, we predict:

**H2a:** Past Experience will exhibit a significant positive effect on EI.
H2b: The decision to be an informal entrepreneur will moderate the effect of Past Experience on EI.

Necessity Entrepreneurship and Informality

Necessity Entrepreneurship is defined as the choice to start a new business because other options for work are not available or unsatisfactory (Williams, 2008). Conversely, opportunity entrepreneurship seeks to take advantage of some business opportunity and it is sought out by choice (Neuwirth, 2012). Past literature conventionally assumed that informal entrepreneurs are largely necessity entrepreneurs, pushed into entrepreneurship by their inability to find employment in the formal economy. Such a representation has been rejected by recent research, which shows how informality and necessity are two different factors in a complex process (Williams, 2008). Consequently, we propose:

H3a: Necessity will not exhibit a significant effect on EI.

H3b: Necessity will not moderate the effect of Informality on EI.

Methodology and Measures

Sample Characteristics

Data was collected from 855 undergraduate students in a top university in Bolivia. Bolivia was chosen for having the right socio-economic characteristics to perform the study. First, Bolivia’s reports economic growth rates significantly above the average in South America, thanks to political stability, well performing economic policies, and an eco-system touted as having
favorable conditions for entrepreneurship (Vargas & Garriga, 2015). Second, Bolivia’s economy is characterized by a pervasive informal sector that accounts for 70% of GDP (Schneider & Enste, 2013). The respondents have been recruited among undergraduate students from all the colleges available at the university. The final sample mean age was 22. Students reporting to have direct or indirect (through family members) past experience were 621, by which ninety-seven with direct past experience. Finally, 35 percent of respondents reported the choice to operate in the informal economy. This result is not in contrast with the size of the informal economy at nation level, because our sample has been collected among a segment of population characterized by better perspectives in their future professional life. Table I reports the descriptive statistics.

Table I. Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample</td>
<td>855</td>
<td>551</td>
<td>304</td>
</tr>
<tr>
<td>Past Experience Yes</td>
<td>621</td>
<td>398</td>
<td>223</td>
</tr>
<tr>
<td>Past Experience No</td>
<td>234</td>
<td>153</td>
<td>81</td>
</tr>
<tr>
<td>Necessity Entrepreneur</td>
<td>253</td>
<td>156</td>
<td>97</td>
</tr>
<tr>
<td>Opportunity Entrepreneur</td>
<td>602</td>
<td>395</td>
<td>207</td>
</tr>
</tbody>
</table>

Measures

The instrument, originally designed in English, was translated to Spanish by a local panel of experts and faculty, and then back-translated to English to test for content validity. We employed the four variables representing the classical TPB model, namely attitude toward behavior (ATB), subjective norms (SN), perceived entrepreneurial self-efficacy (ESE), and entrepreneurial intention (EI). All our variables were selected from literature and showed good internal reliability (see Table II). ATB and SN have been operationalized through multi-item
scales from Kolvereid and Isaksen (2006). ESE has been operationalized as one factor aggregate scale from Hallam, et al. (2016). Finally, we decided to measure EI through a one-item Likert scale based on intentions: “After your graduation, do you intend to start your own company or business?” In addition, we asked for the type of business, formal or informal. We asked about the motivation to start a business to split the entrepreneurial intent between necessity and opportunity. The measure past entrepreneurial experience (PE) included direct personal experience as an entrepreneur and indirect personal experience through a family member, because both contribute to form positive or negative evaluation about entrepreneurship.

Table II. Variable Reliability, Means, Standard Deviations, and Pearson correlation

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>α</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ATB</td>
<td>5.81</td>
<td>1.18</td>
<td>.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>SN</td>
<td>3.94</td>
<td>1.30</td>
<td>.82</td>
<td>0.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>ESE</td>
<td>5.27</td>
<td>1.14</td>
<td>.91</td>
<td>0.17</td>
<td>0.26</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>EI</td>
<td>5.86</td>
<td>1.39</td>
<td>n.a.</td>
<td>0.30</td>
<td>0.18</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Results

Multiple regression models we employed to test the research hypotheses. Table III reports the results. We first ran a multiple regression analysis for the baseline TPB model (Model 1), then we included the three independent variables, namely past experience (PE), Informal Entrepreneurship (Informal), and Necessity Entrepreneurship to examine main effects (Model 2). Finally we added interaction effects to evaluate whether the independent variables have different effects according to other variable.
Table III. Linear Regressions Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESE</td>
<td>0.27163 ***</td>
<td>0.26697 ***</td>
<td>0.25044 ***</td>
<td>0.24992 ***</td>
<td>0.23691 ***</td>
</tr>
<tr>
<td>ATB</td>
<td>0.28852 ***</td>
<td>0.28766 ***</td>
<td>0.28012 ***</td>
<td>0.27906 ***</td>
<td>0.27237 ***</td>
</tr>
<tr>
<td>SN</td>
<td>0.08539 *</td>
<td>0.08008 *</td>
<td>0.02008</td>
<td>0.02029</td>
<td>0.01737</td>
</tr>
<tr>
<td>PE (TRUE)</td>
<td>0.21195 *</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informal (TRUE)</td>
<td>0.04003</td>
<td>-1.04208</td>
<td>-1.07256</td>
<td>-0.89355</td>
<td></td>
</tr>
<tr>
<td>Necessity (TRUE)</td>
<td>0.01720</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESE:informal</td>
<td></td>
<td>0.06105</td>
<td>0.06134</td>
<td>0.07478</td>
<td></td>
</tr>
<tr>
<td>ATB:informal</td>
<td></td>
<td>0.01202</td>
<td>0.01382</td>
<td>0.01856</td>
<td></td>
</tr>
<tr>
<td>SN:informal</td>
<td></td>
<td>0.17591 *</td>
<td>0.17415 *</td>
<td>0.18046 *</td>
<td></td>
</tr>
<tr>
<td>PE:informal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.38220</td>
</tr>
<tr>
<td>necessity*informal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Intercept)</td>
<td>2.42162 ***</td>
<td>2.29877 ***</td>
<td>2.82288 ***</td>
<td>2.84166 ***</td>
<td>2.70225 ***</td>
</tr>
<tr>
<td>Sample Size</td>
<td>855</td>
<td>855</td>
<td>855</td>
<td>855</td>
<td>855</td>
</tr>
<tr>
<td>(R squared)</td>
<td>0.15</td>
<td>0.16</td>
<td>0.16</td>
<td>0.15</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Note: ‘***’ p < 0.001, ‘**’ p < 0.01, ‘*’ p < 0.05, ‘.’ p < 0.1.

The analysis of Model 1 shows that the three TPB antecedents of entrepreneurial intentions have a significant effect on the dependent variable. In particular, we would like to point out that the small effect of SN on intentions reflects the poor performance of SN as predictor already verified in past research (Engle, et al., 2010; Sheppard, Hartwick, & Warshaw, 1988). According to Model 2, students with Past Experience have significantly higher intention to open a business compared with students without PE ($\beta = 0.21195$, p < 0.05). However, the decision to start an informal business and necessity entrepreneurship do not directly affect the intentions.
Model 3 shows the interaction effect between the intention to start an informal business and the TPB independent variables. The results provide evidence that subjective norms have a stronger effect on intentions in the case of informal entrepreneurship ($\beta = 0.17591$, $p < 0.05$).

Model 4 investigates the interaction effect of informality on the TPB independent variables and necessity entrepreneurship. The results confirm the interaction effect between informality and social norms. In this model, there is no significant difference in entrepreneurial intention between opportunity entrepreneurs and necessity entrepreneurs, meaning that the effect of TPB predictors on EI is not significantly different across necessity and opportunity entrepreneurs. Model 5 investigates the moderating effect of informality on the TPB model predictors and past experience. The results confirm the interaction effect between SN and Informality, thus confirming Hypothesis H1b. There is no significant interaction between ESE and informality, thus confirming H1c. Surprisingly, we found no significant interaction effect between ATB and informality, thus rejecting H1a. Further, the analysis confirms the significant role of PE as predictor of intentions (Hypothesis H2a). However, there is no evidence of a significant interaction effect between PE and informality, thus rejecting H2b. Finally, there is no evidence of a significant effect of necessity on EI or of an interaction effect between informality and necessity (Hypotheses H3a and H3b).

Conclusions and Implications

According to our finding, the decision to start an informal business reinforces the effect of subjective norms on entrepreneurial intentions. This result can be explained by taking into account the nature of SN as predictor, and the surrounding ecosystem in which the future entrepreneur is planning to operate. SN is a measure of the perception of social pressure derived from the
judgment of salient others, namely closest family, closest friends, and people who are important in the respondent’s life (Ajzen, 1985). In an economic ecosystem characterized by a pervasive informal economy, such as in Bolivia where it accounts for 70% of GDP, the social pressures lean towards informality, pushing the future entrepreneur into the shadow economy. Our findings confirm the positive effect of prior exposure (direct and indirect, through family members) to entrepreneurial activity on EI (Krueger Jr, 1993). Further, we verified that there is no difference between informal and formal entrepreneurs, thus reinforcing the fact that informality affects the intentions through SN.

**Implications for Economic Development**

In a transient economy, policy makers and regulators are setting policies to move business out of the shadow economy, for several reasons. First, they believe the shadow economy erodes tax collection and consequently weakens the social security base. In addition, a growing shadow economy allocates resources and production factors in a manner that is assumed to unfairly competing with formal economy firms. Furthermore, shadow economy distorts official economic indicators, causing severe difficulties for policy-makers to plan based on standard measures of economic policy. Yet there is no consensus between experts about the nature of policies needed to shift businesses out of shadow economy. The point of views fluctuates between two extremes: the macro-economic school of thoughts calls for greater regulation and enforcement to impede the ability of entrepreneurs to operate in the shadow economy (La Porta & Shleifer, 2014). While conversely, a recent stream of literature recognizes the crucial role of informal entrepreneurship for countering poverty in emerging and developing countries, calling for smaller barriers to entry, tax reduction, and less regulation to encourage entrepreneurs to start informally and eventually transition to the formal economy (De Soto, 2000).
Our findings provide evidence that shared common norms, beliefs, and expectations among informal entrepreneurs lead to a group-level institution that exerts social pressure on nascent entrepreneurs (Webb, et al., 2009). This social pressure contributes to create a more favorable evaluation about informal entrepreneurship, thus pushing nascent entrepreneurs toward informality. A rise in regulations and taxes may cause more entrepreneurs to choose the informal options, which in turn increases the group-level institution of informal entrepreneurs. Economic policies in developing countries need to take a comprehensive view of this phenomenon, to avoid a vicious circle of further increase of informality that avoids growth in the formal economy. Rather they need to look for ways to capitalize on the positive feedback that entrepreneurial action can exert of overall economic growth and transition to formal economic activity.

**Implications for Entrepreneurship Education**

As discussed above, carefully-designed policies are needed to shift the economy from informal to formal, and may include elements of promotion of informal entrepreneurship. Education can be a crucial factor in this process, especially in how informal entrepreneurship is portrayed and even taught. Our findings provide evidence that University students, tomorrow’s entrepreneurs, are more affected by social pressure when they intend to start an informal business. Because SN includes judgment of salient others, the role models and mentors can form a crucial piece of the process in pulling entrepreneurs towards the formal economy even if they begin in an informal setting.

**Limitations and Implication for future research**

Given the exploratory nature of this study, further research is needed to better understand the process of informal entrepreneurship. First, the peculiar nature of the Bolivia’s economic ecosystem may provide conclusion that are not generalizable to other countries. A cross-country
study is needed to explore the phenomenon in different economies. Second, our sample of university students may suffer from the typical problems associated with convenience samples. Further, although mitigated through anonymity, the self-reporting nature of our instrument may lead to bias in our findings (Fisher, 1993). Finally, longitudinal studies on intention and behavior could confirm the role of mentors in the entrepreneur’s education.

References


EMERGING MODELS OF BUSINESS INCUBATION:
THE CASE OF GREECE

Tiago Ratinho
Merrick School of Business
University of Baltimore
1420 N Charles St, Baltimore MD 21201, USA
tratinho@ubalt.edu

Michael Mitsopoulos
Hellenic Federation of Enterprises
Xenofontos 5, 105 57 Athens, Greece
mmitsopoulos@sev.org.gr

Abstract
Business incubators are a relatively new phenomenon in Greece. The long economic crisis led to multiple private and public entrepreneurship support initiatives. This paper investigates five case studies of new business incubators located in Greece. Our data shows a diversity of incubation models each operating in a unique way. In addition, we discuss each incubator in the context of other aspects of the entrepreneurial ecosystem, and evaluate it as a further step that is needed to complete it in a workable whole. We finalize with implications for future business incubator promoters, prospective tenants, and public policy makers.

Executive Summary
Business incubation is a very popular tool to assist aspiring entrepreneurs and startups. With worldwide presence, incubators provide a mix of infrastructure, business support, and access to
networks seeking to equip starts with important resources to increase survival chances and growth. Despite the commonly agreed designation, a multitude of incubation models has emerged over the years.

In this paper, we investigate five new business incubators in Greece, a small Southeast European economy characterized by a decade long economic crisis and an incipient entrepreneurial ecosystem. We set out to investigate how this resource-constrained environment and the inherently inexperience in supporting entrepreneurs motivated business incubation operation. Data was collected in 2016 by interviewing key managers of incubator. We based our analysis in prior work on business incubation and attempt to place findings in context by using the emerging literature on entrepreneurial ecosystems.

Our results show that despite general commonalities, important differences emerged in selection criteria, service portfolio and delivery, and access to finance. We note a growing trend to blur the boundaries of existing incubation models and sources of entrepreneurship support. Angel investors, property-based incubation, business acceleration, and entrepreneurial education are intriguingly combined in multiple ways in our cases.

These results are important to business incubation managers, prospective tenants, and policy makers. Business incubation managers are encourage to incorporate types of support than previously were delivered by other sources of support such as business angels or venture capitalists. Prospective tenants should also look for more holistic business incubators in order to enjoy more types of support that likely to lead to faster development. We also inform policy makers who should direct entrepreneurship policies to activities that support entrepreneurs rather than investing in physical facilities.
1. Introduction

Business incubators (BI) support startups and aspiring entrepreneurs by providing a curated bundle of physical infrastructure, business assistance, and network access (Bruneel, Ratinho, Clarysse, & Groen, 2012). In the past decades, the popularity of BIs remains unscathed despite the many different public policies seeking to drive economic growth. Multiple and disparate measures including innovation subsidies, technology transfer initiatives, urban development targeted small and new businesses often mention some sort of business incubation (Gilbert, Audretsch, & McDougall, 2004; Minniti, 2008).

Many models have emerged for incubating businesses. Existing taxonomies use service portfolios (Von Zedtwitz & Grimaldi, 2006), promoter strategy (Clarysse, Wright, Lockett, Van de Velde, & Vohora, 2005), historical generations (Bruneel et al., 2012), or regional scope (Carayannis & von Zedtwitz, 2005) to differentiate among the many existing BIs. Further models are found in different economic contexts such as Korea (Kim & Ames, 2006) or Nigeria (Adegbite, 2001) often defying commonly accepted notions about supporting businesses as a result of the unique environmental conditions.

In this paper, we investigate five new BIs in Greece. The decade long economic crisis affecting this small southeastern European economy evolves amidst reforms that should support business initiatives through removing supply side constraints like regulated markets and red tape, on the one hand, and a number of adverse developments, with the country risk and its implications on access to finance by business being a prominent example, on the other hand. In this setting, the country has seen a growth of private and public entrepreneurship support initiatives purporting to contribute to job and wealth prosperity. Drawing on the emerging notion of entrepreneurial ecosystems, our investigation suggests that each of these new BIs occupies its own space in the
ecosystem and fills a unique systemic gap rather than competing directly for the same kinds of startups.

2. Background

2.1. The Greek economic and political context

Located in the southeastern tip of the European continent, Greece is one of the smaller European countries in size and population. Greece achieved accession to the European Community, as it was then called, in 1981, after having restored solidly democracy following a 7-year junta between 1967-1974. As the majority of EU and OECD countries embarked on a path of market deregulation and privatizations, a new government in Greece, that was elected in 1981, started moving fast in exactly the opposite direction, expanding on the already pervasive micromanagement of the economy by the state and further increasing the overregulation of the economy. The net effect was that the difference between the level of regulation and government intervention in Greece and the other economies it now shared a common market with started to increase, instead of declining. This put an enormous pressure on the sectors that produced tradable goods, leading to a fast decline of employment and activity in these sectors.

A forceful, not always optimal, and ultimately short-lived, effort to deregulate the Greek economy during the 1990-93 started paying large growth dividends a couple of years later and for over a decade, in addition to the perceived macroeconomic stability brought by EMU accession (Pelagidis & Mitsopoulos, 2015). The inability to resolve the structural problems of the country and to counter the activity of rent seeking groups (Mitsopoulos & Pelagidis, 2009), meant though that, in spite of the high growth rates, the productive economy, the business ecosystem and employment could not evolve at a satisfactory pace (Mitsopoulos 2014). Especially, minutiae of legislation and its administrative application formed an increasingly
strong barrier to entry across most sectors of the economy, affecting disproportionally those businesses that depend more on open markets and a friendly business environment, that is innovative companies that try out new things that depart from the established processes. Thus the ability of the economy to produce tradable goods and to join in the innovation ecosystems and global value chains had been steadily diminished not only through the 1980’s but also during the later 1990s and the period after the EMU accession – this degradation was now deeply entrenched, and reflected by the low openness of the economy and the low business expenditure on R&D (Pelagidis & Mitsopoulos, 2014). While the advent of the crisis and the adjustment program gradually addressed a number of the key issues that formed the nexus of the hostile business environment, other developments negated the effect of the removal of these supply side constraints. In particular, political risks increased and financing for the private sector became essentially inaccessible cancelling out any positive structural developments (Mitsopoulos, 2016).

Within this context, for the first time since the 1960s the younger generations that did not leave the country for studies and foreign employment opportunities ceased to see the public sector as their employer of preference, and turning to a private sector that was shedding fast salaried employment started to examine in a more determined way the possibility of entrepreneurship.

### 2.2. The Greek entrepreneurial ecosystem

Entrepreneurial ecosystems are networks of interconnected organizations in which the focal point is the entrepreneur (Stam, 2015). This approach emphasizes the importance of context in the entrepreneurship (Autio, Kenney, Mustar, Siegel, & Wright, 2014) and the complex relationships between institutions, organizations, and individuals that make up the ecosystem. Mostly at policy makers and practitioners (Stam, 2015), this body of literature often lists attributes of entrepreneurial ecosystems as well as normative guidelines for its development. For
instance, Feld (2012) proposes nine attributes that together characterize an entrepreneurial ecosystem as a network of entrepreneurs, supporting professionals, established companies and universities whose interactions are enabled by a relatively strong government policy conducive to the creation of new businesses (Feld, 2012) (Table 1).

++ Table 1 ABOUT HERE ++

During the 1990s – and similarly to other comparable European countries such as Portugal (Ratinho & Henriques, 2010) – public investment in Greece prioritized large infrastructure project such as science parks (SP) as the leading tool to support entrepreneurship. The premise was that the geographical co-location of large companies, universities and startups would promote technology transfer and, as a result, bring economic prosperity to the SP regions (Bakouros, Mardas, & Varsakelis, 2002; Caldera & Debande, 2010). Over the years a decent, for the size of the country, number of business parks had been established through public financing and within the context of the public administration in geographically diverse areas and around research universities, offering an outlet for initiatives from the university or a hosting area for business that wanted to benefit from close ties with the university. Still, a large number of entrenched administrative barriers and weaknesses as well as the immaturity of the ecosystem mean that, with a few noteworthy exceptions, these parks did not really manage to flourish. The persistent institutional, and after a certain point consequent cultural, barriers limited use of these, extensively funded by public money, parks to either demonstrators, usually part of EU research grants, or companies that essentially chose office space regardless of the benefits that could follow from access to the proximate research facilities. In such an environment, a number of private companies managed to establish links with the facilities of the research institutions that hosted the part - their numbers were always relative small, but they sufficed to demonstrate that
the potential to follow this path exists (First Research and Innovation prize “Greece Innovates,” 2010). In these cases, an exceptional product and close links of the officers of the company that usually were alumni from the affiliated university occasionally led to a marketable product either by a group of alumni from the research facility that started their private business, or in very few cases successful university spin-offs (e.g. Dysis medical). At the same time, a number of larger companies have kept a foothold in these parks to support their ongoing research (e.g. Clonatech), in a quite diverse spectrum of areas. The fact that these successful cases in which indeed the business economy collaborated with the research community were rather marginal is supported by a number of studies that show that performance is generally low with SPs showing low occupancy, a single graduation to an IPO, and weak linkages between tenant companies and universities (Sofouli & Vonortas, 2007).

In addition, during the 2000s a number of venture capital funds started operating, supported in part by EU structural funds that were further increased by the contribution of some financial institutions and private investors. Even though the ability to invest in innovative startups or maturing startups was generally curtailed by the weaknesses of the institutional environment, a number of these funds actually invested in technologically advanced projects beyond ICT (e.g. Advent technologies, a company specializing in fuel cell technology that subsequently opened up and attracted investors from the US, even while keeping the research base in the Patras SP). ICT, on the other hand, benefited from the fact that the industry essentially matured after the drive to overregulate the economy was over, which means that many of the aspects of ICT activity were not overregulated or overtaxed exactly because the legislator had not foreseen their advent. As a result not only did some investor ecosystems evolve, allowing some flow of investment funds from Greek but also international investors into interesting start-ups and graduating companies,
but also a number of VCs started specializing on these cases allowing them to mature (a good example is the company Taxi-Beat) and the ecosystem even reached a level where open coffee-shop sessions were organized, during which aspiring entrepreneurs were pitching at angel investors (the Open Coffee still takes place). The mobility of ICT though meant that many of the success cases soon migrated outside the country, in order to have easier access to funds that are paired with expertise and to grow within a friendlier business environment.

It is exactly at this conjuncture that a number of BIs, with three of them supported by EU structural funds, opened in particular in the Athens area. Their advent combined with the gradual maturation of a ecosystem that had spun off a number of foreign companies that were active in microelectronics in Greece, and whose breakup led to a constellation of smaller companies and start-ups with good links to major research universities. This cluster, Corallia, had managed to build strength over years reaching a higher mass and level of complexity about the time of the crisis. A key aspect of this cluster was, already at the time, its ability concentrate the needed knowledge and thus to help members to navigate the treacherous institutional environment and vague legislation in a safe way – a knowledge that was not granted for example among many research university technology officers due to the many intricacies of Greek laws. In addition, an able administration that allowed members to benefit in useful ways from this growing network.

Still, in spite of gradually expanding its scope, this cluster focused on a rather narrow set of activities. At the same time, it has to be noted, many of the companies active in this cluster demonstrated a much higher propensity, when compared say to ICT startups, to remain in the country even after achieving their first success.

The new BIs, on the other hand, in spite of the inevitable lack of experience, were open to any reasonable business idea which made them interesting for young aspiring entrepreneurs from
numerous disciplines and, potentially, originating from academic environments that did not relate directly with Corallia, the ICT ecosystem and the network of SPs. But one has to stress, they were established in a setting in which the clusters, SPs and certain universities along with the patchy and small, but existing, VC community already was accumulating experience and know how. As a result, these BI’s emerged at a time during which the crisis was testing the country, but also key ingredients of a more complete ecosystem were gradually maturing or persisting, in spite of their individual weaknesses and their, still weak, interconnections among each other and the dwindling supply of funds. It has to be stressed here that there exists no evidence that the introduction of the BIs that were funded by EU grants followed as a conscious initiative to complete the existing ecosystem in one more dimension – rather the availability of the EU funds motivated their establishment. This does not mean that the gap in the ecosystem was not identified – for example the initiative of the Dutch embassy to open an incubator and the initiative of an ICT group to establish its in-house incubator shows that the need for this service had been identified and that initiatives had been taken to fill this gap irrespectively of the EU sponsored incubators, and these initiatives coincided more or less with the establishment of the EU funded BIs. While the gap that has been filled with the establishment of the BIs is an important step towards nudging the whole ecosystem towards a density and maturity that often is compatible with accelerated growth in all of its dimensions, other important gaps do remain. In spite of serious efforts to improve the infrastructure to protect and defend intellectual property, with the enhancement of the patent office and the establishment of special courts that can judge cases involving IP, and in spite of a number of institutional advances that facilitate business projects that start from, or collaborate with, research universities and some improvement in the tax laws (private investors now can offset profits with losses for 5 years) and the creation of the
new limited liability company type, many weaknesses remain. Contracts according to Greek law still are often deviating, as mandated by the law, from the standards used in mature ecosystems, courts remain slow and often incapable of handling complex business issues, the structure of responsibilities of public sector and bank officers create impediments to the swift and cheap dissolution after failure, to name a few of the challenges at hand. In addition, in spite of the recent initiative of the Athens Chamber of Commerce and Industry to establish a network of angel investors, and the fact that the in-house incubator of an ICT group is very well connected to the small angel investor community of the country, the related culture and know how are still nascent implying that there exists a significant gap in the stream of finance that needs to be accessible to a fast growing success story from the beginning till maturity. In addition, in spite of the fact that a number of VC’s have now no more access to EU funds, as their initial financing has been completed and delays in the next round of EU funds mean further funds are still not available, there have been cases of successful exits even during the crisis as well a number of new investment.

3. Methodology

3.1. Research context

Prior research has shown that business incubation in Greece is a relatively new and emergent phenomenon (Bakouros et al., 2002; Sofouli & Vonortas, 2007). As a result, we chose to utilize the case study method given the small sample size and deliberately searched for a number of representative cases (Eisenhardt, 1989; Eisenhardt & Graebner, 2007).

First, we wanted to focus our attention in new and young BIs. Older historical generations of BIs have been found to deliver office space to tenants essentially becoming business centers with little or no visible intervention in tenants (Bruneel et al., 2012). This model of business
incubation clearly occupies a small and irrelevant space in any entrepreneurial ecosystem or, at best, is at the margins of a well-functioning support system.

Second, we decided to concentrate our research in one geographical region. While there are other major cities in Greece with existing entrepreneurship support systems (Sofouli & Vonortas, 2007), Athens remains the prime area that concentrates an educated population, advanced infrastructure, research facilities and universities along with businesses of all sizes.

Lastly, we wished to take advantage of the observed variance in terms of ownership and mission, given that depending on their financing source and management BIs deploy different service portfolios as a consequence of their distinctive missions (Carayannis & von Zedtwitz, 2005).

As an example of an incubator promoted by public institutions, we study THEA. Established by a partnership between the Athens Chamber of Commerce and Industry, the Municipality of Athens, and the Prefecture of Attica (region where Athens is located), THEA started its operation in 2014 with a mission to assist entrepreneurs in several phases of development ranging from business idea to operating companies. Teams are selected in cohorts and, at the time of research, 59 out of 104 company projects had graduated. Heavily depending on external funding, THEA was seeking a different revenue model to continue its operation after EU funding run out, and the Chamber succeeded to motivate member companies to support the continuation of its operation.

All other cases are examples of BIs managed by private sector entities, with the exception of Orange Grove that is managed by the Dutch Embassy, albeit with important differences:

1) The Egg (enter – grow – go) is a corporate social responsibility initiative of Eurobank, one of Greece’s major banks, that covers though its CSR budget the operation expense after the completion of the EU funding. Promoted jointly with Corallia (see 2.2), it
incubates company in set cohorts since 2013. So far, 68 companies have been through the program in a total of three cohorts.

2) IQbility is a privately owned BIs operating also as an angel investor for its tenants. Owned and operated by Quest holdings, a leading national IT group in the country, it invested so far in 7 companies since 2012.

3) EkinisiLab operates an incubator centered on an educational program sponsored by the Hellenic Federation of Enterprises (SEV). At the time of research, the incubator had suspended operation following the completion of EU funding, after incubating 150 entrepreneurs in cohorts since 2012.

4) Orange Grove is an initiative of the Dutch Embassy in Athens in partnership with Dutch multinational companies operating in Greece. Designed as a co-working space, the program has incubated 150 entrepreneurs in 110 teams.

Table 2 summarizes the main attributes of the selected cases.

++ Table 2 ABOUT HERE ++

3.2. Data collection and methods

The main information source is interviews with key informants in each BI. We have also used information available in the public domain (website, news, press releases, etc) as means to triangulate some data (Yin, 2008). We collected data from five relatively new BIs located in Athens, Greece and that aspired to become a prominent part of the local emerging entrepreneurial ecosystem, that already included research parks in the vicinity of greater Athens, a number of VCs, a number of clusters with connections to the research community and good
access to the infrastructure that dispensed EU funds, along with the headquarters of the country’s key financial institutions.

The interviews were designed after having already acquired a quite extensive knowledge of the landscape following the completion of two rounds of the Research and Innovation prize by SEV and Eurobank, and numerous on site visits to SPs or BIs that involved discussions with the key representatives of these institutions and their liaison offices, premises of innovative companies of all sizes and of many different sectors as well as discussions with officers of companies that invest in R&D. In addition, previous contact had been made with officers of most of the incubators before the structure of the interviews was designed. Some of the insights gained during this process are also supporting previous work by the authors.

We were particularly interested in two broad aspects of each BI. First, we wanted to know in more details how each incubator operates by looking at three aspects:

1) Selection and exit policies (Aerts, Matthyssens, & Vandenbempt, 2007; Bergek & Norrman, 2008). Screening criteria are determinant in shaping the tenant population within each incubator which impacts which services are delivered (Ratinho & Henriques, 2010) as well as which ones are more valued by tenants (McAdam & McAdam, 2008).

2) Available service portfolio alongside three dimension: infrastructure, business support, and networks access (Bruneel et al., 2012; Von Zedtwitz & Grimaldi, 2006); and

3) Service delivery mode (Bruneel et al., 2012; Clarysse et al., 2005) (on-demand, incidental, compulsory).

Second, we wanted to explore how connected each incubator is within the ecosystem by looking at:
1) Access to finance. Previous studies included access to finance as part of the service portfolio conceptualizing the incubator either as an active investor (Carayannis & von Zedtwitz, 2005) or as having a broker function legitimizing incubated tenants next to potential investors (Bruneel et al., 2012). We allow for both possibilities and ask incubators what is their role in tenants’ access to financial capital. We have decided to discuss access to finance separately given the growing number of incubation models that fund directly incubated companies. For instance, business accelerators combine some incubation features (office space, mentoring) with active funding (previously the hallmark of business angel or VCs) to provide finite structured assistance programs (Cohen, 2013; Pauwels, Clarysse, Wright, & Van Hove, 2015). In addition, the very challenging terms of access to finance in Greece, especially for small companies without tangible collateral, elevates further the importance of this issue for Greek start-ups.

2) Perceived position in the entrepreneurial ecosystem. Based on prior work on the attributes of entrepreneurial ecosystems (Feld, 2012; Isenberg, 2011), we explored incubators’ own perceptions about the function they occupy and how they interact with others institutional or individual actors engaged in supporting entrepreneurship.

3) Environmental context. Although we characterized above the economic and political context, we asked each BI how they perceive the external condition and how do those motivate any strategic response in terms of their operation.

All interviews took place between April and May 2016 ranging from 60 to 120 minutes in total (maximum of two sessions). Interviews were conducted in English and fully transcribed.
4. Results

4.1. Business incubators’ operation

4.1.1. Selection criteria and exit policies

Selection procedures differ substantially in all five cases although we note that they are fairly consistent with each incubators’ mission. We also observe that in all cases there is a concern with weighing the idea perceived potential with the entrepreneurial team’s characteristics. On terms of exit policies, we see that THEA, The Egg and EkinisiLab offered time limited programs. While THEA enforces a limit of 18 months maximum residence in the incubator, The Egg and EkinisiLab offer set programs of 12 and 6 months, respectively, during which entrepreneurs receive a mix of professional training, network contacts, and are encouraged to participate in business idea competitions. Orange Grove does not enforce any particular exit criteria although since opening it reported tenants staying for an average of one year. Exit criteria are not really applicable to IQbility since it operates as an investment fund. Table 3 contains a summary of our results.

++ Table 3 ABOUT HERE ++

THEA seems to put more importance on the entrepreneurial team when selecting their tenants. In their words:

“(…) the promising startups are not the ones that have the most brilliant idea, (…) the most important is the team. Of course, the idea, it has to be (…) innovative. (…) Many startups did fail because they didn't have good communication, or they didn't distribute the roles evenly, or they (had) some kind of conflict. (…) [We] pay highly attention to the way that people react or behave during the interview, and (…) how they express
themselves, their ideas, and how complementary also are their roles, and also if they are coming along. If they are willing to let other people step in in their project, I think also that is important. There is no one-man show. I don't think this would ever succeed.”

The Egg seeks an optimal mix of three aspects in which the entrepreneurial team’s attributes are absent:

“The three issues we evaluate, innovation of content, the profit for the future trends, and viability in the market. I mean, we need something brilliant”.

IQbility uses a complex and detailed selection process that spans many stages from initial idea assessment to due diligence including in some cases efforts to find syndicate investments. This is somehow unsurprisingly given that IQbility is the only case in our sample that makes sizable financial investments in tenant companies. Here’s how the selection process works:

“Usually there are something less than 100 proposals every year. (...) We never accept companies at the idea [stage]; [e]very company should have a working prototype. Some of them may have some first users.” “[T]he [online] questionnaire (...) helps us very quickly [to] do a first screening of the companies. Usually, at that point 50% of the companies are [d]isqualified, if not more.” “After this, (...) we have a Skype call with the rest of the teams (...). If they succeed with that, and we like them, then we go to a third stage [due diligence].” “Due diligence meaning that we try to search for the markets, the competition, to verify the claims that they have in the pitch stake, and all of that stuff. If it still sounds interesting... We also try to contact some advisors that we have, or to meet new advisors.”
EkinisiLab selects purposefully technology-based projects that emerge mainly from academics or researchers.

“[W]e have selection procedures, with specific criteria for each field that has to do with innovation and technology. We have people from the universities that are mainly rating the innovation and the technology and also we're rating the commercialization [potential].”

Finally, Orange Grove targets specifically the younger generation of entrepreneurs (aged under 40) and starts the application process by requesting a business model canvas (Osterwalder, Pigneur, & Clark, 2010), a graphical representation of the venture’s business model.

“[W]e get the application forms and the selection committee sits down, reads the application from the first episode decide who they are going to see in a personal interview.”

4.1.2. Service portfolio and delivery

Prior work on incubation has analyzed BIs’ service portfolio along three aspects: office space, business support, and network access (Bruneel et al., 2012). All the cases in our sample cover all three aspects although there are important differences in delivery and scope. For instance, THEA, The Egg, IQbility, and EkinisiLab make their service portfolio available free of charge after the successful completion of the selection process, which differs greatly as seen in 4.1.1. Orange Grove, conversely, charges for the space, which opens access to the remainder of the service portfolio. Also, at Orange Grove all entrepreneurs attend a mandatory bootcamp before starting to work at the incubator.
All BIs provide office space in open space form, except EkinisiLab. Since their offer is centered on an educational program, EkinisiLab trains entrepreneurs for 6 months in various management tools including business modeling as means to prepare them to pitch ideas to potential investors.

Business support is delivered in all cases in the form of mentoring/coaching, and training such as organized workshops, boot camps, seminars, and access to complementary information. Network access is also consistently provided across all cases in the form of professional services. Important differences were observed in the scope and delivery though.

THEA emphasizes the incidental on-demand business support by the BI management team

“[T]here's an open space philosophy, (...) I never ever close my door (...) [s]o many times, our startups came and knocked my door and said ‘I want to discuss this or that.’”

while strongly relying in their promoters’ network of professional to broker important local, national, and international contacts to tenant companies. In their words:

“Networking (...) it's (our) competitive advantage (...) compared to the other incubators (...) The Athens Chamber of Commerce and Industry has more than 80,000 members, enterprises, within the greater metropolitan area of Athens. The largest companies in Greece are members of the Athens Chamber of Commerce and Industry. Also, we are part of the club of the European Metropolitan Chambers of Commerce across Europe, hundreds of Chambers and Associations, businesses associations across Europe, an international network as well. (Incubatees) have full and free access to that network.”

The Egg provision of support is mandatory at least in the first stages of the program.
The initial “[b]usiness training, a 3-month intensive, very intensive bootcamp [covering] IT issues, how to pitch, accounting issues (...)” “Each mentor [is] connected with each company in the same industry. I mean, the mentors are coming from the same industry as the company, to understand better the business plan (...) [and] maybe to make some connections with the market, with customers, et cetera.”

During the remainder time at the incubator, tenant companies can also enjoy business support on-demand and through organized activities as well as continued brokered network access.

“[W]e have seminars, bootcamps, [and] mentoring. One stop shop services are all those services that the company needs in house, legal, accounting, marketing, marketing communications, branding, IT support, human resources, HR.”

IQbility does not deliver business support and network access at the incubator in the traditional sense. However, all these functions are covered from the outset in the various stages of the selection process and due diligence. The incubator management team curates the contacts between potential tenant with mentors seeking to cultivate a lasting relationship.

“Usually, during the first meetings, we are involved in it, because we like to know what happens, how the chemistry is, if the job is done.”

Upon acceptance to the incubators, IQbility monitors frequently each tenants to ensure development and well functioning the external business support delivery.

“We interact with the company in the beginning of every week, or every two weeks, or (...) sometimes every day.”
A defining feature of EkinisiLab is the educational program directed mostly at faculty and researchers which covers all the business support aspect of their service portfolio. In their words:

“We have a coach that is working with the specific team with them, the research team. This is the first two months. The second two months we are designing the business model and we're making the market analysis. We are focusing on the 2-3 markets that we think are the markets that they should focus on in the beginning. We are making market analyses. The third two months we are formulating the business plan and also pitching presentations “

Orange Grove’s service portfolio is based on an initial bootcamp and business pitch competitions. Despite operating as a co-working space, business support in the form of mentoring is mandatory.

“[T]he boot camp is usually three, four days long from our knowledge partners: (...) Athens University of Economics and [the] University of Amsterdam.”

“Afterwards (...) we gather all the new startups (..) all the mentors that are available at this specific moment in time and (...) do a speed dating. Meet and greet we call it. [The] startup give us its top three mentors, and mentors gives us [his/her] top three startups. We match, this is one procedure that we follow.“

4.2. Access to finance, ecosystem position and external environment

THEA does not finance directly any tenants aside from the provision of free office space. Also, tenants do not enjoy any specific brokerage to investors aside from incidental information.
“Every three or four months, we inform our startups and let them know there will be a new call on the business angels network. They will be gathered together and they want to hear new ideas, new startups apply(ing). (...) They have the chance to present in front of the business angels and who is interested (...) It's a private procedure.”

The Egg organizes competition to award the best teams in the incubator in the first trimester of the program. While this financial support is not granted across all tenants companies, some of the amounts awarded qualify as sizable seed capital in Greece.

“[Each] December, they [winning teams are] awarded (...) 3000 euros, 5000 euros, 7000 euros. A small amount (...). [W]e have a pitching competition [in which three teams are awarded] $55,000, (...) $35,000 and (...) $10,000. It’s a good amount.”

Further, towards the end of the incubation program The Egg organizes

“a roundtable according to industries, different industries (...), venture capitalists, business scientists and private banking customers that would like to hear about energy, about gaming, about tourism. According to the industry, maybe we are doing a PR network connection, but they don’t guarantee that they will invest, of course.”

Unlike the other cases in our sample, IQbility invests directly in companies.

“Depending on the amount we can invest, usually at this stage we invest 30, 40, 50k. It's something like 6%, 7%, it can be 5% in some cases, it can be 8%. Usually, it's not 10%.”

EkinisiLab attempts to put their tenants in contact with investors as part of their educational program.
“We are trying to have presentations for investors but also to companies because many of our startups as I told you are at the beginning of their commercialization process so we have a lot of cases that they need corporations with a company in order to have a pilot phase.”

An important result here pertains the articulation of support between EkinisiLab and IQbility. Ekkinisi Lab also has channeled a number of start-ups towards IQbility, thus providing indirectly a link with a solid angel community\(^1\). This suggests synergies in providing technology based entrepreneurs a sequence of business assistance each focused on a specific dimension of support (training vs finance) and stage of development (idea development vs angel financing).

“We are working with [IQbility] and two of our startups have been funded from them. I think this is what I told you before, some from the ecosystem are doing a very good job and with them, we are collaborating.“

“We're trying to select from the ecosystem the parts that are doing their job well, and they are supplementary, and from which, we can really create a strong ecosystem. When it's not a structured ecosystem, there are a lot that are doing a lot of things and a lot of the same things. We are trying to from all these ecosystem, collaborate with some of them that we think we can have a very strong change of all the parts as needed.”

Similarly to The Egg, Orange Grove hosts periodical business pitch competitions in which tenants are awarded substantial seed capital.

---

\(^1\) The chairman of Quest Group, which runs IQbility, is also the President of SEV, the Hellenic Federation of Enterprises, which managed EkinisiLab.
“[W]e offer a competition where we give 50,000 Euros and 10,000 Euros four times a year to two of our best teams.”

Finally, we wanted to understand how each incubator perceived its foundation and operation in the harsh economic environment. Most of our respondents focused on the latest critical episode – the bankrun and capital controls of July 2015. As all these new incubators were established after the 2010 bailout, we can infer that the economic climate influences their operation, and it might as well have inspired their establishment, while not having elicited a noteworthy strategic response. For instance, Orange Grove was founded with a clear mission of combating the brain drain phenomenon in the country as a result of the economic crisis. The subsequent worsening of the economic climate did not motivate them to alter their operation.

IQbility further notes that the size of the angel investments they make in companies are not large in the context of the whole Greek economy thus perceiving the economic climate as being unrelated to their activities.

“[T]he amount of money invested in startups, at the end of the day, is not that much. I wouldn't say that the financial crisis has a real severe impact on that, until at least now, because the financial crisis goes on.”

5. Discussion

Taken together, our results show a number of emerging models of BIs that combine known existing models’ features. We see that space provision, angel investments, and network access are curated and often mandatory to tenants companies. Nevertheless, we still observed a number of key areas in which differences among the BIs shape their unique aspects.
Selection criteria range from more competitive (e.g. The Egg) or restricted, as is the case of IQbility essentially works as an angel investor co-locating all the companies they invest in under one roof, to relatively simple (e.g. THEA, EkinisLab) who look essentially at the team’s potential.

In terms of the service portfolio and delivery, we observe a significant difference in content and pace, with some BIs allowing the tenant companies to advance at a more flexible pace during the 18 months tenancy (e.g. THEA) while others have a structured program that tenants must follow (e.g. The Egg and EkinisiLab). Specifically, whilst mentoring by experienced entrepreneurs is integral to all incubators, it is provided without much intervention from the incubator. It is openly, and realistically, admitted that the incubator may not always know of the content of the interactions between the mentor and the tenant (e.g. THEA). The case of IQbility stands out in the sense that the process of incubation depends less on outside mentors, but involves from the start potential angels that are already experienced entrepreneurs. In addition, their focus ensures that the affiliated group’s experience regarding the practical aspects of doing business in Greece, that can often be tricky to the uninitiated, is readily available and can be tapped into. Orange Grove offers a comparative advantage in the sense that it directly connects with multinational companies and links up with the ecosystems in the Netherlands. Also, a direct aim to link up with investors and an infrastructure to motivate the investors in a more structured or systematic way seems to be present, from the initial start, in some cases. For example, this is the case in THEA, which is now completed with the Angels Network the Athens Chamber of Commerce grooms, and IQbility. The Egg is trying to bring investors and companies together through an annual cohort election process that has the ability to tap into the corporate customer base of the Bank that includes the majority of Greek important companies. These aspects are in line with the
need to establish incubators in a setting that also leads to an investor community as an integral part of the broader community that supports startups (Cohen & Hochberg, 2014; Hathaway, 2016).

6. Conclusion and Implications

We set out to research five new BIs in Greece, a small Southeastern European economy. Founded in an nascent entrepreneurial ecosystem emerged amongst the worst economic crisis in the country’s modern history, all BI operate in a relatively unique way delivering support to startups and aspiring entrepreneurs. While this may lower competition amongst BI, it also exposes the relative fragmentation of the ecosystem. Approximately 500 entrepreneurs were supported by one of BIs in our sample and only but a few graduated from one to the other.

Our contribution has important implications to the body of literature on BIs. We observe that contrary to prior conceptualizations, the BI models found in our sample are blurring the boundaries between angel investors, property-based incubation, business acceleration, and entrepreneurial education. Multiple intriguing combinations were observed: co-location of all angel investments combined with periodical compulsory monitoring; co-working space provision conditional to mentoring and frequent pitch competitions; educational program with curated interactions with investors. We believe this has also has profound implications entrepreneurship educators, particularly those focused on training practicing entrepreneurs, and suggests important questions for future research in this field. For instance, is entrepreneurial training more effective when embedded with real funding exercises? Are entrepreneurs more likely to succeed when going through structured programs of training combined with mandated business assistance?

What are the effects of entrepreneurial training for co-located entrepreneurs?
References


Table 1 Attribute of a entrepreneurial ecosystem (Feld, 2012, pp. 185–187)

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>Strong group of entrepreneurs who are visible, accessible and committed to the region being a great place to start and grow a company</td>
</tr>
<tr>
<td>Intermediaries</td>
<td>Many well-respected mentors, advisor, accelerators and incubators</td>
</tr>
<tr>
<td>Network density</td>
<td>Deep, well-connected community of start-ups and entrepreneurs along with engaged and visible investors, advisors, mentors and supporters.</td>
</tr>
<tr>
<td>Government</td>
<td>Strong government support for and understanding of start-ups to economic growth. Additionally, supportive policies should be in place covering economic development, tax and investment vehicles</td>
</tr>
<tr>
<td>Talent</td>
<td>Broad, deep talent pool for all levels of employees in all sectors and areas of expertise. Universities are an excellent resource for start-up talent and should be well connected to community</td>
</tr>
<tr>
<td>Support services</td>
<td>Professional services (legal, accounting, real estate, insurance and consulting) are integrated, accessible, effective and appropriately priced</td>
</tr>
<tr>
<td>Engagement</td>
<td>Large number of events for entrepreneurs and community to connect, with highly visible and authentic participants</td>
</tr>
<tr>
<td>Companies</td>
<td>Large companies that are the anchor of a city should create specific departments and programmes to encourage cooperation with high-growth start-ups</td>
</tr>
<tr>
<td>Capital</td>
<td>Strong, dense and supportive community of venture capitalists, angels, seed investors and other forms of financing</td>
</tr>
</tbody>
</table>

Yongseok Jang

Extended Abstract

Introduction

The purpose of this paper is to establish a conceptual ground for theoretical development on the talent misuse in the context of SME. Within the current study, three objectives were established to achieve a major goal, which was to establish a conceptual ground for theoretical development on the talent misuse within the context of SME. The three objectives for the goal were (1) to explore and build a list of unethical treatment practiced on young talents to highlight special attributes associated within the context of SME; (2) to establish new framework for the special context or refining the existing framework on employee mistreatment; and (3) to call for further discussion of the unethical practice on the young talents within the context of SME.

Empirical Approach: Explorative Study

Sampling Strategy and Data Preparation

To achieve the purpose of this study, it is necessary to first build a list of cases in which talent mistreatment is currently taking place. The data collection process involved multiple tasks of field research using diverse sources including practitioners, civic organizations for labor issues, labor lawyers, labor unions, and/or government organizations. In the first stage, existing cases went through a preliminary review for me to develop a rough idea of the organizations and persons involved in the issue and build a list of contacts. After the preliminary review, I developed a list of potential organizations we could solicit. In the second stage, we contacted
such organizations as news media companies, civic organizations, law offices and government organizations.

The goal of the second stage was to develop a preliminary list of talent misuse. The process first focused on the cases of famous unpaid internships in the United States. 34 cases were collected from numerous sources, such as news reporters, law offices and bloggers. Then, a list of 30 cases reported from South Korea was added to the pool. In this case, Presidential Committee on Young Generation of South Korea provided most of the cases. Primarily, I took the approach of text analysis, instead of conducting interviews or survey research.

The Findings: Data Exploration

Frequency analysis

First, I noted patterns of the work characteristics that were specified in interviews as best characterizing the work they involved. When selecting up to three descriptors, the most frequently appeared by type of work were as follows, for both SMEs and Large firms:

- **SMEs**: Task Variety (22), Work Conditions (15), Physical Demand (13);
- **Large firms**: Task Variety (25), Equipment Use (24), Feedback (21), Job complexity (21).

An effort was made to get a sense of the most frequent mistreating behavior by type of firms. The result is as below:

- **SMEs**: Below Minimum wage (14), Menial tasks (12), Excessive work without compensation (12);
- **Large firms:** Below Minimum wage (17), Menial tasks (15), Excessive work without compensation (13)

Findings of this preliminary study demonstrate striking similarities in terms of mistreating behavior, with moderate differences in terms where the behavior has emerged. Young talents in either context, SMEs and large firms both complained about their below minimum wage rates. They both were not satisfied because they did not receive a chance to learn from serious professional tasks; rather they had to handle menial tasks. Most of them seem to have worked over time but did not receive proper compensation.

Differences included that the young talents in large firms were involved in the use of equipment. Feedback was given to their performance, which lead to complication. Young talents in SME context seem to struggle from relatively poor workplace environments, mostly due to a high level of physical demand.

**Cluster analysis**

Second, to develop more systematic insight into different kinds of mistreating behaviors clustered together, a cluster analysis was conducted using the inventory of observations. The three clusters are then characterized by the three mistreating behaviors and the work characteristics, appearing most in the clusters.

The cluster analysis shows nearly even distribution of SMEs and large firms over two clusters (cluster 1 and 3), but dropped far greater large firms onto cluster 2, which is differentiated by the presence of ‘menial tasks’ from other two clusters. The relations of cluster in terms of work design attributes are graphically presented in the figure 1. Recall that cluster 2 had the largest
number of large firms, being characterized as ‘job complexity’, it seems that young talents may be more exposed to a situation that they perform tasks with complexity.

**Conclusion**

For the first goal, an attempt was made to develop a list of mistreating behavior by collecting and analyzing cases of ethical disputes. Analyses on 64 cases of talent mistreatment, namely ‘passion pay’ here, was conducted to present a conceptual ground for further investigation. The analysis observed seven different mistreating behaviors under four categories of mistreating practices. Then, for the second objective, this study has proposed an integrative approach for assessing these ethical elements. The ethical implications were discussed based on an assessment conducted using three theories of ethics. Finally, a cluster analysis further shows the emergence of three groups based on the mistreating behaviors. In addition, the cluster analysis implies that talent mistreatment may be rooted in job design. The size of the organization may provide some contextual reason, but it was unclear to what extent this quality interacts with job design.
Figure 1: Shared and Unique Work Design Attributes by Clusters
The Gig economy, the Allee effect, and the long tail liability of newness
Andrea Zavakos and Jay Janney

Abstract

Does the concept of a liability of newness change with the rise of the sharing economy? The last major societal shift moved from wages to salary, and the sharing, or gig economy involves one time payments to independent contractors. In this paper we argue Stinchombe’s (1965) work still holds, but two new liabilities emerge—a long tail liability (for independent contractors), and the Allee liability for platform providers). We examine the economic shifts emerging, and how they will affect both independent contractors and internet platform providers, such as Uber. Two key insights emerge: Independent contractors will face diminished liability of newness, but struggle to earn large profits. Platform developers may welcome competition as it helps grow new industries more quickly to a point where profit viability occurs. Firms who launch solo into new industries will grow more slowly than will those who enjoy some competition.

Introduction:

Although not considered a classic entrepreneurship text, Arthur Stinchcombe’s Social structure and Organizations (1965) identified an interesting phenomena how the post-war years yielded profound environmental changes (1965), that in turn led to a change in compensation models. Whereas the 1950s saw the rise of the collegiate model (from wages to salaries), the gig economy conveys the rise of freelance wages, a compensation shift as substantial as was the collegiate model compensation shift before it. The “long-tail liability of newness” affects contractors who adopt a given platform, while the “Allee liability of newness” affects the creators of those platforms. The gig economy may be viewed as a subset of the alternative employment arrangement BLS categorization, as well as the larger literature on fragmented industries (e.g. Porter, 1979, Dess, 1987), focusing specifically on independent contractors employ technological platforms.

As with previous environmental shifts, new firms continue to face some level of concern from a liability of newness issue (Stinchcombe, 1965). We suggest that the rise of the sharing economy may reduce the liability of newness for contractors, but may create for them a new liability, which we refer to as the long tail liability of newness. We believe today that a primary change in the independent contractor portion of the economy lies in the increase in the proportion of overall workers moving from salaries to transactional fees.

Defining the gig economy and how the internet affects economic factors of production

The internet itself is not all that revolutionary (Porter, 2001). Where it represents a major societal change is in the network itself. The internet simply makes communicating and transacting across larger numbers of people easier, even if they are geographically dispersed (Kahn, 1994). In turn this makes it easier for people to remain connected, and a portion of their social identity is now digital. Many internet industries are simply re-creations of earlier industries, albeit fitted onto the internet, often in ways that diminish existing industries. The rise of platform technologies has created new intermediaries.
The gig economy comprise a growing portion of what the Bureau of Labor Statistics considers alternative employment arrangements. This category also includes free-lance workers, contingent workers, on-call workers, temporary help agency workers, and workers employed by contract firms. Katz and Krueger (2016) indicate this category has grown from 10.1% to 15.8% in the past ten years. Because of the relatively tighter coordination between the platform and independent contractors, participants in the gig economy today may be viewed as a hybrid organization form (Williams, Horodnic, & Windebank, 2015), as an intermediary of both markets and hierarchies.

The economic factors of production’s influence on the gig economy.

We believe that the rise of the internet platform gig economy re-allocates economic factors of production in new ways. We discuss each of the four economic factors of production in greater detail, below. As noted above, eBay by and large employs the same industry and business model as the flea market/garage sale/consignment shop industries. But by investing heavily in developing an on-line platform (as well as creating market awareness for buyers), eBay has re-allocated resources away from physical sites, where land was a critical resource for the industry. It had to be close to large populations, yet located somewhere cheap, with easy access. Ebay must operate a physical “server farm,” but otherwise, land has been largely de-emphasized as a factor of production. Similarly, capital has been re-allocated, because listing fees are much less than classified ads from newspapers.

Prior to the internet, flea market sellers had to acquire a certain level of business activity in order to remain viable. This specialized knowledge created a barrier to entry, making it more difficult for new entrants. Because classified ads charged “by the inch,” selling one or two items of low value was not cost effective. With the rise of eBay, sellers can research prices for free by simply observing existing other sales. Individuals can slowly develop their own specialized knowledge, and thus remain viable with little risk.

Finally, the entrepreneur changes the economic factor of production as well. Prior to the internet many sellers were familiar with their industry. People often learned from working within the industry, then went out on their own (Lippmann, 2008). With the emergence of internet platforms, the need for specialized industry knowledge has been reduced, resulting in lower barriers to entry (Porter, 2001). In turn more entrants are “me too”.

In summary, entrepreneurial firms employing the internet have opened up additional opportunities for independent contractors. It is much easier and cheaper to operate online today than it was 15 years ago (Collewaert & Manigart, 2016). They find that for venture investors, it costs much less to invest in most start-ups today than in the past.

How the gig economy reduces concerns arising from Stinchcombe’s liability of newness

The rise of the internet directly impacts all four elements of a liability of newness, thus reducing the risk of failure for new entrants. The net effect of the of the internet platforms is to reduce the risk of organizational mortality for the independent contractors who affiliate with a given platform. Because of the rise of platforms, many practices are standardized or
commoditized, lessening the need for new entrants to master them. Where Stinchcombe saw a risk for firms requiring new practices under conditions of uncertainty, platforms reduce this risk dramatically. As for the next concern, firms today still need to work out bugs in their offerings, but platforms are more stable than what independent contractors would create for transacting their own products, reducing vulnerability. Internet platforms also address his third and fourth concerns. As platforms become established, they create a brand identity, and new entrants benefit by affiliating with the reputable platform name (Stuart, Hoang, and Hybels, 1999). While an individual might not be trusted because of a lack of reputation, the platform’s reputation ameliorates that concern to some degree for new entrants. Finally, because new entrants lack stability with their transaction partners, it is hard to persuade buyers to change from suppliers where they have enjoyed successful repeated transactions to an unknown commodity. Many platforms provide tactics which ameliorate this concern.

In addition, as the platform creates the marketplace infrastructure, costs for new entrants are substantially less today than they were 30 years. Because the network has incentive to protect its reputation (Stuart et al., 1999), most engage in requisite tactics which promote commerce, directly benefitting the new entrant. Platform producers possess incentive for their affiliates to succeed, and create processes and tactics to encourage their success.

**Mortality and profit tradeoffs: The long tail liability of newness in the gig economy**

There appears to be a trade-off as the independent contractors may be less likely to fail, but at the same they may find their ability to profit diminished. We identify this as the long tail liability of newness, premised concepts popularized by Chris Anderson (2006). For developers of internet platforms, the long tail permits them to earn profits from smaller and smaller niches that reside farther into the tails. Technological platforms reduce both transaction costs and barriers to entry. We provide five explanations for this is so, below.

First, because barriers of entry become much lower, more entrants enter a given market. This may increase the size of specific market niches; but potential market share is split among increasing numbers of market participants, driving down potential revenues. As a second concern, as the number of independent contractors increases, search costs actually increase, as buyers won’t wade through thousands of similar listings to find the ideal supplier. Internet platforms stimulate a buyer’s bounded rationality (March, 1978), resulting in their curtailing searches to just the first page of results or so. Being at the top of the search list is the new “best location.” Third, internet platforms enable competitive rivals to monitor their peers. As the number of independent contractors for any good or service increases, concerns of imitation increase drastically. Independent contractors can monitor what is selling well for peers, and adjust their marketing accordingly.

Fourth, the importance of good customer experiences is even more important. Inertia may create a modest switching cost provided buyers are reasonably happy. But if competitors lower prices significantly, finding another supplier is very easy—by design. Finally, while gig economy participants are independent contractors, the platforms may restrict how they operate, limiting their ability to innovate. Platforms which benefit from an increase in the number of users possess incentive to reduce prices that its independent contractors may charge in order to stimulate demand. Alternatively, they may change terms of service in ways that make it less
attractive for independent contractors to operate. Taken together, these forces on the platform-driven gig economy are more likely to lead to a reduction in the average profits for any given independent contractor. Independent contractors may survive, but not as profitably as they would like. In the next section we address potential liabilities for developers of intermediary platforms. They face a different set of concerns.

The Allee liability of newness for Platform developers.

At the time of this writing, Industry leaders in many internet platforms launched after more innovate firms: Uber after Sidecar, Airbnb after VRBO.com, or Icraft and Zibbet after Etsy. We suggest that internet platforms are susceptible to another liability, which we describe as an Allee liability of newness. The Allee effect is named for Warder Clyde Allee, an ecologist who observed that that goldfish grow larger when there is a greater population of goldfish in a given aquarium (1931). The Allee effect suggests that populations increase due to increases in population density. The Allee liability is in many ways an inverse from organizational concerns of density dependence. That is, where some environments grow less munificent due to overpopulation (Singh & Lumsden, 1990) others are less munificent because of too few members (Courchamp, Clutton-Brock & Grenfell, 1999). Because of too few firms, those in the industry are typically characterized by pre-legitimacy concerns (Arthur, 2003).

In addition, there is less information about what practices will work, and which will produce stability. A dearth of competitors may increase search costs (Lyons & Natusch, 2013). Demand may be diminished over concerns for the stability of the suppliers. In short, when there are too few firms to establish the legitimacy of an emergent industry, mortality concerns may emerge, consistent with observations found in species studies (Courchamp, et al., 1999). Because these impact the first entrants more seriously, the Allee effect can be considered a complement to the first mover dis-advantage literature (Lieberman and Montgomery, 1988). An Allee effect suggests that across all firms of an industry niche, there will be higher growth in user adoptions if there are multiple platforms, relative to just one platform. The higher growth permits firms to reach scale (and profitability) more easily. Multiple platforms can lead to rapid expansion in acceptance for a time, which alleviates some competitive pressure, as there are ample resources for all firms in the short term (Hannan, 1998). For many platform firms it took too long for the market to grow to sufficient scale. Platforms which start too soon may struggle to grow to a sufficient size once other competitors enter into the marketplace. Other competitors will not be burdened by having been seen as struggling, and will appear fresh, in a industry niche still nascent enough to reward later movers.

Conclusions and Implications for Entrepreneurship Education

A key question arising from the gig economy asks whether independent contractors using technological platforms should be considered entrepreneurs or not. Does the rise of platforms and the gig economy change our understanding of entrepreneurship? While new ventures which create intermediary platforms are reasonably considered entrepreneurial, should the affiliation of independent contractors be considered entrepreneurial as well?
This is not an idle question. While entrepreneurship is generally seen as a societal benefit, the rise of Uber, AirBnB and others have been fought by numerous societal stakeholders. Lawsuits about the well-being of independent contractors are numerous: will this change how society views entrepreneurship? We as faculty encourage our students to consider entrepreneurship: should we encourage them to consider being independent contractors? Can students learn entrepreneurial thinking from working for platforms such as Uber, or will it limit them.

A careful reading of Stinchcombe (1965) suggests that the platform creators are the innovators, who recruit, train, and motivate the independent contractors (pp 161). Evoking a Weberian perspective, it can be argued that these innovators need a formally free workforce in order for their being able to innovate. The platform cannot exist without the individual independent contractors who have a strong affiliation with the organization. This hybrid approach may require fine-tuning our understanding of entrepreneurial ventures, so that we may better understand its implications. One concern is that the long tail liability of newness may discourage innovative behavior if individuals feel they cannot adequately monetize their own contributions.

Selected Bibliography


EMPRENDE LAB: A STUDENT ENTREPRENEURSHIP DEVELOPMENT PROGRAM FOR Future Business Leaders

Eduardo R. Díaz
CETYS Universidad
eduardo.diaz@cetys.mx

Eduardo Durazo-Watanabe
CETYS Universidad
eduardo.durazo@cetys.mx

Heberto X. Peterson R.
CETYS Universidad
heberto.peterson@cetys.mx
ABSTRACT

Institutions of higher education are trying to promote entrepreneurship development among their students through curricular and co-curricular programs. The success of these programs is often difficult to assess because the impact of the student’s entrepreneurial efforts may only be realized years after graduation. Fortunately, some of the competencies often associated with entrepreneurs can be evaluated in students during their undergraduate studies. Faculty at CETYS Universidad have assessed the impact of their entrepreneurship development co-curricular program, Emprende-Lab, by measuring transformational leadership self-efficacy with the first cohort of students involved in said program. The present study was developed to compare Student Leadership Practices Inventory (S-LPI) mean scores among 58 junior year students enrolled in the School of Business and Administration at CETYS Universidad. Statistically significant differences were found between students in the Emprende-Lab cohort and students who are not involved with the program. Statistically significant differences were also found with students involved with other leadership or entrepreneurship development programs (not Emprende-Lab), and between males and females. These findings are encouraging for faculty members involved with entrepreneurship development programs and students who participate in this kind of leadership training. The findings also support the claims that female students are more transformational than their male colleagues.

Key words: entrepreneurs, leadership, students, education
Entrepreneurship has been linked to important societal concerns like job creation and prosperity (Bradley & Klein, 2016). In Mexico, particularly in the state of Baja California, government officials have addressed the problems associated with economic recession through programs designed to promote entrepreneurial activities (Mungaray Lagarda, Osuna Millán, Ramírez Urquidy, Ramírez Angulo & Escamilla Díaz, 2015). However, Latin American countries continue to face the challenge of generating better employment opportunities for their citizens to promote the growth of the middle class and achieve superior levels of development (Ibarra Mares & Gómez, 2007).

Institutions of higher education are indirectly associated with initiatives aimed at promoting economic development in their countries (Rosado & Castaño Duque, 2015). Entrepreneurship education, specifically, has yielded favorable results in academic programs designed to motivate and prepare students to embark on entrepreneurial ventures (Rauch & Hulsink, 2015). Moreover, entrepreneurs who have received the benefit of obtaining a degree from an institution of higher education are more likely to create and operate businesses in the formal sector, and contribute positively to the economic development of their communities (Gielnik et al. 2015).

In Mexico, 10.8% of entrepreneurs have completed an undergraduate degree while less than one percent hold a graduate degree (Global Entrepreneurship Monitor, 2016). These numbers are a reflection of the fact that individuals who hold college degrees in Mexico are still a minority. However, higher levels of education seem to correlate with ownership of business
that remain in operation after three and a half years in Mexico (Global Entrepreneurship Monitor, 2016).

The relatively recent surge in courses and programs on entrepreneurship have contributed to increases in student entrepreneurial activities (Marchand, Hermens & Sood, 2016), but while colleges and universities advertise their efforts to develop student entrepreneurs, educational administrators have not been able to clearly articulate the learning needs of their students (Peterson & Peterson, 2012). Moreover, properly assessing the effectiveness of entrepreneurship education represents a major challenge to educators given the fact that a student’s entrepreneurial success may be realized years after graduation (Duval-Couetil, Gotch & Yi, 2014).

Lyons, Lynn, and Bhaird (2015) recognized the need to appropriately measure the effectiveness of entrepreneurship education and noted that measures of self-efficacy can yield adequate data on the matter. Educators working with young students have found that increasing self-efficacy among their students has positive effects on entrepreneurship development (Studdard, Dawson & Jackson, 2013).

Fincham, Roomaney and Kagee (2015, p. 511) defined self-efficacy as “the individual’s sense of competence in performing tasks and achieving goals.” In the present study, the focus was on student transformational leadership self-efficacy, which was measured through the S-LPI. The assumption is that higher levels of transformational leadership self-efficacy can yield superior entrepreneur performance.

**Justification of the Study.**

Faculty members from the School of Business and Administration at CETYS Universidad, a regional institution of higher education in Baja California, Mexico, developed an entrepreneurship development, co-curricular program designed for undergraduate students. The
program is called Emprende-Lab. A detailed description of the program will be provided in the next section. One of the challenges encountered by the faculty members behind the program was finding proper ways to assess the effectiveness of Emprende-Lab.

For this reason, the present study was focused on partially assessing the effectiveness of the Emprende-Lab program. The focus is on one particular aspect of entrepreneurial education: transformational leadership self-efficacy. The underlying assumption is that enhancing students’ sense of leadership identity through self-efficacy and awareness directly affects the process of entrepreneurship development of learners (Bagheri & Lope Pihie, 2013).

Furthermore, the relationship between entrepreneurship development and leadership self-efficacy continues to be a crucial item on the research agenda (Jain & Ali, 2013). Through the use of the Student Leadership Practices Inventory (S-LPI), the transformational leadership behaviors of students can be assessed (Posner, 2012) to determine transformational leadership self-efficacy, and lead to the development of actionable information that faculty members can use to inform curricular and co-curricular changes.

The S-LPI allows researchers and educational leaders to evaluate several key constructs of student leadership. The dependent variables for the present study were each of the five constructs measured through the S-LPI (model the way, inspire a shared vision, challenge the process, enable others to act, encourage the heart) (Posner, 2012). The independent variables for the study were student participation in the Emprede-Lab program, student participation in other leadership or entrepreneurship development programs, and the gender of the participants.

The purpose of the study was to compare S-LPI mean scores among junior years students to determine whether statistically significant differences exist among junior year students enrolled in the School of Business and Administration at CETYS Universidad based on the
variables just described. A total of 58 students participated in the study. The results represent measures of transformational leadership self-efficacy, given the fact that the survey data were gathered through self-reports using a prominent transformational leadership instrument, the S-LPI.

This is a timely and relevant study for students and educators in Mexico. The Global Entrepreneurship Monitor reported that Mexico ranked 46 out of 60 countries in terms of the percentage of the 18 – 64 population who believe that entrepreneurship is a good career choice (Kelley, Singer & Herrington, 2016). It is expected that the success of Emprende-Lab and similar programs in other educational institutions will serve to improve this ranking in the future.

**CETYS and Emprende-Lab.**

CETYS University is an educational institution with a mission to develop well-rounded individuals with the moral and intellectual capacity to contribute to the economic, cultural, and social development of Mexico. Its educational model is designed to strengthen the individual and his or her notion of being human through a set of institution-wide ideas, initiatives, and actions. The vision of CETYS University for the year 2020 paints a clear picture of the direction it has taken. By the year 2020, CETYS will be known throughout Latin America for its superior perforce in entrepreneurship education (CETYS Universidad, 2016).

As part of its educational model, CETYS developed five guiding forces known as Differentiating Elements of CETYS University Education (EDECs, using the acronym in Spanish) (CETYS Universidad, 2016). These EDECs are used to operationalize actions geared toward the development of citizens who are capable of creating high impact life projects that positively affect their social environments. These EDECs are: Information Literacy, Culture of Entrepreneurship and Innovation, Internationalization, Sustainability, Connection and Social
Responsibility (CETYS Universidad, 2016). The second EDEC, Culture of Entrepreneurship and Innovation, indicates that faculty and staff at CETYS University are expected to help their students develop their creative capacity and entrepreneurial spirits.

In this context and with the purpose of strengthening the connection between the curricula and co-curricular activities aimed at promoting entrepreneurship throughout the institution, a team of individuals in the School of Business and Administration and the Tijuana campus Business Incubator developed Emprende-Lab, a program designed to identify and develop the entrepreneurial potential of undergraduate students interested in the addressing the challenges implicit in becoming entrepreneurs. The objective is to motivate these students to learn about new business models that they can experiment with and develop. This would prepare them to become leaders among members of the entrepreneurship community in the region.

Emprende-Lab takes a hands-on approach to entrepreneurship training and development where students can experiment in real-life situations that challenge them to put into practice their knowledge and skills, some of which they learn in school through the curricula, and find ways to support other entrepreneurs and create value to society. Emprende-Lab is not a regular course, it is a co-curricular program based on student interaction with the entrepreneurship ecosystem in Tijuana.

The first cohort of Emprende-Lab included 20 undergraduate students who were recruited with the help of faculty members and academic advisors. Students who were invited to participate in the program were interviewed by members of the Emprende-Lab team. The goal is to develop a new cohort every year with students entering their sophomore year. Students in the Emprende-Lab cohorts must complete 200 hours of extra-curricular training within an 18 month period. During their senior year, they are required to enroll in the Entrepreneurship Development
course, a capstone course for undergraduate students in the School of Business and Administration. Once they accredit the course, they will help train and develop new cohorts of students in Emprende-Lab.

Emprende-Lab was launched in the fall semester of 2015. Since then, the students in the program participated in the following activities:

- The Innovation and Entrepreneurship seminar organized by the Secretariat of Communication and Transportation. This eight-week course was delivered in the facilities of Punto Mexico Conectado. This organization has the stated goal of providing digital training and educational programs to the community on topics related to information technology, creativity, entrepreneurship, and innovation.

- Various conferences organized by the Secretariat of the Economy and the National Institute of Entrepreneurship. The conferences were held as part of the activities of the 2015 National Entrepreneurship Week.

- Entrepreneurship Development course Expo. This event was organized by CETYS Universidad. It provided students the opportunity to witness some of the business projects developed by their peers, and how other students pitched their projects to judges in the event.

- Trip to Silicon Valley. The activities included as part of the trip were: one course facilitated by the business accelerator TechBA, visits to Google, Intel’s Museum of Technology, and Stanford University. Finally, the students participated in a conference held at San Francisco State University.

Sixteen students form the first cohort in Emprende-Lab responded to the S-LPI along with another group of 42 junior year undergraduate students who are not involved with Emprende-
Lab. The results from the survey helped identify correlations between student leadership, as measured through the five dimension in the S-LPI, and participation in Emprende-Lab. Correlations were also identified between students involved with other, similar, leadership or entrepreneurship development programs, and by gender.

REVIEW OF THE LITERATURE

The present study was designed to measure leadership self-efficacy, through the use of the S-LPI, among junior year students in the School of Business and Administration at CETYS Universidad. The results were expected to inform faculty and staff responsible for the Emprende-Lab program so they may develop a better sense of the effectiveness of that particular educational initiative. In the following paragraphs, the basic assumptions that support the design of the present study will be supported. Specifically, an argument will be provided on the relationship between transformational leadership behaviors and entrepreneur self-efficacy.

Transformational Leadership and Entrepreneur Self-Efficacy.

The students involved in the Emprende-Lab project are charged with fulfilling the expectations set forth by CETYS in terms of EDECs that guide its educational model. Therefore, these student entrepreneurs in training are encouraged to develop their entrepreneurial skills and be able to actively participate in the global, multi-cultural environment that characterizes industries today.

Burns (2010) developed transformational leadership theory in the late 1970s. He argued that effective leadership consisted of transactional behaviors, charisma, and morality. His work was heavily associated with the behaviors of political and social leaders. It was Bass (1985) who contributed to the theory by conducting research in military and organizational settings. He,
along with Bruce Avolio, developed the Multi Factor Leadership Questionnaire (MLQ), which is now the most widely used transformational leadership instrument (Northouse, 2016).

Currently, transformational leadership has been associated with leader behaviors that promote favorable work environments through the support of corporate identity and the reduction of employee burnout (Steffens, Haslam, Kerschreiter, Schuh & van Dick, 2014). Ling, Simsek, Lubatkin, and Veiga (2008) studied 152 firms to measure the relationship between transformational leadership and corporate entrepreneurship. They found that top managers in these firms promote corporate entrepreneurship by engaging in activities that foster group integration, delegation of responsibilities, willingness to accept change, and provide incentives based on merit.

Kang, Solomon, and Choi (2015) studied CEOs and managers of start-up companies across a variety of industries and learned that transformational behaviors were consistent with follower motivation to make greater efforts in support of organizational goals. These results prompted an interest to conduct the present study under transformational leadership theory. Specifically, under the five practices of exemplary leadership model, developed by Kouzes and Posner (2012).

Kouzes and Posner’s (2012) model is a well-known approach to transformational leadership theory, which consists of the model the way, inspire a shared vision, challenge the process, enable others to act, and encourage the heart leadership dimensions. As part of the model, these researchers developed the Leadership Practices Inventory (LPI) to gather survey data from self and observer sources. They later developed the S-LPI (Posner, 2016) to measure student leadership.
One important element in selecting transformational leadership theory as a platform to conduct the present study was its application in international contexts. Puffer and McCarthy (2008) argued that transformational leadership was essential in the implementation of Corporate Social Responsibility (CSR) initiatives, which in turn are critical for the successful deployment of an international business strategy. They noted that companies headquartered in developed countries as well as those that are based in developing countries can be better served if managed under transformational leaders.

Bealer and Bhanugopan (2014) studied the leadership approach of expatriates and local managers working in the Middle East and compared it to that of leaders operating in the United States and Europe. They concluded that Middle Eastern managers were more passive avoidant while American and European managers exhibited more transformational behaviors.

In Iran, Mokhber, Wan Ismail, and Vakilbashi (2015) used the MLQ to gather data from individuals working for 63 out of the top 100 organizations in the country. The results support the notion that transformational leadership is associated with organizational innovation in the setting in which the study was conducted.

In South Korea, survey research conducted with 546 organizational managers and subordinates yielded results that suggest that transformational leadership is associated with higher employee satisfaction and commitment to the organization (Kim, Liden, Kim & Lee, 2015).

Moreover, several studies have been conducted in Taiwan to identify the effect of transformational leadership on organizational performance. Shih, Chiang & Chen (2012) noted that transformational leadership was a key component of a system that organizations in that
country can use to develop a collaborative work environment that is based on trust among co-workers.

Chen and Chen (2009) conducted a study with a sample of 324 individuals associated with the high-tech industry in Taiwan to identify relationships between management approach and innovation. They found that transformational leadership behaviors were desirable in managers responsible for leading team assignments in the high-tech industry in that country, where innovation is heavily valued.

Also in Taiwan, Wen-Hai and Yu-An (2009) used the MLQ to identify the relationship between leadership style and quality management and organizational commitment in the high-tech industry. After analyzing survey data from 376 participants from that industry, they concluded that transformational leadership behaviors were more effective than transactional behaviors in promoting total quality management procedures and organizational commitment.

Perhaps of more relevance to the present study, in Mexico, Andrew and León-Cázares (2015) surveyed 1,016 public workers in the city of Guadalajara to assess the effect of transformational leadership on their motivation to serve their communities. They concluded that the participants in the study respond favorably to transformational leadership behaviors, increasing the likelihood of an enhanced willingness to serve on their part.

Robles Francia (2008) surveyed small and medium enterprise managers in Mexico to assess their transformational leadership behaviors using the LPI. The results for the study suggest that Mexican managers experience greater difficulty communicating their vision for the future and taking risks to promote innovation than with other leadership behaviors.

Robles Francia, Contreras Torres, Barbosa Ramírez, and Juárez Acosta (2013) used the LPI to compare mean scores between 101 Colombian and 121 Mexican managers. They
concluded that both cohorts display similar patterns in terms of leadership approach, and noted that the one leadership behavior where the participants displayed less efficacy was articulating a shared vision for the future.

These studies have helped to make the argument that transformational leadership behaviors are associated with successful entrepreneurship and management in organizations in different parts of the world. This makes transformational leadership a viable approach to develop in the Emprende-Lab students.

**Undergraduate Students and Transformational Leadership.**

Another important factor in selecting transformational leadership theory and the five practices of exemplary leadership model to guide the present study was applicability to undergraduate students. It was found that research on student leadership had been carried out successfully using the transformational approach and Kouzes and Posner’s (2012) model.

Grunwell (2015) argued that leadership development in students involves helping them become self-aware of their capabilities, empowering them to make choices aligned with their stated goals, and providing nurturing environments and programs where they can learn. This view is consistent with the nature of the Emprende-Lab program.

Rosch (2015) tested changes in leadership efficacy among undergraduate students who participated in a class designed to help them develop their collaborative skills and leadership efficacy. The results of the study indicated that student involvement in co-curricular activities was essential in leadership development and that focusing only on in-class experiences was not enough.

Peterson and Peterson (2012) identified developing trusting relationships, team bulling, taking the initiative and inspiring others as essential behaviors for student leaders involved in a
variety of clubs or organizations. Posner (2012) noted that the very fact that educators made efforts to measure leadership behaviors in their students promotes leadership development. This argument makes sense given that simply having students test their leadership capabilities will provide them with a benchmark for them to set goals.

The precursory for the present study came from Burbank, Odom, and Sandlin (2015) who used the S-LPI to conduct pre and post assessment of undergraduate student leadership behaviors. The instrument was administered to students involved in a leadership course that included extracurricular activities. After completion of the course, students developed a greater appreciation for the practice of leadership and leadership education.

Burbank et al.’s (2015) study was different from the present study in that it assessed student leadership based on pre and post-tests while the Emprende-Lab student leadership behaviors were compared to non-Emprende-Lab participants. However, Burbank et al.’s (2015) study along with Posner’s (2012) analysis of the S-LPI, provided the grounds to justify measuring the leadership behaviors of the participants in the present study using the S-LPI.

Posner’s (2012) analysis of S-LPI data from several studies included important variables like nationality, gender, involvement with co-curricular activities, participation in leadership programs, and so on. His conclusions suggest that the S-LPI is appropriate for the examination put forth in the present study, where the variables include student participation in co-curricular programs and gender.

The reason why the researchers in the present study decided to examine differences in leadership dimensions between males and females among the participants is because there is still a gender gap in Mexico that affects well-qualified women (Zabludovsky Kuper, 2015). Therefore, it makes sense to identify differences in leadership self-efficacy between male and
female participants, so that faculty can develop teaching strategies to overcome any imbalances and help address the gender gap in leadership.

METHOD

The present study was conducted using survey research to compare mean S-LPI scores from a group of 58 junior year students from the School of Business and Administration at CETYS Universidad. This section provides a detailed description of the procedures followed to assess leadership self-efficacy among the participants based on the dimensions measured by the S-LPI.

Research questions.

The researchers responsible for developing the present study were interested in addressing the following research questions:

- Q1. Are there statistically significant differences in S-LPI mean scores between participants involved with the Emprende-Lab program and participants who are not involved with the Emprende-Lab program?
- Q2. Are there statistically significant differences in S-LPI mean scores between participants involved with leadership or entrepreneurship development programs (other than Emprende-Lab) and participants who are not involved with such programs.
- Q3. Are there statistically significant differences in S-LPI mean scores between male and female participants?

Participants.

A total of 58 junior year undergraduate students in the School of Business and Administration at CETYS Universidad participated in the study. The participants selected to participate in the S-LPI survey were divided into two groups. First, the Emprende-Lab cohorts,
which consist of 20 undergraduate students, were invited based on their role on the entrepreneurship program. A total of 16 Emprende-Lab students agreed to respond to the S-LPI self. The second group consisted of 50 undergraduate students form the School of Business and Administration. The majority of these students, 42, agreed to participate in the study. The criteria for selection in the second group was their status as junior year students in the School of Business and Administration and their non-participation in the Emprende-Lab program.

This purposive sample (Creswell, 2014) was chosen by the researchers in the present study. Participation was strictly voluntary and participants were not promised any incentives. The only promise made to them was that their identities would remain confidential and that withdrawing from the study at any time would not result in any kind of penalty.

**Procedure.**

The data gathering phase of the present study took place in the following order:

1. The researchers received permission from the publisher of the S-LPI to use it to gather data for the present study.
2. The researchers received permission from the appropriate authority at CETYS Universidad to conduct survey research with a sample of their students.
3. The researchers invited the 20 undergraduate students in the first cohort of Emprende-Lab program to participate in the study. Sixteen agreed to take the S-LPI survey.
4. The researchers invited 50 undergraduate students not involved in the Emprende-Lab program to participate in the study. Forty-two agreed to take the S-LPI survey.
5. The researchers asked the students in the study to read and sign an informed consent form.
6. The researchers administered the S-LPI to both groups. In the same form, students indicated whether or not they were part of the Emprende-Lab cohort, whether or not they were currently involved with other leadership and/or entrepreneurship development programs (other than Emprende-Lab), and whether they were male or female.

7. The data collected from the participants was analyzed using descriptive statistics and independent samples t-tests.

Instrument.

The S-LPI is a 30-item questionnaire that uses a 5-point Likert-scale to assess five leadership dimensions. The questionnaire is divided into five parts corresponding to the five practices of exemplary leadership in Kouzes and Posner’s (2012) model. Each leadership dimension is measured through the combination of six items in the S-LPI. Permission to use the S-LPI was provided by Wiley, the publisher of the instrument, before the data gathering phase took place.

Posner (2012) analyzed data from a sample of 77,387 students to assess the validity and reliability of the S-LPI. Cronbach alpha coefficients for each of the leadership dimensions measured by the instrument were deemed to be appropriate for a variety of populations including samples of college students and Hispanics. Moreover, respondents to the S-LPI showed consistent patterns of responses across a variety of contexts, suggesting strong validity of the instrument (Posner, 2012).

Data analysis.

The data gathered through the survey was analyzed using the Statistical Package for the Social Sciences (SPSS) software. The first phase of the analysis involved calculating descriptive statistics, including mean scores and standard deviations. Second, independent-samples t-tests
were calculated to compare mean scores between the participants in the study (Chen, 2012). To address the research questions that guided the present study, the researchers examined the $p$ values for each dependent and independent variable.

**FINDINGS**

The three research questions developed to guide the present study were addressed to the satisfaction of the researchers responsible for the study. The findings provided a valuable set of data that can be used to objectively evaluate the performance of the Emprende-Lab program and develop strategies for its continued success. Table 1 serves to illustrate the mean scores for the participants for each of the leadership dimensions measured through the S-LPI.

Table 1

*Participant Mean Scores in the S-LPI.*

<table>
<thead>
<tr>
<th>S-LPI dimensions</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode the Way</td>
<td>58</td>
<td>11.00</td>
<td>30.00</td>
<td>23.46</td>
<td>3.53040</td>
</tr>
<tr>
<td>Inspire a Shared Vision</td>
<td>58</td>
<td>15.00</td>
<td>30.00</td>
<td>23.08</td>
<td>3.71004</td>
</tr>
<tr>
<td>Challenge the Process</td>
<td>58</td>
<td>13.00</td>
<td>30.00</td>
<td>23.70</td>
<td>4.22610</td>
</tr>
<tr>
<td>Enable Others to Act</td>
<td>58</td>
<td>17.00</td>
<td>29.00</td>
<td>23.94</td>
<td>3.05748</td>
</tr>
<tr>
<td>Encourage the Heart</td>
<td>58</td>
<td>18.00</td>
<td>30.00</td>
<td>24.24</td>
<td>3.10241</td>
</tr>
</tbody>
</table>

Table 1 shows that participants scored highest in the encourage the heart dimension (M=24.24), followed by the enable others to act (M=23.94), challenge the process (M=23.70), inspire a shared vision (M=23.08) and model the way (M=23.46) dimensions.

The first research question (Q1) was addressed by running independent samples t-tests for the group involved in the Emprende-Lab program (N=16) and the group not involved with the Emprende-Lab program (N=42). The results are presented in Table 2.

Table 2 illustrates how the Emprende-Lab participants (N=16) consistently display higher mean scores across the five leadership dimensions measured through the S-LPI than the non-
Emprende-Lab group (N=42). Furthermore, statistically significant differences are found in the challenge the process (p<.05), enable others to act (p<.05) and encourage the heart (p<.05) dimensions.

Table 2

Independent Samples t-tests for Emprede-Lab and Non-Emprende Lab Participants.

<table>
<thead>
<tr>
<th>S-LPI dimensions</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model the Way</td>
<td>Yes</td>
<td>16</td>
<td>24.18</td>
<td>4.66</td>
<td>.961</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>42</td>
<td>23.19</td>
<td>3.01</td>
<td></td>
</tr>
<tr>
<td>Inspire a Shared Vision</td>
<td>Yes</td>
<td>16</td>
<td>24.93</td>
<td>4.37</td>
<td>1.380</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>42</td>
<td>23.23</td>
<td>4.12</td>
<td></td>
</tr>
<tr>
<td>Challenge the Process</td>
<td>Yes</td>
<td>16</td>
<td>24.93</td>
<td>3.87</td>
<td>2.446</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>42</td>
<td>22.38</td>
<td>3.43</td>
<td></td>
</tr>
<tr>
<td>Enable Others to Act</td>
<td>Yes</td>
<td>16</td>
<td>25.31</td>
<td>2.54</td>
<td>2.164</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>42</td>
<td>23.42</td>
<td>3.10</td>
<td></td>
</tr>
<tr>
<td>Encourage the Heart</td>
<td>Yes</td>
<td>16</td>
<td>25.62</td>
<td>3.13</td>
<td>2.163</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>42</td>
<td>23.71</td>
<td>2.95</td>
<td></td>
</tr>
</tbody>
</table>

The second research question (Q2) was addressed by running independent samples t-tests for the group that reported being involved with other leadership or entrepreneurship development programs (N=20) and the group that reported not being involved with any such group. The results are presented in Table 3.

Table 3

Independent Samples t-tests for Participants in Other Programs.

<table>
<thead>
<tr>
<th>S-LPI dimensions</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model the Way</td>
<td>Yes</td>
<td>20</td>
<td>25.45</td>
<td>2.459</td>
<td>3.37</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>38</td>
<td>22.42</td>
<td>3.583</td>
<td></td>
</tr>
<tr>
<td>Inspire a Shared Vision</td>
<td>Yes</td>
<td>20</td>
<td>26.00</td>
<td>3.043</td>
<td>3.238</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>38</td>
<td>22.50</td>
<td>4.291</td>
<td></td>
</tr>
<tr>
<td>Challenge the Process</td>
<td>Yes</td>
<td>20</td>
<td>25.50</td>
<td>3.052</td>
<td>4.052</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>38</td>
<td>21.81</td>
<td>3.407</td>
<td></td>
</tr>
<tr>
<td>Enable Others to Act</td>
<td>Yes</td>
<td>20</td>
<td>24.85</td>
<td>2.906</td>
<td>1.654</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>38</td>
<td>23.47</td>
<td>3.064</td>
<td></td>
</tr>
<tr>
<td>Encourage the Heart</td>
<td>Yes</td>
<td>20</td>
<td>25.45</td>
<td>2.981</td>
<td>2.226</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>38</td>
<td>23.60</td>
<td>3.009</td>
<td></td>
</tr>
</tbody>
</table>
Table 3 shows statistically significant differences in four out of the five leadership dimensions between participants involved in leadership or entrepreneurship development programs and students who are not involved in such projects. The model the way, inspire a shared vision, challenge the process, and encourage the heart dimensions show $p$ values that are less than .05.

The third research question (Q3) was addressed by running independent samples t-tests to compare S-LPI mean scores between males and females in the study. The results presented in Table 4 suggest that female participants more frequently engage in transformational behavior than their male cohorts.

Table 4

<table>
<thead>
<tr>
<th>S-LPI dimensions</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model the Way</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>26</td>
<td>22.73</td>
<td>3.118</td>
<td>-1.442</td>
<td>.155</td>
</tr>
<tr>
<td>Female</td>
<td>32</td>
<td>24.06</td>
<td>3.775</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspire a Shared Vision</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>26</td>
<td>23.03</td>
<td>4.564</td>
<td>-1.088</td>
<td>.281</td>
</tr>
<tr>
<td>Female</td>
<td>32</td>
<td>24.25</td>
<td>3.918</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenge the Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>26</td>
<td>22.23</td>
<td>3.723</td>
<td>-1.605</td>
<td>.114</td>
</tr>
<tr>
<td>Female</td>
<td>32</td>
<td>23.78</td>
<td>3.607</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enable Others to Act</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>26</td>
<td>23.00</td>
<td>3.261</td>
<td>-2.200</td>
<td>.032</td>
</tr>
<tr>
<td>Female</td>
<td>32</td>
<td>24.71</td>
<td>2.690</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encourage the Heart</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>26</td>
<td>23.26</td>
<td>2.538</td>
<td>-2.224</td>
<td>.030</td>
</tr>
<tr>
<td>Female</td>
<td>32</td>
<td>25.03</td>
<td>3.326</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4 shows statistically significant differences between males and females in the enable others to act ($p$<.05) and encourage the heart ($p$<.05) leadership dimensions. These differences suggest that female participants are more transformational in their behaviors than their male cohort.
DISCUSSION

The present study was designed to measure leadership self-efficacy among junior year students in the School of Business and Administration using Kouzes and Posner’s (2012) five practices of exemplary leadership model. In so doing, faculty from the School of Business and Administration at CETYS Universidad could partially assess the impact of the Emprende-Lab program on their students.

The dependent variables for the study were the five leadership practices in the model (model the way, inspire a shared vision, challenge the process, enable others to act, encourage the heart) and the independent variables were participation in the Emprede-Lab program, participation in other leadership or entrepreneurship development programs, and gender.

Therefore, the study created an opportunity to discuss the effects of leadership and entrepreneurship development programs on leadership self-efficacy among undergraduate students. It also created an opportunity to add to the discussion on gender and leadership self-efficacy. The next paragraphs will address these issues in light of the insights derived from the data presented in the previous section.

Model the Way.

The S-LPI has been used on a variety of contexts to measure student leadership. In a sample of 3,594 college students, the mean S-LPI self score for the model the way leadership dimension was 22.30 (Posner, 2012). The mean score for the participants in the present study was 23.46. This suggest a higher than average measure of leadership self-efficacy for the model the way dimension on the part of junior year students in the School of Business and Administration at CETYS Universidad.
The model the way leadership dimension measures how often leaders take stock of their values and show others how to conduct themselves in accordance with those values (Kouzes & Posner, 2012). The results of the present study suggest that involvement in the Emprende-Lab program does not account for differences among the participants (see Table 2), but that involvement in other leadership or entrepreneurship development programs does (see Table 3). The findings also suggest that gender does not moderate leadership self-efficacy for the model the way leadership practice (see Table 4).

Burbank et al. (2015) noted that students who have not had significant opportunities to lead others may score lower in the S-LPI than students who may have had more chances to act as leaders. Given the fact that the Emprende-Lab program is more geared toward entrepreneurship development than leadership, it is possible that the students in the program have not received enough opportunities to be placed in a position to engage others and lead them in a direction they believe to be consistent with their interests. Nonetheless, the mean score on this dimension is well beyond the average score reported by Posner (2012), suggesting that participants in the present study have developed this particular leadership behavior to an acceptable level.

**Inspire a Shared Vision.**

The 3,594 college students in Posner’s (2012) study averaged 22.00 in the inspire a shared vision leadership dimension. The participants in the present study averaged 23.08, which suggest higher levels of leadership self-efficacy for them. Again, students who reported being involved with the Emprende-Lab program showed no spastically significant differences when compared to the rest of the junior year students (see Table 2), but those who were involved with other leadership or entrepreneurship development programs did show significant difference (see Table 3). Gender was not associated with any differences in this dimension (see Table 4).
Once again, Burbank et al.’s (2015) observation that students who do not have enough opportunities to lead may be relevant in explaining why the the Emprende-Lab cohort showed no statistically significant differences when compared to the group as a whole. Regardless, the scores for the entire cohort were higher than the scores reported by Posner (2012), which suggest that participants in the study have developed their ability to build consensus and aligned individual and group goals.

**Challenge the Process.**

Posner (2012) noted that the mean S-LPI self scores for the 3,594 college students in his study was 21.70 for the challenge the process dimension. Meanwhile, in the present study, the mean score was 23.70. It should be noted that statistically significant differences were found for the Emprende-Lab cohort (see Table 2) as well as in the participant group involved with other leadership or entrepreneurship development programs (see Table 3). Once again, gender did not account for statistically significant differences (see Table 4).

Entrepreneurs’ performance can be predicted based on their willingness to take risks and look outward in an effort to guide their actions (Jain & Ali, 2013). In light of this, it is no surprise that entrepreneurship education programs seek to enhance students’ tolerance for risk and develop a preference for taking the initiative (Densberger, 2014).

This suggest that the participants who are actively involved in developing their leadership or entrepreneurship competencies through formal training are more likely to develop in terms of Kouzes and Posner’s (2012) challenge the process leadership dimension. This was an important finding given the nature of the Emprede-Lab program.

**Enable Others to Act.**
Kouzes and Posner (2012) described the enable others to act leadership dimension as the level of frequency with which leaders develop trusting relationships among group members and promote collaboration. Given the nature of today’s dynamic organizational environments (Bratnicki, Kulikowska-Mrożek, Marzec & Zbierowski, 2007), the ability of future entrepreneurs to empower their partners to positively contribute the achievement of organizational goals is paramount.

For the 3,594 participants in Posner’s (2012) study, the mean score in the enable others to act dimension was 24.00, compared to 23.94 for the participants in the present study. This suggest that junior year students on the School of Business and Administration lag behind the broader population of college students in this dimension. As noted in Table 2, Table 3, and Table 4, students involved with the Emprende-Lab program, other leadership or entrepreneurship development programs, and female participants, show above average mean scores, respectively.

However, as also seen on Table 2, Table 3, and Table 4, non Emprende-Lab students, students not affiliated with other leadership or entrepreneurship development program, and male participants, scored below the mean scores cited by Posner (2012). Among the participants in the study, statistically significant differences were found between Emprende-Lab and non-Emprende lab participants, as well as between males and females.

Encourage the Heart.

The encourage the heart dimension in Kouzes and Posner’s (2012) model measures how frequently leaders engage in promoting a shared organizational identity through praise and recognition. There is evidence that suggests that individuals who expect to be rewarded for a job well done yield favorable outcomes for their organizations and are more likely to raise their levels of satisfaction (De Clercq, Castañer & Belausteguigoitia, 2011).
The 3,594 S-LPI respondents in Posner’s (2012) study yielded mean scores of 22.80 while the participants in the present study averaged 24.24. As noted on Table 2, Table 3, and Table 4, all groups in the study showed statistically significant differences. In terms of the independent variable gender, female participants showed higher levels of leadership self-efficacy in the encourage the heart dimension than the male cohort.

CONCLUSION

In general, the present study supports the claims made in previous research (Bagheri & Lope Pihie, 2013; Studdard et al., 2013) that suggest that educational programs designed for students to develop their leadership potential are effective. While the data presented in this study is limited to the population under study, the findings may be bundled with the results from other studies (Posner, 2012; Burbank et al., 2015; Grunwell, 2015; Rosch, 2015) in support of efforts to develop leadership and entrepreneurship competencies among students.

Because it is difficult to measure the effectiveness of entrepreneurship development programs while the students involved are still in school, the present study focused on leadership self-efficacy as measured through the S-LPI to conduct the evaluation. Given the fact that the S-LPI is a recognized measure of transformational leadership behaviors (Kouzes & Posner, 2012), and that this approach has been used on a variety of contexts outside the United States (Posner, 2012), it made sense to take this approach and apply it to undergraduate students in Mexico.

In response to the three research questions set forth to conduct the present study, there are statistically significant differences in some of the leadership dimensions measured through the S-LPI among participants in the study based on the independent variables established for the study. Hopefully these findings may serve to inform decision-makers responsible for managing
programs similar to Emprende-Lab as well as undergraduate students interested in raising their leadership self-efficacy.

Future research should seek to measure leadership competencies in students who have participated in leadership or entrepreneurship development programs that provide different opportunities to lead others (Burbank et al., 2015). This might help researchers address differences across a variety of leadership behaviors. Also, future research may be used to examine the effectiveness of other leadership or entrepreneurship leadership programs that include male and female students across a variety of cultural contexts.

Another future research opportunity is to conduct a pre and post test for Emprende-Lab cohorts. This can provide a foundation to determine whether student leadership self-efficacy is a pre-existing condition or a competency developed through the Emprende-Lab program. Because of the small sample size used to gather data for this study, the results may not be generalized to other populations beyond the participants in the study.
References


ENTREPRENEURIAL RESILIENCE, HIGH IMPACT CHALLENGES, AND FIRM PERFORMANCE

Yemisi Awotoye and Robert Singh

ABSTRACT

This paper discusses resilience in entrepreneurship as being distinct from the general construct of resilience. We make this delineation by arguing that there are specific high-impact challenges which relate to entrepreneurship but not to general living, such as a weak economy, changes in political climate, lack of access to capital, intellectual property theft, and intense competition. Following a literature review of cognitions research and psychological resilience, we develop six theory-based propositions and present a conceptual model. We also discuss the practical implications and future research directions that should be undertaken, before concluding the paper.

EXECUTIVE SUMMARY

While many new firms are being established, research indicates that many entrepreneurs end up quitting or closing down their businesses. In an attempt to better understand firm failures and success, research in entrepreneurship historically focused on the traits of entrepreneurs. However, after years of inconsistent and contradictory findings, the traits approach has undergone a paradigm shift which has resulted in the study of entrepreneurial cognitions. According to the cognitive perspective, entrepreneurs think differently from others, and as the driving force of the entrepreneurial process, their thinking affects their businesses.

In this paper, we argue that entrepreneurial resilience fits within the cognitive stream of research. We delineate entrepreneurial resilience from general resilience by defining entrepreneurial resilience in terms of the high-impact challenges that are specific to
entrepreneurship. While traumatic events such as natural disasters, accidents, deaths of family and close friends, and terrorist attacks can happen to anyone, we argue that traumatic events in entrepreneurship manifest as high-impact challenges such as a weak economy and changes in the political climate, lack of access to capital, intense competition from bigger and more established firms, or piracy of intellectual property which are specific to entrepreneurs.

Although many entrepreneurs begin the entrepreneurial journey, many do not make it beyond the first few years due to the effects of these high impact challenges. Entrepreneurial resilience may help answer the question as to why some entrepreneurs press on while others quit when facing these challenges.

Following a literature review of cognitions research and psychological resilience, we develop six theory-based propositions and present a conceptual model. We also discuss the practical implications and future research directions that should be undertaken, before concluding the paper.

INTRODUCTION

Each year, thousands of new ventures are founded (Simon, Houghton, & Aquino, 2000), yet many of these ventures do not make it beyond the first couple of years of operations (Audretsch, 1991; Phillips & Kirchhoff, 1989). While research has shown that new ventures and small businesses have been largely responsible for creating most of the net new jobs in the U.S. economy over the last several decades (Birch, 1987; Kirchoff & Phillips, 1988; Scarborough, Wilson, & Zimmerer, 2009; Van Stel & Storey, 2004), the rate of job creation from new business establishments appears to be on a steady decline as entrepreneurship and economic dynamism has declined in recent years (see Pethokoukis, 2014). In fact, there are growing concerns about
declining U.S. business dynamism (see Hathaway & Litan, 2014; Lockhart, 2013; Ozimek, 2013; Singh & Ogbolu, 2015). The elevated failure rates recorded in entrepreneurship (Altman, 1983; Haswell & Holmes, 1989; Perry, 2001) suggest that entrepreneurship is not an easy process; however, the economic benefits and promises of entrepreneurship such as job creation (M. Van Praag & Versloot, 2008) and innovation (Wong, Ho, & Autio, 2005) continue to make it worthy of pursuit.

Historically, research focused on the individual entrepreneur’s traits (Busenitz & Barney, 1997; Carland, Hoy, Boulton, & Carland, 1984). However, this approach was not fruitful in terms of fully capturing the realities of entrepreneurship or explaining the behavior and decisions of the entrepreneur and consequently gave way to other approaches (Gartner, 1988; Mitchell et al., 2002), including a shift to the psychological processes of entrepreneurs (Shaver & Scott, 1991) and entrepreneurial cognitions (Baron, 1998; Baron & Ward, 2004; Mitchell et al., 2002).

In contrast to the traits approach, entrepreneurial cognition research aims to provide an answer to the central question: “How do entrepreneurs think?” (Mitchell et al., 2002). The broad and growing body of literature on entrepreneurial cognitions encompasses issues such as scripts, self-efficacy, cognitive styles and heuristics (Sánchez, Carballo, & Gutiérrez, 2011). Researchers examining entrepreneurial cognitions have sought to explain a wide range of processes such as why entrepreneurs take risks when others avoid them (Palich & Bagby, 1995); the influence of network formation on an entrepreneur’s cognition; (De Carolis, Litzky, & Eddleston, 2009); and the role of cognitive biases and errors in the thinking of entrepreneurs (Alvarez & Busenitz, 2001). However, there remain many unexplained processes that are related to the behavior and decisions of entrepreneurs. This has created a rich opportunity for research in the growing focus area of entrepreneurial cognitions.
Psychological resilience fits within entrepreneurial cognitions research. Psychological resilience is “the capacity of individuals to cope successfully with significant change, adversity or risk” (Lee & Cranford, 2008, p. 213). While there are several definitions of psychological resilience in the literature, the most commonly cited include Masten, Best, and Garmezy (1990) who defined it as “the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances” (p. 426), and Luthar, Cicchetti, and Becker (2000), who defined resilience as “a dynamic process encompassing positive adaptation within the context of significant adversity” (p. 543). Taken as a whole, these definitions have three common themes: adversity, positive adaptation, and risk or uncertainty.

These three themes are all relevant in entrepreneurship. For instance, Branzei and Abdelnour (2010) point out that the notion of striving under adversity is a foundation in the field of entrepreneurship research. Drawing from the works of Baron and Markman (2000), they posit that “entrepreneurs have a higher adversity quotient than non-entrepreneurs” (p. 807). The concepts of risk and uncertainty are also core in entrepreneurship, as the process of embarking on venture creation involves significant risk. We therefore argue that psychological resilience is a concept worth exploring in the entrepreneurship context.

Building on the discussion above on psychological resilience, we define entrepreneurial resilience as the ability to overcome high-impact entrepreneurial challenges and persist in the entrepreneurial process in the face of adverse situations and unexpected outcomes. We believe that the concept of entrepreneurial resilience accounts for why some entrepreneurs quit in the face of those challenges while others press on in the face of uncertainty and risk.

Entrepreneurial resilience may be an important construct in entrepreneurship for a number of reasons. First, it captures the cognitive processes that describe how an entrepreneur positively
faces the challenges and setbacks associated with entrepreneurship and new venture creation. Second, it provides an insight into why some firms survive while others fail. Third, research has shown that psychological resilience can be developed, hence entrepreneurial resilience can be taught in entrepreneurship.

In this paper, we explore and discuss the concept of entrepreneurial resilience and its role in firm survival and success. Following a brief literature review of entrepreneurial cognitions research and psychological resilience, we develop six theory-based propositions and present a conceptual model based on the discussion throughout the paper. We also discuss the practical implications and future research directions that should be undertaken, before concluding the paper.

COGNITIVE PROCESSES AND PSYCHOLOGICAL RESILIENCE

Before developing our definition and propositions with respect to entrepreneurial resilience, it is important to frame the construct within the broader research on cognitions and the resilience literature from psychological theory.

Entrepreneurial Cognitions

Entrepreneurial cognitions, as an area of research within the entrepreneurship literature, is based on cognitive science and psychology. According to Mitchell et al. (2002), entrepreneurial cognitions can be defined as “the knowledge structures that people use to make assessments, judgments or decisions involving opportunity evaluation and venture creation and growth” (p. 97). Drawing on prior research, Baron and Ward (2004) also posit that “the field of entrepreneurial cognition includes all aspects of cognition that can, potentially, play a role in important aspects of the entrepreneurial process – everything from discovering opportunities and deciding to pursue them through making complex decisions and solving difficult and unexpected problems while
running a new venture.” (Baron & Ward, 2004, p. 554). These two definitions indicate that entrepreneurship involves thinking, anticipating and solving difficult and unexpected problems in order to achieve success.

Entrepreneurial cognitions draw attention to the role of the entrepreneur within the entrepreneurial process by explaining how and why entrepreneurs think and act differently from individuals in the general population. Such thinking results in either positive or negative consequences for the venture. As an example, when an entrepreneur makes incorrect assumptions or has poor judgments about the financial prospects of an entrepreneurial opportunity, it could result in venture failure, and vice-versa. As pointed out by Mitchell et al. (2002), the entrepreneurial environment is characterized by a high degree of uncertainty, pressure on one’s time, information overload, stress, and intense emotions. Given that the entrepreneur has to think and make judgments in such an environment, entrepreneurial cognitions consequently affect firm performance through their effects on the psychology of the entrepreneur. These may include positive cognitive processes that help the entrepreneur, such as counterfactual thinking (Gaglio, 2004) and useful rules of thumb or heuristics (Baron, 1998), or may sometimes take the form of negative factors such as overconfidence (Simon et al., 2000) and hubris (Hayward, Shepherd, & Griffin, 2006).

**Psychological Resilience**

Despite the differences in definitions proffered for the psychological resilience construct, adversity/trauma and positive adaptation have emerged as the characteristic features of psychological resilience (Fletcher & Sarkar, 2013). Trauma is defined by the American Psychological Association (APA) as “an emotional response to a terrible event like an accident, rape or natural disaster” (APA, 2016). This definition suggests cognitive processes that are
employed by a person upon the occurrence of a highly unpleasant and/or unexpected event with negative outcome or consequence. While research indicates that most people have to deal with at least one potentially traumatic event during the course of their lives (Bonanno & Mancini, 2008; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995), what constitutes trauma differs from person to person. Many entrepreneurs may not necessarily face any of the popularly acclaimed traumatic events such as natural disasters, death of a loved one, serious illness, or terrorist attacks (Bonanno & Mancini, 2008); physical assault, motor vehicle crash, fire (Norris, 1992); and life hardship and health vulnerability (Shrira, Shmotkin, & Litwin, 2012) in the course of their business life.

In entrepreneurship, trauma can be conceived of in terms of the high-impact (H-I) negative events that an entrepreneur faces which could result in the closure or failure of his business. The ability of an entrepreneur to adequately and positively deal with these negative events is likely to affect firm performance.

**High Impact Challenges in Entrepreneurship**

In line with the APA’s definition of trauma, we define H-I traumatic events in entrepreneurship as those events that have the potential to cause major negative outcomes such as firm failure, bankruptcy, business closure, and loss of customers among other things. Alpander, Carter, and Forsgren (1990) identified the 10 most critical problems faced by firms in their formative years as securing new customers; accessing funding; recruiting and hiring new managers; dealing with existing employee issues; product pricing; planning for market expansion; dealing with legal issues; ensuring quality; and dealing with various government agencies. While we agree that all of these factors will affect the firm’s survival and success/growth, we argue that some are more critical than others, as the degree of impact will vary from factor to factor. H-I traumatic events could come in different forms such as a weak economy and changes in the
political climate; lack of access to capital; choosing the wrong opportunity or poor execution on a good opportunity; intense competition from bigger and more established firms; or even piracy of intellectual property (Chu, Benzing, & McGee, 2007; De Castro, Balkin, & Shepherd, 2008; Zimmerman & Chu, 2013). These factors have the potential to “make or break” the business, hence we will adopt them in this paper.

**Firm Survival and Success**

The survival of a firm has been shown to depend largely on pre-startup planning and entrepreneurial skills (Sexton & Van Auken, 1985). While Phillips and Kirchhoff (1989) debunked the myth that survival rates are limited to 20% of established firms within the first 5 years and showed that they are as high as 40%, the reality is that many businesses still fail within their first few years of formation. Research has documented several reasons for firm failure, including poor planning (Perry, 2001) and the cumulative effects of reduced real economic growth, stock market performance, money supply growth, and competition as a result of increased business formation (Altman, 1983). Bankruptcy, an outcome of firm failure, has also been attributed to lack of knowledge, inaccessibility to debt capital, and economic climate (Carter & Auken, 2006). These factors are similar to the H-I challenges proposed in this paper.

H-I challenges in entrepreneurship have the capacity to determine whether a firm survives or goes out of business. Specifically, we propose that the occurrence of high impact challenges in entrepreneurship will reduce the chances of a firm surviving in the first three years. In line with the work of Lewis and Churchill (1983), we argue that the first few years of a venture are the most important in terms of the survival of the venture. Decisions made in the early life of a venture are crucial, hence any major disruption during this early stage of the venture has the potential to highly impact it.
Firm survival and success are often considered to be related constructs in literature, but some researchers have questioned the idea of equating survival with success considering that some firms close voluntarily (Van Praag, 2003) or are harvested or merge with other ventures (Headd, 2003). This suggests that the performance measures of success commonly adopted in mainstream entrepreneurship research such as firm size and growth (Bates, 1990), or sales, or number of employees as pointed out by Jennings and Brush (2013) may indicate less about firm survival than has been portrayed. We therefore treat survival and success as two related but distinct constructs. We argue that H-I challenges in entrepreneurship will reduce the chances of firm survival and success within the first few years of its formation due to its liability of newness (Freeman, Carroll, & Hannan, 1983).

Put succinctly, we propose the following:

*Proposition 1a:* High impact challenges are negatively related to firm survival.

*Proposition 1b:* High impact challenges are negatively related to firm success.

**Entrepreneurial Resilience**

Entrepreneurial resilience, the ability to overcome H-I entrepreneurial challenges and persist in the entrepreneurial process in the face of adverse situations and unexpected outcomes, rests on the decisions made by an entrepreneur. It allows the entrepreneur to remain optimistic in the face of difficult market conditions and unpredicted challenges (Ayala & Manzano, 2014). According to Van Praag (2003), the entrepreneur determines the survival duration and the success of his venture because “it is the man who makes the difference: he sets the conditions, the boundaries, the characteristics, and ultimately, the value creating ability of the newly founded firm” (p. 1). We therefore propose a relationship between entrepreneurial resilience and firm survival and success. By definition, resilient entrepreneurs are able to positively adapt in the face
of H-I challenges and still succeed against the odds. According to Bullough and Renko (2013), non-resilient individuals would be less capable of engaging in the necessary entrepreneurial behaviors, choosing rather to respond to the uncertainties in the business world with caution and fearful reactions. Resilient entrepreneurs on the other hand are protected from reacting negatively to situations due to their positive emotions, thereby causing them to blossom rather than fail (Fredrickson, Tugade, Waugh, & Larkin, 2003).

As pointed out by Sine, Haveman, and Tolbert (2005), entrepreneurship is an inherently risky process, hence, the survival of a firm depends on several factors within and beyond the entrepreneur’s control. An entrepreneur, while aware of some of the possible risks they could face in the course of the business, is also affected by bounded rationality (Cooper, Folta, & Woo, 1995). Arguing along similar lines, Ayala and Manzano (2014) pointed out that entrepreneurs often have to make decisions in the context of ambiguous, incomplete, or constantly changing information. Consequently, when certain H-I challenges occur, entrepreneurs may not be readily armed with all the information they need to make the best decision. They rely on their cognitions and experiences to make decisions that determine whether or not the firm will survive (Ireland & Miller, 2004). As an example, scholars have found that entrepreneurs are sometimes unwilling to leave or close down under-performing firms (Pierce, Kostova, & Dirks, 2001) even when the ventures appear to have little or no future potential. They attributed this unwillingness to what they termed psychological ownership – the strong psychological connectedness that entrepreneurs develop with their ventures. Entrepreneurs have been known both to impact and be impacted by events that occur in their businesses (Ucbasaran, Shepherd, Lockett, & Lyon, 2013), partly because they have invested their time, energy, and resources into the business and therefore consider the business part of themselves (DeTienne, Shepherd, & De Castro, 2008). While this may be the case, we posit that
entrepreneurs who are resilient are better able to steer the under-performing firm back from the brink of failure and eventually to success, as their willingness to keep on with the business may suggest their determination to make things work in the first instance. Thus, the ability to deal with a high degree of ambiguity and adapt quickly to change differentiates resilient entrepreneurs from others, and better prepares the resilient for success (Ayala & Manzano, 2014). We therefore formally propose that:

**Proposition 2a: Entrepreneurial resilience is positively related to firm survival.**

**Proposition 2b: Entrepreneurial resilience is positively related to firm success.**

Building on the propositions regarding the negative relationship between H-I challenges and firm performance, we further posit that entrepreneurs who are resilient will be able to limit the negative effects of such challenges on firm survival and success. According to Beardslee (1989), resilience and survival are directly related such that resilient people can be called survivors. The ability of an entrepreneur to successfully cope with and manage H-I entrepreneurial challenges raises the odds of the firm surviving. Given the association of resilience with coping (Linnenluecke, 2015) and its conceptualization as a factor of psychological capacity (Luthans, Avey, Avolio, Norman, & Combs, 2006), we argue that entrepreneurial resilience moderates the negative impacts of the stress and uncertainty associated with the entrepreneurial environment, such that the more entrepreneurial resilience an entrepreneur has, the lower the negative effects of H-I challenges they experience on their firm’s performance, and vice versa.

More formally:

**Proposition 3a: Entrepreneurial resilience moderates the negative relationship between high-impact challenges and firm survival.**
Proposition 3b: Entrepreneurial resilience moderates the negative relationship between high-impact challenges and firm success.

Based on prior literature and the development of our propositions, Figure 1 illustrates the proposed relationships between H-I challenges, entrepreneurial resilience, and firm survival and success. More specifically, we believe that the presence of H-I challenges poses a threat to the survival and success of a firm. That is, H-I challenges will be negatively related to firm performance. However, entrepreneurial resilience is central to overcoming these challenges and is expected to moderate that negative relationship. At the same time, we believe that entrepreneurial resilience also has a positive direct effect on firm performance.

Insert Figure 1 about here

DISCUSSION

The propositions and relationships illustrated in Figure 1 can occur at any time in the life of a venture; however, given that the failure rates of firms have been shown to be higher within their first five years of existence, we believe that it is more likely for the proposed relationships to occur during the early stages of the firm. It is during this period that uncertainty is often at its peak. The firm is working to establish itself and entrepreneurs may be most susceptible to negative outcomes as a result of H-I challenges. It is during this time - before the firm is fully established that the cognitive processes of entrepreneurs may be paramount to firm survival and ultimately to success.
As we have argued throughout this paper, entrepreneurial resilience represents an important cognitive process to achieve entrepreneurial success (Ayala & Manzano, 2010). H-I challenges affect the performance of a firm by determining its survival and success, particularly within the first five years. This is because a firm has to overcome the liability of newness (Freeman et al., 1983) within this timeframe, and the entrepreneur also has to contend with high uncertainty in the entrepreneurial environment (Mitchell et al., 2002). We have also defined the construct of resilience in entrepreneurship as encompassing positive adaptation to H-I challenges in the entrepreneurial process. In developing our propositions, we have treated firm survival and firm success as two distinct constructs similar to early research by Van Pragg (2003). Specifically, we have proposed that entrepreneurial resilience has both a direct effect on firm survival and success, as well as a moderating effect on the negative relationship between H-I challenges and firm survival and success. We believe that entrepreneurs, as the driving force of the entrepreneurial process, ultimately make the decisions that impact their firms. Hence, a resilient entrepreneur will make decisions that reflect positive cognitions and a determination to see the business survive and thrive amidst adverse situations. Such resilience is associated with coping abilities and psychological capacity (Luthans et al., 2006), which transfer to the firm to moderate the negative effects of high impact challenges.

In an earlier study, Ayala and Manzano (2014) questioned the predictive validity of resilience in entrepreneurship and conducted a longitudinal study to examine this. They found that the three dimensions of resilience adopted in their study (hardiness, resourcefulness, and optimism) helped in predicting entrepreneurial success. While this may call into question the uniqueness of our work, we point out that they did not specifically define entrepreneurial resilience, but rather adopted the broader concept of resilience which encompasses adversity and
trauma in a general context rather than the entrepreneurship-specific context we have adopted. Additionally, we posit the possibility of confounding effects from their choice of Spain as their country of study. Given that tourism is the backbone of Spain’s economy, it is possible that government policies already position tourism firms for success. Therefore, their selection of an industry considered to be the pillar of their nation’s economy indicates a high probability of sampling successful firms. We do not believe our discussion or arguments are industry specific, and we expect to find the propositions holding across different groups of entrepreneurs.

Limitations

This paper has tried to introduce researchers and entrepreneurs to the potential benefits of entrepreneurial resilience. However, there are several limitations that bear mentioning. First, we offered examples of H-I challenges, but did not necessarily develop a complete list. There may be certain challenges that are either not on the list; or for those that are identified, may not necessarily be as important as others on the list. Only through empirical study and verification can a parsimonious list of H-I challenges truly be determined. Second, the operationalization of the entrepreneurial resilience construct could take different forms. As a new construct, the validity of measures to empirically test the role of resilience within entrepreneurial processes and to survival and success has yet to be determined. A third, and final limitation that we considered was whether entrepreneurial resilience could result in negative outcomes. For example, if an entrepreneur was pursuing a weak opportunity with little chance of success, entrepreneurial resilience could result in an entrepreneur staying with a venture when it should be abandoned. Instead of being a positive cognitive process, it may instead be nothing more than irrational stubbornness. As further research is conducted, this possibility should be explored.
These limitations notwithstanding, the paper makes a significant contribution to the literature by laying out a largely unexplored cognitive process that could help unlock the mysteries of successful entrepreneurship. The paper has implications for practicing entrepreneurs, researchers, and entrepreneurship educators. These are discussed below.

**Implications for Entrepreneurs**

This paper has some implications for nascent entrepreneurs and entrepreneurs. First, by highlighting the increased chance of survival and success associated with having entrepreneurial resilience, there is a possibility that the fear of failure in entrepreneurship harbored by these entrepreneurs could be minimized as they focus on developing their entrepreneurial resilience. Secondly, this paper has highlighted H-I challenges specific to the field of entrepreneurship. By understanding these specific challenges that they could encounter in the entrepreneurial process, aspiring entrepreneurs can make more informed decisions and weigh their options carefully before launching their businesses.

**Implications for Research**

The propositions and research model should be tested through longitudinal research, and the limitations we have identified should be further considered in future research. We have delineated traumatic events in entrepreneurship from the general definition of traumatic events that occur in people’s lives. We have also defined resilience in entrepreneurship based on this delineation and outlined six propositions which can be tested. An implication of our work for research in the field of entrepreneurship is that other researchers can test these propositions to advance theories relating to resilience in entrepreneurship. Theory development and testing can be enhanced only when constructs are properly defined. We hope that our definition of
entrepreneurial resilience provides an adequate starting point to help achieve this, but further refinement may be necessary.

Implications for Entrepreneurship Education

Given the argument that resilience may be encouraged and developed (Ayala & Manzano, 2014; Brewer & Hewstone, 2004), our paper also has implications for entrepreneurship education. Training programs and entrepreneurship courses may benefit by incorporating entrepreneurial resilience into their course design to teach students (1) the nature of traumatic events in entrepreneurship (2) that it is possible to cope with the H-I challenges associated with entrepreneurship, and (3) the mechanisms for positively adapting to these H-I-challenges.

CONCLUDING REMARKS

While some have concluded that we will never be able to fully understand resilience (Coutu, 2002), the purpose of this paper has been to define resilience in the context of entrepreneurship and how it impacts the survival and success of a firm. Our contribution lies in the delineation of traumatic events in entrepreneurship from the general definition of resilience and the proposal of testable propositions.

As with all papers, our work is not without limitations which we discussed. However, we hope this paper will help researchers consider further study of entrepreneurial resilience as it represents a possible new line of knowledge development with respect to our understanding of entrepreneurial processes. We presented implications and possible new directions of research, but much more future research, particularly longitudinal research, is certainly needed.
REFERENCES


Figure 1: Effects of H-I Challenges and Entrepreneurial Resilience on Firm Performance
An Emerging Model for the Effective Teaching of Innovation and Entrepreneurship at the Graduate Level?

Lotfi Belkhira and Rafik Loutfyb

aW Booth School of Engineering Practice, McMaster University, Email: Belkhir@mcmaster.ca
bDirector, Centre of Engineering Innovation & Entrepreneurship, Ryerson University, Email: rloutfy@ryerson.ca

1 Summary

The Master of Engineering Entrepreneurship and Innovation (MEEI) program at McMaster University is an technology-based engineering entrepreneurship degree. A core differentiating feature of the model is its phase-and-gate technology commercialization approach that combines curriculum and co-curriculum programming in support of a real-world enterprise project. Another feature is the built-in, hands-on mentoring and coaching of the students by an Enterprise Advisory Board through the entirety of the program. This has proven to provide a learning experience that is guided by pertinent and practical expertise and produces effective innovators, whether they continue with their own company or move on the marketplace.

Keywords: Innovation-driven entrepreneurship, knowledge economy, technology-based enterprise, entrepreneurial education.
2 Introduction

Since the 1980’s, the gradual transformation of our economic landscape from industrial to knowledge-based economies has led to the emergence and rapid growth of a new kind of enterprises. The enterprises, starting with Microsoft and Apple and leading to the likes of Google, Facebook, Amazon, Tesla, etc, have in many ways disrupted the traditional fabric of the industrial manufacturing-based economies, and redefined what innovation is all about. In the Industrial Age paradigm, innovation was primarily product and invention-driven, and aimed at creating increasing efficiencies that drive higher productivity and lower costs. In the Information-Age or Knowledge-Economy paradigm, on the other hand, innovation is all about value creation at the societal level using novel thinking aiming at disrupting the status-quo, redefining customers expectations and changing the rules of competition. In turn, this paradigm-shift has profoundly disrupted the old ways of doing business of the traditional industrial sectors, and led to the severe erosion in growth of those companies and their future ability to create new jobs.

Indeed, several independent and corroborating studies, led by the Kauffman Foundation, have shown beyond the slightest doubt, that since 1980 through 2012, 100% of net job creation in the USA was generated by young firms (< 6 years-old) [1]. To be clear, it’s neither the large enterprises nor the SME, but rather the “young firms” (regardless of their sizes) that are the source of 100% of net job creation in the USA. This fact while only validated in the US, is likely to hold true to a large extent in the developed countries as well. This means that on average, an enterprise, whether small or big, loses its ability to create more jobs past the age of about 6 years-old, and then remains about the same size for the foreseeable future, either as a SME or a large enterprise. Furthermore, Figure 1 below shows that this net job creation is strongly dominated by the ICT and High-Tech startups.

The obvious conclusion of the above statistics is that the economies of the developed world today can only grow by encouraging and maintaining a sustained and strong entrepreneurial activity in the ICT and Hi-Tech sectors. The implications of these results are very significant in two major ways:

Figure 1: The Net Job Creation is in the US since 1980-2011 comes exclusively from young firms (< 6 years of age), and is dominated by the ICT and the Hi-Tech startups (courtesy of Reference [1])

Figure 2: Average Annual Net Job Creation at Surviving Businesses by Firm Age (1990–2011)
(i) The economic policies that should be developed to stimulate, foster and nurture the entrepreneurial activities of startups during their very early years of existence to enable faster and greater growth.

(ii) The educational models and methods in post-secondary institutions that should be adopted to prepare our students to become productive participants in this entrepreneurial economy.

This paper describes an innovation-driven entrepreneurial model at the graduate level in the Faculty of Engineering at McMaster University that aims to offer an educational and holistic platform that seeks to equip engineers and non-engineers alike with the innovation and entrepreneurial skills that satisfy the demands of the Information Age. While the program leverages the fields’ best practices and proven approaches to entrepreneurship education, such as Business Model Generation and the Lean Startup Model (LSM), it also offers two additional key enablers: (i) A 16-month dedicated program where the curriculum component thereof was designed from the ground up to deliver the required learning that supports the requirements of those three phases of venture development, and (ii) the ongoing and hands-on mentoring and coaching of the student-team by a 4-person Enterprise Advisory Board from the early start to the completion of the program.

3 Program Description

The Master of Engineering Entrepreneurship and Innovation (MEEI) program at McMaster University is an engineering entrepreneurship degree that aims to develop leaders who are able to take technology-based ideas from concept to the market place. It’s an approach that combines curriculum and co-curriculum programming in support of a real-world entrepreneurial project that provides a 16-month dedicated learning experience and produces innovators who can effectively participate in the Knowledge Economy. Innovation is central to the program, where innovation is defined as the process of creating net market value with novel and creative thinking. The overall mission of the MEEI program is to: “Develop leaders, through an innovation-based, interdisciplinary, student-centered learning experience, that will support the development of technology-based enterprises that create jobs and accelerate the green economy”.

The MEEI is a sixteen-month program consisting of seven-courses and a “Phase & Gate” technology commercialization process called the “Enterprise Project Development” that spans the entire duration of the program. The Enterprise Project is the experiential learning platform for the MEEI program. The seven courses were designed from the ground-up by academic/practitioners to provide the pertinent and timely tools and knowledge that the students need to apply at each of the three phases of the sixteen-month long Enterprise Project Development. This in turn, provides the students with a hands-on learning experience and a working knowledge in systematically building a business from the ground up.

The Enterprise Project Development Process is similar to processes used in industry for new product development or new business creation. It also embraces to a great extent the Business Model generation and Lean Startup method without however subscribing to its prescriptive approach in its fine details, while allowing a much longer development time line, for the full maturation of the project. The main idea is to approach the entrepreneurial project with a holistic and iterative approach that manages both the discovery and the de-risking of key technical and commercial hurdles while managing the critical resources the students need to deploy during the customer creation and company building phases.
As shown in the Figure 1 below, there are four primary phases in the new business creation process used by the MEIP program.
Figure 2: The four enterprise development phases and the three gates of the MEEI Enterprise Development process.
The E&I modules are the core modules and were designed to be sequential and supportive of the enterprise development phase the students are going through (see Exhibit A for a more detailed description of the learning outcomes of each module and how they align with the knowledge and skills the students need to learn at that specific stage of their entrepreneurial journey.)

The essence of this commercialization process is a set of deliverables for each phase. These deliverables have been carefully selected for each phase along the continuum of taking an idea from concept to the market place. These deliverables describe what the students need to know, master, and produce at each phase. It allows the student’s advisory committee to easily assess whether the student has applied all the learning tools required for their successful exit of the phase, as well as identify areas for student performance improvement. Also these deliverables can be directly measured and observed by the student’s advisory committee. At each of the three phases, the information collected and presented by the students is evaluated to determine whether the students have mastered the learning outcome of this phase and a decision is made to either: continue to the next phase, get more information for the current phase, or terminate the business venture and switch to a new enterprise project.

The Advisory Committee reviewing the deliverables at each tollgate of the Enterprise Project evaluates the quality of the student’s analysis, and the level of judgment exercised, to achieve the deliverables for the phase. Advisory Committee decisions are Go/No Go decisions that reflect the Advisory Committee’s assessment of whether or not the information describing the business case has been thoroughly researched and whether or not the tools taught have been satisfactorily executed. The Advisory Committee does not assess business viability. This assessment is the responsibility of the student(s).

As the ME E I students move the enterprise project through the process, assumptions are tested for validity so that the information for each set of deliverables is refined and enhanced. This continuous refinement of the understanding of the enterprise project moves the project concept from the status of an untested idea at the beginning of the process to an implementable business at the final gate. It is also an inherently iterative process, often described as “peeling the onion”, where the in-depth understanding and development of the (i) customer needs, (ii) the product, and (iii) the business model, and their mutual impacts on each other, are continuously and progressively improved.

In Phase-1 of the process, the entrepreneur is trying to evaluate the opportunity without investing significant time or resources. An understanding of the problem to be solved, the nature of the solution, and the customer groups that can benefit from this solution, are the key deliverables for this phase. In addition to using secondary market research data, it is expected that the students will talk to industry experts to better understand the market niche or the industry they are targeting. The preliminary work associated with this phase will also focus on the competitive situation in the envisioned market(s), the business model and value proposition. The preliminary technical plan should include analysis of intellectual property issues associated with the solution. It should also sketch out all the technical activities needed for achieving proof-of-concept. At the end of the first phase, the student goes through the Concept Initiation Tollgate (Tollgate #I) and is evaluated and observed on Learning Outcomes 1-4 i.e. student’s ability to:
In Phase-2, the budding entrepreneurs have to validate the assumptions they made in the Concept Initiation Tollgate and perform both technical and market feasibility analysis. The main objective is to validate that there are customers willing to pay for their product and/or service. From the market development side, it is expected that thorough primary market research will be carried out to explore different customer groups, and determine what is the market size? Who are the main competitors? Etc. From the technical perspective, the students are expected to prove that the core technology works and that there is no further invention required. Moreover, using the voice of customer, customer requirements are mapped into technical specifications for the product or services. A plan for the development of the final product is developed. When the market development and the technical proof-of-concept (POC) activities are done, a financial projection is developed. At the end of this phase the student goes through the Business Initiation Tollgate (Tollgate #2) and is evaluated and observed on Learning Outcome 5-7 i.e. student's ability to:

| 1 | Identify and assess technology based business opportunities that solve real customer problem |
| 2 | Apply market research tools to assess the market potential for their business idea – documented in a Enterprise Project Brief. |
| 3 | Apply competitive analysis tools to identify sources of sustained competitive advantage & unique value proposition and integrate into business model canvas – documented in Venture Map & Business Model Canvas. |
| 4 | Conduct a customer validation study and apply house of quality tools to collect and analyze voice of the customer and translate to proof-of-concept requirements – documented in a Customer Validation Report & proof of concept development plan. |

In Phase-3 of the process, the knowledge accumulated in the second phase provides the context for an analysis of potential business models and a selection of a business start-up strategy. The remaining project assumptions are tested and the outcomes are used to formulate the tactical go-to-market approach. The strategic decision process should lead to the development of a fully articulated business plan. The expectation is that the business is either ready to enter the market and raise funds, or the venture is terminated. At the conclusion of this phase, the student goes through the Business Startup Tollgate (Tollgate #3) and is evaluated and observed on Learning Outcomes 8-10 i.e. student’s ability to:

| 6 | Conduct a comprehensive primary market research survey and analysis results to evaluate market feasibility – documented in market development. |
| 7 | Develop a comprehensive financial projection and evaluate the project financial feasibility – documented in financial plan projection. |

| 8 | Develop and evaluate alternative business strategies and chose viable strategy that maximize their sustained competitive advantage – documented in a business strategy matrix. |
| 9 | Develop a comprehensive strategic business plan document and pitch – documented in a full business plan. |
| 10 | Develop a go-to-market operating and marketing plan and presentation – documented in a go-to-market operating & marketing plan. |

These last three outcomes complete the ten (10) Learning Outcomes of our MEE program (LOP’s).
4 Innovative Aspects

The Master in Engineering Entrepreneurship program was designed and implemented first in 2005, when only two other similar programs were available around the world, namely the Innovation Management and Entrepreneurship MSc at Manchester University (UK) and at Swinburne University of Technology (Australia).

The key and most significant innovative aspects of the content and delivery of the program are as follow:

1- A 16-month long program dedicated to technology-based enterprise development, where all the curricular and non-curricular content and activities were designed from the ground-up enable the learning of innovation and technology-based entrepreneurship.
2- The requirement for a real-life enterprise project from every student and team that they carry on with them through the duration of the program
3- A 3-stage “Tollgate process” with a GO/ NO GO decision at each stage to validate that the students applied the required and appropriate learning skills to their specific enterprise project at that particular stage of their project development
4- Every student is assigned an Enterprise Advisory Board constituted of an Enterprise Advisor, a business development advisor, a technical mentor and a business mentor, that will accompany them through the duration of their program with ongoing practical and real-world coaching and mentorship to enhance their learning experience and the chances of success of their enterprise project.
5- A state of the art Enterprise Development Lab for ongoing students, as well as an off-site incubator for students who have incorporated their enterprise project into a new company.

In the last 10 years since the start of our program, many more Masters’ degrees in Entrepreneurship and Innovation have emerged around the world. Most of them seek to emphasize the “theory for the sake of practice” approach, and most of them teach the same basic skills needed in every entrepreneurial venture, such as (i) assessing ideas for new venture opportunities, (ii) integrating multi-disciplinary skills and approaches, (iii) Market and product development skills, and (iv) business plan and financial projections.

However, the MEI program continues to perform

5 Bibliography

and mentors the students through the various hurdles of their enterprise project by helping them practice what they’ve learned; and finally

(v) The provision of Proof-of-Concept funding to assist the students in developing their project proof of concept prototype.

5.1 Curriculum Innovation

As mentioned above, the MEEI curriculum was designed and developed from the ground up to coincide and deliver to the students what they need to learn and apply at their current stage of enterprise development. This “design principle” of our curriculum has led to the development of a unique set of modules that combine both the cognitive and practical aspects of entrepreneurship education, but also the assignments that help the students progress through their enterprise project stages in a fast and effective way.

The MEEI Program’s 5 core modules are all delivered by practitioners with many years of industrial experience that practiced new venture creation and hence teach from real world experience. Each module leader uses a variety of delivery techniques that are most suitable to transfer the knowledge to the students at the particular stage of their enterprise project development. On the other hand, the three enterprise project tollgates are the forcing functions that require the students to put the knowledge they have acquired, and apply the tools they learned, into practice. The effectiveness by which the student meets the deliverables at these tollgates is the measure of achieving the program’s learning outcome.

Because the MEEI program is experiential, most of the students’ learning happens in the market, outside the class, through interaction with customers; investors; business partners; suppliers; mentors; and manufacturers. Students’ learning also happens through participation in business plan competitions or tradeshows or attending network meetings. The students then take all this back to their tollgate reviews and integrate and synthesis the knowledge in to concrete deliverables.

5.2 Project Selection

Because of its real-world nature and the level and length of commitment the students must make to their enterprise project, the project selection and team formation is the most critical and stressful initial choice that the students have to make when they first join our program. The students select their enterprise project and their team through an ideation and self-selection process that is facilitated by the faculty but where the decision resides exclusively with the student. The students are exposed from the start to:

- What are the salient features of innovation and technology-based startups,
- Community-based innovation challenges that might present an opportunity for an enterprise project
- University owned intellectual property that is available for licensing
- Brainstorming sessions between student peers
- Peer-to-peer presentations and critiques of potential startup opportunities.

5.3 Mentorship

Another building block of the student learning experience is the recruitment of a technical and business mentor for their Advisory Committee. Both mentors must be proven and successful practitioners in a relevant industry as the students’ enterprise project. While the school might provide a list of mentors that have been approved and are willing to serve, it is the students who must seek them out, or seek out new mentors altogether if they deem more appropriate. When
identified, those mentors must then meet the school’s qualification criteria for mentorship before they are formally invited to serve by the program’s Business Development Manager.

5.4 Financing
The provision and availability of venture financing is another building block of our program and without which the learning experience is seriously undermined. Before having to seek equity-based financing such as Angel or VC financing which are usually unavailable in the very early stages anyway, our students are exposed to three sources of seed-stage and early stage financing:

5.4.1 Proof-of-Concept or Merit Funding
The W Booth School offers POC funding of up to $10,000 on a merit-basis to any team that has completed its first tollgate and has incorporated its company. The team is evaluated by an external jury of competent experts who are key stakeholders and leaders of the local entrepreneurship eco-system in the Hamilton, Ontario area.

5.4.2 Startup Competitions
In addition to POC funding, the teams are also encouraged and trained on how to compete in local startup competitions organized by the university and the surrounding regional incubators and accelerators.

5.4.3 Provincial and Federal startup funding
Finally, another source of significant funding to our startup teams as they further progress through their project and achieve some key milestones are provided by Ontario Centres of Excellence (OCE) in the form of SmartStart Seed fund, the Market Readiness Customer Creation (MRCC) fund, and Market Readiness Company Building (MRCB) fund.

5.5 Post-graduation Support
Because it takes a lot more than 16 months to build a successful startup from scratch, our engagement with our students does not end with their graduation. The School owns a 16-desk A-quality incubator space located at the nearby McMaster Innovation Park, and we make it available rent-free to our recent graduates for a period of up to 12 months after their graduation. In the meantime, we continue to advise them on important matters such as investors’ term sheets, hiring, cash management, product development process, sales and marketing strategies, etc. We have found that this continued involvement, albeit quite light in its time commitment, has a great impact on the entrepreneur’s continued success and is a key driver of the alumni continued commitment to the school, the university and the local community.

6 Space and Infrastructure Support

6.1 The Enterprise Development Lab
The MEEI program, as part of the Walter G. Booth School of Engineering Practice, is housed in the state-of-the-art Engineering Technology Building (ETB). The School occupies the entire 5th floor of that building, as well as has access to other facilities in the building. The total area of the 5th floor, which is occupied solely by the Walter G. Booth School of Engineering Practice, is just over 22,000 sq. ft.

The MEEI students are given desk space equipped with computer and telephone access to operate their enterprise project. This dedicated space can accommodate over 60 students. The space also
offers the students a dedicated Xerox Document Centre, which is a high-speed multifunction color laser printer.

In addition, the MEIE graduates have exclusive access to a Business Incubation Centre at McMaster Innovation Park (MIP) as a result of a generous donation from Mr. Don Pether to the Faculty of Engineering. The Don Pether Incubation Centre is dedicated to graduates of the program that are ready to start their own businesses, and offers them up to 12 months of rent-free occupancy of the space. The space can accommodate up to 18 businesses. There is a committee that oversees the allocation of this space to applicants from the program.

6.2 Library resources

The Science and Engineering (Thode) and School of Business library facilities of McMaster University are part of the informational support for this program. These libraries have excellent collections of materials in all fields of engineering and business. However, due to the nature of the program, the online electronic access to current documents, periodicals, publication through the library system is enormously helpful to students in the program.

The relevant libraries are listed below.
McMaster University:
Thode Library (Engineering and Science)
Innis Library (Business)
Mills Memorial Library (University Library)

In addition to the McMaster University library facilities, access is given to MEIE students to the market research facilities at MaRS (Medical and Related Science) in Toronto. These market research reports are extremely costly and are a valuable resource to students in developing their projects.

6.3 Laboratory facilities

Prototyping laboratory: Students in the MEIE program have access to the Prototyping Laboratory of the Walter G. Booth School of Engineering Practice for rapid iterations in the ideation process, to explain ideas to clients and users, and for functional testing of design concepts. The Prototyping Laboratory provides students with capabilities to show clients and users a more finished model through the use of advanced equipment such as vacuum forming, thermo forming and injection molding.

The prototyping shop includes basic requirements of workbenches and stools, hand tools for wood, plastic, and foam, wood working machines such band saws and drill presses, and metal working machinery such as CNC milling machines, as well as more sophisticated equipment such as rapid prototyping machines and 3D printing equipment.

Access to MMRI (Materials Manufacturing Research Institute), machine shop, electronics lab, photonics lab in Engineering Physics, the ADL (Applied Dynamics Laboratory) and various computer clusters is available to students.
MMRI is a 10,000 sq.ft. facility. It has state-of-the-art machining equipment and polymer processing equipment. In addition, students have access to a unique micro-manufacturing facility that was created this year.

In the areas of micro-electronics, microwaves and photonics, extensive experimental facilities exist in various laboratories for device, circuit and system design and testing.

In addition to these on-campus facilities, our mentors at other universities and industry also make laboratory facilities, and equipment available to students to advance the development of their projects.

Other scientific facilities that enable MEEI students to move their projects forward are:

Centre for Emerging Device Technologies (CEDT) -- an organization that facilitates the study of the optical, electrical, mechanical, and biological properties of semiconductors and related materials and promotes the development of technology based on these materials.

McMaster eBusiness Research Centre (MeRC) - MeRC research groups have developed expertise in areas of mobile commerce, eHealth, portals, identity theft, online negotiation, supply chain management, interface design, online trust and privacy, eLearning, knowledge management, and change management, among others.

McMaster RFID Applications Lab (MRAL) - It provides a hub for applications-oriented RFID research and development between academia and multiple industries, promoting investigation in technology, social policy, commercialization and business process.

As is the inherent nature of entrepreneurial studies, shoe-string budgets and passion for project/business make the budding entrepreneurs ingenious in seeking out low-cost ways to move to the next step. Therefore, if they need equipment or facilities, they will be proactive in finding a suitable solution to augment the facilities listed above.

6.4 Computer facilities

Various computer clusters are available for the students equipped with advanced software in CAD, CAE and finite elements analysis. In particular, there is a cluster of high-performance computers in the Engineering Technology Building, which are accessible to MEEI students requiring specialized software packages.

Students are encouraged to bring their own laptop as there are ubiquitous Internet hook-ups, WiFi and power outlets. Each student has however their own dedicated lockable set of under-desk drawers allocated to them. All faculty and graduate students are provided with an account on the university’s central computer system. This account gives them access to electronic mail facilities, Internet, and a variety of standard software packages. Every effort is taken to provide the technology tools necessary to enable student projects/businesses to move forward to fruition.

7 Benefits & Outcomes

7.1 Cohort Data from 2005-2014

Since the program inception, the program has trained more than 170 entrepreneurs. The table below shows the year-to-year enrollment from 2005-2014. The program initially started as a 20-
month program and was recently reduced to 16 months in 2015. The returning students are those who come back to finish the last two of the 5-term program.

<table>
<thead>
<tr>
<th>Student Enrollment</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 43 49 50 48 49</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7.2 Financing & Jobs Creation

We measure the effectiveness of our program by the performance of our students and graduates both during their tenure with us, as well as after their graduation from our program. While it fluctuates highly year to year, an average of 2/3 of our students who stay in Canada seek employment in established companies after their graduation, while the remaining third continues to pursue employment with a startup, whether it’s their own or not.

During the course of our program, we monitor our students non-academic performance through mostly their ability in winning startup competitions and securing funding from other competitions and highly selective funding agencies. The following is a recent and non-exhaustive list of accomplishments by our students and recent graduates in securing such forms of financing.

- Hussam Haroun (Cinnos - http://www.cinnos.com) received $125,000 from OCE 2015 for their MRCC plan (Market Readiness Customer Creation). As of this date, Cinnos has added 30 new jobs in Hamilton, moved to 5,000 square feet facility in MIP (McMaster Innovation Park), and generated more than $3M in revenues since its inception in our program in 2014.
- Sina Afshani (Blue Orchid - http://www.blueorchidcare.com) placed 2nd in the 2015 Synapse Life Science competition winning $1,500 cash and a $5,000 IP package and placed 3rd in Lion’s Lair 2015 ($35,000). Also received $125,000 from OCE in 2015 for their MRCC plan
- Yousif Hassan and Omar Atta (Checklistings - www.vip.checklistings.ca) received $85,000 from NRC IRAP (Industrial Research Assistance Program) and $45,000 from BCD (Business Development Bank of Canada) for operational and development expenses in 2015.
- Peter Basl (Ranggo - http://ranggo.ca) won 1st place in Lions Lair 2014 ($57,500)
- Douglas Pearson and Chetan Singh (Rotanovus) won $2,500 for 1st place in Spectrum’s 1st annual STAND UP Pitch Competition (November 2014) and placed 2nd in Spectrum’s 1st Annual Student Startup Competition winning $15,000
- Ahmed Elmeligi and Jacob Jackson (HINT) won $2,500 for 1st place in Spectrum’s 2nd annual STAND UP Pitch Competition (November 2015). They also ranked among the top-10 finalists at the annual SPECTRUM Student Start-up Competition, March 31, 2016 with four prizes valued at $25,000 each.

After their graduation, we continue to monitor our graduates in their ability to grow their startups, create jobs and achieve profitable revenue growth. The following table shows a summary of the funding raised and the jobs created by the graduates from 2014 onward.
<table>
<thead>
<tr>
<th>Start-ups</th>
<th>Seed Funding Raised</th>
<th>Jobs Created</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cinnos Inc.</td>
<td>$60,000 in OCE/FedDev Funding</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>$125,000 MRCC funding from OCE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$2,000,000 in Private Equity</td>
<td></td>
</tr>
<tr>
<td>Blue Orchid Inc.</td>
<td>$40,000 in OCE/FedDev Funding</td>
<td>04</td>
</tr>
<tr>
<td></td>
<td>$125,000 MRCC funding from OCE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$200,000 in Private Equity</td>
<td></td>
</tr>
<tr>
<td>CheckListings (formerly Tangobits)</td>
<td>$85,000 from IRAP</td>
<td>02</td>
</tr>
<tr>
<td></td>
<td>$45,000 from BDC</td>
<td></td>
</tr>
<tr>
<td>Rango</td>
<td>Investment from Softmills Inc.</td>
<td>03</td>
</tr>
<tr>
<td>Axiom Networks Inc.</td>
<td>$60,000 in OCE/FedDev Funding</td>
<td>02</td>
</tr>
<tr>
<td>Treata Smart Solutions Inc.</td>
<td>$60,000 in OCE/FedDev Funding</td>
<td>05</td>
</tr>
<tr>
<td></td>
<td>$30,000 in Mitacs Funding</td>
<td></td>
</tr>
<tr>
<td>Advanced Solar Technology Solutions Inc.</td>
<td>$60,000 in OCE/FedDev Funding</td>
<td>03</td>
</tr>
<tr>
<td></td>
<td>$100,000 in Private Equity Investment</td>
<td></td>
</tr>
<tr>
<td>Seamless Display Systems</td>
<td>$60,000 in OCE/FedDev Funding</td>
<td>03</td>
</tr>
<tr>
<td>Natural Protection Solutions Inc.</td>
<td>$10,000 in OCE/FedDev Funding</td>
<td>02</td>
</tr>
<tr>
<td></td>
<td>$60,000 in Private Equity Investment</td>
<td></td>
</tr>
<tr>
<td>Treata Smart Solutions</td>
<td>$60,000 in OCE/FedDev Funding</td>
<td>04</td>
</tr>
<tr>
<td>Akindi Inc.</td>
<td>$30,000 in OCE/FedDev Funding</td>
<td>01</td>
</tr>
<tr>
<td>BNNSoft Inc.</td>
<td></td>
<td>01</td>
</tr>
<tr>
<td>Essamy International Inc.</td>
<td></td>
<td>02</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$3,025,000</td>
<td>66</td>
</tr>
</tbody>
</table>

Of notable mention among our recent startups is Cinnos Technologies. Within less than 12 months from the graduation of its founder and CEO, Hussam Haroun, the company achieved over $3M in revenues and $300k in earning by the end of its 2016 fiscal year (July), and projecting $13M in sales for FY’17. The company also created about 30 highly paying jobs in the Hamilton area, and committed $3M to McMaster University towards the funding of a translational research centre called McMaster Computational Infrastructure Research Centre (CIRC). Today, CIRC is collocated with Cinnos headquarters within a 5,000-sft office and lab area at the McMaster Innovation Park.

8 Conclusion

The MEE program of the W Booth School of Engineering Practice at McMaster University is a uniquely designed entrepreneurship program that combines the state of the art of our cognitive understanding of entrepreneurship and innovation, along with the practical and proven experience of the faculty that deliver this program. This has proven to be a powerful learning experience that has trained proven entrepreneurs and leaders who have made a material impact on the community and the society at large. Whether they led their own startups, or moved into established companies, their holistic and multidisciplinary training with real world experiential and high-stakes project has forged in them a canny ability to deliver innovative and sustainable solutions to real-world problems.
EXHIBIT A:
Master’s in Engineering, Entrepreneurship & Innovation (MEIE)
Modules’ Objectives

The following gives an overview of the module-specific objectives and how they carry the student through the 3 phase gates and the overall program.

In addition to the E&I modules, two additional modules; the Innovation Studio and the Leadership in Innovation are mandatory and common to the students in all the three School’s programs (Entrepreneurship, Engineering Design and Engineering in Public Policy). These common courses bring all the students together around the shared themes of innovation and leadership, and provide the opportunity for synergies, collaboration and the formation of mixed teams.

In addition to the five mandatory modules, the students must also take two additional advanced engineering modules, which range from a wide choice of more than 30 electives, including Total Sustainability Management, Design Thinking, Project Management, Sustainable infrastructures, Process Design, Process Modeling and Optimization, Sustainable Manufacturing Processes, Statistics for Engineers, etc.
9 Bibliography

Understanding entrepreneurship and strategic management in SMEs with a systemic approach

Edmilson Lima

Abstract

The paper aims at demonstrating the contribution potential of a systemic conceptual approach that is useful for research on entrepreneurship and strategic management, especially in small and medium enterprises (SMEs). The use of the approach will be illustrated with a real application into research seeking to explain how shared vision form and evolve in directors’ teams that administrate SMEs, a topic in great need for research.

1- Introduction

It is possible to say that the entrepreneurial character of people and activities in an organization depends greatly on its strategic orientations (mission, vision, objectives and goals, collectively) and on the strategy employed. If the strategic orientations challenge the status quo and focus, for example, on innovation and exploitation of opportunities – cornerstones of entrepreneurship –, they will imprint the organization and its members with entrepreneurial intentions as guides to their actions. As a result, entrepreneurial behavior will tend to be an important characteristic of theirs.

Strategy, which is a pattern of actions articulated with one another over time (Mintzberg and Waters, 1985), is frequently employed as a means to realize strategic orientations. If strategy prioritizes entrepreneurial initiatives according to strategic orientations, actions that build it tend to be entrepreneurial as well. On the other hand, even actions that are not linked to a strategy may be entrepreneurial if they are coherent with entrepreneurial intentions set by strategic orientations. Some of those actions may even create an emerging strategy, if they are later
recognized as an emerging, articulated pattern of strategic actions established over time (Mintzberg and Waters, 1985), an emerging strategy that would be entrepreneurial. One of the advantages of emerging strategies is that they complement strategic orientations, making them more valuable and operational, as stated by Mintzberg and Waters (1985), referring specifically to vision.

Furthermore, if both the strategic orientations and the strategy itself are entrepreneurial, the organizational system will logically be not only guided by entrepreneurial intentions, but also dynamized by truly-entrepreneurial strategic actions. One could expect, then, that such concomitance would establish the utmost entrepreneurial conditions for organizational operation.

As purposeful systems\(^1\) (Ackoff and Emery, 1972), organizations count on the actual strategic orientations to determine what purposes they seek. They are ideal-seeking systems whose progress is directed by images of a desired future that their members shape collectively and develop through time while trying to realize them, but without neglecting the need for continuous promotion of compatibility between the systems and the environment (Banathy, 1992, 1996). Vision is a central constituent of strategic orientations, being an image of a desired future to realize that reflects the system’s purposes, and is shaped collectively to evolve through time generally including an interest for promoting coherence between the organization condition and its context (Lima, 2004; Lima et al, 2013).

As an important indicator of purpose in small and medium enterprises (SMEs), vision is in continuous construction following interactions of the owner-managers or entrepreneurs among themselves (Lima et al. 2013), with other people (e.g., see the role of relations in Filion’s vision

\[^1\] Systems that can produce the same outcome in different ways in the same internal or external state and can produce different outcomes in the same and different states (Ackoff and Emery, 1972).
and relations model), and with the reality in which they live (Lima, 2004). This gives the SMEs a fluid character, imperative to ensure possibilities of development to this organization that is particularly fragile (for lack of resources) in face of a progressively complex, unstable, and somewhat unpredictable context. It seems that SMEs naturally avoid the predictable goal-seeking and cybernetic system paradigms typical in hard-system approaches, which control and try to carry out exactly what was once programed. Instead, their evolution is better explained according to a soft system approach such as the soft system methodology (SSM – Checkland, 1999), which…

…reflects a model of human behavior oriented to “relationship-maintaining” as set down in the writings of Vickers. (…) [T]he concern of hard system thinkers [is] with how we should achieve known goals, with prediction and control and with optimization. In soft system thinking the emphasis is, rather, on what we ought to do and on participation and learning (Jackson, 2000, p. 248).

One could say that these ideas apply particularly well to SMEs guided by a shared vision, as opposed to the vision restricted to one only owner-manager or entrepreneur. Shared visions gather more diverse purposes from members, the organization itself, and the society, since organizations have to fulfill social and/or market needs and have some legitimacy to evolve. Organizations’ directors need to serve these three sets of purpose and avoid conflicts among the sets (Ackoff, 1999). In this regard, shared vision helps with important qualities because, to evolve and be useful, it has to derive from a strategic management process respecting preconditions such as interaction and conversation with, and listening to diverse internal and external stakeholders.

As we can see even in a work not clearly based on systems theory, like Normann’s study (1985), vision and strategic management evolve according to a typically systemic process of organizational learning and promotion of development. The author states that strategies develop
and occur as part of a process comprising at least three key sub-processes that happen in a simultaneous and interrelated way (negation of the “sequence myth” in strategy), namely formulation of a vision, actions oriented by that vision, and interpretations and thinking guided by the actions and their results. As the process is repeated, the vision becomes clearer, new actions are taken, thinking is fueled, and so on. For Normann (1985), the image of a spiral that evolves through time is an excellent reflection of the strategic change based on these three key sub-processes stimulated and oriented by vision.

This kind of learning process involving strategic action that changes reality to accomplish an evolving shared vision is central to this paper. The paper aims at demonstrating the contribution potential of a systemic approach to the research in entrepreneurship and strategy, particularly regarding SMEs. This may be especially valuable to research either subject separately, or their intersection, considering the need for research on topics such as learning in owner-managed small firms (Jones, Macpherson and Thorpe, 2010), entrepreneurial learning (Wang and Chugh, 2014), and strategic entrepreneurship (Hitt et al., 2001, 2002, 2011; Ireland et al., 2001).²

The practical application of the conceptual approach took place in a study of SMEs. Those enterprises raised our interest for different reasons: their socioeconomic relevance; the need for research on their activity and reflection system involving strategic management and entrepreneurship; and the fact that the vision, a soft-systemic concept that still needs to be more deeply studied, has appeared to be more relevant and presents itself more intensely and clearly in

² Hitt et al. (2001, 2002, 2011) and Ireland et al. (2001) understand strategic entrepreneurship as activities in the organization to simultaneously obtain competitive advantage and explore opportunities. The effort aiming at opportunities is seen as the part of entrepreneurship within the intersection strategy-entrepreneurship. However, one cannot deny that obtaining competitive advantage usually requires the creation of innovation and differentiation, which gives a very relevant function to main aspects of entrepreneurship also within the strategy part.
these organizations. As we can see, vision is in the intersection of entrepreneurship, strategy, learning and soft system thinking. Nevertheless, it is rarely treated following a perspective with all these same intersections, which makes such perspective promising and raises even more our interest for using it.

SMEs are commonly seen as organizations with simple structures and “only one head” (Mintzberg, 1996). This only-one-director perspective prevails in entrepreneurship and SME studies, seeing the creation and subsequent direction of organizations as processes conducted by only one owner-manager or entrepreneur. A paradigm was thus established in entrepreneurship and SME studies, considering vision as something that emanates from one sole central person, neglecting that many organizations have a directors’ team. Therefore, to focus on a more restricted research topic with even more need for studies, one could search for answers to the following research question: how does the vision shared in a directors’ team that administrates a SME form and evolve?

To attain the objective of this article, the following sections present the real application of a systemic approach in a research developed to answer the question. The application demonstrates the contribution potential of both approaches and hopefully will inspire solutions for other researches. As the text will show, the study of the learning of directors’ team in the entrepreneurial process is important to answer the question. Hence, other potential contributions of this article concern overcoming the need for better understanding collective entrepreneurial learning, as highlighted by Wang and Chugh (2014).
2- Vision, learning and systemic approach in SMEs

Vision is so relevant and determining in SMEs mainly because, in these organizations, strategic process, entrepreneurship, and administration as a whole are not very elaborate regarding the use of administrative techniques, formality, and analytical methods – largely due to the lack of resources such as personnel, financial, and knowledge (Lima et al, 2013). This reality imposes the use of vision as the central strategic orientation, considering that mission is basically the reason for the existence and operation of organizations while objectives and goals tend not to be well developed in SMEs because of their informality and resource poverty. Vision is a resource within directors’ reach and is well-adjusted to the need for flexibility imposed by the fragility and uncertainties faced by SMEs. It is also related to the prevalence of synthesis, intuition, and judgment concentrated in the directors’ ability in the context of small organizations with little formal, sophisticated, and rational-analytic administration.

In that sense, in Filion’s (1988, 2004) studies based on SSM (Checkland, 1999), the vision of these businesses’ directors and the interpersonal relationships that lead to the development of such vision are seen as foundations and essential promoters of the entrepreneurship they conduct. A number of other studies, mostly in French, also point out the decisive role played by vision in the development of SMEs (for example: Allali, 2005; Carrière, 1991; Cossette, 1996; Filion, 1991, 2004; Mintzberg, Ahlstrand, and Lampel, 2005; Wyer and Mason, 1998). Those studies frequently highlight the preponderance of owner-managers, the lack of resources, and the need for flexibility as determinants of the determining character of vision in these small organizations. However, the authors cited in this paragraph do not approach directors’ teams. Hence, their
contribution has to be complemented to explain the formation and evolution of those teams’ shared vision in SMEs.

The definition of vision used in this paper was proposed by Filion (1991, 2004) as a mental image of the intended future concerning the space that one intends to fill with his/her products in the market, as well as of the necessary organization to reach that point. Shared vision, in turn, is an image created and shared by different individuals of a future to be accomplished related to those same elements (Lima, 2004). According to Filion (1991, 2004), vision is a persistent, realist, and achievable image of the intended future, based on knowledge developed by the directors on the market, the business opportunity to be exploited, and the market niche aimed at. Furthermore, from the same perspective, vision is also guided by certain clarity enjoyed by directors in contemplating the resources to be allocated and how the business should be structured to achieve its main components.

3- A real application of the systemic approach

(This section and the following ones have to be developed.)

Potential references to be used (including those used in this text)


Creating value for Individuals, Organizations, and Society’, Academy of Management Perspectives, 25:2, pp. 57-75.


THE DEMARCATION PROBLEM:  
EXPLORING THE BOUNDARIES OF ENTREPRENEURIAL ORIENTATION 
USASBE EXTENDED ABSTRACT

Steven Phelan – UNC Fayetteville State University 
Caroline Glackin – UNC Fayetteville State University 
Bhavesh Bambrhrolia – Temple University

KEY WORDS: entrepreneurial orientation, entrepreneurial behavior, entrepreneurship, business performance, community college, higher education

ABSTRACT

A positive association between entrepreneurial orientation (EO) and performance is a nearly ubiquitous finding in the entrepreneurship literature. Instead, there is a demarcation problem in determining the contexts in which this association does not apply. This study uses a sample of community colleges to explore the boundaries of the EO-performance relationship and introduces “entrepreneurial degrees of freedom” as a moderator. Two instruments, survey and computer-aided text analysis (CATA) were used to measure EO. A moderate positive relationship between survey EO and revenue growth was found along with a negative relationship between survey EO and graduation rates. There was no significant relationship between CATA EO and performance. Curiously, the subscales of the CATA scales were not internally consistent and no relationship was found between survey EO and CATA EO. The implications of these findings for theory, practice and future research are then discussed.

EXTENDED ABSTRACT

A positive association between entrepreneurial orientation (EO) and performance is a nearly ubiquitous finding in the entrepreneurship literature. Instead, there is a demarcation problem in determining the contexts in which this association does not apply. This study uses a sample of community colleges to attempt to delineate the boundary of the EO-performance effect and to explore the “entrepreneurial degrees of freedom” in this context.

Data on entrepreneurial orientation and performance were collected through an online survey of community college leaders and content-based analysis of archival records. In general, the results did not find a relationship between community college performance and entrepreneurial orientation for the CATA instrument and mixed results for the survey instrument, with EO being positively associated with growth in total revenue and negatively associated with graduation rate. Re-running the models with competitive aggressiveness (or competitiveness) as the independent variable also produced mixed results. CATA competitiveness was significant at the p<0.05 level for equity ratio and Survey competitiveness was significantly associated with revenue growth. Curiously, the subscales of the CATA scales were not internally consistent and no relationship was found between survey EO and CATA EO.
The implications for entrepreneurship education and implementation include increasing the focus on the entrepreneurial context and the degrees of entrepreneurial freedom available to an organization when exploring the relationship between EO and performance. Educators and practitioners should explicitly consider whether exhortations in annual reports to “become more entrepreneurial” will increase performance in all situations as we found they had little effect in the community college context.

INTRODUCTION

Over the last 30 years, hundreds of studies have been conducted on the relationship between entrepreneurial orientation and performance. Entrepreneurial orientation is a theory that explains an organization’s orientation and performance and was brought to the forefront through the seminal work of Lumpkin and Dess (1996). Almost uniformly, studies have found a moderate positive relationship between entrepreneurial orientation (EO) and organizational performance. The notion that organizations with entrepreneurial cultures will outperform less entrepreneurially minded organizations is a beguiling proposition for scholars of entrepreneurship. If true, it legitimizes the teaching of entrepreneurial thinking in the business curriculum (and beyond) and provides a potential remedy for underperforming organizations.

Even though the EO and performance relationship has held in multiple contexts, researchers have suggested that there may be limits to the association and there may, in fact, be contexts in which the relationship is negative or insignificant. For instance, Miller has consistently argued that context should be important to the strength of the relationship (Miller, 1983, 2011). Similarly, Covin and Slevin (1988) identified “pseudo-entrepreneurial firms” in which there is an entrepreneurial management style and a mechanistic organization structure such that these factors are incongruent. Performance in such firms is not expected to be as strong. In addition, in other empirical work, the EO-performance relationship has not held in a community banking context (George, Wood, & Khan, 2001).

In seeking to delimit the boundaries of this phenomenon, researchers have turned to non-profit organizations and non-financial performance indicators, presumably expecting to find a weaker association. However, contrary to this expectation, the EO-performance relationship has held in non-profit contexts and with non-financial performance indicators (Morris, Coombes, Schindehutte, & Allen, 2007; Morris, Webb & Franklin, 2011; Pearce, Fritz & Davis, 2010; Phelan, Johnson & Semrau, 2013). As such, there is not a good understanding of the boundaries of the EO-performance relationship.

This paper contributes to the conversation on the EO-performance relationship by theorizing that it is not the for-profit or non-profit sector nor the industry that defines the nature of the EO-performance relationship, rather it is the freedom to act entrepreneurially within one’s context, degrees of entrepreneurial freedom. We focus on the relationship between the entrepreneurial orientation of managers and performance indicators at community colleges in the United States. Community colleges are of interest because they have lower strategic degrees of
freedom with less room to be competitive in geographic diversification, state charters that limit actions and specify missions, as well as other constraints (AACC, 2016; Cohen & Brawer, 2003; Dougherty, 1994; Roueche & Jones, 2005).

ABREVIATED LITERATURE REVIEW

Entrepreneurial Orientation and Performance

Entrepreneurial orientation refers to “...a strategic organizational posture that captures the specific processes, practices and activities that enable firms to create value by engaging in entrepreneurial endeavors” Entrepreneurial orientation has been studied widely in for-profit and non-profit organizations, and researchers have established a moderately strong relationship between entrepreneurial orientation and organizational performance. For instance, a meta-analysis by Rauch, Wiklund, Lumpkin, and Frese (2009) on 53 studies of the EO-performance relationship found a corrected correlation of 0.242 between the two measures, which they described as moderately high. The relationship continued to hold with different versions of the instrument, whether performance was objectively or subjectively measured, and whether financial or non-financial data were considered (although non-financial data showed a lower correlation).

Community Colleges – Entrepreneurial or Not?

In the United States, community colleges are a vital part of the higher education landscape. They generally provide open enrollment, affordable tuition, and a variety of vocational and 4-year college transition options (AACC, 2016; Dougherty, 1994). A common definition of a community college is “Any institution regionally accredited to award the associate in arts or the associate in science as its highest degree” (Cohen & Brawer, 2003). Ed Gould of Imperial Valley College notes, “Declining fiscal resources has challenged community colleges to continue a multiple-level mission that includes community services, lifelong learning, and community public interest programs and services” (Lorenzo, 2011, p. 15). Typically, community colleges serve a designated local area, such as a county, in much the same way as public high schools, and are non-residential institutions, with primarily employed students (AACC, 2016).

Community colleges are an interesting context in which to study entrepreneurial orientation. On the one hand, they have been urged to become more entrepreneurial over the past 20 years (Lorenzo, 2011; Roueche & Jones, 2005; Wallace, 2005). On the other hand, they have limited degrees of freedom which may constrain their ability to act entrepreneurially.

While community college leaders have advocated entrepreneurial behavior to achieve institutional mission (Roueche & Jones, 2005), it is unclear if the institutions themselves exhibit an entrepreneurial orientation that enables them to reach enrollment, financial, and graduation goals (Lumpkin & Dess, 1996; Morris et al., 2011).

The relationship between entrepreneurial orientation and community college performance remains a gap in research. To date, only one other study has examined entrepreneurial orientation in a community college setting (Schiefen, 2010). The study by Schiefen (2010) related
organizational structure to EO using grounded theory, but did not consider performance as a dependent variable nor did it use quantitative methods. However, given the preceding discussion: there should be a positive association between EO and performance in community colleges.

Prior research has often conceptualized context in terms of sectors and industries. For example, for profit versus non-profit and hi-tech versus non-hi-tech (Morris, Webb & Franklin, 2011; Rauch et al., 2009). However, as we have seen, these studies have found similar levels of association between EO and performance across these contexts. Thus, these structural variables have not proven to be effective demarcation criteria.

This study proposes that the EO-performance relationship will be moderated by the freedom, or conversely, lack of freedom, to act entrepreneurially within an organization’s environment. We call this construct degrees of entrepreneurial freedom (DEF), which we define as the range of entrepreneurial choices available to an organization. This definition builds upon the work of Shay and Rothaermel (1999) who used the term ‘strategic degrees of freedom’ to describe the choices available in the strategic landscape. Certainly, economists have noted that greater deregulation is expected to spur entrepreneurial action (Antoncic & Hisrich, 2003; Shaker A Zahra, Ireland, Gutierrez, & Hitt, 2000). Some environments simply permit a greater range of entrepreneurial actions. With fewer degrees of entrepreneurial freedom, we expect that the relationship between EO and performance will be suppressed or even result in negative outcomes. For instance, Zahra and Garvis (2000) found that greater investments in international corporate entrepreneurship produced declining returns in a hostile environment. Often this lack of entrepreneurial orientation is most apparent when a regulated firm is deregulated. Prior to deregulation, the lack of innovation from a regulated monopoly might have perfectly reflected its lack of entrepreneurial freedom, particularly in the pricing and service arenas. An investment in more entrepreneurial capacity would only have depressed performance in this case. After deregulation, the organization has more degrees of freedom and thus has an incentive to invest in more entrepreneurial capabilities.

Community colleges are generally more constrained than most private sector organizations. Community colleges’ degrees of entrepreneurial freedom are limited by geographic service areas, open admissions, state requirements, federal, state and local funding, and workforce development requirements. They are constrained in their choice of service area, target student populations, requirements for remedial education, and the requirements of their funders. Also, community colleges may be more limited than non-profits, which other than having to select a social mission, have wide latitude in selecting entrepreneurial activities.

If they are in indeed more constrained, it follows that:

**H1: There will be a negative or no association between EO and performance in the community college context.**

Lumpkin and Dess argue that the EO subscales of competitive aggressiveness, innovativeness, proactiveness, risk taking, and autonomy can have different levels of association with performance (1996). Similarly, the degrees of entrepreneurial freedom can also vary along different dimensions. In the case of community colleges, the most apparent constraints are around
competitive aggressiveness, where colleges are typically geographically bound to one county and prohibited from offering four-year degrees. They are also required to have an open enrollment policy which prevents from differentiating their offerings to different target segments, and they also have pricing restrictions imposed by governing bodies. Arguably, four-year colleges have fewer constraints in this regard. The result is that an investment in competitive capabilities is unlikely to yield a performance improvement because so many aspects of competition are proscribed. Thus, we hypothesize that:

**H2: Competitive aggressiveness will have an adverse effect on performance.**

The situation with the other four dimensions of EO is unclear. Certainly, the context does not necessarily place the same constraints on entrepreneurial freedom of action. Thus, given of the ubiquity of positive associations between EO and performance, the default must be that:

**H3: The other dimensions of EO (proactiveness, innovativeness, risk taking, and autonomy) are not constrained and thus will have a positive association with performance.**

**METHOD**

The target population for the study was all public associates degree granting higher education institutions in the United States. The institutions for the study were identified from the Integrated Postsecondary Education Data System (IPEDS) maintained by the National Center for Educational Statistics. A total of 890 institutions, the entire population of public associates degree granting higher education institutions registered with the American Association of Community Colleges (AACC), were invited to participate in the study. Many community colleges participate in a voluntary framework of accountability (VFA) that enables researchers to access a wide range of financial and non-financial performance data (AACC, 2012b).

Data on entrepreneurial orientation and performance were collected through an online survey of community college leaders and content-based analysis of archival records. This application of multiple EO measurement instruments addresses the concerns raised by Lyon, Lumpkin and Dess (2000) regarding various approaches. This approach permits us to minimize measurement error in the central EO construct, as well as validating the modified EO survey instrument that was developed for this context.

Data on community college performance was obtained from the IPEDS database. Previous EO studies have focused on both absolute performance levels and relative performance levels, and financial and non-financial measures. All four categories were considered in this study. Variables matched to respondents included: equity ratio (ratio of equity to assets), graduation rate (normal, 100%, graduation rate, 2013), percent change in full time equivalents between 2010 and 2013, and percent change in revenues between 2010 and 2013. These particular variables reflect key
performance measures for community colleges (U.S. Department of Education, 2014) and are most similar to those used by Pearce et al. (2010) with religious organizations.

A number of control variables were also obtained from the IPEDS database including: size (log of FTE students in Fall 2013), retention (full time students from 2012 to 2013), tuition (published tuition and fees in Fall 2013), and student faculty ratio (2013).

RESULTS

In general, the results failed to demonstrate a relationship between community college performance and entrepreneurial orientation for the CATA instrument and mixed results for the survey instrument with EO being positively associated with growth in total revenue and negatively associated with graduation rate. Re-running the models with competitive aggressiveness (or competitiveness) as the independent variable also produced mixed results. CATA competitiveness was significant at the p<0.05 level for equity ratio and Survey competitiveness was significantly associated with revenue growth.

DISCUSSION

If the results are taken at face value, then the logical conclusion must be that entrepreneurial orientation has little or no influence on performance in the community college context. None of these constructs had much effect on objective performance outcomes, such as revenue growth, enrollment growth, equity ratios, or graduation rates. This is a surprising and unexpected result, particularly given the extensive work that links EO to performance in the business world and the emergence of similar findings in the nonprofit sector.

Perhaps these finding best align with those of George et al. (2001) where there was not a significant relationship between EO and performance in community banks. The fact that both are community organizations may provide a hint to the source of this boundary condition. George et al. note the fact that community banks focus on local rather than regional or national customers which sets them apart. Any explanations regarding the mechanism for this condition would be purely speculative, but one could consider that more controlled/known competitive and market conditions and greater homogeneity of environment may be contributors. This certainly calls for additional research on community organizations to ascertain whether this relationship holds.

CONCLUSIONS AND IMPLICATIONS

This study can be added to the small number that did not find a relationship between EO and performance, which may, in turn, help to delineate the boundary conditions for the EO phenomenon. However, given the limitations in the study outlined above, the authors are not ready to definitively conclude that EO has limited impact on the performance of community colleges. More work is required to refine the dependent and independent measures. Hopefully, more
precision will lead to greater clarity concerning the operation and limitation of entrepreneurial orientation.

The implications for entrepreneurship education and implementation include increasing the focus on the entrepreneurial context and the degrees of entrepreneurial freedom available to an organization when exploring the relationship between EO and performance. Educators and practitioners should explicitly consider whether exhortations in annual reports to “become more entrepreneurial” will increase performance in all situations as we found they had little effect in the community college context. Another implication for educators is that the realization that research is messy – constructs are not replicated using mixed methods, scales are not internally consistent, and data sources can be problematic. This calls for more basic research on construct validity and a cautious approach to the universal application and advocacy of seemingly incontrovertible findings.
REFERENCES


A CONCEPTUAL MODEL OF GENDER-ENTREPRENEURSHIP FIT

Jerald Wallace and Elizabeth Boyd

ABSTRACT

A rich and diverse stream of research has focused on assessing differential outcomes between men and women entrepreneurs. Much past work has used sex as a demographic proxy for more meaningful psychological variables, however. The purpose of this paper is to present a conceptual model based on Person-Environment (PE) fit theory and including a discussion of current conceptualizations of sex and gender, to consider more deeply the potential influence of gender on one entrepreneurial outcome of particular interest to educators: entrepreneurial intentions.

EXECUTIVE SUMMARY

Understanding entrepreneurial motivation is essential as it can lead to insights regarding why and how entrepreneurs succeed. This is particularly important given the performance gap between groups such as men and women entrepreneurs. Existing research on gender differences in entrepreneurship has provided little in the way of suggestions for how to address male-female differences in entrepreneurial outcomes. We argue that in order to do so, research must look beyond surface-level demographics and instead explore the meaningful psychological constructs underlying them. In this way researchers can uncover not only more accurate insights about what drives gender differences, but opportunities for intervention.

In this paper we take a step in this direction by building a model based on the Person-Environment fit and entrepreneurship literatures. The central thesis of our model is that failure to pursue opportunities within the entrepreneurial environment (i.e., entrepreneurial intentions) may be linked to evaluations of misfit with respect to gender by the potential entrepreneur. Evaluations of misfit are thought to be worst when a potential entrepreneur is most feminine (i.e.,
not necessarily when a potential entrepreneur is female) due to the highly masculine embedded social norms of the entrepreneurship field. Gender is expected to relate to femininity, but based on modern conceptualizations and research the two are not expected to be the same thing.

The primary implications of our model have to do with the deepening of thought related to sex and gender as they relate to entrepreneurship. Rather than considering biological sex *per se* to be the determinant of performance or interest differences, our proposed model will instead attempt to uncover psychological mechanisms related to gender that may be underlying these differences. With respect to both entrepreneurship education and research, this is a step toward identifying and remediating factors contributing to gender underrepresentation.
A CONCEPTUAL MODEL OF GENDER-ENTREPRENEURSHIP FIT

Popular stereotypes insist that women are less interested in and successful with the field of entrepreneurship. Some empirical findings seem to back up this assertion (e.g., Green, Hart, Gatewood, Brush, & Carter, 2003). However, most studies assessing male–female differences in entrepreneurship have focused exclusively on the sex or gender of the entrepreneur as the independent or predictor variable (Chaganti & Parasuraman, 1996). This simplistic approach is problematic for two main reasons (Goktan & Gupta, 2015; Powell & Eddleston, 2013). First, entrepreneurship research has conflated biological sex, gender, and the tendency to exhibit masculine or feminine characteristics. Volumes of research have shown these to be separable constructs with independent effects (e.g., Bird & Brush, 2002; Goktan & Gupta, 2015). Second, this approach uses surface-level demographics (i.e., sex) as a proxy for more meaningful psychological variables (e.g., constructs affected by sex) that should be studied overtly. As such, both methodological and entrepreneurial scholars have pushed for more meaningful inquiry into the influence of sex and gender on entrepreneurship (Eddleston & Powell, 2008; Mitchell et al., 2002; Shaver & Scott, 1991).

Given that entrepreneurship is a “gendered phenomenon” (Jennings & Brush, 2013), meaning that the entire experience and context of entrepreneurship are likely sensitive to and affected by variables related to gender, a consideration of the effect of all gender-related variables on all entrepreneurship outcomes is a massive undertaking. Intentions to engage in entrepreneurship are a variable of crucial importance for entrepreneurship educators and scholars alike, however, due to the fact that they are a key intervention point. Therefore, the purpose of this paper is to build a conceptual model of variables within the entrepreneurial environment that
are “gendered” in nature and that as a result are expected to relate to sex differences in individual entrepreneurial intentions.

In order to do so, theories within the entrepreneurship, sociology and psychology literatures will be considered and gendered variables related to the entrepreneur and the entrepreneurial environment will be discussed. Person–environment P–E fit theory serve as the core theory upon which the model will be based (Cable & Edwards, 2004; Frome et al., 2006; Germain et al., 2012). The model will elucidate how gender-related variables associated with the individual entrepreneur combine with gender-related variables associated with the entrepreneurial environment to affect outcomes (Anna et al., 2000; Cejka & Eagly, 1999; Frome, Alfeld, Eccles, & Barber, 2006; Germain, Herzog, & Hamilton, 2012).

This research will contribute to the existing literature within entrepreneurship in three main ways. First, unlike previous research which has focused almost exclusively on the sex or gender of the entrepreneur as the predictor of intentions or outcomes, this study will continue moving the entrepreneurship literature forward with respect to current, more complete conceptualizations and considerations of gender (Cable & Edwards, 2004; Frome et al., 2006; Germain et al., 2012). Second, by going further than simply assessing male/female differences in entrepreneurship outcomes and exploring the potentially meaningful psychological variables underlying those relationships, the model proposed here should help future researchers in their attempts to address the critical question of why men and women differ in their preference to enter entrepreneurship. Third, this study represents one of the first steps toward a more complex understanding of how gender related to perceptions of fit within entrepreneurship and further, how that perception translates into intentions to enter into entrepreneurship (Lewis, 2006; Bird & Brush, 2002).
These theoretical and research contributions are accompanied by a number of important practical contributions. First, women’s underrepresentation and underperformance as entrepreneurs contributes to their global economic disempowerment (Ahl & Marlow, 2012). Increased knowledge about the mechanisms underlying women’s lack of entry and underperformance can help policymakers and educators provide better resources to remediate this issue. Instead of taking a gender essentialism perspective that assumes women’s underperformance as entrepreneurs is due to the fact that they are women (Crompton & Lyonette, 2005; England, 2010), the perspective put forth within this paper stands to contribute knowledge that can empower women entrepreneurs by providing actionable insights that can be developed into educational and training programs, equal access resources, and other opportunities.

The remainder of this paper is structured as follows. First, current research on gender and entrepreneurship is reviewed. Then, a more complex consideration of the definition and conceptualization of gender as it is often considered within other areas of research is provided. Then, Person-Environment Fit theory is discussed to provide the theoretical underpinnings for the model that will be presented. Finally, a conceptual model linking gender-related variables from the individual and contextual sides of the entrepreneurial interface is presented.

Gender and Entrepreneurship

Numerous gender differences exist in the experiences of women and men entrepreneurs. For example, men and women tend to be segregated into various forms or sectors of entrepreneurial activity (Anna et al., 2000; Klyver, Nielsen, & Evald, 2012; Weeden & Sorensen, 2004). Firms headed by women tend to be over-represented in the retail and personal service sectors and under-represented in the manufacturing, construction, and transportation sectors.
Past research has provided some explanation for this gender segregation such as women’s lack of acceptance in certain industries (Germain et al., 2012), women’s concerns about balancing demanding careers with family (Frome et al., 2006), differences in self-assessed ability (Thebaud, 2010), lack of social support (Germain et al., 2012), and stereotyping (Gupta et al., 2009).

Further, businesses headed by women tend to be smaller than those headed by men and tend to generate lower levels of profits and revenues than male-led firms (Collins-Dobb, Gordon, & Smart, 2004; Fairlie & Robb, 2009; Orser, Riding, & Manley, 2006). Moreover, such performance differences are accentuated due to the fact that performance measures such as financial outcomes dominate the literature. Yet, recent research has revealed that the metrics of success most important to the entrepreneur may be different between the sexes (Davis & Shaver, 2012; Eddleston & Powell, 2008; Joshi et al., 2015; Powell & Eddleston, 2013). Research suggests that female entrepreneurs may put greater emphasis on social emotional factors like interpersonal relations with customers and employees rather than status-based measures derived from financial metrics (DeMartino & Barbato, 2003; Walker & Brown, 2004).

Men and women also have different preferences for the pursuit of opportunity and differ in their intentions to engage in entrepreneurship. For example, Zhao et al. (2005) found that women did not differ from men in terms of entrepreneurial self-efficacy or their actual ability to do the job tasks, yet their intentions to become an entrepreneur were lower. As was noted above, however, the studies exploring the role of gender within entrepreneurship have almost exclusively separated male and female entrepreneurs by sex rather than assessing variables
related to gender tendency which may actually be influencing the variables at play. In the following section we will outline and discuss those variables.

**Gender Identity**

Biological sex and gender have traditionally been used to categorize research participants into the categories of male/female or men/women (West & Zimmerman, 1987). As was discussed above, this approach conflates many variables potentially associated with biological sex or gender with the effect of sex/gender itself (Bird & Brush, 2002; Goktan & Gupta, 2015). Although researchers within entrepreneurship and beyond have begun to push for the investigation of more meaningful variables related to sex, little development has occurred along these lines within the field of entrepreneurship thus far (Begley & Boyd, 1987; Eddleston & Powell, 2008; Mitchell et al., 2002; Shaver & Scott, 1991).

However, researchers and many others have begun to realize that the identities, behaviors, personalities and cognitive structures of men and women are not so easily classified into two neat categories based on sex or gender (Eddleston, Veiga, & Powell, 2006; Goktan & Gupta, 2015). Fortunately, although gender and sex have typically been conflated within the literature on entrepreneurship (Goktan & Gupta, 2015; Eddleston & Powell 2008), there are much more richly developed streams of literature on gender within other disciplines to draw from. For instance, within sociology gender is considered to be a sense of identity developed through social categorization processes and is measured as gender identity (Ashforth & Mael, 1989; Eddleston & Powell, 2008).

Gender identity is a sociological concept, referring to social categorization by gender (Sherif, 1982). Gender identity reflects one’s “fundamental location in the gendered social space” (Ely, 1995, PAGE) which is the self-concept of what an individual believes he or she
possesses by way of traits, whether they be masculine or feminine in nature (Bem, 1974, 1993). Aggression, assertiveness, risk taking, ambitiousness, and similar characteristics have traditionally been considered masculine, whereas caring, kindness, nurturance, and cooperation are considered feminine (Eddleston et al., 2006; Eddleston & Powell, 2008).

Instead of being assigned to men and women based on biology, these masculine and feminine characterizations are based on the complex mix of past experiences and social experiences people have had over time (Bussey & Bandura, 1999). As such, gender identities are socially constructed and self-assigned categorizations (Gupta et al., 2009). Gender and gender identity are related, however (Martin et al., 2002). In addition to genetic influences, differential treatment during development affects a host of characteristics like talents, self- and social consciousness, and behavioral norms (Bussey & Bandura, 1999).

Research has suggested most individuals are androgynous, meaning they typically exhibit both masculine and feminine traits depending on the situational appropriateness of these various tendencies (Bem, 1974). Situational appropriateness and adequate perception of a particular tendency fit is individually based and can be adapted given particular environmental factors. For instance, if the situation is a close friend’s loss of a child where sympathy and compassion (feminine tendencies) would be called upon and subsequently an individual would exhibit this in their behaviors. The choice of the chosen gender tendency drawn upon is dictated by the influential role of social cognition. Social cognition assumes an agency perspective to self-development and adaptation where the individual has the distinctive human attribute for the exercise of self-selection (Bandura, 1986). Social cognition heavily attributes social behavior to cultural influence (nurture) rather than the rule of nature (genetics). The social influences of
one’s past, to include their individuated gender schema acquired is translated to eventual gender-linked behavior (Bussey & Bandura, 1999).

The Theory of Fit

Person-environmental fit (P.E.-fit) theory has been central to research in organizational behavior, career psychology, and human resource management (Kristof-Brown et al., 2005). Various studies suggest that P.E. fit is related to selection decisions, occupational choice, performance, and well-being (Verquer et al., 2003; Spokane et al., 2000). Given the different person-environment frameworks of study between individuals and foci of fit, they seem to share one core assumption that individuals will tend to move towards environments which are congruent with their individual needs, values, and capabilities (Prottas, 2011). In psychology, congruence means an adequate fit between an individual’s needs, wishes, and preferences with a situation and its associated rewards and benefits (Tinsley, 2000). Defined another way by Holland (1997), congruence is the compatibility of an individual to a type of work or environment that fits that individual’s needs and interests.

Person-environment fit theory has been used quite extensively in the career development and choice literature (Lent et al., 1994; Betz & Hackett, 2006). Fundamental to this research stream is unless and until the behavior domain of interest of the individual is well delineated, assessment is withheld (Betz & Hackett, 2006). The cognitive appraisal or judgment of future congruence is based on the efficacy belief system. This differentiated set of self-beliefs must only be linked to the distinct functional tasks of the occupation (Bandura, 2005). This emphasizes the key role of the cognitive appraisal of one’s abilities in a specific environment and, in particular, the relevance of self-efficacy to understanding career development. This potential lack of self-belief may help explain in general, women’s underrepresentation in
scientific and technical careers, and in particular the entrepreneurship career domain (Shaver & Scott, 1991; Bandura, 2012).

**Entrepreneurship Fit**

Although person-environment fit theory has been used quite extensively in the career literature (Betz & Hackett, 1981, 1983), it has also been extended into the entrepreneurship domain. Markman and Baron (2003) established a framework that they identified as person-entrepreneurship fit consisting of five dimensions readily open to modifications due to individual differences. This study would propose these dimensions into two subgroups identified as the cognitive traits and the psychological traits. The cognitive subgroup would consist of opportunity recognition, social skill, and human capital. The psychological subgroup, the particular focus of this study, would consist of self-efficacy and personal perseverance. Further, in this study, perseverance would be expanded to consider more holistic but relative traits capturing qualities like persistence, resilience, risk tolerance, tenacity, and competitiveness. This expanded view is offered as a means to better explain the whys behind the what. So what is perseverance? It has been defined as one’s tendency to persist and endure in the face of adversity (Markman, et al., 2002). Why do individuals persevere can include the additional attributes like the willingness to compete against obstacles of adversity inherent in entrepreneurship or perceived expected utility where taking calculated risk is considered worth the effort. In essence, perseverance can incorporate many other enduring and drive-related traits that help explain why an entrepreneur is willing to persevere through uncertain odds.

**The Current Model**

As mentioned previously, within entrepreneurship research studies, biological sex has often been used as the proxy for male–female differences or it is assumed that gender and sex are
the same (Baron et al., 2001). As was discussed in the above section, gender is in fact much more complex than a simple dichotomy between men and women dictated by their biological sex (Ridgeway, 2001). The P–E fit paradigm predicts that the best attitudes, behaviors, and results occur from the congruence between attributes of the individual and the environment (Cable & Edwards, 2004; Ostroff, 2012; Schneider, 1987). A model will be presented integrating these concepts and proposing relationships where variables related to the individual entrepreneur and his or her gender affect his or her perceptions of the entrepreneurial environment; specifically, how s/he evaluates an entrepreneurial opportunity.

**The Entrepreneurial Context**

Entrepreneurship is an institution ruled by certain rules of social justification (Zukin & DiMaggio, 1990). Institutions such as the field of entrepreneurship maintain stability, homogeneity, and legitimacy by promoting compliance to rules and norms (Dacin, Goodstein, & Scott, 2002; Scott, 2007; Thornton & Ocasio, 2008). Although the social formalization of a field necessarily benefits the majority of actors within that field, particularly as a field grows and becomes more diverse these social structures simultaneously penalize others (Seo & Creed, 2002). For example, men within a field consisting primarily of men may benefit from the masculine social norms which result from their overrepresentation. However, women may inadvertently be penalized by the fact that their underrepresentation within the field, particularly during its early stages, meant that they had little influence over its culture or social structures.

The social norms and structures of an institution or field are not easily modifiable but rather inscribed into social institutions. For example, despite the rise in women entrepreneurs of late, entrepreneurship is considered a highly agentic profession characterized by masculine attributes like perseverance, and high self-efficacy (Lim & Envick, 2013; Zhao et al., 2005).
Volumes of research has associated entrepreneurship with other masculine (agentic) characteristics such as risk-taking and competitiveness (Bönne & Jarosch, 2011; Byrnes, Miller, & Schafer, 1999; Chen, Greene, & Crick, 1998). Past studies have found significant barriers to female entrepreneurship such as lack of support (Heilman & Chen, 2003), fear of failure (Langowitz & Minniti, 2007), and lack of competency (Thebaud, 2010) compared with men.

Additionally, gender stereotyping is believed to act as a powerful social force that justifies and maintains sex segregation of various occupations (Cejka & Eagly, 1999; Marlow & Carter, 2005). Despite major changes in recent decades, gender stereotypes still remain largely unchanged (Heilman, Block, Martell, & Simon, 1989) and generally less favorable towards woman than for men. The male stereotype has been characterized with high agentic or masculine traits such as assertive, aggressive, confident, and independent. Conversely, women have been characterized with high communal or feminine traits such as nurturance, emotional, considerate, indecisive, and submissive (Hosoda & Stone, 2000). Becoming stigmatized can be quite damaging to targeted individuals due to it leading to stereotyping and discrimination (Link & Phelan, 2001). Experimental research from the leadership literature (Kuratko, 2007) has shown that women in male-dominated industries are considered as having less ability than men, yet experience a backlash effect whereby they are viewed as less likeable when displaying masculine characteristics (Eagly & Karau, 1991; Rudman, Moss-Racusin, Phelan, & Nauts, 2012).

Traditionally, entrepreneurship has centered on the common theme of recognition and exploitation of opportunity (Shane & Venkataraman, 2000; Venkataraman, 1997). Although opportunity is thus a central concept to entrepreneurship, little agreement exists about the definition or origin of opportunity (Hansen & Shrader, 2007). One school of thought essentially contends that opportunities are discovered while the other contends they are created (Alvarez &
Barney, 2007). This research takes the perspective that entrepreneurial opportunities exist independent of actors (Shane, 2003). This approach makes it clear that individual and the environmental context are of key importance within the entrepreneurial opportunity (Shane & Venkataraman, 2000).

Research on individual entrepreneurs has focused a great deal of attention on the extent to which individuals identify and act upon entrepreneurial opportunities (Alvarez & Barney, 2013). Entrepreneurial capabilities (e.g., cognitive ability, personality, and other traits) have been a major focus within this area as they are central to an individual’s ability and desire to pursue opportunities, as well as the success of those pursuits (Krueger & Brazeal, 1994). Unique individual characteristics like knowledge structures, cognitive processes, and self-image direct the ability of the entrepreneur to recognize and exploit a given opportunity (Mitchell & Shepherd, 2010; Shepherd, McMullen, & Jennings, 2007).

For example, when new information is identified that alters the value of a resource, some entrepreneurs may view it as an opportunity while others may only see the risk involved. Only the entrepreneur who views the context as an opportunity will be willing to exploit it. The identification of market opportunity and the ability to exploit it is the essence of entrepreneurship (Shane & Venkataraman, 2000).

An individual’s perception of an opportunity is unique as he or she brings their idiosyncratic cognitive resources to bear (Grégoire, Corbett, & McMullen, 2011). For example, Mitchell and Shepherd (2010) researched self-image as it pertains to decision-making. Their findings suggested that distinct differences in the individual entrepreneurial self-image affect their perceptions and subsequent decisions on opportunities. In particular, perceptions of self-vulnerability or capability led to the intention to act or not.
Similarly, cognition research has investigated the knowledge structures that entrepreneurs use to make assessments, judgments, decisions, and evaluations regarding opportunity discovery and subsequent exploitation (Mitchell et al., 2002). These knowledge structures provide a cognitive process of different kinds of mental connections that produce structural alignment to opportunity recognition and subsequent action (Grégoire, Barr, & Shepherd, 2010). In addition, individual cognitive styles (patterns use when framing and solving problems) can facilitate or inhibit intentions when confronted with the inherent challenges within entrepreneurship (Brigham, De Castro, & Shepherd, 2007). For example, De Carolis and Saparito (2006) found that opportunities are influenced by individuals’ ability to develop social capital.

Entrepreneurship has been considered an “embedded phenomenon” where subjective perceptions about one’s environment as well as the individual’s relative position in that environment are important (Jack & Anderson, 2002). For example, the intention to enter into entrepreneurship is related to personal perceptions of the supportiveness of a given business environment, culture, and one’s own attributes (Bird, 1988).

Much evidence has indicated that a society’s culture, promoting certain personal tendencies or behaviors while penalizing others (Thomas & Mueller, 2000), plays a crucial function in determining entrepreneurial behavior (Markman & Baron, 2003; Zahra et al., 1999). Within a given culture or environment, norms for men’s and women’s behaviors help dictate where men and women perceive that they will “fit” within society. When masculinity is viewed as the only or most appropriate set of tendencies, people who tend to be more feminine will feel less of a sense of “fit” and therefore become less attracted and/or committed to that place and vice versa (Marlow & Patton, 2005).
If the entrepreneurship domain is perceived as being masculine in nature, and if women tend to perceive themselves as more feminine in nature overall than do men, then women would tend to be less interested in entrepreneurship than would men as a result of lower perceived fit along the dimension of gender (Langowitz & Minniti, 2007). As was described earlier, P–E fit theory states that individuals tend to move toward environments that are congruent with their individual needs, values, or capabilities and that the best outcomes occur when there is fit between individual characteristics or needs that the environmental supplies (Ostroff, 2012). When a person and an occupation possess similar or matching characteristics, a supplementary fit occurs (Cable & Edwards, 2004). Supplementary fit research examines value congruence between the individual and the particular environments they may operate in, whether that be an occupation or as an entrepreneur. For instance, DeTienne and Chandler (2007) provided results suggesting that men and women use fundamentally different processes in opportunity identification emphasizing differences in cognitive perception. Langowitz & Minniti (2007) identified that women tend to perceive themselves and their surrounding opportunity environments in a less favorable way as compared to men. This is the central thesis of our model:

*that the failure to pursue opportunities within the entrepreneurial environment (i.e., entrepreneurial intentions) may be linked to evaluations of misfit with respect to gender by the potential entrepreneur (gender-entrepreneurship fit)*. Evaluations of misfit should be worst when a potential entrepreneur is most feminine due to the highly masculine embedded social norms of the entrepreneurship field. Given past research femininity is expected to be correlated with, but independent of, gender. In the following section we will discuss additional variables linked to gender which may also contribute to lowered entrepreneurial intentions.

**Characteristics of the Entrepreneur**
Perseverance has been defined as commitment to a chosen course of action and its undaunted pursuit despite adversity (Markman & Baron, 2003; Markham & Baron, 2005). Although perseverance representing escalated commitment to a failed cause can be devastating, productive perseverance involves the continuation of a course of action when doing so is worth the risk of failure (DeTienne et al., 2007). As already mentioned, perseverance can result in both positive and negative consequences. Individuals who persevere may adapt to feedback from the environment and therefore achieve positive results due to perseverance (Sutcciffe & Vogus, 2003). Others may persevere beyond any expected utility to a failing course (DeTienne et al., 2007). This is why calculating the risk within the persevering experience is important given counter influences or other enticing alternatives (Gimeno et al., 1997; Holland & Shepherd, 2011). Perseverance has shown substantial gender differences in past research (Zhao et al., 2005; Charness & Gneezy, 2012; Bonte & Piegeler, 2013) with men showing higher scores than women. However, there was substantial within-gender variability in perseverance. As such, we would expect perseverance to relate to both gender and entrepreneurial intentions.

Competitiveness is generally now defined as an individual’s propensity to pursue scarce and contested assets (Deutsch, 1949). Research studying the nature of competitiveness as an individual-differences construct has provided a number of different definitions, ranging from extremes of healthy to extremely unhealthy forms of competitiveness (Kildea, 1983). Healthy forms of competitiveness involve cooperative, assimilating, subjective, forms of interpersonal behaviors. The literature describes this type of competitiveness as personal development competition orientation (PDCO; Ryckman & Hamel, 1992). PDCO is considered a psychologically healthy competitive attitude where the primary focus is not on outcome (i.e., on winning) but rather on the mastery of one’s trade and the associated enjoyment that comes with
This type of competitor wants to win in order to succeed, but not at the expense of other people (Ryckman, Hammer, Kaczor, & Gold, 1996).

The origins of gender differences in competitiveness can be explained by nature, nurture, or both (Gneezy, Leonard, & List, 2009; Nicolaou & Shane, 2009). In psychology the nature versus nurture debate is centered on the origin of particular aspects of behavior. Specifically, the origins of masculine or feminine behavior focus on whether they are products of either nature (i.e., genetic) or acquired (i.e., nurtured or learned) characteristics. Researchers have examined the significance of cultural conditions in the development of competitive behavior of men and women (e.g., Gneezy et al., 2009). Booth and Nolan (2012) found girls’ levels of competitiveness depended on the presence of boys. Their results indicated that girls from single sex schools are just as competitive as boys, which may highlight the germaneness of the “nurture” debate.

Scholars have started to use these type differences to illuminate the debate on gender-specific outcomes in the labor markets. An example of this was the controlled laboratory experiment conducted by Niederle and Vesterlund (2007) where they found men and women of equal ability differ in their selection into a competitive environment. Using a competitive tournament with an economic incentive scheme, they found 73% of men select the competitive scheme while only 35% of women made that same choice. Despite the fact they found no gender differences in performance, twice as many men as women selected the competitive tournament scheme. Their primary conclusion was preferences for performing in a competitive environment differ across genders. Additionally, they found that men are substantially more overconfident about their abilities than women, and those beliefs on ability help predict entry decisions.
Competitiveness has very often been considered an important variable within entrepreneurship because it supposedly relates to the intensity of effort needed to outperform rivals and is characterized by a posture aimed at improving position or overcoming a threat (Ferrier, 2001). As such, we also expect competitiveness to relate to both gender and entrepreneurial intentions.

*Self-efficacy* was originally derived from Bandura’s (1977) social learning theory and is based on an individual’s self-perception of their skills and abilities. Self-perception is the way an individual perceives his or her abilities and tendencies (Ryan, 1970). This concept incorporates a person’s innermost belief and confidence in attaining certain goals. Self-efficacy is a key mechanism of personal agency thought to influence one’s persistence in certain endeavors, as well as, behavior and activity. Self-efficacy is domain specific (Bandura, 1989) meaning a person can have high self-efficacy in a certain task but low in another. An important aspect of self-efficacy is how it allows for the individual’s choice of behavioral fits. In other words, individuals tend to choose environments in which they assume high personal control and avoid low control scenarios (Chen et al., 1998). Given that self-efficacy is domain specific, highly gendered environments could be unattractive to the minority gender. As mentioned previously, due to perceived threat effects from the majority gender, it has been extensively applied in the career literature to explain perceived career preference, choice and ultimately, behaviors of entry or avoidance (Betz & Hackett, 1981, 1983).

Overall, research indicates individuals decide to start new ventures because they are confident in their abilities to act entrepreneurially, even when the probability of failure can be high (Chen et al., 1998). Entrepreneurial self-efficacy (ESE) has been considered a particularly important antecedent to new venture intentions (Barbosa, Gerhardt, & Kickul, 2007). Multiple
empirical studies involving ESE have concluded the following; ESE is positively associated with being a nascent entrepreneur (Arenius & Minniti, 2005), the type of ESE exhibited by entrepreneurs differs from those exhibited by managers (Chen et al., 1998), ESE is positively associated with entrepreneurial intentions (Chen et al., 1998), ESE can differentiate entrepreneurship students from non-entrepreneurship students (De Noble, Jung, & Ehrlich, 1999), and entrepreneurs score higher in self-efficacy than non-entrepreneurs (Markman & Baron, 2003). Gupta et al. (2008) showed that women entrepreneurs are not only aware of society’s widely held stereotypes about the entrepreneurship field, but that their awareness of these stereotypes negatively impacts their interest in entrepreneurship. As such, we predict that women’s awareness of the mismatch between their gender and the entrepreneurial environment will result in lower ESE for women than for men. Consistent with past research we have included a relationship between ESE and intentions.

Conclusion and Implications

The literature is fairly clear that female entrepreneurs seem to display differences in entry as well as performance when compared to male entrepreneurs (De Bruin, Brush, & Welter, 2007; Jennings & Brush, 2013). However, the underlying reasons for this relationship are unclear. Furthermore, the existing research on male-female differences on a host of entrepreneurship outcomes stops short of exploring anything deeper than demographics as independent or predictor variables. As a result, the purpose of this paper was to develop a conceptual model elucidating some of the underlying linkages between gender-related variables within the entrepreneurship context and within entrepreneurs themselves and a key entrepreneurship outcome for scholars and educators alike: entrepreneurial intentions.
The implications of this model and the thinking underlying it are clear for entrepreneurship education. As an entry point into entrepreneurship, entrepreneurial intentions are a key variable of interest for entrepreneurial educators. As some of the gatekeepers to the entrepreneurial field, thinking more deeply than surface-level demographics and exploring the mechanisms through which these variables may influence underrepresentation is essential to increasing diversity and inclusion within entrepreneurship (Crompton & Lyonette, 2005; England, 2010). Doing so not only advances research and teaching, it can provide intervention points. For example, if people are avoiding entrepreneurship due to outmoded yet deeply embedded stereotypes about the field, policymakers and educators can begin to change these stereotypes and to empower those disenfranchised by perceived lack of fit. Altogether, a better and richer understanding of the issue can only help toward developing a high-quality solution.
H1– Individuals higher in ESE will provide ratings on all sub-scales of perceived fit.

H2 – Individuals higher in perseverance will provide higher ratings on all sub-scales of perceived fit.

H3a – Individuals higher in masculinity will provide higher ratings on all sub-scales of perceived fit.

H3b – Individuals higher in femininity will provide lower ratings on all sub-scales of perceived fit.

H4 – Perceived fit will be positively related to individual entrepreneurial intentions, thus mediating the relationship entrepreneurial characteristic (ESE, perseverance, and masculinity)
REFERENCES


Migration, Culture and Home-Country Entrepreneurship

Dekuwmini Mornah¹
Virginia Military Institute

&

Michael H. Morris
University of Florida

Abstract
In this paper, we review the literature and examine the potential effects of out-migration on home-country entrepreneurship, taking into account the differential effects of host and home countries’ entrepreneurial orientations and cultures. We adopt a resource-based theory and conjecture that all things being equal, out-migration affects home-country entrepreneurship through the activities of return migrants, remittances, and knowledge transfers. However, we recognize that the true effects of out-migration are enhanced or moderated by differences in entrepreneurial cultures of the host and home countries as well as the entrepreneurial orientation of the migrant.

Key words: Migration, remittances, culture, entrepreneurship

1. Executive Summary
Central thesis: Our interest in this paper is to review the literature and examine the channels through which migration affects home-country entrepreneurship and the role that differences in home and host country cultures play in this dynamic.

Methodology: Our analysis is fundamentally a literature review and an application of the resource-based theory to the issue of migration and home-country entrepreneurship.

Findings: We find that out-migration could affect home-country entrepreneurship through the activities of return migrants, remittances, and knowledge transfers. However, we recognize that the true effects of out-migration are enhanced or moderated by differences in entrepreneurial cultures of the host and home countries as well as the entrepreneurial orientation of the migrant. This effect is especially predicted to be stronger if the migrant chooses entrepreneurship in the host country as his or her occupation.

1 Contact author: 331 Scott Shipp Hall, Department of Economics and Business, VMI, Lexington VA 24450: Email: mornahd@vmi.edu; Phone: 540 464 7381.
Implications of findings for practice: These findings suggest that migration, especially from poor countries to richer countries, confer unique resources on the migrant. These resources if properly harnessed by the migrant and the migrant-sending country could positively impact on entrepreneurship and general economic outcomes of the country. So instead of preventing migration especially of skilled resources, migrant-sending countries may be better served by crafting policies that will ensure that they tap into the resources conferred on successful migrants for home-country entrepreneurship and development.

How the findings can be implemented: Countries can create platforms for migrant entrepreneurs to network with home entrepreneurs. Similarly, governments can create projects that migrants in general can invest in while abroad. Finally, governments should create conducive environments for migrants to do business in the home country.

2. Introduction
Dabuo, [The Immigrant], hails from Sankana in the Upper West Region of Ghana. Sankana is a village of about 2000 people whose mainstay is rain-fed subsistence farming. Relying on rain-fed agriculture means that Dabuo’s people get to work for only 5 months of the year and have to survive on the harvest for the year. Obviously, years that rainfall has been erratic have seen the people of Sankana struggle more for survival. Dabuo recently migrated to the United States. He is the first member of his village to have made that dream trip to America. On the day of his departure, the whole village was up in pomp and pageantry. Why? To Dabuo’s family in particular and the village in general, this was their escape from poverty. This was the breakthrough they had been waiting for.

Dabuo’s out-migration to the United States is no accident. He is hard working and believes that the United States will give him the opportunity to realize his dreams. The United States is considered the entrepreneurial hub of the world with an entrepreneurial model that is said to be representative of the ideal entrepreneurial profile (Thomas & Muller, 2000). By dint of hard work, Dabuo is well settled in the United States and financially stable. He owns a small business. He is also assimilating well into the culture of his new country. But the hopes and dreams of his people have not been lost on him. He wants to help his family and possibly his community.

Dabuo’s circumstances and interests are not unique. Many migrants share similar aspirations – to better themselves and their families at home. There are many channels through which out-migration can impact economic outcomes in the home country. Among others, entrepreneurship is one such channel. So we ask:

How can out-migration impact on entrepreneurial activities and general economic outcomes in the home country? What are the conditions under which out-migration will lead to home country entrepreneurship and economic development?

Our interest in this paper is two-folds. The first is to provide an overview of the literature on migration, entrepreneurship and development. The second is to examine the channels through which out-migration impacts on home country entrepreneurship and the conditions under which one is likely to get a net positive impact.
3. Brief Literature Review

The literature on the effects of migration on host country development and entrepreneurial outcomes is largely settled. There is almost a consensus that in most developed countries, immigrants are more entrepreneurial than natives and contribute positively to economic development (Borjas 1986; Lofstrom 2002; Clark & Drinkwater 2000, 2010; Schuetze & Antecol 2007; Fairlie Woodruff. 2010, Fairlie & Lofstrom 2015). On the other hand, the literature on the effects of migration on entrepreneurial and economic outcomes of the migrant-sending countries is still murky. Some studies find that the effect is positive (Dustmann and Kirchkamp, 2002; Rapoport, 2002; Mesnard, 2004; Demurger and Xu, 2011; Marchetta, 2012) while others find a negative or insignificant effect (Reichert, 1981; Staut and Kerney, 1981; Papademetriou, 1985; Vasco, 2013).

The literature suggests that out-migration leads to increases in FDI and remittances (Riddle et al., 2010; Kugler and Rapoport, 2011; Vaaler, 2011), higher levels of trade between the sending and receiving countries (Rauch and Trindade, 2002; Vaaler, 2011; Egger et al., 2012; Fairlie and Lofstrom, 2013) and increases in social remittances such as ideas, behaviors, identities, and social capital back to the home-country (Vorderwuelbecke, 2012).

Only a few studies have specifically looked at the issue of out-migration on home-country entrepreneurship. Amuedo-Dorantes and Pozo (2006) argue that remittances positively affect entrepreneurship by easing household liquidity constraint, while Vasco (2013) finds an insignificant effect for Ecuador. The most comprehensive study, to date, on this relationship is Valaar (2011), who finds that for 61 developing countries, immigrant remittances increased venture capital availability as well as openness to international trade. However, the effect of immigrant remittances on new business start-up rates is positive only for countries with a small public sector (Valaar, 2011). Return migrants on the other hand have been found to have a higher likelihood of starting business upon return (Arif, and Irfan,1997; Dustmann and Kirchkamp, 2002; Rapoport, 2002; Mesnard, 2004; Pribilsky, 2007; Castaldo, 2009; Wahba, and Zenou, 2009; Demurger and Xu, 2011; Marchetta, 2012).

Main limitation of previous studies: There is much country and individual heterogeneity in migration-development outcomes.” (Naude, Siegel and Marchand, 2015, p.4). Without controlling for country-level variables such as culture, results are bound to be confounding.

Culture and Entrepreneurship: Some work has been done on the effects of culture or aspects of it on entrepreneurship. A few studies have directly or indirectly used either Hofstede’s or GLOBE’s measures of culture as explanatory variables to understand entrepreneurial outcomes (Shane, 1992,1993; McGrath, MacMillan, and Scheinberg, 1992; Baum et al., 1993; Morris et al., 1994; Hayton, George, and Zahra, 2002; Hofstede et al., 2004; Wennekers et al., 2007; Thurik and Dejardin, 2011; Schlaegel et al., 2013; Mornah and MacDermott, 2015). Even though the findings of these studies are not all consistent when it comes to the effects of individual dimensions of culture on entrepreneurship, there is evidence that culture, indeed does matter when it comes to entrepreneurship. This suggests that the entrepreneurial effects of out-migration on home-country entrepreneurship could be culturally dependent. It could depend both on the cultures of the home and host countries.
Culture is not an absolute. Some cultures or aspects of it promote entrepreneurship while other cultures or aspects of it stifle entrepreneurship. Dependency cultures are seen to be limiting to entrepreneurship. But how are dependency and independency in cultures related to entrepreneurship? Haggett (1983) claims that differences in country responses to entrepreneurship is a result of different historical backgrounds coupled with country-specific characteristics especially in relation to how the concepts of individualism or communitarianism, and equality or hierarchy are injected into the society. In a cross-country study involving nine regions Morrison (2000) finds that “the historic political systems within Slovenia, South Africa, Kenya, and Finland have, to differing degrees, served to promote an anti-entrepreneurial culture due to the dependency on, or control of, the populace by the State, which decreased the propensity for private enterprise. This has resulted in a significant power distance in society that has served to divide the population into the majority which are ruled, either formally or informally, by an elite group. This serves to grow persons who are lacking in the personal attributes generally associated with entrepreneurs, in particular leadership, creativity, self-reliance, and self-confidence. However, in the more egalitarian and democratic societies of North America and Australia these qualities are fostered, thus stimulating entrepreneurial behavior.” (Morrison, 2000, p.66). The preceding suggests that dependent cultures are less entrepreneurial while independent cultures are more entrepreneurial.

From the literature analysis, no study to the best of our knowledge has simultaneously looked at the relationship between migration, remittances, culture and home country entrepreneurship. We believe that cultural differences or complementarities could help explain differences in the effects of out-migration on entrepreneurial outcomes across countries or communities.

4. Theoretical Underpinnings

We analyze the effects of out-migration on home-country entrepreneurship through the lenses of resource-based theory (RBT) of entrepreneurship. Resource-based theory suggests that long-term sustainable competitive advantage is cultivated when a firm possesses resources that are heterogeneous, unique, valuable, rare, difficult to imitate, and non-substitutable. Resources are valuable in so far as they help create strategies that capitalize on opportunities and ward off threats. These resources can be tangible or intangible. Tangible resources can be seen, touched or quantified. In contrast, intangible resources are quite difficult to see, to touch, or to quantify. The nature of tangible resources makes them easily replicable while intangible resources will be difficult to replicate. As a result, intangible resources are more likely to be better strategic resources that can help confer sustainable advantage over competitors.

Migration confers unique bundles of heterogeneous resources on the migrant that can be leveraged to impact on home-country entrepreneurship. Tangible migrant resources include remittances, FDI and capital. Intangible migrant resources include technical knowledge, entrepreneurial knowledge and skills, reputation/goodwill and cultural pollination. “There is probably no group of individuals that have been assumed to be more heterogeneous from the rest of the population than entrepreneurs.” (Alvarez & Busenitz, 2001, p.757). Entrepreneurship embodies the cognitive abilities to frame situations in an opportunistic manner and this cognitive ability is a heterogeneous resource that can be used to organize other resources (Alvarez & Busenitz, 2001). Migrants are more likely to identify opportunities both in their home countries

---

2 Australia, Slovenia, Mexico, North America, Finland, Scotland, South Africa and Kenya
and host countries because they have the benefit of comparing and contrasting the two environments. In addition, they have a better chance of exploiting these opportunities to the benefit of themselves and the home country because of the tangible and intangible resources available to them.

The availability of resources (tangible and intangible) alone, however, is not an end in itself in terms of providing sustainable competitive advantage but rather a means that provides the needed footing to develop capabilities that can lead to acquiring sustainable advantage over competitors. It is these acquired capabilities that determine the advantages generated over competitors and the value created for customers from bundling, managing, and exploiting resources. Capabilities are valuable and create an inimitable advantage provided when applied to resources; it leads to an outcome where “the whole is greater than the sum of its parts.” Applied to migration, migrant-entrepreneurs in an entrepreneurial host country will cultivate both the cultural and entrepreneurial capabilities that will give them an advantage over the competition. In other words, for migrant entrepreneurs in the host country, the nexus/interaction between cultures and entrepreneurial practices create capabilities which are inimitable over and beyond the availability of tangible and intangible resources.

5. Model

In Figure 1, we present the benchmark model of the channels through which out-migration may affect entrepreneurship and the moderating role that culture may play. From the figure, out-migration confers three main categories of resources on the home country in the form of Return Migration, Social Remittances and Financial Remittances. Return migrants have two main resource portfolios – Social Remittances and the resources they accumulate and bring back to the home country. Social remittances take the form of knowledge transfer (such as tacit, cognitive, technical and entrepreneurial knowledge), market access (through networks/social contacts), and access to finance in the host country.

As noted in the literature review, there is no consensus as to the effect of out-migration on home-country entrepreneurship and economic outcomes. The inconclusiveness in the research is testament to the fact that cultural differences could be important in explaining migration and home-country entrepreneurial outcomes. In Figure 1, we account for the possible moderating effects of culture on home-country entrepreneurial outcomes. The concept of culture itself is a bit nebulous. Some aspects of culture may promote entrepreneurship while other aspects of it may hamper it. For this paper, we assume two main divisions of culture, on a spectrum – a dependency (anti-entrepreneurial) culture and an independency (entrepreneurial) culture. According to Dictionary.com, a dependency culture is “the phenomenon of granting help or aid then increasing the likelihood of the recipients being in adverse circumstances.” At the national level, dependency cultures are characterized by systems of social welfare that encourages people to stay on benefits rather than work, while an independency culture has the opposite effect.

Migrants in a country with high dependency and low entrepreneurial culture will experience a dampening in entrepreneurial orientation the longer they stay in this dependent cultural environment. If this is coupled with a low entrepreneurial culture in the home country, then migration will most likely not impact positively on home country entrepreneurship. Similarly, if migrants move into a high entrepreneurial culture and if migrants are entrepreneurs (either ex
ante or ex post or both), then the effects of migration on home entrepreneurship will be enhanced especially if the home country also has a good entrepreneurial culture. This is so because the migrant will be exposed to superior resources and a re-enforcing culture.

Naturally, all things being equal, if migrants have a choice as to which country to emigrate to, they will choose a country that most likely reflects their cultural preferences. In this case, unless the migrant is a deviant from the home “societal norms”, we will expect that migrants will seek countries that are culturally similar to their home countries, ceteris paribus. Whether culture has mediating effects on home-country entrepreneurship due to out-migration will depend on what constitutes entrepreneurial and non-entrepreneurial cultures. This aspect of the analysis will be addressed in a subsequent paper.

6. Conclusions and Policy Implications

Many studies have found that for many advanced countries, immigrants tend to have higher rates of entrepreneurship compared to natives. We argue that out-migration, especially from poorer to richer countries confers unique and valuable resources on the home country that could have positive and significant effects on home-country entrepreneurship and development. We further argue that the effects of out-migration on home-country entrepreneurship will be stronger if migrants are ex-post entrepreneurs in an entrepreneurial host country. This is so because migrant entrepreneurs have specific experiences and knowledge that will foster entrepreneurship and when they send resources or return home, they are also more likely to actively channel these resources towards entrepreneurship. But also, equally important is the role-model effect of migrant entrepreneurs. It is argued that if there are enough practicing and historic entrepreneurs who can be identified as role models for future generations then entrepreneurial culture will increasingly be embedded in the country Anderson (1995). Morrison (2000) finds that for Kenya, people without successful inter-generational entrepreneurs as role models are less likely to be entrepreneurs.

We recognize that the effect of out-migration on home-country entrepreneurship and economic outcomes may be moderated or enhanced by culture. If both the host and home countries have good and complementary entrepreneurial cultures, then the chances that resources channeled towards entrepreneurship will be supported to succeed are higher. There is some degree of endogeneity to this effect in the sense that more successful inter-generational entrepreneurs will serve as good role models and help foster an entrepreneurial culture. Essentially, our hypothesis is that out-migration will have the most impact on home-country entrepreneurship when it occurs from poorer countries into richer countries and the emigrant chooses entrepreneurship in the host country provided both countries have good entrepreneurial cultures.

6.1. Policy implication

The availability of resources alone will not impact much on home-country development unless they are properly harnessed. Countries can tap into the wealth of experience, knowledge and resources of their emigrant populations to impact positively on development at home. This could be by tapping into current emigrants abroad or migrant returnees at home. China and to some extent India, have done this to some good effect. For current emigrants, this could be done by creating platforms for building strong business networks and partnerships with those in the diaspora to facilitate the exchange of ideas and resources.
Similar networking platforms can also be built for return migrants to facilitate their re-entry into the country and into business. If developed countries are crafting controversial policies to attract migrant entrepreneurs, developing countries should be prepared to craft policies to facilitate the re-entry of migrant entrepreneurs. The United Nations claims that most international migration is temporary. While migrants may spend most of their working life in a foreign country, they almost always return home on retirement, if not earlier. But the fact that entrepreneurs hardly retire implies that returnee migrant entrepreneurs will most likely continue to work and create or exploit opportunities upon return.

Apart from designing policies to facilitate resource transfers, policy makers can actually work to change the cultural base in such a way that it is conducive to entrepreneurship. As Morrison (2000) noted, “Given the direct involvement of the state in all aspects of social and economic life it has a dominant power base, which will undoubtedly influence the culture of a nation.” (p.66). Policy makers see culture as a dynamic, changeable variable and have intervened to re-orient the population to a new value system such that the individual, rather than the State spearheads innovation and entrepreneurship (Morrison, 2000; Heelas and Morris, 1992). Needless to say, in most developing countries, these initiatives or changes tend to be part of the requirements to benefiting from either the World Bank or IMF development programs.
References


Figure 1: Out-migration and home-country entrepreneurship: Heterogeneous cultures
A Multi-level Analysis of the U.S. Start-ups’ Relocation Decisions

December 5, 2016

In Hyeock (Ian) Lee
Management Department
Quinlan School of Business
Loyola University Chicago
820 N. Michigan Avenue
Chicago, IL 60611
TEL: 312-915-7656
ilee1@luc.edu
EXTENDED ABSTRACT

Aim of the Paper and Research Framework

Despite the claim of the ‘death of distance’ in a globalizing world (Cairncross, 1997), interest in the geography of economic activities has increased in recent years. This growing interest manifests itself in such topics as the co-location of firms and the relationship it has with economic growth (Krugman, 1991), the clustering of economic activities (Porter, 1998), and the role of geography in the strategic management of firms (Baum & Sorenson, 2003). One of the emphases in this stream of the literature is on the regional variations of entrepreneurial activity in the form of their location choices and determinants (e.g., Reynolds et al., 1995; Armington & Acs, 2002; Fritsch & Falck, 2007; Lasch et al., 2013). This is not surprising because, on the one hand, the location decisions of both new and already existing firms are essential for the regional economic development (Audretsch et al., 2006; Fritsch & Mueller, 2008), and, on the other hand, differences in the rates of entrepreneurship and the determinants of location decisions have been pronounced (Acs et al., 2007; Brixy & Grotz, 2007). Despite extensive studies in the regional variations of firm start-ups and their determinants of locations, the existing analyses are mainly static: they are confined to the initial location decisions of new firms, not considering a post-entry dynamic process of firm migration across regions after their start-up activities. Thus, I observe a gap in the literature.

Relocation of start-ups, which is to move all or a part of their business operations to a new place (Brouwer et al., 2002), is a costly but critical and urgent decision to make, since it is a spatial adjustment of entrepreneurship to respond to the turbulent changes of internal and external environments surrounding them. For example, new firms usually grow internally after
their entrepreneurial start-up in terms of size, age, employment, product offering, geographic market coverage, performance, etc., which may invalidate their current location for continuing the start-up business (Knoben & Oerlemans, 2008). As start-ups go through an intensive organizational learning process, they may acquire new information on alternative locational sites that may be more attractive than their current location for accommodating the internal growth of the firms (Holl, 2004). In addition, when new firms are faced with unexpected changes of external regulation, legislation, institution, technology development, business environment, and/or industrial landscape at their current location, they have to look for new places to survive and/or remain competitive in the market (Pellenbarg et al., 2002). As a result, critical factors encouraging new firms’ relocation may differ from those affecting their initial location decisions, since the former is to substitute a current location with an alternative new location (Pellenbarg et al., 2002; Holl, 2004).

To fill the knowledge gap in the literature, I propose an integrated model with multi-level factors that may encourage start-ups to move from their current location to a new one. Specifically, using a sample of U.S. new ventures from the newly updated Kauffman Firm Survey (KFS) dataset, I aim to answer the following research questions in this proposed research project based on the conceptual framework captured in FIGURE 1.

(1) Do start-ups really consider relocation after the costly investment of their initial location decisions? Under the rapidly changing internal and/or external environment surrounding start-ups, how do they adapt to the turbulent changes? Do they continue to stay in the same location, search for alternative locations, or simply stop doing business in the market?
(2) How do multi-level characteristics of start-ups affect their subsequent choice among the three options? Which firm-level characteristics of start-ups encourage venture owners’ decision to relocate to a new place? Are their relocation decisions subject to the geographic characteristics of the regions where the start-ups are born? Are there any specific industrial sectors/market segments that may drive their relocation decisions in a different way?

(3) How do the multi-level unique characteristics of start-ups affect their subsequent business outcomes? Do entrepreneurial relocations help the start-ups achieve better outcomes in the market in terms of survival, growth, employment, financial performance, etc.?

FIGURE 1: Conceptual Framework

Research Methods

Data and Variables
To conduct this outlined research project successfully, I applied for the Data Enclave (DE) version of the KFS data on the following variables in Fall 2012, and was awarded access to the Enclave in Fall 2013. In addition, I participated in the two-day Academy of Management (AOM) training sessions in Boston on August 1-2, 2012 for using the KFS data. The KFS is the world’s largest longitudinal study of new businesses ever embarked upon and provides a longitudinal dataset of 4,928 U.S. new ventures in 2004-2010. The KFS longitudinal data is organized in major sections that provide information about firm-, region-, and industry-level characteristics of the new ventures.

For multi-level characteristics of the U.S. start-ups, I utilize the following information on firm heterogeneity in the KFS data.

(1) Total revenue
(2) Number of employees
(3) Employment information for sales/marketing and R&D
(4) IPR information
(5) R&D investment
(6) Rental or lease payments for buildings, etc.
(7) Customer location
(8) Sales out of the US
(9) Regional characteristics based on confidential geographical codes of each venture (i.e., zip code, metropolitan statistical area, and state)
(10) Industry codes
(11) Service versus product
For relocation decisions of the U.S. start-ups, I generate each firm’s binary response variable based on the following information from a geographic perspective.

(1) The year when your business was established
(2) Whether you are out of business
(3) The calendar year when your business was closed
(4) Whether you filed for bankruptcy
(5) Mailing address
(6) Primary location
(7) Possibility of moving to another location
(8) City and state for next move
(9) Main reason for the change of location
(10) Whether you operated in more than one location
(11) The number of locations where you operated
(12) The year and month when you opened the second location
(13) The year and month when you opened the most recent location

For outcomes of the U.S. start-ups’ relocation decisions, I construct diverse performance measures from the survey information as follows.

(1) Survival
(2) Total revenue
(3) Paid expenses
(4) Total profit or loss
(5) Estimated value of asset
Empirical Methodology

I follow two-step procedures in this proposed project to estimate the aforementioned research model empirically. In the first stage estimation, I regress the relocation decisions of the U.S. start-ups on their three-level characteristics. The empirical analysis in the first stage would determine which firm-, region-, or industry-level characteristics of start-ups encourage venture owners’ decisions to relocate to a new place. Since the dependent variable is a categorical variable, I utilize a logit/probit regression method in the first stage.

\[
Relocation_{ijk} = \beta_0 + \sum \beta_{ic} \cdot Firm_{ic} + \sum \beta_{jc} \cdot Region_{jc} + \sum \beta_{kc} \cdot Sector_{kc} + \epsilon_{ijk}
\]

In the second stage estimation, I estimate the effects of the multi-level characteristics on the various outcomes of the U.S. start-ups in the market via relocation decisions, such as firm survival, revenue growth, employment, and other financial performance (e.g. RoS, RoA, RoE). When the dependent variable used in the second stage is a continuous variable, I utilize feasible generalized least squares (FGLS) and/or 2-stage least squares (2SLS) regression methods to alleviate potential heterogeneity and endogeneity issues.
\[ \text{Outcome}_{ijk} = \beta_0 + \sum \beta_{ic} \cdot \text{Firm}_{ic} + \sum \beta_{jc} \cdot \text{Region}_{jc} + \sum \beta_{kc} \cdot \text{Sector}_{kc} + \beta_{ijk} \cdot \text{Relocation}_{ijk} + \epsilon_{ijk} \]

**Contributions and Implications**

By tackling this important task, I aim to make contributions to the strategic entrepreneurship literature in three aspects. First, I make a theoretical contribution to the literature by identifying firm-, region-, and industry-level factors that may drive new ventures to adjust their entrepreneurial location decisions to respond to the internal and external environmental changes. Second, I make an empirical contribution to the literature by evaluating under which circumstances start-ups’ relocation strategy will be positively translated into their business outcomes in the market. Lastly, I make a practical contribution to both business communities and public policy makers with the empirical evidence to be obtained from this proposed project. For managers of new ventures, it will provide guidelines for formulating and implementing appropriate relocation strategies to remove current locational constraints for their future expansion. For public policy makers, given that local employment opportunities are spurred stronger by relocated firms than by newly established firms (Pellenbarg, 2010), it will articulate multi-level characteristics of start-ups that may contribute to the regional economic development through relocations.
References


The Relationship between Open Innovation and globalization: Focused on collaboration modes of R&D in SMEs

Rara (Hye-Seong) Jeon  
Doctoral Student, Grenoble Ecole de Management, Grenoble- France  
rarajeon@gmail.com

Dr. Daniel Degravel  
Professor, California States University, Northridge-U.S.A.  
daniel.degravel@csun.edu

Bibliographic Notes

Rara (Hye-Seong) Jeon

Assertive Consultant for Strategic Marketing & Business Development. Advisor for Educational Management and Instructor. She has 13 years of experiences as an owner, director, and manager in different organizations. She takes great joy in help organizations such as business development, creating strategies for marketing, HR, and management aspect. Recently, she is focused on start-ups in high-tech industry: finding a problem and building strategies such as business model, developing organizations’ structure, creating marketing and management strategies.

Dr. Daniel Degravel

Dr. Degravel teaches Strategic Management for the College of Business and Economics. He received his Ph.D. (with high honors) in Business Management from the University of Grenoble II, France. He has expertise in Strategic Management and Organizational Behavior, and he has significant accomplishments working in a global and long-term approach. He demonstrated ability managing multiple functions cost effectively, identifying critical issues and implementing effective solutions.
1. ABSTRACT

The purpose of our study is to encourage SMEs to achieve globalization and benefit from open innovation with local and global partners. The impact of open innovation for SMEs and analysis along with globalization is valuable as SMEs face challenges.

However, studies related to our theme targeting SMEs are lacking. A thorough analysis of the relationship between open innovation and globalization is performed using in-depth interviews, observations, and documents. To qualify case firms and examine them, we selected firms which export, own a subsidiary overseas, or produce overseas.

We used the model of process of open innovation, the *Upsala model* for understanding the steps of globalization. As for the global strategy, we use both models and theories, ‘Thinking Strategy’ (Allaire Y. and Firsirotu M, 1993) and ‘Global Strategy’ (Yip, 1989) to analyze each firm’s global strategies. Our study explores this phenomenon for the first time: *How do different collaboration modes of R&D drives globalization?* At the end of our study, we recommend an appropriate collaboration mode for each firm based on the firms’ globalization strategy: Open & Global, Open & Close, or Closed R&D.

2. EXECUTIVE SUMMARY

Innovation is essential for an organization’s growth (Horibe, 2003) to sustain competitive positioning and to strengthen it (Baregheh, Rowley, & Sambrook, 2009). Innovation can be defined by the management of the process of idea generation, technology development, and manufacturing and marketing of products and/or services (Trott, 2011; Stojmanovski, Viktor, et al, 2013), and business modeling (Baregheh et al., 2009).
Our central theme, open innovation was first proposed by Henry Chesbrough to describe how knowledge and technology is increasingly benefiting from the integration of ideas and capabilities from multiple sources (Chesbrough, 2003). Among typologies of open innovation including business model, product, technological, and managerial innovation (Park, 2007), we focus only on technological innovation since this is a crucial issue for high-tech SMEs. Innovation is originally linked to the role of R&D which is the most significant strategy in technological companies (Conte & Vivarelli, 2014). This is why we focus on R&D in high-tech industry.

After open innovation, the second most important theme in our study is globalization. Intensive competition in domestic markets may give a reason for firms to expand their technology into new markets overseas (Lee & Jeong, 2010; Kang, 2012). However, the uncertainty in the global marketplace has caused a fundamental change in firms’ innovation strategies (Lee & Jeong, 2010; Kang, 2012). To mitigate this confusion and secure global markets, open innovation has become commonplace in organizations, and needs to be studied (Zhang, 2011; Qiuyan, 2012).

Most large and multinational firms commonly implement open innovation (Wynarczyk, 2014) whereas SMEs are reluctant because of lack of experience and case studies targeting their situation (Kang, 2012). However, we agree that globalization could simply be done if firms collaborated with buyers and/or distributors regardless of their size (Kang, 2012). Different modes of network relationship have different effects on their performance (Lin & Lin, 2015). Therefore, types of collaboration need to be studied with open innovation. Large firms are focused on the early stage of open innovation, the R&D phase. Most SMEs utilize collaboration at the commercialization and/or marketing phases to expand their global channels. International
collaboration raises important questions regarding the proportional relationship between R&D and innovation (Ebersberger & Herstad, 2013). Our study analyzes how collaboration modes of R&D impact firm’s globalization.

We use multiple case analysis to explore how SMEs can utilize open innovation in global markets, particularly those of high-tech industries. As for practicing firms, our case study will help them to apply open innovation to achieve globalization. For the academic purposes, we have filled this theoretical gap and we propose future research that focuses on how different phases of open innovation activities influence firm’s globalization. Another future study is, the government policy impacts the firms’ decision regarding to the collaboration modes.

The first part of this dissertation is an article based on the literature’s review on open innovation, SMEs, R&D, collaboration, globalization, and strategy. We conclude this first section with a part detailing the research question of our thesis. The second section details the research methodology and research design. In this section, we present results of the contributions at the managerial and theoretical levels. The third section details the analysis of the relationship between collaboration modes of R&D and globalization by studying SMEs. Following Figure 1 is units of research.

[Figure 1. Units of Research Analysis]
3. LITERATURE REVIEW AND RESEARCH QUESTIONS

Innovation and Technological Innovation

According to the authors, innovation involves large overlaps between the various definitions with no clear explanation (Baregheh, Rowley, & Sambrook, 2009) corresponding to understand its nature (Zairi, 1994; Cooper, 1998; Adams et al., 2006; Baregheh et al., 2009). Innovation is widely considered to play a central role in creating value, sustaining competitive advantage, and representing the evolution in any organization (Baregheh et al., 2009). Firms should actively adapt new technology and create competitiveness for long-term success. However, investing in innovation involve greater risk for firms, especially for SMEs (Alexander Kaufmann, Franz, 2002).

This is the reason why the SMEs are less likely to invest compared to large multinationals (Scagnelli & Cisi, 2014). Among typologies of innovation, our study will focus on technological innovation, which is the heart of innovation and is critical to globalization (Abdullah and Zain, 2011; Verweij, Pearl, Shelton, Jasmin, & Eckert, Parsons, Goddard, and White, 2012).

Porter (1985), Kang (2012), and various scholars have highlighted that the key success factors for technological innovation are technological capabilities and management skills.
Profiting from technology is imperative and it relates to the management of innovation processes (José López Rodríguez, Antonio García Lorenzo, 2011).

**The Process of Innovation**

The process of technological innovation is the process of developing the new idea into a product and/or service. New advanced processes and innovation is a combination of technical, industrial, and commercial operations (Freeman, 1982; Tohidi & Jabbari, 2012). Understanding the process of innovation allow firms to achieve greater efficiency in production and quality (Schumpeter, 1934; Clark and Fujimoto, 1991; Stadler, 2011; Un & Asakawa, 2015). Moreover, high-tech and rapidly-changing industries require huge amounts of R&D investment and is associated with high risks (Miotti and Sachwald, 2003).

According to the ‘extension of market model of innovation process (obtaining ideas -> R&D -> commercialization -> penetrating markets)’, innovations is the result of consumer demands and market needs. Consumers, potential buyers, distributors, and strategic partners require demands, which directly affect technology development (Conte & Vivarelli, 2014).

In terms of R&D, it affects the product and the process of innovation significantly (Scagnelli & Cisi, 2014), even though the process of innovation is primarily internal (Hatch and Mowery, 1998; Stadler, 2011; Pisano and Shih, 2012; Un & Asakawa, 2015). R&D contributes to a rise in export capacity and lowers the business risk associated with their activities (Beise-Zee and Rammer, 2006; Nunes, Serrasqueiro, Mendes, Luis, Sequeira, 2010). Even though R&D drives the success of innovation, most multinationals spend less than 5% of their revenue on R&D (Scagnelli & Cisi, 2014).
Businesses are forced to find partners through networks to benefit from innovations given rapidly changing global market conditions and increased competitiveness (Vapola, 2011). Thus, the openness in the innovation process is becoming more prominent recently as evidenced in various academic literatures (Patra & Krishna, 2015). Open innovation can stimulate the increase of diversity of technology and minimize gaps between technological innovation and consumer needs (Greenstein, 1996; Lichtenthaler, 2011). Open innovation and the external sourcing of technologies have received considerable attention from both practitioners and academics for number of reasons: shorter technology life cycles, emerging technologies, rising costs, and risks associated with technology innovation (Rigby and Zook, 2002; Christensen et al., 2005; Henkel, Laursen, and Salter, 2006; Enkel, Gassmann, & Chesbrough, 2009; Lee, Park, Yoon, and Park 2010; Vanhaverbeke, 2011; Vrgov, Petar, Vidiki, Predrag, Glassman, and Brian, 2012; Kaisa, 2013).

However, the open innovation phenomenon is a complex issue and increasing focus on different stream of academic discourse such as globalization of R&D and innovation, supplier integration, and application of technology (Gassmann, 2006; Patra & Krishna, 2015) is necessary. Firms, especially SMEs need collaboration with external partners to conduct R&D and commercialization (Wynarczyk, Pooran, 2013) since SMEs can benefit from co-investment, or co-marketing, or co-R&D (Diez, 2000; Chesbrough, 2002; Vrgovic, Petar, Vidiki, Predrag, Glassman, Lee & Jeong, 2010; Kang, 2012). However, fewer SMEs collaborate with partners for R&D, whereas conglomerates are most likely to establish global networks all over the world. In order to penetrate global market, firms need to know global market conditions, learn from competitors and partners with respect to innovation of technology and services (Narula, 2004).
According to Suh and Kim (2012), open innovation is divided into four strategic activities such as technology acquisition transfer, R&D collaboration, joint venture activity, and networking. In order to answer how collaboration modes of R&D influence globalization, we divide partnership structures into “Closed”, “Open-Local”, and “Open-Global” scenarios: It seems obvious that collaborating with foreign partners could be more beneficial for firms to globalize rather than collaborating with local partners or in-house. However, there might be pros and cons that we need to examine. There are potentially great advantages associated with forming global partnerships including cost reductions, improving quality, and enhancing competitiveness (MIT Sloan Management Review, 1989; Pla-Barber and Alegre, 2007; Chetty, Sylvie K., and Stangl, 2010). This is why global partnerships have become common terms in innovative firms, especially among technological firms (Gassler, Helmut, Patra, Krishn, and Nones, 2015). Moreover, firms’ benefit might differ depending on firm’s global strategies. However, there is no solid case studies and frameworks for firms’ practice. Our research is valuable to focus more on “Open-Global R&D” rather than “Open-Local” or Closed in order to encourage SMEs and guide them how to implement global collaboration, and benefit from them. We established two criteria of open innovation based on Openness (Open/ Closed) and geography (Local/ Global) in order to categorize of open innovation. Integrating both concepts of “Open & Global” is an interesting concept to analyze whether or not these criteria benefit firms for successful globalization (Enkel, Gassmann, and Chesbrough, 2009); most SMEs tend to collaborate with local partners or keep in-house which is more convenient than partnering with global.

Collaboration is an open and comprehensive process of problem solving (Haarons, 2013), which is a constructive concept of open innovation. Moreover, partnerships are essential
for many organizations, especially for those who have innovative technologies (Andersen, 1999, 2002; Geffen and Rothenberg, 2000; Simpson et al., 2007; De Marchi, 2012) and strengthen the competitiveness. However, firms need to be careful in selecting partners for innovation, since not all collaborations are equally beneficial (Un & Asakawa, 2015). Sherer (2003) provides eight success factors of strategic SME networks, which are trust, CEO support, confidence, dedication, capabilities, external relationships, intermediaries, and information technology. Sherer (2003) determined that morality and trustworthiness are the most important characteristics to secure partnerships between firms. Reliable characteristics are higher priorities than expertise when a firm considers selecting potential networks or partnerships (Thorgren et al. 2009), which we completely agree. Adner (2006) also pointed out that successful innovation requires tracking your partners and potential adopters as closely as possible. However, finding reliable and appropriate partners in overseas and maintaining these partnerships can be overwhelming for firms (Mahalingam and Levitt, 2007; Oke, Adegoke, 2013), especially SMEs. As a result, we focus on the effect of collaboration, and the strategies to find the right partners and securing them as a means to overcome resource constraints and optimize globalization. In this respect, our study will examine how firms find appropriate partners and maintain partnerships with respect to the risks involved for collaboration as a sub-question.

The Positive and Negative Consequences of Collaboration

Firms tend to be more encouraged to set and work towards with partners to achieving goals. However, partnership could not be always positive. The quality of partnerships is significant and it dependent on both economic incentives and mutual trust via active interaction and open communication (Agarwal, Croson, and Mahoney, 2008). Moreover, vertical and
horizontal collaboration with customers, suppliers (Perez & Freeman, 1988), distributors, and experts who understand market phenomenon (Parenti, 2015) play a distinctive role in the innovation process (Perez & Freeman, 1988).

From Burt (1992) and Ahuja's (2000) position, building networks consisting of disconnected or external organizations is the optimal strategy in long term business for organizations. According to the Parenti (2015), a leading firm is measured by its dynamic strategic behavior with respect to innovation, relationship with partners, and ability to organize and manage business connections. Various recent studies have shown that the positions of firms in inter-organizational networks influence firms’ activities and outcomes (Powell & Koput, 1996; Walker, Kogut, and Shan, 1997; Ahuja, 2000). It could be either constructive or destructive. Although the goal of strategic collaboration is to remedy insufficiencies or inabilities, certain partnerships can result in excessive use of resources and energy (Powell, Koput and Smith-Doerr1, 1996; Walker, Kogut, and Shan, 1997; Ahuja, 2000). For instance, communication and collaboration between external partners can be time consuming and at times difficult to reach agreement (Powell & Koput, 1996; Walker, Kogut, and Shan, 1997; Ahuja, 2000). This is why most collaborations fail with 60% to 70% of collaborative agreements being dissolved without achieving the intended result or goals (Draulans et al., 2003; Zineldin and Dodourova, 2005; Comi and Eppler, 2009). This phenomenon can explain why numerous firms innovate in-house. A certain level of in-house competence must be maintained to secure firms’ core technology and minimize complexities and risks caused by collaborating with partners (Dunning and Narula, 2004). Given the relatively high failure rate of collaboration and many potential risks, investigating *how and why certain companies achieve positive outcomes while others fail* is important to examine it. To better understand the condition of successful external
partnerships, especially global ones, we look to the ‘strategic networks’ theory as presenting a typical collaboration with global external networks (Human and Provan, 1997). Strategic networks have been defined as “intentionally formed groups of SMEs in which firms: (1) geographically proximate, (2) operate within the same industry, potentially sharing inputs and outputs, and (3) undertake direct interactions with each other for specific business outcomes” (Human and Provan, 1997). It is interesting to note that although “geographical proximity” may make it easier for firms to communicate and perhaps less costly, however, we consider that the importance of geographic proximity is overstated. Firms have become more globalized and are more likely to cooperate with global partners regardless of geographic issue. In this standpoint, we have selected case firms which are in the same high-tech industry in South Korea, and collaborating with local and global partners. For better understanding of collaboration effects, the following table (Table 1) illustrates the positive and negative consequences of collaboration.

<table>
<thead>
<tr>
<th>Collaboration Aspect</th>
<th>Contents / Authors</th>
</tr>
</thead>
</table>
| **Positive Consequences** | - Sharing information and knowledge with external channels  
- Risk sharing (technically/ financially)  
- Problem solving (limited resources)  
- Expanding financial resources (cost saving)  
- Synergy effect between firms (developing technology, product, and services) |
### Negative Consequences

- “The more partners, the higher the risk of costly delays.”
- A larger portion of external R&D collaboration will reduce a firm’s benefit.
- Conflicting goals, short-term thinking, and higher expectations towards partners cause obstacles of collaboration.
- No guarantees for success of collaboration.
- Collaboration entail higher cost to build.
- Collaboration can be distracting whereby managerial attention to the external partner can impair internal R&D processes.
- Diverse inter-organizational relationships reduce the positive impact of innovation and firms’ performance (internal capabilities).

Rosenfeld, 1996; Sherer, 2003; Todeva & Knoke, 2005; Adner, 2006; Eisingerich, Rubera & Seifert, 2009; Lichtenthaler, 2011; Park, Kang, and Ansari, 2013

[Table 1: Positive and Negative Consequences of Collaboration]

Overall, sharing costs and risks, building synergy effects are positive outcomes of open innovation, whereas complexity of technology and culture, time consuming, reducing firm’s benefit, distracting internal R&D process are negative impacts.

**The Process of Open Innovation**

Open innovation highlight “innovation source” which is obtaining idea or knowledge externally (Salampasis, 2015) while innovation more focus on process of innovation.

As above, open innovation can be divided into obtaining (Innovation source), integrating (R&D), and commercializing (customers) (West and Bogers, 2014). However, SMEs are more likely to consider external sources mostly to get access to marketing and sales channels rather than large firms which are focused on early stage of innovation, with R&D (Vanhaverbeke and
Various authors underlined that the origin of knowledge should be studied (e.g. outside-in, inside-out, and coupled process) to understand process of open innovation in-depth (Lee et al. 2010). Thus, we examine both model to apply to our case studies in order to examine process of open innovation and globalization.

**Small and Medium Sized Enterprises (SMEs)**

Since the restructuring of advanced economies in the 1970s and 1980s, SMEs are increasingly viewed as the vital source of new product development innovations and new technologies (Wynarczyk, Pooran, 2013). SMEs are defined by a number of factors and criteria, such as size, structure, number of employees, sales volume, and ownership (Rahman, 2001; Demirgüç-Kunt, and Levine, 2005, Singh & Suresh, 2008; Mbizi, Rangarirai, et al, 2013). SMEs are independent organizations that employ no more than a given number of employees. Each country has different standards for defining SMEs as following:

- European Union (EU): less than 250 employees
- United States (OECD, 2005, 17): less than 500 employees
- South Korea (Park, 2010): less than 300 employees. SMEs account for 99% of companies in South Korea.

(Source: [http://www.newspim.com/view.jsp?newsId=20150518000196](http://www.newspim.com/view.jsp?newsId=20150518000196)).

There are various advantages and disadvantages associated with SMEs beyond having a limited number of employees. SMEs react quickly to change in the marketplace. Furthermore,
SMEs have no hierarchy and are willing to take risks unlike multinational firms that take a long time to make a decision (Parida et al. 2012; Hossain, 2015).

The obstacles that SMEs face with the lack of information about the market opportunities, lack of knowledge of process for the technological innovation and networks overseas (Vossen 1998; Olander et al. 2009; Vrgovic, Vidiki, Predrag, Glassman, Brian, 2012; Stojmanovski, Viktor, et al, 2013). However, SMEs do not have enough knowledge and confidence in global markets. Moreover, SMEs have been limited their efforts to overcome drawbacks to contribute to their success (Kee, Azura, Effendi, Suriety Talib, and Rani, 2010).

SMEs are under pressure to sustain their competitiveness in domestic as well as global markets. SMEs have the greatest positive impact on the innovations when collaborating with different types of partners (Brioschi et al. 2002; Becker & Dietz 2004; Bullinger et al. 2004; Nieto & Santamaria 2010; Vrgovic, Petar, Vidiki, Predrag, Glassman, Brian, 2012).

In general, large firms are more likely to conduct structured innovation processes and have more focused networks and long-term goals (Kleinknecht & Reijnen 1992; Bullinger et al. 2004; Vrgovic, Petar, Vidiki, Predrag; Glassman & Brian, 2012). Contrastively, SMEs tend to be more focused on immediate projects and short-term goals rather than long-term goals as they need consistent revenue to organize all expenses. Overall, SMEs are clearly different from their larger counterparts such as R&D activities, marketing strategy, or technological capabilities. Therefore, SMEs need to be studied separately from large firms.

**South Korean SMEs (SK SMEs)**

As stated, S. Korean SMEs are generally defined as firms with fewer than 300 employees. More detailed definitions depend on the industrial sector as following (Park, 2010). South Korea
occupies over 99 percent of number of SMEs whereas around 95 percent of private sector enterprises in other countries (Park, 2010). Recently, SK SMEs that are domestically oriented tend to penetrate overseas markets to achieve a trade target of US$ 2TRN (KOTRA, 2014). This is why Korean corporations and government bodies are more focused on global business than local markets.

According to Bloomberg’s annual ranking of the most innovative countries in the world, South Korea was ranked first (Bloomberg, 2015). SK has one of the high levels of gross domestic expenditure for R&D (Pro Innovation Europe, 2012). Also, SMEs have been called the “Asian miracle” that continues to be the most intriguing and least understood of the region’s fast-growing economies (McKinsey Korea, 2014). This phenomenon motivates us to examine SK firms, especially SMEs as the backbone of the SK economy and its role model in terms of innovation (OECD, 2002; Bae and Yu, 2005; SMBA Commissioned Report, 2006; Park, 2010). SK SMEs are being supported by the government in South Korea as a priority (OECD, 2002; Bae and Yu, 2005; SMBA Commissioned Report; 2006; Park, 2010). The extensive government support enhances SK SMEs growth potential and ability to achieve successful globalization (Park, 2010). Noticeable strengths of SK SMEs are strong consensus by successive governments and increasing investments in science and technology for economic growth (McKinsey Korea, 2014). SK SMEs exhibit positive specificities related to innovation: producing dynamic technologies, fast moving technological industries, various advanced government policies and supportive programs for firms. As a consequence, SK companies and government are focused on globalization. SERI (2012) demonstrates the collaboration rate of R&D of SK firms (Table 2). We can refer to this to understand the status of collaboration modes.
<table>
<thead>
<tr>
<th>Division</th>
<th>Open-Global</th>
<th>Open-Local</th>
<th>Closed (In-house)</th>
<th>Closed-Global</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMEs</td>
<td>3%</td>
<td>32%</td>
<td>64%</td>
<td>1%</td>
<td>100%</td>
</tr>
<tr>
<td>Large firms</td>
<td>16%</td>
<td>32%</td>
<td>47%</td>
<td>5%</td>
<td>100%</td>
</tr>
</tbody>
</table>

[Table 2: Collaboration rate of R&D based on different modes of South Korean firms]

*Note: 1) Open-Global; 3% collaborate with global partners by SMEs vs. 16% by large firms
2) Open-Local; 32% collaborate with local partners by SMEs vs. 32% by large firms
3) Closed-Local; 64% SMEs are not collaborating with partners, vs. 47% by large firms
4) Closed-Global; 1% SMEs are located in overseas without collaboration

The data is valuable to understand the status of firm’s collaboration with global partners, local partners, or in-house, which may directly apply to the phenomenon of the collaboration of open innovation. These figures indicate Global R&D (4%) is considerably below the line of Open R&D (35%) conducted by SMEs. The existing literature provide only a scarce evidence of whether global R&D is beneficial to firms’ innovation performance (Peters & Schmiele, 2010).

The recent studies mostly use patent data to analyze the impact of foreign knowledge sources on firms’ innovations (Peters & Schmiele, 2010). We believe that the financial, technological, and commercial collaboration with global partners allow firms extend a business to the global markets more successfully (Abdullah and MohdZain, 2011). However, most SMEs utilize in-house R&D (Closed R&D, 64%), and their business count on large firms (Lee, 2005; Park, 2007). Although targeting the local market might have short-term advantages to maintain revenue, it could yield minimum profits, and hard to secure profits in the long-term (SERI, 2012).
GLOBALIZATION STRATEGY

Globalization is a broad concept used to describe a variety of phenomenon that reflect the developed economic, social, and political interdependence of countries (Abdullah and Zain, 2011). Despite the growing awareness, there is no generally accepted definition and no standard measurement of globalization (Asmussen, Pedersen, & Petersen, 2007, Amirkhanyan, 2012). In this regard, we have selected one definition which is applicable to SMEs that globalization has defined as the efficient movement of goods, services, capital, people and ideas across national borders (Little & Green, 2009).

Trade openness is an all-encompassing concept to explain a wide range of activities such as international trade (import & export), foreign direct investment (FDI), and cultural exchange (Archibugi & Iammarino, 2002). In order to meet global standards, most firms need to innovate. This is why Abdullah & Zain (2011) stated that invention and innovation are a part of the globalization process.

The main issue we need to consider is that firms are unsure of whether globalization will provide them with profit or not. Difficulties and uncertainties in foreign markets lead firms to hesitate to penetrate global markets (Cooper, Edgett, and Kleinschmidt 2003; Koufteros, Vonderembse, and Jayaram 2005; Griffiths-Hemans and Grover 2006). Nevertheless, empirical data proves evidence that the desire to increase profits is the major reason behind a firm’s move into the global markets (Abdullah and Zain, 2011). Likewise, Korean firms are more likely to seek global markets as a priority due to their limited market scope to create benefits. However, SMEs are not able to manage globalization barriers effectively. (Dunning, 1977; Stojmanovski, Viktor, et al.2009). The utilization of globalization networks helps SMEs gain support as an ideal
solution to increase their business and technological activities in the global environment (Möller et al., 2005; Johanson and Vahlne, 2006; Stojmanovski, Viktor, et al. 2009; Chetty, Sylvie K., and Loren M. Stangl, Chetty, Sylvie K., and Loren M. Stangl, 2010). Globalization tends to benefit large firms compared to SMEs because scaled advantages allow large firms to create new opportunities. (Rammer, Christian; Schmiele, Anja, 2009). As a consequence, SMEs are faced with increasing prices and technological competition from large firms in their local markets (Rammer, Christian; Schmiele, Anja, 2009). In this regard, the objective of our study is precisely to identify the process of globalization, building strategies for globalization and collaboration (Franco, Mário; Haase, Heiko; Figueiredo, Sandra, 2013).

The ‘export’ is an accurate method to measure globalization rather than using culture, people, technology, and other traits (Chiao et al. 2006). We will use “export” as a measure of successful globalization along with subsidiaries, and production. However, only a few SMEs were able to open subsidiaries, which is the most expensive method of globalize (Halim & Zain, 2011).

In terms of strategy, Porter (1991) maintains a successful innovation strategy involves integrating marketing, production, R&D, procurement, and finance within a firm. Strategy is the most influential factor that determines the success or failure of a business and should be employed by all parts of an organization. However, firms’ global strategy varies depending on firms’ decision. In doing so, we use the existing theory of fundamental globalization strategy presented by (Cornelis A. de Kluyver, 2010) and will consider both external and internal variables (factors) that affect a firm’s globalization. Internal strategies include people in firms, leadership, strategic processes, firm’s structure, and culture. The market environment for producing technology and services which are external strategies will be measured as
globalization strategies with the five new elements above.

THEORETICAL FOUNDATION

The Process of Open Innovation

Depending on authors, process of open innovation varies. West and Bogers (2014) demonstrated four phase process model of open innovation; obtaining, evaluating, selecting, and applying. Gassmann and Enkel (2004), however, highlight three archetypes of open innovation process: outside-in (integrating external knowledge, customers, and suppliers), inside-out process (brining ideas to market, selling/licensing IP, and multiplying technology). We cannot overlook either of the theories when we examine the process of innovation. Ergo, our study integrates both models and present one through our case studies.

Globalization theory—Upsala Model

Although existing definition of firms' globalization vary, the indices are of three main types. Foreign Direct Investment (FDI) is one of the major tools acquiring existing assets abroad or set up entirely owned activities in foreign markets (Patra & Krishna, 2015). There are other important procedures of globalization; trade, licensing, joint patents, and international technological and scientific collaborations (Patra & Krishna, 2015). Almost 75% of firms utilize “exporting” among globalization procedure, yet very few SMEs could open subsidiaries overseas, which is the most expensive method to globalize (Abdullah and Zain, 2011). In this sense, we used “export” as a tool of filtering SMEs to select firms who are qualified as our case studies. The Uppsala model is a theory that explains how firms gradually intensify their activities in foreign markets—it was introduced by Jan-Johansson and Jan-Erik Ahlen in 1977. However,
several issues remain understudied, such as how to move forward to the next step of globalization leveraged by open innovation.

**Theory of Global Strategy**

There are many articles related to globalization strategy, including *The Thinking Strategy Model* for corporations envisioned by Allaire Y. and Firsrotu M (1993), divided into external and internal variables. Internal strategies include employees, leadership, strategic processes, firm’s structure, and culture. The market environment (such as producing technologies and services) are external strategies.

The theory we integrated is called *Fundamentals of Global Strategy*. Each firm has different strategies based on their circumstances. Internal organizational factors constrain their ability to conceive and implement international strategies and policies (Wernerfelt, 1984; Porter, 1991; Barney, 1989). Firms integrate global strategies when they penetrate likewise markets: This answers questions such as what value the strategy provides, to whom and how, and what price and budget (Cornelis A. de Kluyver, 2010) are required. Generic strategies represent creating a global competitive advantage, ranging from adaptation to aggregation to arbitrage (Cornelis A. de Kluyver, 2010) and which firms need to apply this. Firms need to decide their business model (Cornelis A. de Kluyver, 2010) and strategies (Whittaker, Fath, and Fiedler, 2014) based on their circumstances. Although marketing is possibly the most important component of a firm’s global strategy (Cornelis A. de Kluyver, 2010), these categories are more focused on marketing than incorporating.
Global strategy must not only incorporate wide-ranging objectives, but also specify how activities such as sourcing, R&D, manufacturing, and marketing must be coordinated globally (Zou & Cavusgil, 1996). The article, *Generic Global Strategy* (Zou & Cavusgil, 1996), demonstrates the robust framework of how to evaluate the globalization of individual firms, including market, cost, environmental and competitive factors (Yip, 1989; Zou & Cavusgil, 1996); this model is more comprehensive than models. This strategy encompasses both internal organizational factors and external industry globalization drivers.

However, Hout et al. (1982) argues that an effective global strategy requires not a single approach; therefore, we integrate *Global Strategy* and *Fundamentals of Global Strategy* to examine each case firm’s tactics.

### 3.2 RESEARCH QUESTIONS

Our main question is *how do high-tech SMEs in South Korea leverage their globalization through Open Innovation?*

At a theoretical level, our research is based on the most recent literature on innovation, open innovation, collaboration, R&D, SMEs, globalization, and global strategy. The recent studies typically use patent data to analyze the impact of foreign knowledge sources on firms’ innovations (Peters & Schmiele, 2010). Although most empirical evidence has been based on the practices of open innovation conducted by large firms a decade ago (De Backer, Koen, Vladimir López-Bassols, and Catalina Martinez, 2008), there are various studies focused on SMEs after that. These are related to collaboration, Open Innovation, knowledge sharing, R&D, and globalization. The article, *Innovation and Knowledge Creation*, examined knowledge creation with different activities, the foremost being knowledge identification, acquisition, and sharing
through Romanian SMEs (Purcarea, Espinosa, and Apetrei, 2013). Both authors, Lin & Lin (2016), analyzed the effect of network relationship on the performance of SMEs in Taiwan. A recent study of eight Swedish biotech firms has highlighted the importance of collaboration, especially on a global scale and examine firms’ connectedness to foreign business relationships (Rovira Nord-man and Melén, 2008; Nordman, Tolstoy, 2016). Petraite (2013) emphasized R&D innovation through networks and collaboration. Nevertheless, there is no comprehensive case study examining SMEs and innovation, open innovation, SMEs (SK SMEs), collaboration modes of R&D, strategy, and globalization.

We will also explore how SK SMEs implement open innovation with global associates given the uncertainties, complexity, and potential risks arising from the formation of outside partnerships, which are understudied. Even though corporations have recognized the benefit of global collaboration, firms tend to be reluctant to implement global collaboration due to the lack of information, experience, and confidence (observation). On the other hand, numerous SMEs are willing to benchmark case studies if there are any successful case studies related to global collaboration. However, there is no exemplary case study related to our theme demonstrating strategies and the phenomenon that SMEs can benchmark. This is a theoretical gap we will fill through our empirical research.

4. RESEARCH DESIGN AND METHODOLOGY

CHOICE OF RESEARCH STRATEGY

Innovation is not simply quantifiable and there are few research papers that are based on case studies (Kang, 2012). We conducted a qualitative approach that implements multiple case
studies, and carefully examined internal and external factors of global strategies at the industry level in order to analyze the firm’s ability to globalize. We are sure that quantitative research is not sufficient to demonstrate a certain phenomenon (how open innovation influences firms’ globalization) that we would like to explore in our study. Numerous academics emphasize that case study research would be the most appropriate method if the scope and content of the research target cannot be fully developed and examined (Eisenhardt, 1989; Yin, 2003; Grabner, 2007; Kang, 2012). The method for case study will be used to explain 'why' and 'how' (Kang, 2012) some SMEs achieve success whereas others do not. Moreover, the main insights of our research in open innovation are based upon case studies of firms practicing such a strategy (Chesbrough 2003, 2006; OECD 2008). This tradition was stated by Chesbrough and followed by several authors (Dodgson et al. 2006; Huston and Sakkab 2006).

Our research goals, which are derived from our research questions, and our applied methodology are presented in Table 3. During the research period (2014~2016), we participated as an observer who analyzed organizations in each firm that has been consulted by us for one to three years.

<table>
<thead>
<tr>
<th>RESEARCH GOAL</th>
<th>LEVEL OF ANALYSIS</th>
<th>METHODOLOGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>To identify SMEs, S. Korean SMEs, Innovation, Open Innovation, collaboration of R&amp;D: Open R&amp;D and Global R&amp;D, globalization, and globalization strategy</td>
<td>Industry level</td>
<td>Literature review</td>
</tr>
<tr>
<td>-To analyze case firm’s globalization strategies, the process of innovation and globalization -To examine how the relationship between collaboration mode of R&amp;D and globalization</td>
<td></td>
<td>Qualitative methodology; multiple case study of high-tech SMEs in South Korea. Interview with CEO, directors, or managers, participant observation, and secondary</td>
</tr>
</tbody>
</table>
4.1. DATA COLLECTION

To provide us with a more in-depth understanding of each SME, corporate secondary data collected ahead of the interviews. This data includes corporate history, the CEO’s message, culture, management philosophy, and initial and future business models. During the research period, we were working for the companies as a consultant, so we could also use participation observation as a method of data collection. The names of the organizations and interviewees will be anonymized for confidentiality. The research position involves selection and examination of collaboration mode, “Open & Global” as a key component of the Open Innovation concept and crucial elements to increase globalization. Following Table 4 is the overview of industry level research.

<table>
<thead>
<tr>
<th>INDUSTRY LEVEL RESEARCH OVERVIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of study</strong></td>
</tr>
<tr>
<td><strong>Industry</strong></td>
</tr>
<tr>
<td><strong>Analyzed companies</strong></td>
</tr>
<tr>
<td><strong>Time of research</strong></td>
</tr>
<tr>
<td><strong>Data Resources</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Unit of Analysis</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Data Analysis</strong></td>
</tr>
</tbody>
</table>
| Research output | - Conceptual framework for relationship between collaboration mode of R&D and globalization  
- Process of innovation (open innovation)  
- Process of globalization |

[Table 4: Industry Level of Research Overview]

Finally, we will examine how different modes of collaboration influence the technological perspective. Quality improvement, cost reduction, diversification of products, expanding market share, innovation, achieving technical standard, and speed of globalization all contribute to technological innovation. To compare collaboration modes, we chose SMEs which engage in successful open innovation to export with global partners (Open-Global); local partners (Open-Local); and or in-house (Closed). We conducted 24 interviews in 14 firms with different questionnaires depending on collaboration modes: Open & Global, Open & Local, and Closed. Most of the interviews were conducted face-to-face, or digitally using Skype. Interviews are estimated to take half an hour to an hour. Interviews were audio taped. “Tapes are convenient and reliable, and they ensure that the original data are available at any time (Gay, Mills & Airasian, 2011)”. The interviews took place in 2016. Despite the opportunity of recording each interview, notes were taken in order to collect all the information needed for this study. We applied data triangulation to check for reliability and validity, combining different qualitative methods (i.e. observations, documents, and interviews). We observed behaviors, attitudes, and opinions of the interviewees whereby the organization and interpretation of the data had the following sequences: (1) characterization of the firms towards globalization- (2) individual case analyses, and (3) multiple case analysis (Franco & Mário, 2011; Haase & Heiko, 2012; Figueiredo, 2013).

Through our primary data collection method, direct observation, we also gathered
documents produced during our meetings, not limited to reports, and/or press releases, and/or presentations. 24 in-depth interviews were conducted over the study which are not able to get data from a secondary source: company culture, global strategy, market orientation, culture (values), management and technology factors, current situation, vision, process of open innovation and globalization. Case firms were interviewed once or multiple times. According to the circumstances, second additional interviews were conducted by phone, email, or SNS.

4.2 DATA ANALYSIS

This research uses a combination of document analysis, participant observation, and mainly interview answers on our central questions. We first gathered all the materials and then wrote a monograph (Eisenhardt, 1989) to synthesize all the events, giving information about the relationships between collaboration mode of open innovation and globalization. We used open innovation theory developed by Gassmann and Enkel (Gassmann & Enkel, 2004) and West and Bogers, (West & Bogers, 2014) to examine the firm’s innovation process. To measure the degree of globalization, we utilized the theory of the same name referred by Halim and Zain (Halim & Zain, 2011).

To categorize globalization strategy, we refer the both models and theories of Generic Global Strategy (Cornelis A. de Kluyver, 2010) and Global Strategy (Yip, 1989; Zou & Cavusgil, 1996), and how firms apply this. Depending on the firm’s global strategies which they have taken, they performance or result vary. We analyzed the globalization strategy of each firm
internally and externally based on the data categories: technology capabilities, global mind-set and experience, culture, market, partnership, and management.

From literature Analysis, we reviewed examined theories and research relevant themes to the current study. Later in this study, we will reanalyze and discuss several key factors in relations to dynamic collaboration modes of innovation through observations, interviews, and document analysis.

As for the participant observation, we consulted the SMEs that we had interviews with. While consulting, we found out the phenomenon related to our theme. These strategies encompass building management, marketing tactics, expanding export, finding partners overseas, and developing businesses. The unique experiences afford us a deep analysis of the phenomenon of open innovation and globalization targeting SMEs that may often be invisible to other researchers.

From data analysis of the interviews, we translated each interview from Korean to English, and the interview transcripts were analyzed; this step focuses on describing the participants and the phenomenon of the study in detail. The themes were derived based on the literature reviews and the data that has been collected. In the data, we searched for the process of open innovation and globalization, and global strategies in each firm based on the categories from the Theory of Global Strategy.

To analyze the data gathered on the industry level, we have used coding methodologies, using software NVIVO. We have first used the emergent coding of the interviews and used an inductive approach to see what themes and variables would emerge. Then, we have compared them with a list of codes we have constructed a-priori and revised our list of codes. In the data, we have searched for the process of open innovation and globalization, and global strategy to
analyze them in depth. After the first coding, we searched for the patterns and themes in the data and organize the codes and modify previous conceptual framework. We use the frequency of the codes related to our theme to examine the phenomenon.

The cases were compared by identifying similarities and differences in terms of three different parameters: Open & Global, Open & Local, and Closed based on firms’ capabilities and decision to conduct global strategies.

5. CASE STUDY

Part 3. Case study Results

We conducted in-depth 24 interviews in 14 firms with senior managers representing SMEs with the goal of evaluating their opportunities for growth or unfortunately, stagnation at the existing side at knowledge assets. Following Table 5 is the characteristics of case firms.

<table>
<thead>
<tr>
<th>Firm</th>
<th>Position</th>
<th>Technology</th>
<th>No. of People</th>
<th>Revenue</th>
<th>Export (%)</th>
<th>R&amp;D team</th>
<th>Overseas sales team</th>
<th>Subsidiary</th>
<th>Types of Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td>YL</td>
<td>CEO/Director</td>
<td>Security Tech.</td>
<td>52</td>
<td>14M</td>
<td>80%</td>
<td>40%</td>
<td>20%</td>
<td>Distributor Overseas</td>
<td>Open &amp; Global</td>
</tr>
<tr>
<td>MS</td>
<td>CEO</td>
<td>Chemicals for electronics</td>
<td>63</td>
<td>19M</td>
<td>47%</td>
<td>34%</td>
<td>12%</td>
<td>Export through large firms</td>
<td>Open &amp; Global</td>
</tr>
<tr>
<td>KC</td>
<td>Director/Senior researcher</td>
<td>Semiconductor</td>
<td>250</td>
<td>9M</td>
<td>85%</td>
<td>20%</td>
<td>10%</td>
<td>Japan, China</td>
<td>Open &amp; Global</td>
</tr>
<tr>
<td>SL</td>
<td>Director/manager</td>
<td>Touch panel for Smartphone</td>
<td>300</td>
<td>8M</td>
<td>87%</td>
<td>11%</td>
<td>5%</td>
<td>China, distributors in Japan, USA, Asia</td>
<td>Open &amp; Global</td>
</tr>
<tr>
<td>TM</td>
<td>Chairman/CEO/Director</td>
<td>VR/CCTV</td>
<td>210</td>
<td>36M</td>
<td>60%</td>
<td>28%</td>
<td>4%</td>
<td>China, USA, Europe</td>
<td>Open &amp; Global</td>
</tr>
<tr>
<td>NT</td>
<td>Head of institution/Director</td>
<td>Set-top box</td>
<td>82</td>
<td>15M</td>
<td>100%</td>
<td>80%</td>
<td>15%</td>
<td>Distributors UK, the middle East, S. America</td>
<td>Open &amp; Global</td>
</tr>
<tr>
<td>AO</td>
<td>Director</td>
<td>Digital implant</td>
<td>282</td>
<td>90M</td>
<td>45%</td>
<td>15%</td>
<td>20%</td>
<td>USA, China, Japan, etc.</td>
<td>Open &amp; Local</td>
</tr>
</tbody>
</table>
### Table 5. Descriptive Characteristics of Case firms

<table>
<thead>
<tr>
<th>Phase</th>
<th>Content</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Obtaining (Input)</td>
<td>Outside-inside ideas from overseas buyers and/or distributors who are familiar with their respective markets in terms of business trends, and their technology needs for growth (observations/interviews).</td>
</tr>
<tr>
<td>2</td>
<td>Integrating (R&amp;D)</td>
<td>“We define the role of each interviewee based on their specific specialty: hardware, software, and technology integration, cost effectiveness, and productivity.” (CEO YL/MS).</td>
</tr>
<tr>
<td>3</td>
<td>Commercializing</td>
<td>“Depending on quality of technology, we determine how to commercialize: either doing in-house or outsourcing in China or Vietnam, etc.” (director YL/MS) “Some partners who manufacture products and distribute to produce its technology in the local markets.” (YL/MS) “This is the ideal case to collaborate with partners (CEO YL/MS).”</td>
</tr>
<tr>
<td>4</td>
<td>Interaction</td>
<td>Both parties create its own markets and share the profits (observations/interviews). “Overseas partners (distributor or buyers) have better ideas and better understanding of the markets and recognize the</td>
</tr>
</tbody>
</table>
clients’ requirement and market needs.” (CEO YL/MS)

[Table 6. Process of Open Innovation collaborating with global partners (Open & Global)]

Following Table 7 is the firms that collaborate with local partners such as universities, institutions, or large firms in Korea. In this case, the firms who collaborate with conglomerates, export indirectly through the channels of large firms.

<table>
<thead>
<tr>
<th>Phase</th>
<th>Content</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Obtaining</td>
<td>“We obtaining ideas (outside-in) from universities, or institutions, and share their ideas with the case firms on what types of technologies will lead in the near future.” (AO/director AC) “We learn the future trends and technologies from them.” (AO/CEO AC) Inflow of ideas with technological specification from multinational firms. (observations/interviews)</td>
</tr>
<tr>
<td>2</td>
<td>Integrating (R&amp;D)</td>
<td>“We collaborate with academic/government institution, or other SMEs in the same industries to develop new technologies.” (AO/director AC) “Most of the firms are more likely to receive government funding for implementing R&amp;D.” (AO/AC)</td>
</tr>
<tr>
<td>3</td>
<td>Commercializing</td>
<td>When the firms collaborate with institutions, most cases fail to commercialize technologies given that institutions do not have business sense to commercialize due to the lack of experiences. (observation/interviews) “In the case of collaboration with large firms, large firms usually integrate its technologies and commercialize by themselves or outsource rather than collaborate with us.” (CEO, director/ AC)</td>
</tr>
<tr>
<td>4</td>
<td>Interaction</td>
<td>“When we collaborate with large firms, they share their ideas and knowledge with the us and require specific technology they cannot serve.” (CEO, director/ AC)</td>
</tr>
</tbody>
</table>

[Table 7. Open Innovation Process collaborating with local partners (Open & Local)]

As for the Closed R&D (in-house), these firms have top level technologies and man powers, and they utilize VC backing or government funding, meaning they have enough resources which are necessary for developing R&D internally.
### Phase 2. Globalization strategy

Following Table 8 demonstrates a corporation’s strategy, especially focused on the globalization aspect. We examined three cases based on collaboration modes, such as Open & Global, Open & Local, and Closed.

<table>
<thead>
<tr>
<th>Internal organizational factors</th>
<th>Market orientation</th>
<th>Partnership</th>
<th>Management</th>
<th>culture</th>
<th>capabilities</th>
<th>Global mindset/ global experience</th>
<th>Market factor</th>
<th>Competitive factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Must market (active): develop their technology targeting overseas markets</td>
<td>“We are willing to collaborate or obtain comparable technologies from overseas partners to meet the market needs.” (CEO YL/MS)</td>
<td>- Centralized: “We decide our target market.” (CEO YL/MS)</td>
<td>- Values: deep understanding of significance of global culture. We obtain global standardization and competitive experiences overseas. “We are eager to hire international people who come from different cultures and have engineering back ground.” (YL/MS)</td>
<td>“We minimized cost through global sourcing to compete with competitors such as China, Vietnam, or any other developing countries.” (YL/MS)</td>
<td>“We have strong passion for global markets, and have various experiences (YL/MS). The CEO of both firms have global experiences of working and studying. (observation/ interviews)</td>
<td>“The market requires advanced technology continuously, especially high-tech industry.” (YL/MS) “Analyzing markets and a target niche market can be a strategy to penetrate new markets.” (YL/MS)</td>
<td>-Product leadership: “We always search for market trend to develop their technology.” (CEO YL/MS) “If firms have competitive technologies, it would be better to focus more on their specialty.” (YL/MS)</td>
</tr>
</tbody>
</table>
A market requires innovative technology always. “Firms need to collaborate or obtain comparable technologies which meet their clients’ requirements.” (YS/MS)

Partnering with global buyers and distributors is the best scenario for firms to cope with lack of technologies, markets, and funds for commercialization.

<table>
<thead>
<tr>
<th>Internal organizational factors</th>
<th>Market orientation</th>
<th>Partnership</th>
<th>Management</th>
<th>Culture</th>
<th>Capabilities</th>
<th>Global mindset/ global experience</th>
<th>Market factor</th>
<th>Competitive factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|                                | - May market (passive): “We are willing to expand global markets if we have opportunity.” (AC) | “We have working experiences overseas, but we more focus on the relationship with large firms so far rather than focusing on overseas partners.” (CEO, director/ AC) | -Organization structure
  Internally: Engineers, marketers, administrators.
  Externally: Partnership with large firms and distributors.
-Centralized: Owners have a desire to secure existing businesses rather than taking the risks for global markets. (observations/interviews) “Our company is more focused on R&D rather than marketing or any other issues as our technology are relatively competitive.” (AO/AC) | -Value: Regular clients (supply to large multinationals). Higher level of engineers and fund raising from government. (observations) | -Lacking engineers and/or funds for R&D encourage firms to collaborate with partners, universities or institutions. (observations/interviews) Those who supply their technologies to large firms are relatively advanced. (document analysis/ observations/ interviews) “The references collaborating with conglomerates allow us to have opportunities for expanding our businesses.” (AO/AC) | -Firm owners: People have experiences overseas but lack experience in motivating them to collaborate with others.
-Lack of international experiences and overseas networks (focusing on existing local businesses and more passive than active for creating new markets). | “Markets need advanced technology continuously” (SN/ST) | -Highly educated engineers and/or experienced people (observations/interviews)
- Product leadership: “We are mainly focused on business collaborating with large firms.” (AC)
-Firms have advanced technology and competitive power to lead their fields. |
Firms produce their technology or product in ODM or OEM way (observations/ interviews)

Technology factor

“We have advanced technology and are eager to innovate to meet market needs, but we do not want to be a first mover in the market to mitigate risks.” (AC)

[Table 9. Characteristics of Corporate Strategy focusing on Globalization: Open-Local]

Challenging leadership (entrepreneurship) targeting overseas markets is required to become independent from large firms and create new global markets. In order to increase success rate of open innovation, firms need to collaborate with the firms which are same industry and have different capability rather than collaborating institutions.

<table>
<thead>
<tr>
<th>Internal organizational factors</th>
<th>Market Orientation</th>
<th>Partnership</th>
<th>Management</th>
<th>Culture</th>
<th>Capabilities</th>
<th>Global mind-set /Global experience</th>
<th>External globalization</th>
</tr>
</thead>
</table>
|                                | “To meet with market trends, we focus more on R&D rather than marketing or other activities.” (SN/ST) | “As an SME, we do not want to take a high risk arising from partnerships, unless the partners have more advanced technology than us, and we need it in the near future.” (SN/ST) “We collaborate with partners for manufacturing and marketing.” (SN/ST) Firms continuously focus on obtaining innovative ideas and advanced technologies, and expanding market channels. (observations/ interviews) | -Organization structure
  Internally: Engineers/ marketers/ administrators.
  Externally: Agents abroad, partners for commercialization and marketing.
-Centralized: “We do not want to be emulated by Chinese and any other firms overseas.” (SN/ST) “We do not want to be emulated by Chinese and any other firms overseas.” (SN/ST) | Value points: Customer focus, intensive R&D activities, higher level of engineers, top level of technology, stable revenue from IP and patents. (observations/ interviews) | -Intensive R&D activities; High level of engineers / Top level of technology/ Stable revenue from IP and patent. (observations/ interviews) | -Conservative: “We are eager to secure our technology rather than openness.” (SN/ST) “We are very pride of our technology.” (SN/ST) -Firm owners have not enough experiences in global partnering. (observations) | “We find networks, partners, and obtain market trends through government agencies or participating conventions (exhibitions + conferences)” (SN/ST) |

| Technology factor | “Our company is leading technology in our field all over the world.” (SN/ST) |

[Table 10. Characteristics of Corporate Strategy focusing on Globalization: Closed]
Compared to the firms which are collaborating with local and global partners, these firms are relatively capable of developing technology by building in-house. However, the firms may need external partners if the market is changed and/or they would like to diversify business model.

**Part 4. Theory contribution, Discussion, and Conclusion**

The above *Figure 1* provides a basis for organizing existing literature on open innovation, globalization, SMEs, and collaboration. Such a map will be useful for teaching and guiding future research in these areas. The case studies are primarily directed at SMEs, and are structured to provide information on how SMEs implement open innovation at the R&D phase and generate successful global collaboration. Following Figure 2 is the answer of our central question: *how SMEs globalize through Open Innovation.*

![Figure 2. Process of Open Innovation and Globalization in SK SMEs](image)

As seen above *Figure 2*, there are three types of R&D collaboration: R&D with global
partners (Open & Global), with local partners (Open & Local), and by themselves (Closed). Closed R&D firms prefer innovative development in-house rather than collaboration with external partners. Following Figure 3 is the outcome of case studies based on the collaboration mode of R&D.

Following Figure 3 is our recommendations and suggestions for beneficiaries on how firms should select collaboration modes to fit in their situations to maximize benefits and mitigate risks. Figure 3 represents the traditional progress of collaboration modes of R&D, which are Closed, Open & Local, and Open & Global, and demonstrate what type of SMEs are appropriate to conduct Closed, or Open & Local, or Open & Global.

** If an SME has a ‘A’ type of global strategy, they would benefit from conducting Open & Global R&D (or Open & Local/ or Closed R&D)

[Figure 3. Recommendation of Collaboration mode and Future Study]
From the Figure 3, we suggest apposite ideas for SMEs, and encourage them to benchmark collaboration modes to benefit from partnerships.

In the case of Closed R&D, firms consider that their technology is the top level internationally and they are eager to protect their technology instead of sharing it. These firms own the necessary skills to expand markets within the global context using their own channels such as agents and/or subsidiaries. However, the firms located in suburbs stated that it is hard to recruit professional marketers that have global business sensibilities such as SN, AC, and ST.

In terms of open innovation with local partners (Open & Local), firms are less likely to have enough engineers, market information, and budget for R&D. Thus, most of the firms utilize government funds for collaboration R&D with universities, or institutions. Most interviewees provide their technology to large multinationals and export indirectly utilizing the market channel of large firms. “The corporations are relatively less aggressive and enthusiastic to find global partners (CEO/ TM). The firms are afraid to exhaust funds for global operation such as traveling and opportunity costs. (AI, AC, etc.) Most these firms are eager to conduct Open & Global after they achieve innovation with local partners. However, “there is no case study to benchmark know-how for SMEs and the processes of implementing open innovation with global partners successfully (AC/ ST)”. This is why our case study is valuable and beneficial.

As for the global collaboration (Open & Global), only very few Korean SMEs export successfully. SMEs collaborate with their buyers or distributors who suggest ideas and are most likely to fit on market trends. This is an ideal example of why firms collaborate with global partners targeting global markets. However, collaboration with global partners are highly risky for SMEs compared to local R&D since firms have to invest in frequent business trips, deal with
complex technological management and cultural differences. Although SMEs are capable of globalizing the technologies, it is hard to make a profit in the short-term. Moreover, opening up innovative activity involves substantial business risks with firms accidentally disclosing patented information rendering their competitive advantage obsolete (Henkel, 2006; West, 2003; Alexy et al., 2016). Therefore, these firms need to have diverse global background, experiences, and global networks in order to find right partners. Above all, ‘will’ or ‘enthusiasm’ for global market is the most significant factor in owners to pursue firms’ globalization (result of interviews). “Economic incentives are the crucial solution for securing partnerships for long-term.” (YL/AC/TM). Otherwise, their relationship will not last longer.

Depending on firms’ decision of global strategies and their circumstances, firms can select one of collaboration mode which is more appropriate to them aiming to globalize: Closed, Open & Local, or Open & Global R&D.

Based on above Figure 3, we create a conceptual framework which other SMEs can apply to their firms, and achieve globalization. (Figure 4)
Above Figure 4 represent that SMEs need a government subsidy or other funds to innovate, and partnership is a crucial factor both for open innovation and global strategies. Firm’s globalization will vary depending on firm’s decision of strategies and entrepreneurship.

As for the future study, we could examine how different phases of open innovation activities (such as R&D phase and commercialization) impact a firm’s successful globalization (Figure 9). Another study could be how government policies and subsidy programs influence firm’s decision of collaboration mode for innovation.

Compared to large firms, most SMEs collaborate the later phase of collaboration which is commercialization and/or marketing stages. However, firms could benefit from collaboration at the early stage of collaboration which is R&D. The partners who collaborate R&D can be an appropriate partner for marketing and manufacturing as well. Firms can develop technology up
to date through their R&D partners and utilize their global channels. Knowledge and information is a crucial issue for firms to innovate and to have competitive power around the world.

**Conclusions and Implications for Entrepreneurship Education**

Our study explores the certain phenomenon for the first time: *How do South Korean SMEs leverage globalization through Open Innovation?* To answer this question more specifically, we analyze *how different collaboration modes of R&D impact globalization in SMEs*. As we examined, most SMEs conduct R&D by themselves (in-house) rather than collaborating with partners to protect their technologies and mitigate risks from partnerships. SMEs need to collaborate with partners to cope with their drawbacks, lack of resources and lack of experiences. Companies benefit from partnership either local or global unless they have the top level technology and enough budget for R&D which is unusual for SMEs. Once companies fail global partnerships, it makes firms be isolated. (interviewee /SN/ Director) To increase the success rate of global partnerships and/or projects, firms need to build joint-institution to cooperate in the same space until the project is done. This is the best way to minimize risks caused by global partnerships and to build a mutual real-time communication. (CEO, director/ YL) Otherwise, time to market will most likely be delayed and firms may lose their potential markets to their competitors. (CEO, director/ YL)

Our analysis is not to evaluate which collaboration mode has more advantages than others, instead, we recommend what types of SMEs are appropriate to conduct Open & Global, Open & Local, or Closed R&D targeting international markets. Corporations have different global strategies depending on their situation, a passion and mind-set of organizations towards global markets. SMEs can choose their global strategies based on their goals and circumstances.
The research answers will demonstrate various options to firms, and guide them on how to implement R&D successfully. Our case study will implicate SMEs, academic institutions, practitioners, entrepreneurs, and policy makers. We will encourage them to understand how to utilize open innovation for their successful globalization, and to benchmark the strategies of case firms who already implemented collaboration.

Our findings will apply to the SMEs in a variety of industrial categories and countries. Lastly, in order to secure external partnership, both parties (between firms and institutions or firms and firms) need to break down competitive barriers, and maintain a mutually beneficial cooperative relationship.

We have concluded that most of the decision-making such as innovation, the selection for collaboration, and global strategies originates from the business leaders. Thus, an enthusiastic mindset and passion, partnerships, and their international experiences are the key elements of successful globalization.
REFERENCE


http://doi.org/10.1016/j.technovation.2012.01.004


THE IMPACT OF ENVIRONMENTAL FACTORS ON INTERNATIONAL PERFORMANCE OF MULTIUNIT FRANCHISING

Andrey Kretinin
Assistant Professor of Management
Cotsakos College of Business
William Paterson University
300 Pompton Rd.
Wayne, NJ 07470
(216) 456-1639
kretinina@wpunj.edu

Todd Morgan
University of Massachusetts Lowell

ACADEMIC ABSTRACT

While previous research has shown a multitude of benefits of multiunit franchising (MUF), there may be a potential downside when accounting for distances between the home market of the franchisor and the MUF’s. In this paper, we examine how cultural, administrative, geographic and economic distances impact the relationship between MUF and franchisor performance. We suggest and find empirical support that cultural and economic distances negatively impact the relationship whereas geographic and administrative distances enhance the relationship. This research contributes to the international franchising literature by examining a potential dark side to MUF when considering the internationalization of franchisors.

EXECUTIVE SUMMARY

Previous research has shown numerous benefits of multiunit franchising (MUF). Research has demonstrated how franchisors may restructure their franchising system over time from single unit franchising (SUF) to multiunit franchising, which may lead to greater performance. Although research has uncovered a plethora of benefits of MUF, there may be potential disadvantages. In this research we suggest and empirically test the notion that while MUF is a
means of reducing the disadvantages of SUFs in fairly homogeneous markets, if there is a need for greater market adaptation, MUFs may utilize their bargaining power and engage in more opportunistic behavior. When demand for adaptation is high, MUFs cannot simply implement the franchisor’s system that was created in its home markets. As such, the MUF will need to deviate from the franchisor’s system in order to succeed in the distant market such as changes in offerings, the supply chain system, pricing, or customer target groups.

This research assesses differences in cultural, administrative, geographic and economic environments between the home and the operating markets. We suggest that cultural and economic distances between the home and foreign country will erode the relationship between MUF intensity and firm performance whereas greater geographic and administrative distances will enhance the relationship.

We find support for greater levels of MUF increasing firm performance. Moreover, we find support for our interaction hypotheses that suggest cultural and economic distances negatively impact MUF and franchisor performance whereas geographic and administrative distances positively impact the relationship. Our research provides implications for both theory and practice. While franchising research has found numerous benefits of MUF, we have brought light to potential negative consequences in the internationalization context. Moreover, as MUF intensity is increasing, franchisors should be aware of how this affects potential opportunism when various types of distances from the home market are considered.

INTRODUCTION

Over the last decade, franchising research has shifted its focus from SUF, where a franchisee owns a single outlet, to MUF, where a franchisee owns multiple outlets. Multiple studies across various industries indicate that the majority of franchising is in fact MUF (Combs et al., 2011; Dant et al., 2011). Recent research has emphasized the importance and benefits of MUF, such as reducing adverse selection (Cox & Mason, 2009), preventing information withholding among franchisees and the franchisor (El Akremi et al., 2010), increasing franchisees’ motivation (Dant & Gundlach, 1999), and reducing monitoring costs (Perryman & Combs, 2012). Additionally, Cox & Mason (2009) demonstrate how franchisors restructure their franchising system over time and improve performance by converting from SUF to MUF.

Despite such benefits of MUF, several papers briefly indicate that MUF has potential disadvantages such as an increase in bargaining power by the franchisee or slow growth rates, but these issues have not been addressed theoretically or empirically. In this paper we fill this gap and attempt to broaden existing theory on MUF by focusing on the consequences of MUF, more specifically the franchisor’s performance. We demonstrate that the benefits of MUF may be diminished if MUFs possess a high degree of bargaining power and have potential incentive to behave opportunistically. Such motivation may occur when market heterogeneity exists and, as a result, adaptation requirements are high (e.g. when the franchise operates internationally). This research claims that in case of low information asymmetry and low adaptation requirements, the MUF is positively associated with franchisor’s profit (H1).
However, companies do not operate only within homogeneous markets, but instead they operate in an open multicultural global marketplace. To operate successfully, companies have to alternate their offerings and business practices to adapt to market specifications. When MUF has to adapt to a given market, information asymmetry between MUF and franchisor increases due to franchisee’s unique knowledge about the market (Perryman & Combs, 2012, Elango, 2007). In this case, MUF invests in adaptation and deviates from the franchisor’s practices and the franchisor cannot efficiently monitor and evaluate MUF’s activity due to the knowledge differences. This research distinguishes two types of environmental factors: eroding and enhancing. Eroding factors create expenses for the company indirectly through a requirement to change its offerings. Eroding factors are considered the environmental factors that force company to change its offerings and/or business practices in order to survive and prosper in the given market. For service providers, the process of adaption lies within the interaction with customers due to the simultaneous production and consumption of the service. Customers’ culture, such as beliefs, traditions, and norms, and their purchasing power and habits will influence preferences (Ghemawat, 2007). High cultural differences among the regions will cause strong deviation from standard routines and provide an opportunity for franchisees to behave opportunistically. Thus, this research argues that cultural differences will negatively moderate the relationship between MUF and franchisor’s profits (H2).

Similarly, consumers’ purchasing power and quality expectations depend on economic development in the given market. Economically developed and wealthy nations tend to spend more money, expect higher quality, and utilize highly developed infrastructure, such as internet and mobile commerce (Ghemawat, 2007; Yildiz, 2013). Thus, greater economic differences among the countries will force franchisees to deviate from existing business model and behave opportunistically. Hence, economic differences will negatively moderate the relationship between MUF and franchisor’s profits (H3).

The second type of environmental factors considered in this paper is enhancing factors. The presence of enhancing factors reduces the need for adaptation. Enhancing factors create difficulties for the franchisor that are associated with market entry and monitoring. If the franchisor tries to enter the market itself with company-owned outlets, the franchisor’s spending on overcoming administrative barriers and efficient monitoring will be enormous. Regardless of expenses, these factors do not force the company to change its offerings to adapt to a foreign market. Franchisees can help solve the issues caused by enhancing factors due to their citizenship status and geographical location. As such, the MUF’s geographic location is local with respect to franchised locations, which minimizes monitoring costs: geographic distance will positively moderate the relationship between MUF and franchisor’s profits (H4).

Finally, the MUF’s domestic status in international country provides it with unique knowledge about laws and regulations on the market and eliminates the need to go through customs, thus reducing operating costs: administrative distance will positively moderate the relationship between MUF and franchisor’s profits (H5).

**METHODOLOGY**
Sample and Variables

The sample for this study consists of public franchising companies of US origin that satisfy the following criteria: franchisors have to be public companies; franchisors should have or should have had international operations (e.g. non-negative portion of revenue generated from the countries outside the US). We then eliminated large companies such as McDonald’s since they represent outliers due to their extensive global operations. Then, the quarterly reports were collected for 36 quarterly periods (years 2004 – 2012).

Results

We performed regression analysis with Driscoll-Kraay standard errors (De Hoyos & Sarafidis, 2006). We specified the model with 4-period time lag in order to control for the whole year (Beck & Katz, 1995). We hypothesized that the overall main effect of MUF on franchisor’s profit is positive and obtained support for H1 ($\beta=1.25$, $p=0.016$). We hypothesized negative interactions between MUF and cultural and economic distances; we expect to see the negative coefficients of moderation effects of both distances. We received support for both H2 ($\beta=-3.52$, $p<0.01$) and H3 ($\beta=-1.38$, $p<0.01$), respectively. We hypothesized a positive impact of enhancing factors on MUF-to-franchisor’s profit relationship and obtained support for H4 ($\beta=1.84$, $p<0.01$) and H5 ($\beta=1.30$, $p=0.04$), respectively.

DISCUSSION

In this paper we provided empirical evidence of non-monotonic effect of MUF intensity on franchisors’ profitability, which depends on the different environmental factors. Our findings are consistent with existing research on MUF suggesting that, overall, MUF does have a positive impact on company’s performance. However, this effect varies significantly depending on market environment, which we separated into enhancing and eroding factors. The eroding factors (i.e. economic and cultural differences) play crucial roles in shaping companies’ offerings and business practices from one country to another. Due to these factors, MUFs that possess enough bargaining power may disobey a franchisor’s policy and change suppliers, prices, or offerings. Some changes are inevitable due to the adaptation to the international market, and some of them may be initiated by the MUF. In both cases, these changes create information asymmetry between franchisor and its franchisees. These deviations are out of full franchisor’s control and, as a result, may diminish its profits.

The second set of factors is enhancing (i.e. administrative and geographic). Geographic and administrative differences among the countries may create the barriers that can be problematic to franchisor, but not for franchisees. MUF provides clear benefits when outlets are located far enough from franchisor. MUF significantly reduces monitoring and traveling costs and boosts franchisor’s profit. Similarly, if a foreign country employs any bureaucratic policies that increases perplexity of monitoring or flow of supplies, such as customs, MUF will provide great benefits due to franchisee’s domestic status of that foreign country. Therefore, enhancing factors do not encourage opportunistic behavior among franchisees.
The results of our study have important pragmatic implications. Franchisors must consider the increasing of bargaining power of MUFs, especially when franchisees own substantial market share and located in the countries with different cultural and economic systems. The process of adaptation may clearly be out of franchisor’s control, and therefore managers may want to establish a limit for MUF intensity or establish several company-owned outlets, as suggested by Perryman and Combs (2012). We also demonstrated that the domestic status of MUFs plays a very important role when a franchisor tries to enter the country with a plethora of bureaucratic procedures.
Social Capital, Density, and Startup Survival:
An Empirical Study Using the Kauffman Firm Survey

Cesar Bandera
Assistant Professor of Entrepreneurship
bandera@njit.edu
Martin Tuchman School of Management
New Jersey Institute of Technology

Ellen Thomas
Associate Professor of Marketing
ellen.thomas@njit.edu

Abstract

The high density of firms in incubators and clusters could positively impact their regional economy simply due to their sheer number of startups they launch, but the failure rate of these startups is not significantly greater than that of startups elsewhere. This lackluster performance at the level of the individual firm is all the more striking given the opportunity for social capital diffusion in these high density regions, and the importance of social capital to startup success. We hypothesize that a being in an environment in which social capital is readily accessible does not imply that the startup will engage it. This work presents a life table model and a parametric exponential model of startup survival that distinguishes between the density of the startup ecosystem and its exploitation. Using the longitudinal Kauffman Firm Survey of 4928 companies founded in 2004 and the US Census Bureau County Business Patterns, we compute the density of a startup’s ecosystem as the number of companies in the startup’s ZIP code with the startup’s 2-digit North American Industry Classification System code. We find a strong positive association between startup survival and its collaborations with other agents (universities, industries, and government organizations). These collaborations are not correlated with density, although we find that survival improves slightly with density for high tech startups and worsens slightly for non-tech startups. This work suggests that instead of focusing on the
development of human capital among their tenants, incubator and cluster managers should encourage startups to develop their social capital.

1. Introduction: Conflicting Effectiveness Measures of Business Incubators and Clusters

Similar businesses will tend to cluster geographically (Porter 2000, Stuart and Sorenson 2003, Gilbert, McDougall et al. 2008) in order to benefit from access to relevant resources including specialized staff, venture capital, suppliers, and support services (Saxenian 1996). Business incubators and business clusters are such regions characterized by a high density of companies addressing similar markets and managed by universities, municipalities or states/provinces so as to promote regional economic development (Porter 2000, Van Geenhuizen and Soetanto 2008, Colbert, Adkins et al. 2010, Al-Mubaraki and Busler 2013).

Incubators, for example, boast high survival rates among their startup tenants, measured as the percentage of tenants that graduated, and Lewis (2001) finds that the majority (~84%) of tenants remain in the vicinity of the incubator upon graduation. High density thus allows continued collaborations between firms that becomes routinized thereby making a cluster self-sustaining (Hoang and Antoncic 2003). It has also been found that proximity will stimulate communication and scientific exchange of ideas (Allen, Raz et al. 2009). Other common reasons why a business moves into an incubator include to minimize initial operating costs, and for a supportive environment offering space and business services (Markley and McNamara 1995, Ruland 2013).

Researchers and practitioners have published case studies and best practices for the management of these regions, but verifying their economic impact remains elusive (Udell 1990, Van Geenhuizen and Soetanto 2008, Albort-Morant and Ribeiro-Soriano 2016). Incubators rarely
track their tenants once they graduate from the incubator and into a less supportive environment (Lewis 2001, Avnimelech, Schwartz et al. 2007), and a cohort study by Schwartz (2013) even reveals that startup survival is statistically significantly better among companies that never participated in an incubator. Among clusters, Ruland (2013) finds that the profitability of smaller firms tends to be considerably lower than for firms that opt not to join clusters.

The above evidence seems to contradict social capital theory and knowledge management models of entrepreneurship, which predict that the sharing of tacit knowledge is crucial to startup success (Nonaka, Toyama et al. 2000, Cope, Jack et al. 2007, Hughes, Ireland et al. 2007). Sorenson, Rivkin and Flemings’s study (2006) on the role of social proximity on knowledge diffusion found that with simple knowledge firms near and far perform similarly, but socially proximate firms have the greatest advantage as knowledge becomes more complex. Singh (2005) finds that knowledge flows are particularly strong within the same region. Davidsson and Honig (2003) found that being a member of a business network had a positive effect on financial milestones (first sale and profitability), but did not account for density. Feldman and Zoller (2012) find that startup success and its contribution to the regional economy are impacted more by dealmakers than by the density of startups or investors.

A study by Stuart and Sorenson of the bio-tech industry (2003) suggests clustering plays an essential role for entrepreneurs in high-tech industries because social relationships allow them to obtain the resources needed to create a new firm. However they find that although entrepreneurs may prefer to establish new firms in geographic concentrations, the most productive new ventures are not located in regional clusters, speculating that the benefits from clustering may disappear as the geographic reach of firm’s social network expands.
In their study on incubator typologies, Hughes, Ireland, and Morgan (2007) may explain this inconsistency in startup performance when they argue that “Firms’ destiny lies in the hands of their combinations of strategic networking activities, and incubation outcomes do not occur because of their mere presence in an incubator.” The managed services that incubators and clusters provide their tenants typically consist of basic office resources (e.g., office space, receptionist, and Internet) and human capital training (e.g., seminars on intellectual property protection and finance) (Lumpkin and Ireland 1988), none of which provide the tacit knowledge that contributes to a startup’s competitive advantage. While social capital may be available, it may be difficult for entrepreneurs to locate the right individual in a complex network (Tötterman and Sten 2005), or not be used due to fear of knowledge spillover to competitors (Ruland 2013).

Region administrators and policy makers thus face a quality versus quantity dilemma, summarized by Isenberg (2012) “In focusing entrepreneurship policy almost exclusively on startups we are favoring quantity of startup at the expense of quality of scale-up.” On one hand, the high concentration of startups in business incubators, parks, and clusters seems to cost-effectively yield a favorable regional economic impact; Lewis (2001) calculates the cost to the public sector for each startup job created in an incubator is only between $3K and $12K. On the other hand, the failure rate of startups graduating from assisted environments like incubators is higher. Fahey and Prusak point out in their critique of the knowledge management discipline that the second most common error committed by researchers and practitioners is “emphasizing knowledge stock to the detriment of knowledge flow” (Fahey and Prusak 1998, pg. 266). If the accumulation of tacit knowledge through sharing is important to startup survival, region administrators and policy makers may be making the same mistake.
We attempt to shed empirical light on this dilemma by analyzing the relationships between the geographical density of business clusters, the sharing of asymmetric information, and firm survival in longitudinally-tracked startups, controlling for the nature (high tech versus low tech) of the density. We use the qualifier “asymmetric” to distinguish information that has a significant positive impact on the firm’s competitive advantage from other types of information offered at incubators and clusters such as that from human capital training.

2. Methods and Data

Density

This study uses the confidential version of the longitudinal Kauffman Firm Survey (KFS) of 4928 companies founded in 2004 and surveyed annually from 2004 to 2011 (Robb and Farhat 2013). The KFS dataset is augmented with the County Business Patterns (CBP) dataset of the United States Census Bureau such that for every firm in the KFS we obtain the number of companies in its ZIP code with the same North American Industry Classification System (NAICS) sector code. We use this count as a measure of the geographical density of the startup’s industry at its location. Note that the number of firms in the startup’s ZIP code, without filtering by NAICS code, would not yield an industry-specific density measure.

The CBP information is available for every year from 2004 to 2010. Spatial variation in density is very high (Table 1). For example, every year at least 75 startups are the only establishments of their two-digit NAICS code in their ZIP code (density=1), and several startups are one of over 1000 establishments in their same ZIP code with the same two-digit NAICS code. Temporal variation in density is also significant. The density at the locations of KFS startups surviving to
2011 is on average similar to that where they initially formed, but the fit about the trend line has a low $R^2$ of 0.56 (Figure 1). This also indicates that density be a time-varying covariate in the startup survival model, as opposed to a fixed covariate.

<table>
<thead>
<tr>
<th>Year</th>
<th>Surviving KFS Startups</th>
<th>Density Mean</th>
<th>Density Std. Dev.</th>
<th>Density Min</th>
<th>Density Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>4,830</td>
<td>76.7</td>
<td>104.7</td>
<td>1</td>
<td>1409</td>
</tr>
<tr>
<td>2005</td>
<td>4,257</td>
<td>73.9</td>
<td>101.6</td>
<td>1</td>
<td>1416</td>
</tr>
<tr>
<td>2006</td>
<td>3,747</td>
<td>76.4</td>
<td>101.9</td>
<td>1</td>
<td>1421</td>
</tr>
<tr>
<td>2007</td>
<td>3,345</td>
<td>78.1</td>
<td>101.6</td>
<td>1</td>
<td>1508</td>
</tr>
<tr>
<td>2008</td>
<td>2,931</td>
<td>76.7</td>
<td>104.1</td>
<td>1</td>
<td>1481</td>
</tr>
<tr>
<td>2009</td>
<td>2,659</td>
<td>75.7</td>
<td>105.4</td>
<td>1</td>
<td>1488</td>
</tr>
<tr>
<td>2010</td>
<td>2,342</td>
<td>77.1</td>
<td>106.3</td>
<td>1</td>
<td>1469</td>
</tr>
</tbody>
</table>

Table 1. Descriptive statistics of startup density (number of firms in the same ZIP code as the startup and with similar NAICS sector code).

(Circle area is proportional to number of companies with those densities in 2004 and 2011)

Figure 1. Density at firms’ locations: 2004 vs 2011
Density varies significantly by NAICS sector code (Table 2). For example, agriculture, forestry, fishing and hunting industries (NAICS sector 11), traditionally rural, have the lowest density.

The zip codes of 98 KFS startups (2.0% of participants), including the three in the Public Administration sector, did not match CBP records and are excluded from density analyses. The KFS asked if participants considered their startup to be a high-tech firm. The sector IDs of the 649 participants that consider themselves to be high-tech are presented in Table 3.

<table>
<thead>
<tr>
<th># of Startups</th>
<th>Average Density</th>
<th>NAICS Sector ID</th>
<th>NAICS Sector Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1203</td>
<td>128.8</td>
<td>54</td>
<td>Professional, Scientific, and Technical Services</td>
</tr>
<tr>
<td>243</td>
<td>114.4</td>
<td>45</td>
<td>Retail Trade (General Merchandise, Non-Store Retail)</td>
</tr>
<tr>
<td>283</td>
<td>114.2</td>
<td>44</td>
<td>Retail Trade (Market Specific Retail)</td>
</tr>
<tr>
<td>121</td>
<td>111.3</td>
<td>62</td>
<td>Health Care and Social Assistance</td>
</tr>
<tr>
<td>186</td>
<td>73.7</td>
<td>52</td>
<td>Finance and Insurance</td>
</tr>
<tr>
<td>98</td>
<td>68.2</td>
<td>72</td>
<td>Accommodation and Food Services</td>
</tr>
<tr>
<td>390</td>
<td>67.4</td>
<td>23</td>
<td>Construction</td>
</tr>
<tr>
<td>454</td>
<td>64.6</td>
<td>81</td>
<td>Other Services (except Public Administration)</td>
</tr>
<tr>
<td>219</td>
<td>58.9</td>
<td>42</td>
<td>Wholesale Trade</td>
</tr>
<tr>
<td>518</td>
<td>42.0</td>
<td>33</td>
<td>Manufacturing (Mechanical, Electrical)</td>
</tr>
<tr>
<td>151</td>
<td>39.2</td>
<td>32</td>
<td>Manufacturing (Lumber, Chemicals, Pharma)</td>
</tr>
<tr>
<td>177</td>
<td>38.1</td>
<td>53</td>
<td>Real Estate Rental and Leasing</td>
</tr>
<tr>
<td>360</td>
<td>37.8</td>
<td>56</td>
<td>Admin, Support, Waste Mgmt &amp; Remediation Services</td>
</tr>
<tr>
<td>51</td>
<td>35.0</td>
<td>31</td>
<td>Manufacturing (Food, Beverage, Textile, Apparel)</td>
</tr>
<tr>
<td>102</td>
<td>23.9</td>
<td>48</td>
<td>Transportation and Warehousing</td>
</tr>
<tr>
<td>5</td>
<td>21.5</td>
<td>21</td>
<td>Mining</td>
</tr>
<tr>
<td>164</td>
<td>20.3</td>
<td>51</td>
<td>Information</td>
</tr>
<tr>
<td>10</td>
<td>20.2</td>
<td>49</td>
<td>Transportation and Warehousing (Messenger &amp; Storage)</td>
</tr>
<tr>
<td>105</td>
<td>12.2</td>
<td>71</td>
<td>Arts, Entertainment, and Recreation</td>
</tr>
<tr>
<td>29</td>
<td>9.9</td>
<td>61</td>
<td>Educational Services</td>
</tr>
<tr>
<td>10</td>
<td>4.4</td>
<td>55</td>
<td>Management of Companies and Enterprises</td>
</tr>
<tr>
<td>6</td>
<td>3.0</td>
<td>22</td>
<td>Utilities</td>
</tr>
<tr>
<td>40</td>
<td>2.3</td>
<td>11</td>
<td>Agriculture, Forestry, Fishing and Hunting</td>
</tr>
<tr>
<td>3</td>
<td>N/A</td>
<td>92</td>
<td>Public Administration</td>
</tr>
</tbody>
</table>

Table 2. Average density of companies by startup NAICS sector code (2004)

<table>
<thead>
<tr>
<th># of High-Tech Startups in Sector</th>
<th>Average High-Tech Density</th>
<th>NAICS Sector ID</th>
<th>NAICS Sector Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>399</td>
<td>133.9</td>
<td>54</td>
<td>Professional, Scientific, and Technical Services</td>
</tr>
<tr>
<td>174</td>
<td>41.2</td>
<td>33</td>
<td>Manufacturing (Mechanical, Electrical)</td>
</tr>
<tr>
<td>38</td>
<td>28.4</td>
<td>32</td>
<td>Manufacturing (Lumber, Chemicals, Pharma)</td>
</tr>
<tr>
<td>38</td>
<td>22.9</td>
<td>51</td>
<td>Information</td>
</tr>
</tbody>
</table>

Table 3. Average density of companies by high-tech startup NAICS sector code (2004)
Collaboration

We measure a startup’s use of social capital by whether or not its founder believes that collaborations with other companies, universities, or government labs improved its competitive advantage. The KFS records each class of collaboration starting in the 2007 survey (Farhat and Robb 2014). This data does not describe the nature of the firm’s network in detail, such as the topology of strong and weak ties (Greve and Salaff 2003, Pirolo and Presutti 2010), other than classifying collaborative partners into three categories. However, network information may not be necessary if the self-reported claim that collaboration impacted the firm’s competitive advantage is trustworthy.

Startups report asymmetric collaboration activity all five years, with roughly 60% fewer collaborations in 2007 than in 2011 (Table 4); when measured as a percentage of surviving (and reporting) companies, collaborations are relatively consistent over this time period. This cross-sectional analysis, however, does not distinguish between many startups collaborating at different years, or few companies collaborating consistently. If the former, a startup survival model would use collaboration as time-varying covariates; if the latter, the model would use collaboration as a fixed covariate. Thus, we need to look at the startups’ patterns of collaboration activity before selecting a model.

<table>
<thead>
<tr>
<th>Year</th>
<th>Surviving Startups</th>
<th>Startups Collaborating with:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Companies</td>
</tr>
<tr>
<td>2007</td>
<td>2915</td>
<td>434</td>
</tr>
<tr>
<td>2008</td>
<td>2606</td>
<td>415</td>
</tr>
<tr>
<td>2009</td>
<td>2408</td>
<td>366</td>
</tr>
<tr>
<td>2010</td>
<td>2126</td>
<td>288</td>
</tr>
<tr>
<td>2011</td>
<td>2007</td>
<td>257</td>
</tr>
</tbody>
</table>

**Table 4. Collaboration activity (as percentage of surviving startups)**
Collaboration activity can be represented as a five digit binary dummy variable, with the least significant digit being “1” of the company collaborated in 2007, the digit to the left being “1” if the company collaborated in 2008, and so forth with the most significant digit being “1” if the company collaborated in 2011. For example, the pattern 00101 indicates the company collaborated in 2007 and 2009 and did not collaborate in 2008, 2010, nor 2011. Table 5 presents the most frequent patterns of collaboration with the three types of collaborative partners (the pattern 00000 is excluded). The column “Count” indicates the number of KFS startups that exhibited that pattern of collaboration. Of the 4928 startups in the KFS, 981 collaborated at least one year with another business, 279 collaborated at least one year with a university, and 131
collaborated at least one year with a government laboratory. These numbers are more than double those of Table 4, indicating that a startup’s asymmetric collaboration activity varies from year to year; this conclusion is also apparent from the five digit patterns themselves, and indicates the use a survival model with time-varying covariates.

Event History Analysis

Startup survival is commonly described as exponentially decreasing, i.e., a risk function that is constant over time. We thus fit startup survival to an exponential parametric model because startup survival is commonly described as exponentially decreasing with time, and because this model permits straightforward analysis of the effect of covariates on company survival.

Each panel of the KFS records the state each firm as (1) refused to participate at the current time, (2) previously stopped operations permanently, (3) stopped operations at the current time, (4) merged or sold at the current time, (5) temporarily stopped operations at the current time, or (6) continues to operate. Of these six states, only the third is considered a death event. A firm in the second state would have been labelled as being in the third state at some previous time in the survey. A merger or sale of a company is a negotiated exit strategy, which we do not consider to be a death event. Firms in states 1, 5, or 6 in 2011 are considered right censored.

We use Stata v14.1 to analyze the long-format multiply 5-times imputed version of the KFS dataset merged with CBP ZIP and NAICS code data (from which density is computed). The imputed version reduces the effects of missing values and produces in a five-fold count of firms (Farhat and Robb 2014). A life table model is first conducted to visualize the relationship between survival and social capital. A parametric exponential model of startup survival is then
conducted to evaluate the relationships between survival, density, and social capital; this type of model was selected for the ease in which the model coefficients can be interpreted.

3. Results

A life table analysis confirms that collaboration improves the survival rate of startups (Table 6). Moreover, companies that collaborate with more than one type of collaborative partner (companies, universities, or government labs) have improved survival. To visualize this disparity in survival, Figure 2 plots the survival as a percentage of companies alive in 2007 (the year that KFS begins to collect information on collaboration), distinguishing by the number of types of collaborative partners. This does not distinguish between the number of collaborations with partners of the same type.

<table>
<thead>
<tr>
<th>Interval</th>
<th>Beginning Total</th>
<th>Deaths</th>
<th>Lost</th>
<th>Survival</th>
<th>Standard Error</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Collaboration</td>
<td>2004</td>
<td>17016</td>
<td>1818</td>
<td>0</td>
<td>0.8932</td>
<td>0.0024</td>
</tr>
<tr>
<td></td>
<td>2005</td>
<td>15198</td>
<td>1698</td>
<td>0</td>
<td>0.7934</td>
<td>0.0031</td>
</tr>
<tr>
<td></td>
<td>2006</td>
<td>13500</td>
<td>1344</td>
<td>0</td>
<td>0.7144</td>
<td>0.0035</td>
</tr>
<tr>
<td></td>
<td>2007</td>
<td>12156</td>
<td>1283</td>
<td>0</td>
<td>0.639</td>
<td>0.0037</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>10873</td>
<td>884</td>
<td>0</td>
<td>0.587</td>
<td>0.0038</td>
</tr>
<tr>
<td></td>
<td>2009</td>
<td>9989</td>
<td>843</td>
<td>0</td>
<td>0.5375</td>
<td>0.0038</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>9146</td>
<td>684</td>
<td>84</td>
<td>0.4971</td>
<td>0.0038</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>8378</td>
<td>0</td>
<td>8378</td>
<td>0.4971</td>
<td>0.0038</td>
</tr>
<tr>
<td>One Type of Collaboration</td>
<td>2007</td>
<td>1536</td>
<td>127</td>
<td>0</td>
<td>0.9173</td>
<td>0.0070</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>1409</td>
<td>100</td>
<td>0</td>
<td>0.8522</td>
<td>0.0091</td>
</tr>
<tr>
<td></td>
<td>2009</td>
<td>1309</td>
<td>51</td>
<td>0</td>
<td>0.819</td>
<td>0.0098</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>1258</td>
<td>78</td>
<td>0</td>
<td>0.7682</td>
<td>0.0108</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>1180</td>
<td>0</td>
<td>1180</td>
<td>0.7682</td>
<td>0.0108</td>
</tr>
<tr>
<td>Two Types of Collaboration</td>
<td>2007</td>
<td>232</td>
<td>12</td>
<td>0</td>
<td>0.9483</td>
<td>0.0145</td>
</tr>
<tr>
<td></td>
<td>2009</td>
<td>220</td>
<td>24</td>
<td>0</td>
<td>0.8448</td>
<td>0.0238</td>
</tr>
<tr>
<td></td>
<td>2010</td>
<td>196</td>
<td>24</td>
<td>0</td>
<td>0.7414</td>
<td>0.0287</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>172</td>
<td>0</td>
<td>172</td>
<td>0.7414</td>
<td>0.0287</td>
</tr>
<tr>
<td>Three Types of Collaboration</td>
<td>2007</td>
<td>56</td>
<td>6</td>
<td>0</td>
<td>0.8929</td>
<td>0.0413</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>50</td>
<td>0</td>
<td>50</td>
<td>0.8929</td>
<td>0.0413</td>
</tr>
</tbody>
</table>

Table 6. Life Table of KFS Startup Survival
Figure 2. Startup Survival (relative to companies in business in 2007)

We fit an exponential parametric model to the KFS startup death events, using as time-varying covariates the number of types of collaborations (0, 1, 2, or 3) for each company for each year this is measured by the KFS, and the market-specific firm density for each year this is reported (and linked to the KFS) by the Census Bureau. The parametric model is a good fit (Table 7) and confirms the statistical significance (at the 1% level) of the relationship between improved survivability and collaboration. It also indicates that high-tech firms benefit from collaboration more than low-tech firms (at the 0.5% level). Density has a small and statistically insignificant impact on startup survival.

No. of subjects = 72,453  Number of observations = 96,737
No. of failures = 214,965  Time at risk = 2166956.056
Log pseudolikelihood = -495583.15  Prob > chi2 = 0.0012
Wald chi2(3) = 15.90  Prob > chi2 = 0.0012

| Coefficient | Std. Error | z     | P>|z| | 95% Conf. Interval   |
|-------------|------------|-------|-----|-----------------------|
| Collaboration | -.3424199 | .131373 | -2.61 | 0.009 | -.5999063 | -.0849335 |
| Density     | .0002763  | .0003196 | 0.86  | 0.387 | -.0003501 | .0009028  |
| High-tech   | -.2858886 | .1024622 | -2.79 | 0.005 | -.4867109 | -.0850663 |
| $\alpha_0$  | -2.294634 | .0388202 | -59.11 | 0.000 | -2.37072 | -2.218548 |

Table 7. Parametric model of startup survival
Setting the exponential survivor function

\[ G(t) = e^{-at} = e^{-te^{a_0}} \]  \hspace{1cm} \text{Equation 1.}

to \( G(\bar{t}) = 0.5 \) and solving for \( \bar{t} \) gives a median startup survival time of 6.88 years. The impact of a change in covariate \( A_j \) on the transition rate \( r(t) \) of the exponential survivor function is

\[ \Delta r = (e^{a_j})^{\Delta A_j} - 1 \]  \hspace{1cm} \text{Equation 2.}

where \( a_j \) is the covariate’s coefficient (Blossfeld, Golsch et al. 2012). The change in the transition rate (i.e., the risk of failing that year) by a one unit change in covariate \( A_j \) reduces to

\[ \Delta r = e^{a_j} - 1. \]  \hspace{1cm} \text{Equation 3.}

Changing from no collaborations to one type reduces the risk of failure by \( e^{-0.3424} - 1 = -29\% \), to two types by \( (e^{-0.3424})^2 - 1 = -50\% \), and to three types by \( (e^{-0.3424})^3 - 1 = -64\% \).

Holding collaboration constant, high-tech startups have \( e^{-0.2859} - 1 = -25\% \) less risk of failure than low-tech startups.

4. Discussion, Limitations, and Future Work

Our findings suggest that clustering and the availability of social capital do not necessarily lead to startup survival. This seems to confirm Stuart and Sorenson’s finding that while clusters offer conditions conducive to new venture creation, they do not support their growth. Our study also finds that the availability of social capital does not have a significant relationship with the utilization of social capital. In other words, while clustering can offer numerous benefits, it does not guarantee that firms will actually capitalize on those benefits.
A limitation of this work is that the exponential model applies a constant transition rate to startup risk, i.e., startup survival exponentially decreases. However, incubators and clusters endeavor to provide tenant firms with an environment that is more supportive than “the real world.” If so, the risk function associated with startup survival would be lower while the startup inhabits such an environment, and increases when the startup leaves it. Future work will investigate the use of a Weibull accelerated failure time distribution to model startup risk because it is the simplest parametric model that can represent monotonically and asymptotically increasing risk over time.

5. Conclusions and Implications

This work contributes to incubator and cluster best practices by highlighting the importance of social capital sharing to startup success, and by suggesting that cluster administrators promote collaboration within their critical masses. It also proposes the use of collaboration as a predictor of startup success, which might disambiguate the conflicting effectiveness of clusters and incubators reported in the literature. In contrast to building human capital with subject matter experts, which is expensive and difficult to scale, many business incubators have already built the social capital stock desired by their tenants. Our study indicates that incubator administrators should proceed directly to promoting its utilization in a distributed fashion, leveraging the startup density it has amassed.

Implications for Entrepreneurship Education

Entrepreneurship curriculum is often organized around traditional disciplines borrowed from management or the scientific/technical fields from which the students originate. Group projects notwithstanding, these disciplines involve predominantly solitary activities, and entrepreneurship
curriculum rarely emphasizes the importance of tacit knowledge and the building of social capital for opportunity discovery and risk mitigation. This research addresses ongoing discussion in the literature differentiating high quality entrepreneurship from just high quantities of entrepreneurs. Instructors need to develop experiential activities that obligate students to develop social capital. The nature of social capital networks should also be taught. For example, Pirolo and Presutti (2010) find that “too much close and strong social networking can negatively influence the ability of the start-ups to reach high levels of innovation performance during their entire life cycle.” Such activities should transcend the classroom and force the student to engage a broader ecosystem, just as incubator/cluster tenants must transcend training courses and engage the critical mass of their environment.

6. References


PATENTING IN THE SHARING ECONOMY: A DUAL-MARKET NARRATIVE
OF NON-PRACTICING ENTITIES
Sanwar Sunny, Sunny Li Sun and Cheng Shu

Abstract
Debates regarding Intellectual Property Rights (IPR) have centered along its ability to spearhead innovation or its propensity to stifle it. Over the years, IPR have evolved into being a special asset class, where an equally special group of non-practicing entities (NPE) has emerged to speculatively reap gains through knowledge and technology transfer services. Often shunned for their practices, we posit that NPEs leverage legal and institutional shortcomings of the innovation system and cater to two user groups of the process through an innovative, dual-platform business model. Enabling efficiency through the clearing of prices on the market, NPEs may actually be able to extend the innovation enhancing-hindering dichotomy in a way that benefits both sides of market. We take an ecosystem-perspective where this emergent business model may potentially implicate R&D processes, public policy, corporate venturing, or IP strategy for individual inventors and small, medium and large corporations.

Keywords: Patents, Business model, knowledge transfer, non-practicing entities, platforms

JEL Classification: O34, P14, D83, D23
INTRODUCTION

Non-practicing entities (NPEs) are special organizations which provide professional service in the patent market. Often used the synonymous name of “patent trolls”, they originated in first use with the lawyer of a firm called TechSearch, named Raymond Niro, who was referred to as such by Intel’s lawyer Peter Detkin when the former organization started purchasing patents and suing other companies for infringement (Hagiu & Yoffie). Appearing in the 1990s, and evolving over time, the term has no commonly agreed upon definition, although literature has attempted to conceptualize them overall as firms that do not tend to practice or leverage their patents through development, commercialization or product sales, but rather focus instead on earning fees\(^1\) (Shrestha, 2010; McDonough, 2006). Although the concept of patent trolls and their business models have been studied in extant literature, (Magliocca, 2007; Golden, 2006) conceptually it is difficult to provide an apt definition of a patent troll, as Merges, 2009 elaborates “One can act as a troll, but it will not be true that one simply is a troll”. The emergence of patent trolls have been linked to three elements, the increased availability in the number of patents, the governance or structure of litigation, and finally, the operations or mechanisms used by trolls to put firms in a comprised or litigious situation (Reitzig et al., 2007).

Their knowledge intensive activities include purchasing, transfer or selling patent rights, legal consulting, and litigations in a way where they do not directly make use of the patents

\(^1\) Perhaps, a much overlooked distinction during the conceptualization of the current definition should be made to provide contextualized nuances to our understanding of the true identity of a patent troll. There are patent brokers, and there are “pure” trolls. So within this treatment, while patent trolls may be detrimental to R&D investments, patent brokers (who specialize in technology transfer, (Pénin, 2012)) are not, as they encourage knowledge-producing firm emergence. While defining NPEs as actors who do not leverage patents, but only profitably enable its transfer, one needs to include fabless firms who specialize in upstream R&D activities in terms of knowledge of new technologies or processes, which are then sold to manufacturing firms further down within the value chain, thus the operation of a “market for technology” (Arora & Merges, 2004; Gambardella et al., 2007). Within our broader definition above, these technology classes are also logically NPEs – however, our paper does not include them in our current treatment of the topic, centering instead on a hybrid broker-troll understanding.
themselves. While one side argued the benefits of free trade and competition through removing or repealing laws, citing patents to be restraints to productive innovation and reformation hence seemingly impossible, others argued, in agreement of pitfalls, that stricter upholding of rights through a cheaper and easier process is of collective utility (The Economist, 2015). Although patents were traditionally designed to prevent infringement, trolls acquire them in order for a party to infringe them, thereby reaping monetary gains in the process. Trolls therefore provoke infringement and keep patent portfolios hidden, after buying them cheaply from distressed actors and waiting till an identified infringer has made significant, irreversible investments as sunk costs in developing or manufacturing systems or products directly related to the acquired portfolios (Pénin, 2012). This evaluation, purchase and securing of patents also hinges on the willingness to wait till an infringer invests in development provides the arbitration opportunity for the patent trolls, as the ex-ante purchase of portfolio patents rise in the intrinsic value in ex-post negotiations after sunk investments have been made (Steiner & Guth, 2005; Shapiro, 2011; Farell et al, 2007; Lemley & Shapiro, 2007). Prior literature has shown how manufacturing firms may adapt their patenting strategy in order to react to trolls (Henkel & Reitzig, 2008).

In this current paper, we revisit assertions by observing the research question: Do NPEs create value in promoting innovation by extending incentives for the inventors, or do they instead just increase the direct cost from litigation, in a way that reduces innovation?

**Patents and the market**

Patents are key for our understanding of innovations. Unlike traditional exchanges of resources or goods however, information regarding inventions, particular complex patents, are

---

2 Although patents only account for a minority of product or process innovations, (Arundel & Kabla, 1998) they do provide the few means of measuring innovation across a broad spectrum of industries and over time. Given that patent counts correlate highly with other measures of innovation, one can usually generalize from them to the effects on innovation more broadly defined, while other research has connected patents counts to various measures of
imperfect given the uncertainty regarding the value and related property rights. Patent agents, thus negotiate under enormous uncertainty as prices for similar patents tend to vary from one transaction to another, especially due to the often secretive and confidential nature of such deals or exchanges (Hagiu & Yoffie, 2013). This has been observed from the perspectives of challenges inherent in the market of ideas, particularly within the realm of market failures (Gans & Stern, 2010). “Comparables” used as a valuation techniques on the market for estimating the value of a given asset cannot be applied to patents, as they cannot be valued by comparison to other available patents, since, by their very definition, they are unique.

Transactions in patent markets, besides incurring high search costs for parties, also creates large transaction costs, owing to them taking place under the shadow of litigation, implying patents best viewed as “probabilistic property rights” (Lemley & Shapiro, 2005). As a result, patent owners and users have traditionally preferred to settle out of court for amounts that commensurate with opportunity costs in the litigation process, rather than the economic value of the patents themselves (Hagiu & Yoffie, 2013). NPEs such as patent brokers are able to reduce search and transaction costs, as literature has documented their positive effect on technology markets in the U.S. during the late eighteenth, and early twentieth centuries (Lamoreaux and Sokoloff, 2002).

Additionally, a patent’s value is subject to complementary effects, or portfolio effects (Parchomovsky & Wagner, 2005) meaning that they may derive their value due to its appropriateness in lending complementary value to other patents which compounded make up increasingly interdependent system – thereby discounted the singular value of an individual patent. This creates an asymmetric effect of patenting and related tradeoffs between small

performance and growth (Hagedoorn & Cloodt, 2003; Griliches, 1990). In our discussions, we use our understanding of patents to implicate levels of innovation for economic growth and well-being.
inventors contributing to a single patent, and large firms that holds a portfolio of patents (Jaffe & Lerner, 2004). As a result, findings of Lamoreaux and Sokoloff, 2002, in a time where portfolio effects was negligible, may need to be revisited in light of recent observations pointing out assymetries. For example, in 1964, inventor Robert Kearns applied for a patent for a windshield wiper system, which automotive manufactures refused to license and started producing cars which include the system’s use. After considerable personal hardships, Kearns was able to earn $30 million in court infringement settlements from Ford and Chrysler (Schudel, 2005). Although inventors and small businesses contribute more than 60 percent of all U.S. patents, they only are able to extract a mere 1 percent of total licensing revenues, leaving the 99 percent of it for large companies (Hagiu et al, 2009).

**Current Debate**

The former discussion with respect to the current debate rested their case by proposing the argument that patent grants “excites fraud, stimulates men to run after schemes that may enable them to levy a tax on the public, begets disputes and quarrels betwixt inventors betwixt inventors, provokes endless lawsuits [and] bestows rewards on the wrong persons” (The Economist, 2015). Public policy, particularly as seen during 1883 attempts to improve patents by the British Parliament, was then geared towards reform – where proponents of abolitions claimed that inventions that were hallmarks of human endeavor, ingenuity and development, such as mule-spinning, railways, steam ships or gas lamps, which did not evolve from the forces of patents.

The counter argument for the existence of patents in general, and in not total abolition, was that as a public-good stance, ideas and inventions build on top of each other to drive progress and economic development. Through registrations of patents, the non-obvious, useful
and novel idea provides a temporary monopoly to the inventors that incentivized them to innovate, and allows the resulting knowledge to be accumulated through dissemination of prior art in public and accessible disclosures. However, conflicting literature also claims that they neither reward innovation, nor propagate it. In any case, these have become the most pressing legal challenges in contemporary United States and abroad, moving to the top of the nation’s political, legislative and judicial agenda (Lemley, 2007; Parloff, 2014).

As with every other property rights, intellectual property such as patents constitutes a marketable commodity and over the last decade, a market for IP rights has since emerged (Hagiu & Yoffie, 2013). This phenomenon can be observed in these modern times through the interactions and activities of non-practicing entities (NPEs) or patent trolls – those who neither invent new products or systems nor manufacture anything, but purchase or sell patent rights. Although the definition may indeed vary (Krech, Ruther & Gassman, 2015, Benassi & Di Minin, 2009, Massa & Tucci, 2014) non-producing or manufacturing products, but owns patent rights to earn (at times unreasonable) licensing fees or making economic rent from suing companies or manufacturers (Jiang & Su, 2014, Pohlmann & Opitz, 2013, Hagiu & Yoffie, 2011). Non-practicing entities in general are also paradoxically considered as key features of the modern, knowledge-based economy, which is linked to the development of technological firms and securing markets for technologies, (Chesbrough, 2006; Pénin, 2012) while at the same time, literature also has indicated concerns regarding this emergence of perverse strategies being adopted within patent markets, especially the detrimental effects on R&D investments by manufacturing firms (Jaffe & Lerner, 2004; Merges, 2009; Bessen et al., 2011). Recent research has shown that there may be an optimal level of patent trolling needed or appropriate in order to maintain specialized knowledge production while not contributing to decreased R&D initiatives.
(Pénin, 2012). In other words, this balancing act is what should be a goal for policy makers in their design of the effective patent systems, which does not completely eradicate, but instead limit the detrimental (and arguably necessary) activity of trolling (Merges, 2009). Recent scholarly work also show the reliance of trolls on patents of good quality (Fischer & Henkel, 2009) which may possibly implicate the potential payoff for inventors for striving for “good patents”, hence increasing our stock of useful knowledge and contributing to prior art for ongoing inventive information. By creating appropriate intermediaries that are able to facilitate the transfer of patents to users, the system can maintain incentives necessary for continued innovation.

A booming “industry” that quantified assertions worth $29 billion in 2011 alone (Bessen & Meurer, 2014), their goal will be to simply aggregate huge amounts of patents – and their business model can be characterized as searching the relevant markets for potential accused infringers of their newfound patent stock who are profitable and have resources, who are then asked for a license fee or else threatened to be sued. Some companies will settle below litigation costs, irrespective of the patent’s validity.

This allowed for NPEs to enter the value chain and posit a new model where they both lowered the risks for inventors and corporations, while providing a more cost-effective process on which they anchored relevant endeavors related to intellectual property. However, the value of a patent or a stock of patents was not immediately known to either parties, which moderated the transaction’s effectiveness during the onset of this innovative model, particularly during negotiations of license fees or estimates of litigation costs.

Therefore, the key debate is whether NPEs increase the liquidity of the patent markets, speed up the market clearing process from a price-standpoint, or increases market efficiency
Traditional efficient markets hypothesis could be difficult when it comes to explaining the market clearing process since the patent transaction price does not fully rely on the equilibrium between the supply and demand (Haigu & Yoffie, 2013). Based on the adaptive markets hypothesis (Lo, 2004), we propose a dual-platform model of the NPEs to explain the NPE patent market emergence, dynamics, and evolution. The adaptive markets hypothesis, raised from recent behavioral economics and cognitive neurosciences, argue that markets are driven by greed, not by rationality (Akerlof & Shiller, 2015). It ideally meets some observations on NPEs which aggressively seek the profit from their patent inventory (Bessen & Meurer, 2014; Parloff, 2014).

In this article, we propose this new framework that reconciles market efficiency with behavioral alternatives by applying the principles of evolution - competition, adaptation, and natural selection - to financial interactions within the IP context. We argue that NPEs, acted as the similar agents in financial market-makers (Schmalensee, 2009; McDonough, 2006), and is changing over time, which indicates the adaptive aspects of financial agents. These empirical findings provide the initial direction for the early development of financial agent engineering. First, they suggest what rules to look at; and then point out the significance of learning and adaptation. Our adaptive markets hypothesis enables us to address two specific questions; first, would the degree of heterogeneity matter, and, second, would learning matter (Chen, Chang, & Du, 2012)?

Based on this hypothesis, we propose a different viewpoint based on current events in the landscape that moves away from a dichotomous worldview on legal reformation or ban, and to a market solution through value-creation for actors, largely due to the use of the innovative business model which was historically characterized as “trolling”. We observe and explore the
platform model currently used by NPEs to profitably serve the users in two markets, independent inventors and technology corporations, in order to further their individual aims. By providing a medium where both of the sides are satisfied, we are able to extend the conflict resolutions from discussions previously held: whether patents lead to inventors innovating, or are they simply for organizations to leverage existing and newly received rights for purely monetary profits. By providing a symbiotic and interdependent relationship, multiple NPEs are observed to act as they are both leading to the sought-after efficiency.

Figure 1 shows cases from company-to-company lawsuits, and cases from NPEs. Over the years, it generally began increasing. However, a great asymmetry existed in the NPE’s

![Figure 1: NPE and non-NPE patent litigation cases (Source: RPX, 2015)](image)

3 Other sources (Hagiu & Yoffie, 2013) claim that there were 144 lawsuits targeting around 578 companies in 2001, which increased to 1,211 lawsuits targeting 5,031 companies respectively, by 2011.
knowledge of the value or worth of each patent, how much to pay and how much to charge for during litigation. A similar dilemma was faced by corporations who could not predict or model whether litigation is a cost-effective choice or not, given how little it knew of the patent’s value and the uncertainty of the outcome of any potential legal processes.

**BUSINESS MODELS OF NPES**

**Two business models, one ecosystem**

In our analysis, the NPE is treated in its pure “non-practicing” and “non-inventing” form, that is, a patent holding company that only purchases patents with purposes of licensing and enforcement (McDonough III, 2006). In reality, independent inventors and universities that do not make a product of the invention but instead sue large corporations for infringement, and companies that have in-house R&D capability but choose to profit from infringement litigation rather than manufacturing are usually considered as NPEs also. However, some of our analysis still applies to these “inventing” NPEs as long as they conduct licensing and enforcement activities, and the inventing side of NPEs does not affect its way of interacting with customers and responding to markets, and can thus be safely ignored.

We consider two most prevalent business models currently adopted by the “pure” NPEs. The first one is labeled as “Pro-inventor” which seeks to vindicate the right of inventors against large companies using the patent rights. A typical case is Acacia Research Corporation. The second is labeled as “Pro-corporate”. Practiced by companies like RPX and Allied Security trust (AST), this type of NPEs seeks to defend the large companies from dubious and ill-found litigations from the former. For example, RPX has among its clientele, firms such as Cisco, IBM, Intel, Microsoft, eBay, Nokia, Panasonic, McAfee and Best Buy, among others (Hagiu & Yoffie,
In literature, Pro-inventor NPEs is sometimes called “aggressive” NPEs, and Pro-corporate “defensive”. We choose not to use these terms because both models deal with patent holders on one side and potential accused infringers (usually large corporations) on the other side. Aggressiveness from one side of the market can be equally seen defensive from the other side. This two-sidedness (Rochet & Tirole, 2004) of both business models will be further explored later. Table 1 presents the key differences in the two discussed business models.

Table 1: A Comparison between Two NPE business models

<table>
<thead>
<tr>
<th></th>
<th>Pro-inventor</th>
<th>Pro-corporate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value proposition</td>
<td>Unlock financial value in patented inventions for patent owners</td>
<td>Lift the burden of NPE litigation for tech companies</td>
</tr>
<tr>
<td>Major activities</td>
<td>Seeking profitable patents; suing large corporations for infringement</td>
<td>Obtaining subscription from large corporations; purchasing potentially problematic patents; working on settlements for members</td>
</tr>
<tr>
<td>Relation to inventors</td>
<td>Buyer; agent</td>
<td>Buyer</td>
</tr>
<tr>
<td>Relation to large corporations</td>
<td>Seller (Problem seeker)</td>
<td>Seller (Problem solver)</td>
</tr>
<tr>
<td>Management Team</td>
<td>Lawyer, technologist</td>
<td>Lawyer, technologist</td>
</tr>
<tr>
<td>Investor</td>
<td>VCs</td>
<td>VCs, large corporations</td>
</tr>
<tr>
<td>Buyer</td>
<td>Accused infringer corporations; large corporations such as Apple, Microsoft, etc.</td>
<td>Large corporations such as Apple, Microsoft, etc.</td>
</tr>
<tr>
<td>Seller</td>
<td>Inventors (Patent holders)</td>
<td>Pro-inventor NPEs</td>
</tr>
<tr>
<td>Cost</td>
<td>Legal fees; purchase of patent portfolio</td>
<td>Legal fees; purchase of patent portfolio</td>
</tr>
<tr>
<td>Cost uncertainty</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Revenue</td>
<td>Royalty, lawsuit settlement or award</td>
<td>Membership (subscription) fees</td>
</tr>
</tbody>
</table>

2013).
The Pro-inventor NPEs fit the popular perception of a patent troll. They purchase patents from all sources ranging from independent inventors, universities, operating companies, to auctions at bankruptcy courts, and then sue companies of any and all sizes for possible infringement. The original patent owner (be it a person or an organization) can sell the ownership or the exclusive rights of enforcement to a Pro-inventor NPE, and receive a lump sum payment and sometimes a share of licensing revenues (Krech, et al. 2015). Hague and Wright (2013) suggest it essentially a reseller model, or a weak platform model when inventors (original patent holders) also involve in the litigation and enforcement activities. Large operating companies has information and resource advantage over small inventors who lack the expertise to bargain or litigate, but Pro-inventor NPEs can represent inventors and create credible threat of litigation to large corporations and thus set the market clearing prices. In this market, a transaction of patent rights as the commodity can hardly happen without the facilitation from Pro-inventor NPEs. The Pro-investor NPEs business model can be visualized on the left in Figure 2.

Figure 2. Pro-inventor NPE model (left) and Pro-corporate NPE model (right)

* Potential accused infringer companies (usually large corporations) claimed by patent holders (usually small companies) often have their own patent pools, thus appearing on the other side of both models as a patent holder, except that they may or may not rely on an external organization to file lawsuits.
There are generally two types of Pro-corporate NPEs. One is the traditional patent pool. The other is a more recent practice exemplified by RPX. The major differences between the two types are in their financing sources and defense strategies. Patent pools are often founded by corporations with a clear goal of purchasing a specific patent portfolio and can be non-profit organizations, while types exemplified by RPX is formed in the usual NPE way backed by outside VCs, in line with the rise of hedge funds, venture capital or private equity groups invest in activities that result in outcomes where they are able to realize a portion of payments in return (McCurdy, 2009). Both types of NPEs shield corporations from infringement litigation. Patent pools’ main strategy is trolling prevention by monitoring the patent market and purchasing potentially troublesome patents, whereas RPX is able to help corporations with both the same prevention strategy and negotiation with other Pro-inventor NPEs on more favorable terms in litigations for corporations. Both types of Pro-corporate NPEs can be seen as a platform to facilitate the transaction of patent rights as well. Unlike the transaction enablement function of Pro-inventor NPEs, Pro-corporate NPEs serve to reduce the uncertainties of transactions. Of course, the lowered risk comes at a price, the possible gain of litigation for patent holders (NPE or non-NPE) will reduce (though the possible loss is also reduced), and corporations need to pay annual subscription fees to enjoy the platform service. These fees may range anywhere from 10 to 30 percent of the transaction (Young, 2008) while settlements can be non-uniformly distributed, with arbitrage opportunities in a monetary sense, on part of the partaking NPEs still remaining considerably sizable. For instance, in 2010, median price paid by an NPE for a single patent was around $100,000 (with a mean of $400,000); with settlements costing anywhere from $50,000 to a few million dollars (Sharma & Clark, 2008; Hagiu & Yoffie, 2013). If an overwhelming majority of settlements are distributed between $50,000 to $1 million, and the rest
around $100 million, the expected net payoff for a risk-neutral NPE, due to a patent purchase would be over $1 million. RPX clients pay annual subscription fees ranging from $65,000 to around $7 million depending on levels of income in exchange for identification and acquisition of threatening patents. Unlike traditional insurance policy providers, RPX does not pay its clients or customers in the event of accidents, (or in this case lawsuits) but rather, provides value through a reduced “probability” of such accidents. An illustration of the Pro-corporate NPE business model is shown on the right in Figure 2.

**Envelopment and Symbiosis**

In terms of the interactions between the two NPE business models, we offer two complementary views. The first is based on envelopment effects of the Pro-corporate NPEs on Pro-inventor NPEs, with a focus on competition and substitution of the models. The second treats both models as part of a larger ecosystem and explores the symbiosis relationship between them. Together, both views will enhance our understanding of the NPE business models and give further implications on efficiency of the patent market.

Now that we use the term “platform” loosely when describing the business models, it should be noted that on the continuum between pure reseller model and a pure multisided-platform model, these two NPE platforms are close but not entirely equal to the pure reseller model. Due to the expertise and complications in lawsuits, most residual control rights (prices, customer service, order fulfillment, etc.) rest with the NPEs (Hagiu & Wright, 2014). In other words, there is limited interaction between buyers and sellers on both platforms, and the focal NPEs nearly make all decisions for whomever it represents. However, the concept of “platform
envelope” and “dual-internal platform” can still shed light on our analysis of the interaction between the two models.

Platform envelopment happens when one platform provider adds another platform’s functionality to its own. As shown in Figure 3a, the Pro-inventor NPEs are nested supply-side user of Pro-corporate NPEs. In the platform literature, it follows that the corporations can view two types of NPEs (platforms) as “unilaterally specific complement”; most uses of one will be coupled with the other (Eisenmann, Parker, & Alstyne, 2011). However, we must be careful not to equate the NPE platforms with platforms like Amazon and Visa. The most important distinction is that the buyers cannot make purchasing choice freely - defendant corporations cannot choose whom to be their plaintiff. Therefore, the attacking strategies used by both parties will have new features different from typical envelopment.

For example, Pro-corporate NPEs limit corporate access to the Pro-inventor NPE platform. The more limits they have, the more market power they amass and better deal they will negotiate. However, the decline in value of lawsuits could hurt Pro-corporate NPEs profitability as well, as the less the cost associated with the lawsuit, the less they can charge for membership. Further, if we want to consider the possibility of disruption of one model by the other, it can depend on the Pro-corporate NPE’s decision and capability to incorporate the function of a Pro-inventor and start to sue people in order to coerce them into being a member, or if Pro-inventor NPEs start to adopt the same sue-for-membership strategy. Either way is a possible route towards the platform leadership change through envelopment.
This understanding also leads us to delve into the symbiosis relationship between two models, and conceptualize the total effect as a dual-platform model (Figure 3b). To bring about the needs of both sides, in a way that is efficient in the macro sense and uses models that fit the needs in this micro-sense, the two models of NPEs create an internal dual-platform to better serve the asymmetric needs of the two-sided market users they cater to, the holders of the patents and the infringing companies. This interaction between the two types of NPEs is “echoing”, or a mechanism through which their models influence each other and subsequently are used in recombination. This recombination allows the divergent nature of their business impacts to converge, and this echoing happens due to a platform model used – where the objectives of the
users are met. At the same time, one cannot assume that the cooperation between the two kinds of NPE entities are benign in nature, it is possible that it can be characterized at times as a set of malign cooperation, when both entities work together to monetize the “client”. Even if there is no such direct and observable cooperation, these two kinds of NPE need the existence of each other to function and provide respective services.

![Diagram](image)

**Figure 3b. Dual-platform model of NPEs**

In the conventional platform model, the platform (an NPE) allows two users, say, the holder of the patent and the infringing company to interact in a way that aims to benefit a user group. In our dual-platform model, the sub-platforms (the Pro-inventor and Pro-corporation NPEs) enable the needs of their corresponding users (patent holders and the company),
respectively to symbiotically and mutually benefit from the inter-sub-platform interaction. Here the patent holders that conduct R&D or invent new products or processes could parallel or conflict with the commercializing or infringing companies, both big and small. The primary goals or objectives of these two user groups are to appropriate the fruits of inventing, and to appropriate profits from manufacturing said invention or selling it on the market, respectively. Given the current legal institutions that provide a risk for either user group, the new Pro-corporate NPE model reduces this risk in a way that allows for both sides to benefit in their respective objectives efficiently, and thereby creating value through provisions of such services.

Effectively, the sub-platforms themselves enter into agreements and negotiations in a way that enables both user groups to mutually derive value from a transaction. With more such sub-platforms or emergence of entities that partake in dual platform operations, the resulting echoing enables for the different recombinations to converge temporally. As such, we predict the market to clear up, from a pricing standpoint, as more NPEs enter the market with such similar, yet newly formalized business models.

Yet, a more thorough analysis of the different NPE models shed further light in their logics behind the models. The more distance between their respective trajectories, the less of a platform effect for the users they serve – lowering the distance will allow the NPEs to maximize their profits and benefiting the users on both sides of the market, leading to a more efficient process – a systematic equilibrium. This distance is dependent therefore both on the models of the NPEs and also a multitude of external factors such as legal precedence, patent laws or court cases, etc. resulting in the current debate taking an ecosystem view over the mere firm-centric view. The trends in the past few years could be conceptually modeled and observed. See Figure
4, to show the overall trend with time as the two forms of NPE grew in numbers over the years, each catering to a different set of user group interests discussed before.

**MARKET CO-EVOLUTION PROCESS**

The above presents merely a snapshot of what are in the current patent market. Two important questions can be raised on the emergence and evolution of both models and market dynamics. 1) Where do NPEs business models come from and what will happen to the two types of business models? Will one eliminate the other or both merge together? 2) What are the
implications of the competition and symbiosis of two types of business models on the patent market process?

**The Genesis of New Patent Industry**

The patent licensing and monetization industry experienced a surge in the information age. The rise of NPEs signified the emergence of a new industry, also a byproduct of technological innovations in new industries such as semiconductors, mobile communications, and software in the late 20th century. As prior literature in technological change finds, the emergence of a new industry is often the result of technological or market discontinuity (Schumpeter, 1934). During the early development years of the industry evolution, various designs and categories are introduced, and the whole competitive landscape changes dramatically with creation, abandonment and recombination of all possibilities (Abernathy & Utterback, 1978; Anderson & Tushman, 1990).

First, NPEs could grow out of operating manufacturers. Manufacturers did realize that they could collect revenue through licensing out their patent portfolios. For many manufacturers, when they first adopted the licensing model, it was only a peripheral revenue stream. However, gradually some abandoned their manufacturing capabilities and focused solely on R&D and licensing, and eventually infringement litigations. Public firms like Tessera Technologies and Unwired Planet belong to this category.

NPEs can also start from patent pools. Patent pools are often formed by manufacturers to cross-license patents of basic technologies of standards and can be formalized or informal organizations in which actors come together to cross license to each other or external parties (Shapiro, 2001; Lerner et al., 2007). The Bluetooth was such a standard which arose from the corresponding pool brought together from 12 firm’s patents, which included Ericsson, IBM,
Nokia, Motorola, Intel and Toshiba (Layne-Farrar & Lerner, 2011). Many patent pools can serve a defensive purpose by purchasing potentially problematic patents, especially when a bankrupt company has a patent portfolio for sale. However, patent pools may switch from defensive to aggressive as well. Intellectual Ventures was founded with a defensive purpose to protect companies like Microsoft, Intel, and Apple. Yet after a few years of operation, it started to sue people as well. Patent pools may also create barriers to entry, and innovation – by favoring companies with large resource base or extensive patent portfolios and by discriminating against smaller parties, younger companies or the lone inventor who do not have leverage in negotiations within the pool.

There are huge challenges and opportunities for firms in this embryonic stage. The market and boundaries are still unclear, and firms have to test the viability of different business models (Granovetter & McGuire, 1998; Santos & Eisenhardt, 2009; Gustafsson, et al, 2015). More importantly, the market is in the process of formation. The pricing and legitimacy of new products/services, and market categories are unclear. Therefore, market participants undergo painful case-by-case bargaining and negotiating process to test the true value of the service. The large number of unsettled lawsuits indicates market inefficiency, which will be further exploited by new entrepreneurs (Kirzner, 1978)

**Growth and Divergence**

For the earlier history of patent troll emergence, particularly during the accumulation of patents from companies and inventors, investors pooled funds to make purchases of patents at auctions or during bankruptcies. The earliest patent troll models were therefore set-up much like hedge funds, promising returns to investors while the troll’s management team took a percentage of the profits along with modest management fees (Parloff, 2014). This group of NPEs could be
seen as subplatform 1, catering more to inventors during the sale of their patents onto the pool of
the NPEs, in hopes of bringing suits to corporations who infringe. One of the primary drivers at
this stage were returns for investors, not necessary maximizing the economic utility for the
inventors, since the investments enabled the beginning of the negotiations. This pro-investor to
pro-inventor transformation is done under NPEs that are essentially referring to the same group.

**Equilibrium**

The logic behind the transformation however is that as the deals start coming, more and
more inventor’s patents are being incorporated onto the pool with more bargaining power to the
investors who enjoy attractive returns. But at a critical mass of patents in a pool, inventors attain
more information of their relative worth and compounded saturation of investors give the
inventors more bargaining power. At this time, on the other side, subplatform 2 enters the
process to negotiate on behalf of the corporations who would have been threatened or sued. At
this point, negotiations begin between the two subplatforms amicably and in a way to reduce
asymmetry. This effectively clears the price of transaction in the markets, and brings stability to
the system.

**Challenges and the regional context**

There are yet challenges for this innovative business model. NPE cases, when gone to
court, have been successful for a lower percentage of cases, compared to their practicing entity
counterparts (Levko et al., 2009). Although proponents for troll business models claim that they
enhance market efficiency and competitive innovation by assisting single inventors, (Geradin et
al, 2011) literature shows that patent trolls do not benefit independent inventors who decide to
sell patents to them, (Tucker, 2011) rather a market for patents is a better solution for transfer
within parties with stronger financial capabilities (Rubin, 2007; Tarantino, 2010; Pohlmann &
Other challenges with a dual-platform model can be apparent when observing tested business models of real NPEs. Online marketplaces and live auction platforms, such as Yet2 and Tynax have seen a high ratio of low-high quality patents within its listings. Transactions costs could not be removed to a helpful level, since neither interactions, nor any resulting transactions could be conducted purely online, and as a result, the business model lacked scalability, and in fact, the restructuring and reorganization of thousands of patent files and information created a diseconomies of scale (Hagiu & Yoffie, 2013). Like most platform providers, such a model additionally suffers from issues of quality, and the chicken-and-egg problem or reaching an appropriate level of critical mass of buyers and sellers to sustain growth of the model.

These network externalities, which can generally be described as the effects of a network on an attribute of an artifact or system component, leads this issue, where owners of valuable patents may not find attractive buyers, and hence opt not to access the platform, which in turn causes only a few large companies to actively participate given the lack of resultant valuable patents. This could be either be direct (most two-sided or dual-market offerings where the value is access to other actors with complementary use-case or expectations, where the system only derives benefit for buyers if there are enough sellers (and vice versa) to expand possible choices of purchase offerings) or indirect (when the availability of one product impacts the demand for a complementary product). This phenomenon is well studied in literature, which characterizes it as the utility (or value) of a product or service, in proportion to the amount of people/agents (size of network) using it (Katz & Shapiro, 1986; Basu et al, 2003). In the direct network externalities case, the size of the user network or total users or customers, discussed above as the critical mass, has been called the installed base (IB), and research has tried to ascertain the value-added,
through network externalities in relation to the installed component base. However, scholars have commented further on the “chicken and egg” (Stremersch, 2007) problem of establishing if the installed base drove the value or product diffusion or if it was the other way around. As such, a dual platform model is still challenging in its own right. For instance, Chicago-based Ocean Tomo, which organized transactions through IP auctions, valued at under $115 million in total, a relatively measly sum compared to the billions of dollars spent on patent portfolios by single companies (Jarosz et al., 2005). However, these challenges are not idiosyncratic to the current model, but a feature of the general dual-market platform itself.

There is further a regional context to the phenomenon of infringement and troll litigation, for instance, in the USA, there is a high probability of losing a trial if a firm is the accused. Additionally, indemnification laws, which varies from one nation to another, makes being infringed more profitable for a focal firm, than to bargain a licensing agreement (Jaffe & Lerner, 2004; Reitzig et al., 2007).

CONCLUSION

Transformative Innovation

The implications of this involve ramifications that adequately remunerate inventors who create technologies used by corporations during the purchasing of patents by NPEs, while at the same time, allowing the corporations to budget for, or better predict the scales of these remunerations or reduce risky litigation instances, at a time where they find themselves in purposeful or accidental infringement. In other words, users on one side innovate through

---

4 In June, 2011, a consortium of companies, which included Apple, Sony, Microsoft and others, outbid google to buy 6,000 of Nortel’s patents for $4.5 billion. Google also bought 1,000 patents from IBM, and then 17,000 Motorola patents for $12.5 billion. In April 2012, Microsoft bought 925 patents from AOL for $1.1 billion, before turning back and selling a portion of that to Facebook for $550 million (Hagiu & Yoffie, 2013).
designing and R&D (inventors), while users on the other side commercialize and carry out the process in the inventions (corporations). Both sides reap benefits individually, in a way that is superior to unnecessary litigation (existing), search costs, or uncertain price points, incurring lopsided losses or costs for parties involved that is seemingly unwarranted.

An NPE’s role could be seen speculative, on the part that their aims rest on buying the patents at the low price and selling it at the high price, in a way that effectively transforms it into a tradable asset – but, in doing so, they play a critical role; to seamlessly integrate innovation from various inventions to large-scale business operations in a way where both side needs are met. NPEs do not have to be “practicing” entities in order to catalyze or facilitate innovation between entities looking to do R&D to invent, enhance or innovate products or processes, and entities looking to manufacture and sell said products or utilizing them to deliver value to its customer base.

Implications for entrepreneurship education

With increasing pedagogical developments within the field of entrepreneurship, it is crucial to inform educators and practitioners alike, that the institutional backdrop against which entrepreneurs and inventors partake in development and commercialization of ideas, is in a constant state of flux, like the market conditions or changes in demographics. Understanding these emerging practices and knowledge brokers allow students and educators to garner strategic knowledge that aides in developing appropriate approaches in entering new markets, or evaluating strategic partnerships with firms who have a complementary portfolio to leverage.

Implication on other markets

With the advent of multi-sided markets and peer-to-peer sharing economies, there are disruptive changes in the conventional business models across industries. NPEs are just a special
class that takes advantage of opportunities, to serve needs of their customers in the marketplace. Given the constant flux in the legal backdrop, NPEs leverage the asymmetry to negotiate and arbitrate situations which allows themselves to capture value, while simultaneously creating it for those they serve. While at first glance, their practice may seem abusive or examples of excessive rent-seeking behavior, ongoing innovation in their business models of platform-based interdependency, will bring efficiency to a system that was plagued with unnecessary litigation and inefficient transactions.

Our proposed dual-platform business model also enrich the research on business model in the system level, especially for the organization in knowledge intensive service. For example, sharing economy can encompass a wide array of structure or models, where, as the information about goods is shared, either from exposure on a marketplace (either real or virtual) to interactions between groups, the value of those goods may increase for the business, for individuals, for the community and for society in general (Geron, 2012). As such, the interactions between subplatform groups in our model may also benefit the individual inventor, licensing firms or ecosystem in general by deriving value from patents through the same logics of transaction. This interdependency removes asymmetry in information on the users sides, realizing better understanding of the prices of goods, which allows both parties to come to a mutually beneficial end-goal, in a way that both encourages innovative patents, while realizing commercial and economic gains from the transfer of property rights. Our two-sided market framework provides a systemic and holistic understanding of how an organization engage knowledge intensive activities for value creation.
References:


Rubin, S., 2007. Defending the patent troll: why these allegedly nefarious companies are actually beneficial to innovation. The Journal of Private Equity, 10(4), pp.60-63.


Institutional pressures and social action:  
A comparison of entrepreneur support organizations in St. Louis and Boston

Banu Özkazanc-Pan, Ph.D.  
Associate Professor of Management  
Department of Marketing & Management  
College of Management  
100 Morrissey Blvd.  
University of Massachusetts  
Boston, MA 02125  
Banu.ozkazanc-pan@umb.edu  
Tel: 617-287-7754

Karren Knowlton  
Doctoral Student  
Management Department  
The Wharton School  
University of Pennsylvania  
Philadelphia, PA 19104  
karren@wharton.upenn.edu  
Tel: 801-472-3483

Susan Clark Muntean, Ph.D.  
Assistant Professor of Management  
Department of Management and Accountancy  
University of North Carolina, Asheville  
1 University Heights  
Asheville, NC 28804  
smuntean@unca.edu  
Tel. 828-232-5053

Abstract  
Entrepreneur support organizations (ESOs) function as intermediaries between entrepreneurs and the resources of local ecosystems. We focus on St. Louis, MO and Boston, MA to compare and contrast a newly emergent versus an established entrepreneurial ecosystem to understand differences in why and how ESOs engage in gender inclusion efforts. Our in-depth fieldwork suggests inclusion efforts in St. Louis and Boston derive from different institutional pressures arising from distinct cultural cognitive, social normative, and regulatory forces in the local community. We unpack these differences and discuss implications for building an inclusive ecosystem in each context.

Keywords: gender gap, ecosystem, entrepreneurship, cultural cognitive, normative, regulatory, community
Executive Summary

Our research contributes to the growing body of literature that investigates the roles entrepreneur support organizations (ESOs) play in the effectiveness of entrepreneurial ecosystems. We focus on St. Louis, MO and Boston, MA to examine ESOs efforts to address the well-documented gender gap in entrepreneurship. All of the organizations that have as their proverbial mission to serve, support or partner with entrepreneurs can be categorized as ESOs. Given their role as decision makers, gatekeepers and resource providers, such organizations—have the power and capacity to determine who is granted the opportunity to access and benefit from the very networks, mentors, programs and funding that increase entrepreneurs’ odds for success.

Using concepts derived from institutional theory, we highlight the distinct institutional pressures these organizations face and the impact of such pressures on ESOs’ engagement in social action, such as diversity and inclusion efforts, to address the entrepreneurial gender gap. We focus specifically on cultural cognitive frames, social normative ‘rules’, and regulatory forces as exerting institutional pressures on ESOs in the specific communities in which they are embedded. Our qualitative approach yields in-depth insights as to the mechanisms and dynamics of inclusion and exclusion in the St. Louis and Boston ecosystems by way of ESOs and their practices.

Findings indicate that ESOs in St. Louis engage in inclusion efforts through institutional pressures exerted at the grassroots level. These efforts seem to have yielded positive results in that women’s business ownership has increased by 16% in a span of five years between 2007 and
2012. In contrast, women’s business ownership has stayed the same, at around 30%, in Boston between 2007 and 2012. We suggest that inclusion efforts driven only by top-down regulatory forces may not be as effective in bringing about change in the ecosystem with respect to the gender gap.

Introduction

Ecosystems have become an important topic within the academic field of entrepreneurship and in the policy world given they hold promising returns to economic development. Scholars have begun to suggest the various ways that cities can build successful ecosystems in order to promote economic growth and innovation (Bell-Masterson and Stangler, 2015; Feld, 2012). Generally, ecosystems refer to the ongoing exchange and reciprocal relationships and connections between different actors including entrepreneurs, entrepreneur support organizations (“ESOs”) (i.e., incubators, accelerators, investors, co-working spaces, etc.), institutions of higher learning, corporations, and government entities (Motoyama and Knowlton (Watkins), 2014, 2016(b)). Within this dynamic context, these ESOs play a significant and important intermediary role: they have the potential to connect entrepreneurs to the extant resources and networks of the ecosystem. Concurrently, such organizations also have the potential to mitigate existing weaknesses in the ecosystem, including those related to gender.

The gender gap in entrepreneurship is a well-documented phenomenon (Brush, De Bruin and Welter, 2009; Hughes et al., 2012) related to differences between male and female entrepreneurs in terms of funding (Coleman and Robb, 2009; Greene et al., 2001), accessing networks (Foss, 2010; Klyver and Grant, 2010), and gender bias in assessment of competency (Marlow and Swail, 2014; Noguera, Alvarez and Urbano, 2013). Further, socio-cultural expectations about domestic responsibilities (McGowan et al., 2012) and motherhood (Leung,
coupled with a lack of state and federal policy to support parental leave (Krause and Fetsch, 2016) have impacted women entrepreneurs in a negative fashion in terms of their ability to start and scale businesses efficiently. This is surprising given that women entrepreneurs are the fastest growing segment of entrepreneurs and can spur substantial economic growth (Robb, Coleman and Stangler, 2014). Yet, most scholars still advocate gender-neutral or gender-blind policies for supporting entrepreneurship as a tool for economic development (Acs, 2006; Acs and Szerb, 2007), taking the standpoint that it is uniform treatment that will lead to equal opportunity. Rather, we adopt a gender-aware approach that recognizes gender as an organizing principle of society and foundational to the very conceptualization and practices of entrepreneurship (Calás, Smircich and Bourne, 2009). We bring this gender aware approach to our lens, institutional theory, to understand whether and how ESOs engage in social action in the form of gender inclusion practices and efforts.

Following this notion, we examine whether and how ESOs can contribute to closing the gender gap in entrepreneurship based on extensive fieldwork in St. Louis, MO and Boston, MA. These two cities represent examples of ecosystems at different stages of growth and development: St. Louis is an up and coming city for entrepreneurship while Boston has a much more established and longer history in this context. In both ecosystems, we find ESOs that engage in a variety of women-focused diversity initiatives to promote an inclusive entrepreneurial ecosystem. However, we also find that the stated reasons for these initiatives are distinct in each city and impact how they are enacted or implemented. These differences are embedded in each city’s distinct history with regard to gender equality and race relations as well as described through rhetoric and concepts unique to each location. We explain these differences through an institutional theory framework that allows considerations of the multiple institutional
pressures organizations face in different environments. Next, we briefly outline our theoretical framework for examining the differences and then move on to discuss our findings in St. Louis and Boston. Following this, we discuss the implications of our research for mitigating the gender gap in entrepreneurship and building inclusive ecosystems.

**Theoretical Framework**

Institutional theory describes how institutional environments and their resulting dynamics impact organizational action. Examples of such action can include such things as adoption of voluntary codes of conduct (Wright, and Rwabizambuga, 2006), voluntary environmental behavior (Rivera, 2004), and engagement in corporate social responsibility initiatives (Aharonson and Bort, 2015; Glynn and Raffaelli, 2013). In their influential work, Marquis, Glynn and Davis (2007) suggest that both the nature and level of corporate social action, such as employee volunteerism, cash donations, or in-kind activities, arise from institutional pressures specific to the local communities in which they are embedded. These pressures derive from cultural cognitive (shared frameworks), social normative (accepted standards for appropriate behavior) or regulatory forces (Scott, 2001) specific to local communities. The combined and additive effect of these pressures is community isomorphism, which then impacts the nature and level of social actions adopted by organizations as they shift their policies and practices to be seen as legitimate in their institutional environment. Thus, understanding institutional pressures at the level of the local community can yield insights about which organizational social actions are likely to emerge as the norm in particular local contexts. To clarify, corporate social action (CSA) is not necessarily behavior within the realm of ‘responsibility’ but represents organizational activity that intends to address social issues beyond economic returns (Davis, 1973). Consequently, by focusing on social action rather than responsibility, we can consider a
broader category of organizational activity with a social focus or aim including diversity and inclusion efforts. Further, while borrowing from the theoretical work on corporations’ social action, we note similar pressures and motivators across different types of organizations, including financial investment firms, professional service firms, etc.

Extending these arguments to the realm of ESOs, local community pressures and contexts can play an important role in whether such organizations engage in gender inclusion efforts. As the interface between ecosystems and entrepreneurs, ESO engagement in social action can have significant consequences with respect to which entrepreneurs are able to access the rich resources and networks that allow success. Guided by the work of Marquis, Glynn and Davis (2007), we examine institutional pressures arising from cultural cognitive, social normative and regulatory forces in St. Louis, MO and Boston, MA and examine their influence on ESO inclusion efforts. By doing so, we bring new insights to the study of gender and entrepreneurship in highlighting how institutional pressures impact whether and how ESOs engage in social action to remedy the gender gap.

Our choice of St. Louis and Boston allows us to understand how actions by ESOs might differ in emergent ecosystems, such as that of St. Louis, versus those undertaken by support organizations in an established ecosystem, such as Boston. By comparing and contrasting these two ecosystems, we aim to address how particular ideas, practices, and approaches may become institutionalized, as changing them at a later stage proves difficult. In the case of gender and entrepreneurship, norms, practices, and approaches may be more malleable in an emergent and developing ecosystem compared to an established ecosystem. Thus, by considering the role and actions of ESOs in St. Louis and Boston, we can begin to understand whether and how gender equality might be possible in each context. More importantly, successful efforts in one context
may not transfer easily to another context as cities aim to foster inclusive innovation and economic development through entrepreneurship.

Methods

Qualitative approaches to entrepreneurship research can yield valuable insights about processes and practices associated with entrepreneurial activity (Neergaard and Ulhøi, 2007). To uncover the distinct institutional pressures ESOs can face at the community level, we conducted fieldwork, including interviews with leadership at ESOs and observations at meetings and events, during the course of research taking place between 2014 and 2016. Our focus herein is on uncovering institutional pressures in each city and the impact they have for adoption of social action in the form of gender inclusion initiatives. To this end, we interviewed 14 ESOs in St. Louis and 26 ESOs in Boston—the younger, newer St. Louis entrepreneurial ecosystem did not have as many ESOs to interview as the more established Boston location. The ESOs ranged from smaller organizations with a few members in leadership positions, such as venture capital firms, law partnerships, or women-focused entrepreneurial event organizers, to larger ones, such as incubators, accelerators, co-working spaces, government agencies and networking platforms. By focusing on a broad set of actors within the ESO space, we made sure that our fieldwork was comprehensive and included examples of available actors within each ecosystem. In addition, both male and female interviewers conducted semi-structured interviews of both male and female entrepreneurs to assess their myriad experiences with ESOs in each ecosystem and to explore ways in which these dynamics might be gendered. These include 94 interviews with entrepreneurs in St. Louis (37 female, 57 male) and 51 interviews with entrepreneurs (29 female, 22 male) in Boston between 2013 and 2016. The St. Louis interviews took shape over the course of two years while the Boston interviews took shape over the course of one year. The number of interviews with male and female entrepreneurs in both locations is representative of the
dominant industries in each city as well as representing a diversity of age, race/ethnicity, experience, and venture life-cycle. Given availability, access and time, the number of entrepreneurial interviews in St. Louis is greater than the number in Boston since we want to understand how this newly emergent ecosystem is taking shape. In contrast, we interview more ESOs in Boston compared to St. Louis, given that the established nature of Boston allowed us to include more support organizations.

All interviews were transcribed and analyzed to find patterns at the community level related to institutional pressures. During analysis of interviews and observations, our focus was to uncover shared frameworks or cultural explanations for practices, consider how standards of behavior and appropriate action took shape and outline any regulatory enforcement which may have impacted social action. Our analysis of qualitative data included transcriptions and text-based analysis (Haberman, 2014; Silverman, 2016) derived from key concepts outlined in our theory section. Below, we discuss how ESOs in St. Louis and Boston enacted social action based on the distinct institutional pressures arising within the local ecosystem.

Findings

Next, we present our comparative analysis of the St. Louis and Boston entrepreneurship gender inclusion initiatives. This section is organized first by city, and within each city, we narrow the focus, in turn, to 1) cultural cognitive frameworks guiding action, such as the region or city’s historic experience with gender and race relations, 2) social normative frames, such as the rhetoric and discourse used within each ecosystem to describe its identity, and 3) regulatory forces. While we made an effort to include each of these elements, St. Louis does not have any recognizable regulatory forces for inclusion while Boston does—thus, we do not address these issues for St. Louis. We then compare these two cities to illuminate the ways in which
institutional environmental conditions interact to affect the method and success of addressing gender inclusion in an entrepreneurship community.

**St. Louis, MO: Cohesive community and grassroots efforts**

*Origins and cohesion*

St. Louis has been known regionally as an entrepreneurial hub for a handful of years, though it has recently received national attention for the growth of its startup scene (Casselman 2016, Stangler and Tomkins-Bergh 2016). The origins of the current entrepreneurial community in St. Louis can be traced back to a grant from the Ewing Marion Kauffman Foundation to start a center for entrepreneurship at Washington University in St. Louis in 2001 and grassroots efforts by local businessmen beginning in 2010 (Motoyama and Watkins 2014). These leaders were interested in the future economic growth of St. Louis and saw a flourishing entrepreneurship scene as a way to jump-start that growth. Thus, they started the support organizations that are now central to the community and created an entrepreneurship hub in downtown St. Louis. In the years since this hub began, the number of ESOs and entrepreneurs in St. Louis has grown rapidly and done so in a way that has reinforced collaboration and coordination among the ESOs (Motoyama and Knowlton, 2016(a), Motoyama and Knowlton, 2016(b)). The various support organizations, including incubators, accelerators, networking groups, pitch events, university centers, and capital investors, among others, regularly join forces formally and informally in this ecosystem. Individuals who are leading one organization will sit on the board of another or be a judge for a competition. Others have held regular brown-bag lunches with members of various organizations to discuss the state of the ecosystem and how to achieve regional goals.

Concurrent with this movement, however, American Express released a ranking of 25 metropolitan areas in the United States for their ability to support woman-led ventures (The State
of Women-Owned Businesses Report). In this 2013 report, St. Louis came in last place. As both women and men with ties to the entrepreneurship community found out about this study and personally observed a lack of women in the community, organized efforts towards inclusion began to form.

The first local initiative geared toward increasing gender inclusion in the ecosystem was by a group called WEST, or Women Entrepreneurs of St. Louis. WEST was founded in 2012 by four female entrepreneurs as a networking group with the goal of “addressing the unique obstacles women face in the business world” (Heuer et al., 2012). WEST experienced many years somewhat isolated. In attending a few WEST events during data collection and through interviews with other support organizations, we observed WEST to be known throughout the rest of the St. Louis entrepreneurial community as a group for women, but it did not collaborate with other ESOs for a long time. Since concluding data collection for this project, however, WEST has recently been integrated into a larger, more general ESO, the Missouri Venture Forum (“MVF”). Founded in 1985, MVF focuses on networking, entrepreneurial education, and connecting entrepreneurs to capital. In line with our theoretical argument, the eventual merging of WEST with a long-standing, non-gender focused ESO suggests an acceptance and legitimation of gender-inclusive action by ESOs in this region.

Shortly after WEST formed, an existing ESO, the Information Technology Entrepreneur Network, or ITEN, launched an Inclusion Initiative in 2013. ITEN provides programming to tech-focused startups aimed at progressing them through the various stages of the entrepreneurial process, from product development to pitching to angel investors. ITEN’s Inclusion Initiative began with the goal of “addressing the diversity gap in tech startups” (ITEN), making it the first ESO in St. Louis with the goal of addressing the overall gap, not only providing support for
existing female entrepreneurs. Further, this initiative focuses on overall inclusion, including
other populations that are typically underrepresented in the technology entrepreneurship sphere,
such as racial and socioeconomic minorities. To fulfill this initiative, ITEN actively recruits both
entrepreneurs and mentors from underrepresented populations, engages leaders of other ESOs on
the topic of inclusion, and co-hosts an annual symposium for entrepreneurs aimed at building a
diverse community. This symposium is co-hosted by two other ESOs in the region, BioSTL,
described in greater detail below, and St. Louis Makes, a “manufacturing focused nonprofit
organization that exists to promote best practices in new product innovation, product
management and business development” (St. Louis Makes). The collaboration between the three
support organizations for the symposium provides evidence of how the relationships among
ESOs serve to further culturally legitimate inclusion-focused practices in St. Louis.

Continuing chronologically, BioSTL started their Inclusion Initiative in 2014. The goal of
this initiative is “to strengthen the region’s bioscience ecosystem by identifying high-potential,
talented women and minority bioscience entrepreneurs and providing a systematic pathway for
them to create viable high-growth ventures” (BioSTL - Inclusion). The programming for this
initiative focuses on building awareness of opportunities, engaging learning about opportunities,
providing training, and connecting individuals to resources. Their activities include co-hosting
the inclusion symposium mentioned above, offering programming about bioscience and biotech
to high school students, facilitating community familiarity with bioscience entrepreneurs through
evening events, providing cash awards to select graduates of an entrepreneurial boot camp
program, and finally, bringing together regional leaders for conversations on how to further
support minority entrepreneurs. Like ITEN, BioSTL’s Inclusion Initiative is focused on various
types of demographic of diversity, including socioeconomic and racial, in addition to gender. As
part of their initiative, BioSTL has partnered with nine other organizations in the St. Louis region, both public and private, to promote and advance minority inclusion.

A handful of women who were either experienced entrepreneurs themselves or otherwise connected to the entrepreneurship community started Prosper Women Entrepreneurs (“Prosper”) in 2014. In the words of one of the founders, “We want to put St. Louis on the map, on a national, maybe even international basis, as a great place to come for a woman entrepreneur to start and grow your business,” (Altman, 2014).

Prosper offers two arms: Prosper Institute and Prosper Women Entrepreneurs Accelerator. Prosper Institute is a non-profit which “helps growth-seeking women entrepreneurs advance their businesses” primarily through “Mastermind” style peer mentoring groups that meet on a monthly basis (Prosper Women Entrepreneurs). Prosper Women Entrepreneurs Accelerator is a for-profit organization that seeks to increase “women entrepreneurs’ access to growth capital and the number of women investing in early stage capital markets” (Prosper Women Entrepreneurs). The accelerator accepts applications bi-annually and provides capital, office space, connections, and intensive mentorship for 6-12 companies for a three-month period. They accept applications internationally from women-led startups only, which they define as a venture where at least one woman is in a position of leadership with significant and meaningful equity.

Prosper is highly integrated within the rest of the entrepreneurial ecosystem in St. Louis. First, Cultivation Capital, a venture capital firm without an explicit diversity focus based in St. Louis, financially manages Prosper’s accelerator. Founded in 2012, Cultivation Capital manages five accelerators in the region, as well as several venture funds. Washington University in St. Louis’ Olin Business School provides awards for the Prosper Accelerator. Further, Prosper houses its accelerator companies and its offices at T-Rex, a downtown startup incubator where
several other ESOs also have offices. Representatives from Prosper regularly present at various entrepreneurship events, such as Venture Café, held at CIC – St. Louis (abbreviated from Cambridge Innovation Center, with the other, original location of this incubator in Cambridge, MA). Up to 300 people regularly attend Venture Café. As one of the co-founders of Prosper notes, “I think we have been completely humbled and floored by the amount of enthusiasm and encouragement we have received from the existing St. Louis ecosystem. We have been embraced, put on a pedestal, lauded, cheered, by all of those men and women who are in this ecosystem.” (ESO A)

*Cultural cognitive: Cohesive identity*

The identity that the entrepreneurial community in St. Louis has taken on can be seen in the rhetoric used by entrepreneurs and ESO representatives alike, using the words “supportive”, “available”, “helping”, “scrappy”, “smaller, earlier” and “collaborative.” Those in the St. Louis ecosystem see it as an “emerging” ecosystem and desire the national recognition that brings with it even more funding, expertise, and entrepreneurs. Though there are somewhat differing opinions on how the region should attain that status – through focusing efforts on a “big exit” or through increasing rates of founding – almost universal is a desire to connect to other regions of the country through transfer of both human and financial capital. One example is the Arch Grants competition, bringing in companies internationally to locate their business in St. Louis for at least one year as part of the prize contingency (Motoyama and Knowlton 2016(b)). Another example is the startup community convincing Southwest Airlines to start a non-stop flight between St. Louis and San Francisco, which was instituted in 2014 (Schankman 2014). This desire to be known and recognized nationally contributes to the region’s desire to find its niche
as an ecosystem, which the quote above by the Prosper co-founder demonstrates may be a driving force toward embracing gender inclusion.

Another central element to the identity of this ecosystem, seen in the rhetoric and dialogue, is that it is networked, familiar, and based on relationships. That does not mean those relationships are exclusive, however. Many spoke to the contrary, relating sentiments such as, “I have not approached any program, mentorship, or incubation space, that I did not feel I could access” (entrepreneur A). It is well known in this community that connections to the right people (which may vary depending on your startup) are essential for success. Some recognize that there is still, unfortunately, an element of an “old boys’ club” (entrepreneur B) to the entrepreneurship community. Many others talked about Midwestern friendliness; one said “It is very folksie, that's a good way to put it” (entrepreneur C). This relationship-based identity of the ecosystem extends to the ESOs, as well, and is reflected in their highly collaborative interactions.

*Social normative pressures; Gender and race relations*

St. Louis is a city with a long history of diversity, especially along racial, ethnic, and socioeconomic lines (Salaam, 2015). The city’s heavy past of racial segregation and tension came to a head recently after the shooting of a young black man, Michael Brown, by a white police officer in Ferguson, a suburb north of St. Louis. The intensity of these various diversity dynamics has led to widely acknowledgement and discussion of opportunity stratification within the St. Louis area, including in the entrepreneurship sphere. The representatives of support organizations that we talked to from St. Louis expressed a desire for the demographic makeup of the ecosystem to be more representative of the region as a whole. Along with this, they expressed a sense of individual and organizational responsibility for creating this change. For example, one ESO leader said:
“And then, in the last year, I think the Michael Brown situation in Ferguson has definitely impacted the startup community but it's allowed us, and this is where I've seen the evolution and the growth, it's allowed the community to say, you know, we could actually use these tools and talents we have, not just for starting businesses, but to address societal challenges.” (ESO B)

In effect, both the cultural cognitive and social normative forces at play in St. Louis indicate a strong grassroots pressure and cohesive community identity that impact the nature and level of social action towards gender integration. In contrast, Boston has a strong regulatory force derived from both state and city level inclusive economy initiatives. As we discuss next, the institutional pressures arising from the factors in Boston do not yield a cohesive community identity or effective gender integration approaches.

**Boston, MA: Fragmented communities and top-down policies**

Based on data from the 2014 Federal Reserve of Boston, the city’s middle/upper income segments enjoy median family income around $120K compared to $44K for low/moderate income residents. Further, 94% of middle/upper income residents have Bachelors degrees or higher compared to 79% for low/moderate income residents. Finally, 45% of middle/upper income residents are homeowners compared to 25% of low/moderate income residents. In addition, the city is plagued with historic racial tensions deriving from school integration efforts in the 1980s and neighborhoods differentiated by race and class/income. Thus, despite being a hub for progressive, liberal thinking, the highest number of college and universities, and a vibrant and growing innovation ecosystem, Boston also experiences inequalities across income. In fact, Boston ranks as the city with the most income inequality based on 2014 data (Holmes and Berube, 2016). Entrepreneurship taking shape within this context holds much hope to equal
the playing field between different races and gender given that women entrepreneurs represent only about one-third of all entrepreneurs in and around Boston based on 2007 and 2012 data (Survey of Business Owners, 2007, 2012). The stagnant numbers indicate that women entrepreneurs are not making gains and in fact, have declined from 33% of all business owners in 2007 to 30% in 2012 (Survey of Business Owners, 2007, 2012). Within this context, we outline some institutional pressures arising from distinct frames starting with the cultural cognitive to examine why the gender gap continues to exist.

*Cultural cognitive: Gender-neutral or gender-blind as meritocracy*

In many of the interviews and events taking place in Boston, there was a shared sense that gender-neutral or gender-blind practices by ESOs would result in the best entrepreneurs getting resourced, funded, and networked within the ecosystem. In fact, several ESOs suggested that they are interested in “getting the best” and that gender does not and should not impact their choices. As ESO 3 in Boston put it, “They [women] come to us based on self-selection; there is no targeted outreach”. In many ways, gender-neutral practices were thought to lead to meritocracy in the ecosystem. Interestingly, there were very few ESOs who questioned meritocracy but rather, some women did suggest that the myth of meritocracy was what led to the current gender gap. On this point, a woman at ESO 1 suggests, “There is now a second generation of women in VC world, the first gen women had to play very tough, acted more like sailors to make it. For the second gen, the norm was to just keep your head down, you would be noted for your work--they bought into the myth of meritocracy”. Ironically, the shared cultural frameworks in Boston seem to be meritocracy and perhaps this is based on the number of high achieving scholars, academics, entrepreneurs, and business people and the belief is that such people get to where they belong based on hard work and achievement rather than tokenism or
bias. Consequently, the institutional pressure on ESOs arising out of such a cultural cognitive framework is meritocracy.

As further example of the cultural norm of meritocracy, a woman at ESO 2 in Boston pointed to the “wildly unpopular” quotas as a non-starter, while noting that the solution to close the gender gap would be to put more women on boards and for funds to set “a certain percentage” of funding for women and minorities. She also notes that “people of standing need to advocate, to stimulate change; more women’s CEO groups are needed, but it has to be done by people who know how to do it well.” To this end, several high-profile accelerators in town, such as MassChallenge and TechStars have started diversity initiatives internally based on interviews with leadership. In fact, MassChallenge has received a substantial grant from the Kauffman Foundation in order to support more women and minority entrepreneurs in their cohorts. The outcomes of these initiatives have yet to be seen but as we discuss in the next section, the approach to the existing gender gap is to put on separate programs or tracks targeting women (and to an extent, minorities) rather than to challenge the notion of meritocracy in the first place.

Social normative: Parallel tracks

Even when there is awareness of the problem of lack of women in the ecosystem, there are no policies or systematic programs or intentional practices to address the gender gap. As ESO 4 noted, “All VC firms put on events and retreats for CEOs, but they are reaching out to guys for sporting events; it’s a relationship game; women need to be intentionally included and are not; most women don’t feel comfortable as a token on a retreat; add alcohol, and it feels very un-fun to them [men] with a woman present.” Leaders at ESOs directed our conversations about women in tech or women in entrepreneurship to the classical “pipeline problem” arguments—that is, the gender gap at the top can be explained by a lack of qualified women in the ranks and graduating
with degrees, which is due to their own preferences starting as girls away from STEM, etc. Given trends in the data, including more women than men graduating from universities and STEM graduates now approximately 40 percent female in the U.S. or at parity (Cummin, 2015), these have been largely debunked and renamed as the “leaky pipeline” to refocus the question more accurately on “why do qualified women leave”? We posit this is because discussions surrounding gender in general and any challenges to the myth of meritocracy, objectivity and equal access to opportunity are very uncomfortable. Pushing the problem down to future generations by focusing programming on coding for girls, for example, allows leaders to deflect responsibility for actively changing current ways of doing things and challenging the status quo. Inviting girls to campuses and funding computer programming makes ESOs look great while deflecting blame. ESO 3 deflected the gender gap problem and her organization’s response in the form of partnering with “a high school biotech program to reach kids” (and not explicitly girls).

On this point, ESO 5 suggests, “women need coaching how to pitch to all white male audience, how to communicate about feminized industries in particular; lots of generational intersection; young women need a lot of coaching, how to navigate gender issues; most women don't have that; need to know how to access it.” She further points out that, “the women's ecosystem is strong in Boston” but questions integration and the fact that the numbers haven't shifted. Or as she states, “women aren't getting equity funding more despite the programming…for all the events, training, programming, add the ingredient of talking about women and gender issues”. In effect, the approach adopted by her ESO, which is the only women-focused ESO of the 26 that we interviewed in Boston, still does not and cannot change the vast number of programs that add on topical discussions of women’s issues. For example, an annual conference focused on women entrepreneurs titled, “Capital W” attracted close to 200
attendees in May 2016—there were only about 10 men who attended and many of them were panelists that gave feedback to entrepreneurs about their pitches. In addition, a prominent women’s networking group put on a women and innovation conference at the same time as the innovation conference by Xconomy/TiE connect was put together (April/May 2016). The content and focus in each conference exemplifies social normative forces or acceptable norms for behavior related to gender, entrepreneurship and innovation: the women-focused innovation conference included discussions on “money mindset, the secrets of success, personal branding and how to master work-life balance” while the Xconomy/TiE conference had content specific to succeeding including all-day panels, networking, as well tracks focused on “Ideate & Innovate, “Scale”, and “What’s Trending in Tech, Healthcare and Pharma”; and a “Startup Expo showcasing 50 of the hottest startups in the area including 15 TiE ScaleUp companies.”

As these examples demonstrate, acceptable norms for topics and programming when women are the primary targets of entrepreneurial activities are distinctly different than when males are the focus. These different but normalized social norms give way to parallel tracks between male and female entrepreneurs in Boston. Another example of this parallel track is the showcasing of women in MassChallenge event that has now entered its fifth year—the original showcase was put together to highlight the handful of women founder or co-founder who made it into the 128 companies chosen to compete for the final prize money out of the thousands of applicants who applied. In fact, in Boston most ESOs do not track diversity and focus on putting together occasional events focused on women and/or minorities and as ESO 3 suggests, “Where the rubber hits the road is wanting to be inclusive as we put on programs, but we need more women represented on the panels on specific topics, but there are not women experts necessarily to put on them; traditionally there are male leaders and networks tend to be male; if we just tried
a little harder, we could do better, but there is not written policy.” Consequently, the dominant and acceptable social normative rules for women participating in entrepreneurship is to have parallel networking events, conferences, meetings, and discussions surrounding the gender gap issue. The outcome of this norm is that the institutional pressure on ESOs is to something about the gender gap and most of the time, this ‘something’ ends up being a panel discussion on gender and inclusion, parallel tracks in an incubator/accelerator program, or altogether separate conferences. In the next section, we focus on the final piece of the community in Boston, the regulatory forces for inclusion.

**Regulatory forces: State and city initiatives**

Under a Republican governor and Democratic mayor, Boston is the focus of both state and city level inclusive economic growth agendas and policy initiatives including the city’s WEBos (Women Entrepreneurs Boston) initiative which aims to support, promote and connect women entrepreneurs across the city. At the same time, inclusive economic growth agendas at the state level dictate that cities and regions do more to build inclusive ecosystems to address gross inequalities in terms of income, education, and housing. Additionally, state-led initiatives such as the Massachusetts Council of Women’s pay equity agenda has impacted conversations on gender and pay in many organizations and in the media. Most recently, Massachusetts became the first state to enact a law that forbids employers from asking about past salary in an effort to end gender-based pay disparities given that women’s salary histories can prevent them from earning more in new positions.

Within this context, the institutional pressure arising from regulatory forces is for certain ESOs to demonstrate their commitment to equity by showcasing what they are doing for women (and minorities): yet this approach is, as mentioned in the above section, a parallel track of
women’s entrepreneurship rather than substantive change to the outreach, recruitment, and selection process of ESOs. In fact, with the exception of the women-focused ESO, no other organization had any plans to change their existing organizational practices despite the pressures for inclusive economic growth and addressing the gender gap in entrepreneurship. That is, despite regulatory efforts, ESOs were not changing their behaviors or practices in terms of engaging more women entrepreneurs. Inclusion efforts at best were still at the intention stage and rhetorical rather than material changes to the very organizational practices at these ESOs.

Next we outline how these differences in the sources of institutional pressures in St. Louis and Boston may have impacted gender integration. We then conclude with additional thoughts on future research and implications for entrepreneurship education.

**Conclusions and Implications**

As our research indicates, social action related to diversity and inclusion efforts at ESOs in St. Louis and Boston have distinct and emergent roots—in St. Louis, the grassroots efforts that allowed for a cohesive entrepreneurial community identity to form while Boston remains a fragmented ecosystem across gender as well as race (although the latter is not the focus of this paper). As we see in Table 1:

```
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Louis</td>
<td>Boston</td>
</tr>
<tr>
<td>28%</td>
<td>44%</td>
</tr>
</tbody>
</table>
```

the rates of business ownership for women has grown 16% in St. Louis between 2007 and 2012 from 28% to 44%. In contrast, this number has dipped slight for Boston when in 2007, 33% of all businesses were women-owned, that number in 2012 was 30%. We suggest that one explanation for the growth of women business owners in St. Louis is related to the basis of legitimacy which influences institutional authority for ESOs and their ability/willingness to take social action. In other words, the institutional pressures and push from different bases of
legitimacy (normative vs. regulative) in St. Louis versus Boston lead to different outcomes/reactions by ESOs. The normative pressures in St. Louis could lead to organizational identity as a moderator whereby ESOs develop a strong organizational identity and take social action based on what is expected of them in a cohesive ecosystem. This cohesion potentially allows normative forces to have more power and to act faster for St. Louis, while in Boston, the fragmented nature of the ecosystem and networks do not allow for the production of a strong ESO identity based on gender-equity. As a consequence, the belief in meritocracy through gender-neutrality continues while at the same time, addressing the gender gap usually is limited to an ad hoc panel discussion or parallel programming.

For entrepreneurship researchers, these findings suggest that ESOs can play a significant role in mitigating the deleterious effects of the gender gap in entrepreneurship, but only if the right institutional pressures are in place. In St. Louis, these pressures include social normative rules of behavior arising from a cohesive ecosystem identity, while in Boston, regulatory forces do not seem to impact extant ESO practices of parallel meetings, conversations and programs given the fragmented nature of the city. These findings further suggest that grassroots efforts may reverse the gender gap despite the lack of regulatory pressure but the reverse may not be true. Regulatory forces by themselves may not be able to address the gender gap in entrepreneurship if there are no social normative frames guiding behavioral change and no shared cultural cognitive frames for understanding the issue. Our research demonstrates that each city and context is different and practices and policies that are successful in one city may not translate to success in other ecosystems. Thus, our next section outlines broader changes that could influence ecosystems through entrepreneurship education.
Implications for Entrepreneurial Education

From our research findings, we develop specific interventions for leaders at ESOs to improve their performance on inclusion goals and diversity metrics. Firstly, following Keith Woods, NPR’s Vice President for Diversity and Inclusion’s suggestions, all organizations that strive to be inclusive must be clear on the “what”, “why”, and “how” with respect to diversity. Following Wood’s definition, diversity is best defined as “inclusion in the face of exclusion”, and is an activity that must take place at the individual, organizational, and societal level with both accuracy and precision. Prior to engaging in the development of programs (that is, the “how”), leaders must be clear on what they mean by diversity and why the organization is attempting to improve it. There must be a clear and public statement of intention, followed by development of a culture and actions that work continually to mitigate bias, prejudice and blinders with respect to inclusion. Our findings that the majority of those interviewed were aware of a “numbers” problem regarding those who are being represented, funded, featured and served in their entrepreneurial ecosystems, and yet did not know what to do about it or were not actively working to close these gaps suggest massive room for improvement.

Entrepreneurship scholars and educators can assist ESOs by developing effective diversity and inclusion training programs, experiential exercises, programs and other effective tools to address implicit bias and the need for intentional inclusion policies and practices at the organizational level, and not as parallel programming. Richard West’s model of shared innovation within communities outlines elements for creating a community of innovation, and may be of valuable reference for ESOs when considering what to provide their start-up ecosystems (West, 2009). Further, entrepreneurship scholars and entrepreneurship educators need to disseminate their ideas, exercises, research and experiments to ESOs and provide
guidance and feedback on their implementation. This might best be delivered through faculty-led consulting and student-engaged immersive learning projects in which scholars and classrooms implement tested solutions and tailor these to individual organizations’ contexts. Finally, the attempts and struggles ESOs have with inclusion would make excellent case studies for scholars to publish and students to analyze and learn from, preparing students to be more informed and effective entrepreneurial leaders who can transform ESOs and ecosystems to be much more inclusive.

References


Table 1: Comparison of male and female-owned businesses in St. Louis and Boston in 2007 and 2012

<table>
<thead>
<tr>
<th></th>
<th>St. Louis 2007</th>
<th>Boston 2007</th>
<th>St. Louis 2012</th>
<th>Boston 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female-owned</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male-owned</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equally male-/female-owned</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Teaching entrepreneurship and/or small business management: shifts in content tensions in Australian Universities

Brian Gibson
TOP Education Institute, Sydney, NSW, Australia
Tel: +61 (0)419694169
e-mail: brian.gibson@top.edu.au

Abstract
The focus of this paper is on teaching in the entrepreneurship and small business domains and the tension that occurs because of blurring in the pedagogical understanding of these terms. As an example of this blurring, analysis of subjects being taught at leading Australian Universities in 2010 and 2013 is reported. The results confirm a confused use of the word entrepreneur and its derivatives in subject descriptions. While there is a need for teaching that pays attention to both entrepreneurship and small business management, there is also a need for a clearer understanding of the distinctions so that false expectations are not presented.

Executive Summary
This paper initially explores the broader definitional confusion that gives rise to a blurring in the understanding of the terms entrepreneurship and small business management at the research level before identifying related definitional confusions at the education level. One aspect of this confusion is the potential for subject titles to mis-represent the content of the subjects and the research proposition explored in the paper is that such misrepresentation does occur. A limited
analysis of the content of entrepreneurship and small business subjects being taught at leading Australian Universities in 2010 and 2013 is reported but the restrictive nature of the data means simple descriptive analysis is used. Notwithstanding these limitations the results do confirm the research proposition that many subjects labelled as entrepreneurship (and consequently implying a focus on creativity and innovation) primarily contain small business management content. Fortunately the results also suggest the extent of this mis-representation is being reduced over time. This confused use of the word entrepreneur and its derivatives in subject descriptions may have been creating an impression of a focus on the creativity and innovative aspects associated with entrepreneurship when in reality the focus is on business management for small firms.

While there is a need for teaching that pays attention to both entrepreneurship and small business management, there is also a need for a clearer understanding of the distinctions. Educators and education administrators need to be careful to use subject titles that reflect content and do not add to the confusion that already exists between the entrepreneurship and small business management domains.

**Introduction**

Meyer (2011) identified and discussed a number of “elephants in the room” in respect of entrepreneur based scholarship. Of particular interest for this paper was his sixth “elephant”: the blurring of the domains of entrepreneurship and small enterprise management. It is the contention in this paper that such blurring, which has been identified and debated for over twenty years, is still occurring and that it is influencing the focus of our education efforts in the entrepreneurship and small business domains. This paper initially explores the broader definitional confusion that gives rise to the blurring at the research level. Related confusions at
the education level are then identified, before, as an example of the blurring, an analysis is reported of the content of entrepreneurship and small business subjects being taught at leading Australian Universities. The results confirm the proposition that many subjects labelled as entrepreneurship primarily contain traditional small business management content and have very little if any content related to entrepreneurship from a creativity, innovation and opportunity recognition perspective. This inappropriate use of the word entrepreneur and its derivatives in subject descriptions is creating an impression of a focus on the creativity and innovative aspects associated with entrepreneurship when in reality the focus is on business management for small firms. While both are legitimate and important they require a different pedagogy and serve a different purpose and institutions and their employees are guilty of adding confusion to the nature and focus of the disciplines in not correctly labelling their subjects.

Blurring of focus: Researching entrepreneurship and/or small business management

The debate about the apparent lack of a clear distinction between research about entrepreneurs and research about small business has been ongoing for some time. Indeed as Solomon and Matthews (2014) assert, “from Schumpeter to the present era of entrepreneurship research, there is a copious supply of competing definitions, characteristics, competencies and behaviors that many believe describe the entrepreneur”. The consequences are that, for example, sometimes when we talk about entrepreneurs we mean the innovative creative drivers of economies and at other times we mean those that own and operate their own business. Sometimes when we talk about entrepreneurship we mean the process by which entrepreneurs bring their identified opportunities to market and at other times we mean the way business owners manage their businesses.
While not intended to be an exhaustive commentary on the diversity of uses for the terms entrepreneurship, entrepreneur, small business (or firm or enterprise), and small business owner (and/or manager), the following provides some examples of the tensions that exist and the tendency for a reduction in those tensions. They are presented from the perspective of the firm, the individual, the process and terminology.

From a firm level perspective, Alvarez and Barney (2010) take a critical realist perspective of the entrepreneurship research field in which the focus of research is on opportunities (their sources, discovery and exploitation) and the set of individuals who discover and exploit the opportunities. In discussing small business research authors such as Wiklund, Patzelt and Shepherd (2009) take a different focus and rely on the complexity theory approach of hierarchical ontological layers to identify the complexity of studying small business.

The tension that arises here is one of exclusion. Apart from the exploitation of opportunities that might take some managerial expertise, there is no consideration of managing enterprises as part of the opportunity focused perception of entrepreneurship. Similarly, while an entrepreneurial orientation is used to partially capture the business model layer of Wiklund, et al. (2009), much of the complexity of small business discussion is focused primarily on business management activities. However the suggestion by authors such as Thurik and Wennekers (2004) that small business can be either a vehicle for entrepreneurs introducing new market opportunities or a vehicle for someone running a business for a living recognise that both approaches may have validity.
Another perspective that contributes to the blurring between entrepreneurs and small business owners is seen in attempts to map individual characteristics of those that start and/or manage businesses. Such individual characteristics are often captured in constructs such as entrepreneurial orientation which is usually posited as an alternative to a small business orientation (Runyan, Droge and Swinney, 2008). This leads to a common generalisation of small business as being “initially concerned with income substitution with a reasonable return on capital, a desire for family participation or considerations, low job creation, and high independence and ownership control” (Weaver and Solomon, 2003), and entrepreneurs being positioned in a contrary dichotomous position as having a focus on “significant wealth creation rather than salary, lower family considerations, significant job creation potential, and a willingness to give up "control" to investors to grow the firm significantly” (Weaver and Solomon, 2003). The existence of blurring is because, as with most psychological characteristics, very few individuals fit the exact profile of these dichotomous characterisations. The reality may be that while differences do exist, there are clear overlaps that suggest an integrated understanding might be more appropriate. Accepting an integrated approach would also suggest that the opportunities for blurring our understanding of entrepreneurship and small business management are now fewer. Solomon and Matthews (2014) clarify this type of distinction by identifying two types of actors: steady state growth oriented entrepreneurs and accelerated growth oriented entrepreneurs. This overcomes some of the tension in the fields by identifying all actors as entrepreneurs and focusing on their preferred growth process to distinguish the creative and innovative entrepreneur from the management focused entrepreneur.
If the blurring of our understanding is being reduced in respect of firm level distinctions and individual characteristics, perhaps the source of blurring is around the process. Again, as an example, in the Shane and Venkataraman (2000) conceptualisation of entrepreneurship there is little support for the notion that entrepreneurship (discovery, evaluation and exploitation) is a continuous activity performed by individuals. As Gibson and Weaver (2012) ask “if it is not continuous then what is happening between each of the processes that might identify entrepreneurial activity?” They suggest that between (or after) these entrepreneurial acts there is a period of “managing resources that have come together as a consequence of the entrepreneurial activities.” In other words there are periods of enterprise management between the entrepreneurial acts of individuals in the firm.

A final potential source of blurring is the tendency to not differentiate the name we give to the economic actors in our conceptualisations. As previously suggested, sometimes in the research domain, when we talk about entrepreneurs we mean the innovative creative drivers of economies and at other times we mean those that own and operate their own business. As Meyer (2011, p.6) argues “SME management and processes are important to study. However, most SMEs are not about the creative soul of entrepreneurship. Such current areas of study as family business and franchises are important but are mostly not about entrepreneurship. Rather they are about small business management”. It is important therefore to clearly identify what it is that is being researched and the Solomon and Matthews (2014) and Weaver and Solomon (2003) approaches are useful in this regard. From the perspective of the firm and the individual it appears entrepreneurship is more closely associated with the creativity and innovative activities of business people. However when concern is with the processes by which a small firm is managed
then creativity and innovation take on lesser significance and in describing those that perform these functions researchers need to be clear in their use of the expression entrepreneurs as a description. If the terminology tension has gone too far and there is a wish to use the expression entrepreneur for all people starting and running a privately owned enterprise then at least there is a need to differentiate in research the different processes that are being explored.

**Blurring of focus: Teaching entrepreneurship and/or small business management**

Gibson (2011) and Gibson and Weaver (2012) have identified the possibility that often when we claim to be researching and teaching entrepreneurship we are in reality researching and teaching small enterprise management. This has also been a theme pursued by Solomon (2006) who suggests the primary objective of small business management education is to provide knowledge related to managing and operating small, post-startup companies including the setting of goals and objectives, providing leadership, and planning, organizing and controlling. In contrast, Solomon suggests that entrepreneurship education focuses on high profitability, rapid growth and expedient exit strategies associated with originating and developing new growth ventures. Such opposing foci seem to demand different pedagogical approaches.

There are many aspects of teaching in these domains that need to be considered. Not all students are necessarily preparing to become entrepreneurs and may be interested only in understanding the phenomenon for use in their professional or large firm managerial roles. Others are hoping that they can find out how to develop the creativity and innovative activity they believe is associated with entrepreneurs while others recognise the importance of managing their businesses and want to understand the different focus in small firms. Educators need to be clear
in specifying the learning outcomes they are expecting students to achieve and that clarity should be reflected in the titles of the subjects they teach. There is not a sufficiently fine distinction between the range of issues that need to be covered if educators just use the expression entrepreneurship in subject names.

**Research Proposition**

The analysis in this paper identifies the extent to which this lack of a clear indication of the teaching focus (entrepreneurship or small business management) is evident in Australia’s leading Universities.

Because the expected nature of the data did not lend itself to detailed statistical analysis, no testable hypothesis has been developed. However, the research question that informed the analysis was the proposition that Universities in the study would have subject descriptions that implied an entrepreneurial (creativity and innovation) focus but have content that presented a small business management focus.

**Research Design**

The results presented in this study are a replication of a 2011 analysis (Gibson, 2011; Gibson and Weaver, 2012). To ensure continuity new data was gathered from the same Australian Universities although two Universities for which data could not be gathered were omitted. The 11 Universities included in this study were (listed alphabetically): Australian National University, Macquarie University, Monash University, University of Adelaide, University of
Melbourne, University of Newcastle, University of New South Wales, University of Queensland, University of Sydney, University of Western Australia, and University of Wollongong.

As had occurred in the 2011 analysis, data was obtained from the catalogue of courses (or units or subjects as the descriptions of a teaching unit do vary across institutions) accessible on line. Data was accessed during April 2013 and included only subjects to be offered in 2013.

Results Analysis

Table 1 summarises the data for this study and includes the modified results of the earlier 2011 analysis by Gibson and Weaver (2012). Note that the institution identifiers included in Table 1 have been applied randomly and do not reflect either the initial ranking that led to their selection or the order in which the Universities are identified above.

--------

Insert Table 1 about here

--------

Perusal of Table 1 indicates that of these 11 top ranked Universities in Australia, all have subjects that include entrepreneurship or small business in their titles. Overall there were more postgraduate subjects (26 + 3 = 29) than undergraduate subjects (17 + 5 = 22) which was not very different to the 29 postgraduate and 19 undergraduate subjects in the 2011 analysis. Those purporting to be about entrepreneurship numbered 43 (an increase from 35 in 2011) compared to only 8 (down from 9 in 2011) that identified small business as their focus.
The second phase of the analysis involved a subjective evaluation by the author of the subject description and a determination of the apparent focus of the unit regardless of its title. Subjects which had a significant focus on creativity and innovation were classified as entrepreneurial (CI) while those that focused on individual characteristic differences or on managerial activities (especially planning) were characterised as business management (BM). There were also a significant number of subjects that were very specialised (e.g. considered entrepreneurship or business management from a regional economic or social or finance perspective) and because they were difficult to place in either of the other categories they were categorised as special focus (SF).

This phase of the analysis indicated that a significant number of subjects that were represented in their titles as entrepreneurship focused were in fact business management focused. At the undergraduate level, 7 of the 17 subjects labelled as entrepreneurship at the undergraduate level were special focus subjects (5 of 14.5 in 2011), and only 2 were focused on creativity and innovation (none in 2011). This means that the remaining 8 subjects (9.5 in 2011) identified as entrepreneurship in their titles were not entrepreneurship focused but were business management focused. At the postgraduate level there were 11 of 26 subjects (8 of 20.5 in 2011) that were special focus, 4 (7.5 in 2011) that were business management and 11 (5 in 2011) that were entrepreneurship. So, at the postgraduate level the extent to which subjects identified as entrepreneurship were in fact business management was much lower especially in 2013. For subjects identified as small business all but 2 special focus subjects were business management which was similar to the result in the 2011 analysis.
In respect of the research proposition, of the 25 undergraduate and postgraduate subjects that were not classified as special focus and implied in their titles a concern with entrepreneurship, only 13 (just over 50%) were in fact entrepreneurship (creativity and innovation) focused. This was more noticeable with undergraduate subjects (only 2 of 10) than postgraduate subjects (11 of 15) and was an improvement on the results of the 2011 analysis in which none of 9.5 undergraduate subjects and only 5 of 12.5 postgraduate subjects (overall only 5 of 22 or just under 25%) were implying entrepreneurship and actually presenting entrepreneurship. While generalisation of these results is not possible, the results do provide another clear example of the blurring (or perhaps deliberate swapping) of terminology in the fields of entrepreneurship and small business although it is encouraging that the extent of the blurring seems to be reducing.

**Discussion and Conclusions**

These results support the proposition that the inappropriate use of the word entrepreneur and its derivatives in subject descriptions may be creating an impression of a focus on the creativity and innovative aspects associated with entrepreneurship when in reality the focus is on business management for small firms. Both are legitimate and important foci but they require a different pedagogy and serve a different purpose and institutions and their employees are guilty of adding confusion to the nature and focus of the disciplines in not correctly labelling their subjects.

There are of course a range of potential biases in the results including the age of the data, the non-representativeness of the sample and the subjective element of the analysis without any checks against the potential errors in individual interpretations. Nonetheless the results give rise to
sufficient concern to warrant a more in depth study and thereby a greater understanding of what it is we are really teaching in our higher education institutions.

There is a clear challenge to educators in the entrepreneurship and small business domains to give greater consideration to the distinctions that exist in terms of the nature of the firm, the characteristics of the individuals that run those firms and the processes they use in identifying and exploiting opportunities and managing their firms. Simple all inclusive expressions such as entrepreneurship are not useful in research or teaching. There needs to be clear extensions of expressions in use so that fellow researchers, fellow educators and students can clearly identify from subject titles and descriptions who the intended audience is and what will be the focus of the teaching.

In summary, it is clear there are linkages between the entrepreneurship and small enterprise fields. Some of the activities commonly associated with entrepreneurs are also associated with the conduct of small enterprises. Often the innovation and uniqueness evident in entrepreneurial activity manifests as economic activity in an independent small enterprise. Similarly there is evidence that many small business managers have, at some stage in the life cycle of their enterprise, taken actions which are entrepreneurial. While there may be a common underlying framework, this does not make the disciplines the same and we need, in research and teaching, to understand the distinctions and to focus efforts on ensuring we do not confuse the objects of our study.
References


### Table 1 - Classification of Subject Content

<table>
<thead>
<tr>
<th>Institution</th>
<th>Entrepreneurship in Title</th>
<th>Small Business (Enterprise) in Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Undergraduate</td>
<td>Postgraduate</td>
</tr>
<tr>
<td>A</td>
<td>1 x BM</td>
<td>2 x BM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>1 x SF</td>
<td>1 x BM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 x CI</td>
</tr>
<tr>
<td>C</td>
<td>1 x BM</td>
<td>1 x CI</td>
</tr>
<tr>
<td>D</td>
<td>1 x BM</td>
<td>1 x CI</td>
</tr>
<tr>
<td>E</td>
<td>1 x BM</td>
<td>1 x CI</td>
</tr>
<tr>
<td>F</td>
<td>1 x BM</td>
<td>1 x CI</td>
</tr>
<tr>
<td>G</td>
<td>3 x BM</td>
<td>2 x SF</td>
</tr>
<tr>
<td></td>
<td>1 x SF</td>
<td></td>
</tr>
<tr>
<td>H[^2]</td>
<td>0.5 x BM</td>
<td>0.5 x BM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>1 x BM</td>
<td>1 x BM</td>
</tr>
<tr>
<td>J</td>
<td>1 x SF</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>1 x BM</td>
<td>1 x BM</td>
</tr>
<tr>
<td>TOTALS</td>
<td>BM</td>
<td>9.5</td>
</tr>
<tr>
<td></td>
<td>CI</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>SF</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>14.5</td>
</tr>
</tbody>
</table>

**Classifications Key:**
- **BM** – business management focus with possibly some (but not dominant) identification of the creativity / innovation aspect of entrepreneurship
- **CI** – creativity and innovation primary focus (with possibly some management aspects)
- **SF** – specialist focus e.g. entrepreneurship from a regional economics or business finance or social perspective

**Note 1** – 2011 data is as reported in Gibson and Weaver (2012) modified for omitted institutions

**Note 2** – some subjects at Institution H in 2011 had both entrepreneurship and small business in the title.
Heterogeneity of Entrepreneurial Opportunities: 
A Complexity Perspective

Hessam Sarooghi  
Assistant Professor of Entrepreneurship and Innovation  
Butler University  
hsarooghi@umkc.edu

Jeffrey Hornsby  
Professor of Entrepreneurship  
University of Missouri Kansas City  
hornsbyj@umkc.edu

Dirk Libaers  
Associate Professor of Entrepreneurship and Innovation  
Northeastern University  
d.libaers@northeastern.edu

&  
Nilofar Abolfathi  
PhD Candidate  
Bocconi University  
Nilofar.abolfathi@unibocconi.it

December 7, 2016
Introduction

“A major mission for future research is to identify, conceptualize, and operationalize the salient characteristics of New Venture Ideas. This is a very considerable task, yet an important and potentially fruitful one” (Davidsson, 2015, p. 687).

Why do some new ventures experience astronomical success while some others hopelessly fail? What are the major factors that contribute to the success or failure of new ventures? How should an observer trace back the root cause of a new venture’s performance? The individual-opportunity nexus has been the dominant theoretical perspective that the entrepreneurship field has drawn on to provide insights to the above questions. This perspective focuses on the presence of lucrative opportunities and enterprising individuals (Shane & Venkataraman, 2000; Venkataraman, 1997). At the core of this view lies the assumption that heterogeneity in entrepreneurial process and outcomes originates from two major sources: an actor part which is mostly studied as the individual entrepreneur, and a non-actor part which has been mainly investigated as the opportunity.

A careful look at the theoretical and empirical knowledge accumulated in the field of entrepreneurship during the past two decades reveals an unbalanced scholarly attention to the two constituent parts of the nexus; individual and opportunity. While research has extensively investigated the individual side of nexus, by exploring the heterogeneity in individual attributes such as social ties (e.g., Singh, Hills, Lumpkin, & Hybels, 1999), prior knowledge (e.g., Shane, 2000), and personality characteristics (e.g., Krueger & Brazeal, 1994), scholarly probe into the opportunity side has been primarily focused on the examination of the origins and nature of opportunities or questions of ontology. In this area, the discovery-creation dilemma has been the central debate in investigating entrepreneurial opportunities (Alvarez & Barney, 2010). Due to dominance of this stream of research in the
opportunity area, very few studies have attempted to study opportunity heterogeneity beyond the ontological debates (e.g., Dahlqvist & Wiklund, 2012; Grégoire & Shepherd, 2012).

This unbalanced attention has hampered our understanding of entrepreneurial phenomena because of one critical reason. Explaining and predicting variance in a phenomenon of interest is at the heart of any theoretical inquiry (Dubin, 1978). However, as a field, entrepreneurship has failed to adequately elaborate on what constitutes variance in opportunities. Hence, while we have been able to ask questions like “what, how, and why individual attributes will lead to specific entrepreneurial behaviors and outcomes”, we have had less theoretical possibility to ask questions such as “how and why different types or levels of opportunities relate to different aspects of entrepreneurial process”. As a result, theorizing on opportunity variance is one of the most vital priorities for gaining an evocative understanding of entrepreneurship.

Recently, in an extensive review of the literature on entrepreneurial opportunities, Davidsson (2015) concluded that lack of construct clarity (Suddaby, 2010), caused by a blurry distinction between the content and the favorability of the acted upon entity in new venture creation context has been the major roadblock in enhancing the utility of opportunity construct in explaining entrepreneurial process. As a result of this lack of clarity, different scholars have chosen different aspects of the umbrella term of opportunity in their theoretical and empirical endeavors.

In this study, we propose the construct of Opportunity Complexity, which we define as the degree of complexity in an opportunity formed by its constituent problem, solution, and business model to address the shortcomings of previous research on opportunity heterogeneity theorizing. In addition, in the light of our conceptualization, we demonstrate
the utility of this construct by revisiting the role of creativity, prior knowledge, and social ties, as three widely researched antecedents of opportunity identification (Ardichvili, Cardozo, & Ray, 2003).

Our abstraction of opportunity variance has several implications. First, it addresses the recent calls for opportunity’s conceptualizations that are actor-independent (Davidsson, 2015). Second, it provides the entrepreneurship field with a more objective and generalizable understanding of heterogeneity in opportunities that can be used across a wide range of entrepreneurial endeavors (e.g., corporate venturing and social entrepreneurship). Finally, it establishes a solid theoretical basis for future empirical investigations that aim to study variance in opportunities.

The rest of the paper proceeds as follows. First, we briefly review the theoretical foundations of entrepreneurial opportunities. Second, we probe into the scant body of research on opportunity types to motivate our research. Third, we elaborate on our construct of opportunity complexity. Fourth, we propose our theoretical frameworks followed by propositions. Finally, we conclude with contributions and future research directions.

Theory and Background

The Conceptual Underpinnings of Entrepreneurial Opportunities

Research on opportunities has been a central intellectual inquiry within the entrepreneurship field in the past two decades. This central role is justified when we look at one of the most dominant definitions of entrepreneurship, which is “how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited” (Shane & Venkataraman, 2000, p. 218). A rich body of knowledge has been created as a result of stimulating theorizing around the entrepreneurial opportunities.
However, a closer look at the state of research on this concept reveals that progress in this area has been hampered by conceptualizations that do not meet the minimum standards of construct clarity including proper definitions, scope conditions, and semantic relationships to other related constructs (Suddaby, 2010). Consequently, the proposed abstractions of the construct entail “a confluence of (pre-existing or created) external circumstances; imagined future ventures; future action paths, or imagined future states” (Davidsson, 2015, p. 677).

One of the reasons that may have shifted the attention of scholars from putting enough emphasis on clarifying entrepreneurial opportunities could be the ontological debates that have been formed around this concept. The conversations in this area have been mainly focused on objective-subjective duality. Scholars in the objective camp, mainly inspired by Austrian economics school (Kirzner, 1997), see entrepreneurial opportunities as objective realities that exist independent of agents who discover them. Conversely, scholars in the subjective camp propose that opportunities are created only as the result of human agency and do not independently exist outside of humans (Sarasvathy, Dew, Velamuri, & Venkataraman, 2003). The intellectual debates surrounding this duality have been one of the liveliest conversations with the entrepreneurship field best known as the creation-discovery dilemma. A complete review of this stream of research is beyond the scope of current study (See Alvarez and Barney (2010), and Alvarez and Barney (2013) for a comprehensive review of the subject). In sum, while a group of scholars believe that there is not any possibility to reconcile these apparently opposing views (Alvarez & Barney, 2010), a recent realist account of opportunities, which views opportunities as propensities, suggests that the subjective process involved in the actualization of opportunities does not contradict with objective existence of opportunities (Ramoglou & Tsang, 2015). This view is also favored
by Grègoire and Shepherd (2010) as they hold that “opportunity recognition rests on the subjective perception and interpretation of objective realities…” (Grègoire & Shepherd, 2010, p. 118). We adopt this view in our theoretical arguments in the rest of this manuscript.

As much as the creation-discovery dilemma has been intellectually stimulating, it has slowed down our ability to move our theoretical inquiry beyond the ontological debates. Metaphorically speaking, we as a field have not as of yet peeled away the inner layers of opportunity onion. To overcome this challenge, Davidsson (2015) conducted a comprehensive critical review of the state of research on opportunities to identify the major barriers that have hindered the utility of opportunities in theoretical and empirical underpinning of entrepreneurship studies. He highlights several problematic areas in prior works.

First, there is an inherent problem with the opportunity label that originates from the favorability undertone embedded in this word (Davidsson, 2015). This problem specially demonstrates itself in the early stages of creating a new venture, in which potential benefits are unknown due to knowledge asymmetries and limited rationality (Hayek, 1945; Simon, 1965). So whether or not a venture is worthwhile, could not be determined ex-ante, and that is why labeling the acted upon entity of a venture an “opportunity” would be problematic. Second, as a result of this favorability connotation, the existing research has failed to adequately disentangle the actor part from the non-actor part in conceptualizing opportunities. This poses a construct clarity problem (Suddaby, 2010) for building a micro theory of an entrepreneurship nexus in which independent characteristics of both actor and non-actor are necessary to study the new venture creation process (Davidsson, 2015).
As a remedy to the above mentioned problems, Davidsson (2015) suggests three substitute constructs that are conceptually distinct and meet the standards of construct clarity. The first one is External Enabler which is defined as “a single, distinct, external circumstance, which has the potential of playing an essential role in eliciting and/or enabling a variety of entrepreneurial endeavors by several (potential) actors” (Davidsson, 2015, p. 683). Examples of this include changes in technology, institutional environments, and macro-economic conditions. The next construct is New Venture Idea which is “… an imaginary combination of product/service offerings, markets, and means of bringing the offerings into existence (Davidsson, 2015, p. 683). Finally, Opportunity Confidence is “The result of an actor’s evaluation of a stimulus (External Enabler or New Venture Idea) as a basis for the creation of new economic activity” (Davidsson, 2015, p. 683). The author puts considerable emphasis on the role of New Venture Ideas construct in building nexus based entrepreneurship theory and holds that “… it might serve entrepreneurship research well to develop a set of well-defined and - operationalized New Venture Idea Characteristics” (Davidsson, 2015, p. 688).

In line with this suggestion, in the next section, we review the prior studies that have probed into opportunity variance to position and motivate our research.

**Opportunity Variance**

Studies on opportunity variance can be meaningfully categorized into three groups: (1) conceptual; (2) scale development; and (3) empirical. Table 1 summarizes these studies.

---

1 Our intention is to conceptualize New Venture Ideas Characteristics as defined by Davidsson (2015). However, as the previous research has widely used the term opportunity, in the rest of the paper we use this term.
In the following, first we review these studies in more details, and then we conclude with an evaluation of their shortcomings and potential contributions.

**Conceptual.** Drawing on creativity literature (e.g., Getzels, 1962), Ardichvili et al. (2003) suggested a matrix of opportunity types based on two dimensions of value creation capability (ranging from undefined to defined, and value sought (ranging from unidentified to identified) addressed in an opportunity. Employing these two dimensions, the authors proposed four categories of opportunities: *Dreams* types are opportunities in which the problem and solution are both unknown; *Problem-Solving* types are opportunities in which the problem is known but the solution is unknown; *Technology transfer* types are those in which a capability in form of a potential solution exist, however no application (problem) has yet been found for it; Finally, *Business Formation* opportunities are those in which both problem and solution are known, so the matching is the main challenge.

Taking a similar approach, Wood, Welter, Artz, and Bradley (2014) proposed that *means-end combinations* (i.e., opportunities) are different based on the newness level of means and ends. Using this logic, they suggest a matrix containing four different types of opportunities: *Replication* (old means, old ends); *Reinterpretation* (old means, new ends); *Revelation* (old ends, new means); *Revolution* (new means, new ends).

In another conceptual study, Davidsson and Tonelli (2013) propose a tentative collection of opportunity characteristics as a guide for operationalization and conceptualization purposes. Their suggested list includes attributes such as novelty, appropriability, diffusability, scalability, and scope.

**Scale Development.** Hill and Birkinshaw (2010) characterized an entrepreneurial *idea set* along five dimensions of content, knowledge configuration of ideas, volume and
stage of ideas, value logic, and novelty. Through a three-phase data collection process and utilizing 388 professional respondents in three large firms, they proposed a 17-item instrument that meets the requirements for content, convergent and discriminant validity.
Table 1

*Previous studies on Opportunity Variance*

<table>
<thead>
<tr>
<th>Year</th>
<th>Author(s)</th>
<th>Type of Study</th>
<th>Opportunity classification/attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>Ardichvili et al.</td>
<td>Conceptual</td>
<td>Dreams, Technology transfers, Problem-solving, and Business formation based on the identification degree of problems and solution</td>
</tr>
<tr>
<td>2014</td>
<td>Wood et al.</td>
<td>Conceptual</td>
<td>Replication, Reinterpretation, Revelation, Revolution based on the degree of newness in means and ends</td>
</tr>
<tr>
<td>2013</td>
<td>Davidsson &amp; Marcello</td>
<td>Conceptual</td>
<td>Novelty, Appropriability, Diffusability, Scalability, and Scope</td>
</tr>
<tr>
<td>2010</td>
<td>Hill and Brinkshaw</td>
<td>Scale Development</td>
<td>Content, Knowledge configuration of ideas, Volume and stage of ideas, Value logic, and Novelty</td>
</tr>
<tr>
<td>2012</td>
<td>Dahlqvist &amp; Wiklund</td>
<td>Scale Development</td>
<td>Newness in a firm’s offerings to market and segments</td>
</tr>
<tr>
<td>2009</td>
<td>Samuelson and Davidson</td>
<td>Scale Development</td>
<td>Innovative, Imitative</td>
</tr>
<tr>
<td>2015</td>
<td>de Jong and Marsili</td>
<td>Scale Development</td>
<td>Equilibrating/disequilibrating, Requirement for new information, Degree of innovativeness, Degree of commonness, Creation/Discovery mode</td>
</tr>
<tr>
<td>2009</td>
<td>Dencker et al.</td>
<td>Empirical</td>
<td>Industry Labor requirements</td>
</tr>
<tr>
<td>2015</td>
<td>Dencker &amp; Gruber</td>
<td>Empirical</td>
<td>Industry Riskiness</td>
</tr>
<tr>
<td>2012</td>
<td>Grègoire and Shepherd</td>
<td>Empirical</td>
<td>Superficial and Structural Similarity</td>
</tr>
</tbody>
</table>
In another study, focusing on the novelty aspect and adopting a Kirznerian view (i.e., opportunities are objective and discoverable), Dahlqvist and Wiklund (2012) proposed that entrepreneurial opportunities are different based on their degree of newness as some include “minor day to day adjustment of the economic system” (Hayek, 1945, as quoted in Dahlqvist & Wiklund, 2012, p. 188), and “some are of a bold imaginative nature” (Von Mises, 1966, as quoted in Dahlqvist & Wiklund, 2012, p. 188). They conceptualize newness based on (1) the degree of newness in a firm’s offerings to market, and (2) the degree of newness for the customer segments. Utilizing a geographical segmentation logic including community, country, and world levels, they propose an 8-item instrument to measure variance of opportunities in respect to their newness.

In another novelty-focused study, Samuelsson and Davidsson (2009) proposed a dichotomous categorization of venture opportunities based on an innovative/imitative scheme. They argue that there is a fundamental difference between innovative versus imitative venture opportunities stemming from the fact that innovative opportunities involve uncertainty and high level of complexity while imitative opportunities entail risk and lower levels of complexity. To operationalize their suggested classification, the authors used the Sweden Panel Study of Entrepreneurship Dynamics (SwPSED) and categorized ventures based on (1) intellectual property application; (2) R&D focused strategy; (3) uniqueness of the venture’s offering in the market, and (4) competition.

More recently, de Jong and Marsili (2015) proposed a bipolar scale of opportunities that range from Schumpeterian to Kirznerian. To empirically discriminate these two types of opportunities, they use a sample of 181 high-tech small Dutch firms and draw on Shane’s (2003) comparative dimensions of Schumpeter and Kirzner’s views to demonstrate the
heterogeneity in opportunities. Their dimensions included (1) equilibrating/disequilibrating, 
(2) requirement for new information, (3) degree of innovativeness, (4) degree of 
commonness, and (5) creation/discovery mode (de Jong & Marsili, 2015).

**Empirical.** There are three studies that have studied opportunity variance as a part of 
larger empirical questions. Dencker, Gruber, and Shah (2009) studied the unique and joint 
effects of individual and opportunity factors on job creation in a German sample of recently 
self-employed individuals. They used labor requirements to characterize opportunity in their 
study. To operationalize this characteristic, they utilized historical data on the average labor 
requirements of new firms at the level of industry at their launch time and also their second 
and third years.

Utilizing this industry level based logic, Dencker and Gruber (2015) used *riskiness* 
as a characteristic of entrepreneurial opportunities to predict performance in a sample of 451 
newly founded German firms. To measure the riskiness of opportunities, authors used an 
industry-specific risk rating in the context of newly established firms which took into the 
account the creditworthiness of new firms over time.

In a subsequent study, using insights from cognitive research, Grégoire and 
Shepherd (2012) proposed two opportunity characteristics that influence the formation of 
opportunity beliefs – *superficial* and *structural similarities* between new product-market 
pairs. They define superficial similarity as the situations in which “the basic elements of 
technology (e.g., who develops the technology, the context where it is developed, its parts 
and components, the inputs it uses, the materials/people it works with in the lab, and the 
output it produces) resembles the basic elements of a market” (Grégoire & Shepherd, 2012, 
p. 754). The structural similarity, however, occurs when “the intrinsic capabilities of a new
technology (what it can do and the logical/scientific/functional mechanisms underlying how it can do this, such as how the various parts and input of a technology work together) resembles the causes and mechanisms underlying the latent demand in the market” (Grégoire & Shepherd, 2012, p. 754). The authors used two samples of entrepreneurs and utilized a within subject experimental design to study the formation of initial opportunity beliefs.

**What Is Missing?**

While previous studies have enhanced our understanding of opportunity variance, they could be criticized in a number of ways. First, a number of studies have failed to adequately disentangle the actor component from the non-actor one when specifying the dimensions. Put it differently, there are high levels of subjectivity involved in delineation of attributes. For example, the novelty aspect in Hill and Brinkshaw (2010) and Dehlvquist and Wiklund (2012), and the strategic value attribute in Hill and Brinkshaw (2010) require high level of interpretation to be specified. Although, it should be noted that there are some aspects such as knowledge configuration and idea content which are less prone to actor interpretation, so they could be good candidates for specification of opportunities.

Second, some studies have not considered the firm specific characteristics of opportunities and have attributed opportunity variance to industry conditions (Dencker et al., 2009; Dencker & Gruber, 2015). This is problematic due to the fact that in reality entrepreneurial firms in the same industry would demonstrate different behaviors and outcomes. This industry level approach would homogenize the inherently heterogeneous set of opportunities in a single industry.
Third, there seems to be some degree of confounding between what can be classified as external enablers and the inherent attributes of opportunities. Grègoire and Shepherd (2012) is an example in this sense. As the authors elucidate themselves, how market needs and technology trends are framed and channeled to entrepreneurs is not an integral dimension of opportunities. Finally, and most importantly, in line with observation of Davidsson (2015), there exist a lack of parsimonious salient super-constructs that can capture the characteristics of opportunities and are applicable in wide range of new venture creation settings.

**A New Perspective on Opportunity Variance: Opportunity Complexity**

As a remedy to the limitations of previous studies, the current study aims to integrate ideas from several scholars and streams of research to provide a more parsimonious and generalizable understanding of opportunity variance. An atomic view to complexity aspects of opportunities is adopted here as we believe many surface level characteristics, such as ease of implementation, novelty, and scalability, are the result of the very core configuration of opportunities. To this end, first, inspired by works of Ardichvili et al. (2003), we suggest that each opportunity is comprised of problem-solution pairs. This aspect is reflected in the works of other scholars as means-ends relationships (Shane & Venkataraman, 2000) or product-market fit (Grègoire & Shepherd, 2012). Moreover, as manifested in Davidsson’s (2015) definition of new venture idea, bringing the problem focused solution to existence requires a commercialization mechanism. The business model concept holds great promise in this regard. Business models are essential to every organization, including a new venture (Magretta, 2002). An entrepreneur thinks about the choice of business model (how to capture value from an imagined problem-solution pair) early on in the process of new
venture ideation (Morris, Schindehutte, & Allen, 2005). In other words, the business model is inherent in the evolutionary gestalt of the opportunity under development throughout an entrepreneurial journey. Hence, we consider the business model as the third constituent component of an opportunity along with problem and solution. This choice of components (i.e., problem, solution, and business model) are also in line with the concepts of problem-solution fit and business model fit in the pedagogical texts focused on Lean Startup (Blank & Dorf, 2012; Osterwalder, Pigneur, Bernarda, & Smith, 2014).

To augment our choice of components, we employ a complexity lens to study the configurational heterogeneity in opportunities. This perspective provides us with a simple yet fundamental way to elaborate and dimensionalize different types of opportunities. The Complexity view has been previously used to study innovation (e.g., Rogers, 1995), strategy (Shoemaker, 1990), marketing (Dellaert, & Stremersch, 2005), and supply chain management (Bozarth, Warsing, Flynn, & Flynn, 2009). Also, there have been few studies that have leveraged complexity theory to study entrepreneurial phenomena (Phelan, 2015; McKelvey, 2004). It is worth noting that the notion of complexity is conceptually different from the uncertainty because the former is a characteristic of opportunity while the latter is related to the actor’s perception of opportunity. In other words, uncertainty is on the eye of beholder and its discussion is relevant when an actor decides to act upon on the opportunity (McMulllen & Shepherd, 2006).

We utilize our proposed components to formally constitute the construct of Opportunity Complexity. As such, this construct is formed through dimensions of problem complexity, solution complexity and business model complexity. We elaborate on each of these dimensions in the following:
Problem Complexity

Problem complexity is related to how well a problem is defined. It is a function of (1) the difficulty in delineation and transmission of a problem, and (2) the extent to which a problem can be modularized (Afuah & Tucci, 2013). The extent to which a problem can be delineated and transmitted is determined by the tacitness of the knowledge that characterizes the problem. Tacitness is a cognitive dimension that represents the difficulty in the transfer of knowledge from one person to the other (Polanyi, 1967). As an example, part of learning a new language necessitates the learning of grammatical rules, which can be obtained from others. However, to become a native speaker, one has to fully immerse in that language, and must spend enough time doing so to accomplish this. This example illustrates the difficulty of tacit knowledge transfer from one person to another. In the same line, tacitness of a problem makes it significantly more difficult for a problem to be delineated and transferred from the potential customer to an entrepreneur.

Modularizability (or decomposability) also plays a significant role in problem complexity. Modularizability is the degree to which a problem can be partitioned into different components. As a result of such quality, each component of a problem can be solved independently (Afuah & Tucci, 2012). A complex problem is usually less conducive to modularizability (Baldwin & Clark, 2006), which will lead to greater challenges in identifying different components of that particular problem. Moreover, high levels of interdependency between problem components can increase the difficulty of grasping an accurate account of a problematic situation.

Solution Complexity
In essence, *solution complexity* is a function of the number of knowledge sets that are embedded in a solution and the degree of interdependence among those knowledge sets (Hsieh, Nickerson, & Zenger, 2007). A number of features can make solution complexity more tangible: (1) numbers of actors with specialized knowledge and multitude of interactions among these actors (Hsieh et al., 2007); (2) the quantity of technologies that are incorporated in a solution and the degree of interconnectedness between those technologies (Barclay & Dann, 2000); and (3) the number of possible choices of interconnection between components and subsystems (Hobday, 1999). These elements of complexity can pose significant coordination challenges when working with users, suppliers and regulators which may necessitate the incorporation of external capabilities in developing solutions.

Comparing cars and airplanes would shed more light on the concept of solution complexity. Compared to cars, airplanes are more complex solutions for the problem of transportation because (1) they require more specialized number of knowledge sets (at least they require the knowledge of aerospace engineering in addition to the knowledge of mechanical engineering and electrical engineering that are also used in cars), (2) they entail greater number of technologies (e.g., the technologies of wing structure and wing configuration), and (3) there are greater number of subsystems in an airplane and more possible choices of combinations between them (e.g. number of engines and control instruments).

**Business Model Complexity**

Before discussing the complexity of business models, a brief review of literature on the nature of the business model concept would be useful. This concept has incited a growing amount of scholarly attention across different disciplines (Zott, Amit, & Massa,
(2011) in the past two decades, however, the use of business model term dates back to the scholarly works of Lang (1947) and Bellman et al. (1957). Numerous definitions have been proposed for a business model (for a comprehensive review, see Zott et al., 2011). In this study, we utilize Osterwalder and Pigneur’s (2010) definition of a business model as the logic by which a business creates, delivers, and captures value. Osterwalder et al. (2010) further propose that a business model is comprised of nine components including value proposition, customer segments, customer relationships, channels, revenue streams, cost structure, key activities, key resources, and key partnerships. The Business model is suggested to be a promising and central construct in entrepreneurship research. However, there exist a limited number of studies that have drawn on this construct in the entrepreneurship literature (e.g., Adam & George, 2011; Morris et al., 2005). We believe integrating the business model as a constituent part of opportunity, through a complexity lens, would be a beneficial endeavor in bringing this concept to the forefront of entrepreneurship research.

Adopting Osterwalder et al.’s (2010) conceptualization of a business model, we propose that Business Model Complexity of an opportunity is a function of number of choices in each component of the business model and the potential matching among these choices. In other words, a business model is more complex when an entrepreneur’s faces multiple choices in design of each business model component, and also when these choices are prone to combination and formation of multiple potential overall business model configurations. An illustrative example would be helpful in understanding this attribute. Compare an entrepreneur who is experimenting with a multisided platform business model that matches business travelers with working space providers. All other things being equal,
this entrepreneur is dealing with a more complex business model compared to an entrepreneur who owns and rents out a working space because of two main reasons. First, the former entrepreneur is targeting two distinct customer segments with their corresponding choice of components (e.g., channels, customer relationships, and revenue streams). Second, she is grappling with more business model hypotheses because she has multiple options for combining her design choices. For example, she has the option of charging travelers on a subscription basis and only interacting with them online, or charging them on a per use basis with a representative at the renter’s locations, or a combination of both.

Figure 1 shows the elements of Opportunity Complexity and their characteristics.

Revisiting Entrepreneurship Nexus through Opportunity Complexity
Having proposed a new perspective in studying the non-actor part of the entrepreneurial nexus, we now propose an exemplar theoretical framework in which the relationship between actor and opportunity is studied in the light of complexity variance in opportunities. In order to do so, we construct a model that enables us to reexamine some of the established theoretical linkages in entrepreneurship research. We draw on Ardichvili et al. (2003) who propose that prior knowledge, social ties, and personality characteristics are three main antecedents of opportunity identification. Among personality characteristics, we focus on creativity (as one of the suggested personality characteristics in the original model) because it is pertinent in complex situations (Barron, Dorwin, & Crutchfield, 1958).

These three factors have been the subject of numerous empirical inquiries in the literature (Bhagavatula, Elfring, Van Tilburg, & van de Bunt, 2010; DeTienne & Chandler, 2004; Dimov, 2007; Gruber, MacMillan, & Thompson, 2013; Shane, 2000; Shane, 2003; Shepherd & DeTienne, 2005; Singh et al., 1999; Ucbasaran, Westhead, & Wright, 2008). Hence, we believe reconsidering their effect in the presence of variance in opportunities will provide fruitful theoretical insights.

Creativity

Entrepreneurship research has acknowledged the role of creativity in opportunity identification (e.g., Dimov, 2007; Shane, 2003). It has been shown that the divergent thinking capabilities of creative individuals are influential on generating business ideas that form the basis of entrepreneurial opportunities (Gielnik, Frese, Graf, & Kampschulte, 2012). Here, we focus on the link between creativity and the level of complexity in identified opportunities. Previous research states that the creative thinking process enables a better
understanding of chaotic phenomena by producing a higher order simplistic version of phenomena that is more inclusive, more open, and broader (Montuori, 2003).

From a problem complexity standpoint, creative actors are more likely to be capable of tackling both the tacitness and lack of modularity in a specific problem. Being comfortable with fluid and uncertain situations (Barron et al., 1958), creative individuals are better able to make sense of under-defined and vague customer problems. Instead of being frightened, they get excited when facing complex problems and celebrate the challenging and puzzling nature of tackling the problems as they cognitively prefer the constant re-organizing of assumptions and givens in a situation. Also, due to their divergent thinking capacity, creative people are able to frame problems from multiple perspectives and get a bigger picture perspective of a given situation. This will increase their ability to gain a more comprehensive understanding of less modular problems because they are more likely to grasp the interrelationships between different sub-problems without having to break them down into smaller components.

Furthermore, creative people are better armed to explore and form complex solutions. They are able to generate several solution hypotheses based on different configurations of knowledge sets, activities and resources and systematically evaluate and refine them in direct contact with stakeholders including customers, suppliers, and employees thanks to their constant ability to reorganize their schema and, domain of activity (Barron, 1990). In other words, they are better able to co-create the solutions, test them, and methodically collect feedback to achieve combinations that create superior value for the entities involved.
Finally, prior research has shown that an entrepreneur’s cognition and sense-making are the most vital resources in the early stages of business model design (Sosna et al., 2010). As a result, considering the superior cognitive capability of creative individuals in simplifying situations (Montuori, 2003), it is more likely for them to utilize their mental models and navigate through different business model hypotheses and iteratively select the best.

In sum, we propose:

*Proposition 1: Individuals with higher levels of creativity are more likely to identify more complex opportunities.*

**Prior Knowledge**

The Austrian school of thought proposes that possession of different prior knowledge enables some individuals to spot entrepreneurial opportunities and not others (Hayek, 1945; Kirzner, 1997; Shane, 2000; Venkataraman, 1997). Prior knowledge can be categorized as knowledge of markets, knowledge of ways to serve markets, and knowledge of customer problems (Shane, 2000). Although, theory suggests that prior knowledge of specific domains makes individuals more prone to discover opportunities, a closer look at the empirical body of work on the link between prior knowledge and opportunity identification reveals some mixed findings. In fact Canavati, Libaers, Sarooghi, Burkemper, & Hornsby’s (2016) meta-analysis of this link suggests that the aggregate correlation between prior knowledge and opportunity identification is only 0.06. We argue that by incorporating complexity into the conceptualization of opportunity, we can portray a more accurate picture of prior knowledge-opportunity identification link and address the underlying reason for this weak correlation.
Individuals leverage their prior knowledge as a cognitive resource in the identification of opportunities. However, when the problems are well defined and explicit, solutions are fairly standard and established, and the business models entail few choices of components, the actors feel less need to draw on their heuristics and schemas, formed based on their prior experiences and training, to identify an optimal problem-solution pair embedded in a business model.

Actor’s prior knowledge becomes more influential as opportunities become more complex. First, delineating complex problems requires previous exposure to the problem situation (Gruber, MacMillan, & Thompson, 2013). Prior experience would help in clarifying the exact pain points, determining the right stakeholders, and elucidating the interdependence between the needs of those stakeholders. Second, prior knowledge provides the individual with an inventory of proven combinations of knowledge sets and resources that form “routines” (Cohen & Levinthal, 1990) and are useful in forming and evaluating solution hypotheses. Third, prior knowledge will facilitate experimenting with different business models. Actors can draw on their previous experiences to systematically gather market information to find the right choice of customer segments, channels, and revenue streams.

At very high levels of opportunity complexity, actors deal with unchartered problems, solution, and business models. In this situation, there is a great deal of uncertainty regarding the appropriate formulation of the problem and the optimal combination of resources and activities for solving the problem and the right business model. Hence, a very large number of previously unexplored hypotheses could be potentially formed about a
viable opportunity which lessens the effectiveness of prior knowledge in identification of opportunities.

In sum, we propose:

**Proposition 2:** There is an S-shape relationship between an individual’s level of prior knowledge and the complexity in the identified opportunities.

**Social Ties**

Social ties are channels for accessing new ideas or opportunities, resources, and information, and they expose entrepreneurs to a variety of opportunities to create products or services that address customer problems (Floyd & Wooldridge, 1999; Ozgen & Baron, 2007). Following our line of reasoning on the role of prior knowledge, we argue that social ties play a role in the opportunity identification process by providing entrepreneurs with external sources of knowledge. However, their effectiveness depends on the level of complexity in the opportunity under consideration.

At lower levels of complexity, it is highly likely that entrepreneurs deal with opportunities that require fewer capabilities to produce viable solutions. These capabilities have been internalized as a result of prior experience. Moreover, at this level, opportunities are well structured and explicit (Nonaka, 1994), so there is less need to leverage external knowledge domains to tap into an optimal opportunity.

However, as the level of complexity increases, higher levels of distant search is needed (Kogut & Zander, 1996; Nonaka, 1994; von Hippel, 2005) to acquire the capabilities to map problems, assemble solutions and select the optimal business models. In this regard, leveraging social ties like mentors and informal industry networks will be more crucial. Mentors can complement the entrepreneur’s capabilities by bringing in mental models that
are useful in interpreting multifaceted information required to identify complex opportunities (Ozgen & Baron, 2007). Also, informal industry networks such as past suppliers, previous customers, or partnering financial institutions provide entrepreneurs with the relevant information regarding the potential venture ideas (Johansson, 2000). This is especially important when individuals are dealing with more complex opportunities because the diversity of information is essential to making sense of opportunities. So, we propose:

Proposition 3: There is a positive relationship between an actor’s extent of social ties and the level of complexity in identified opportunities

Discussion and Implications

We revisited the opportunity construct through a complexity lens. More specifically, we proposed the construct of Opportunity Complexity to account for fundamental structural heterogeneity in entrepreneurial opportunities. Furthermore, we argued that creativity, prior knowledge and social ties are actor-enabled mechanisms in identifying opportunities which their effectiveness is contingent on the complexity level of the opportunities. We believe this study contributes to the literature in several ways.

First, drawing on and extending previous research, we proposed a conceptualization that introduces variance in opportunities at their very core. By focusing on the complexity of the essential elements that constitute an opportunity (i.e., problem; solution; and business model) we enable entrepreneurship scholars to leverage the rich body of literature on complexity (e.g., Phelan, 2015; Hsie et al., 2007), and business models (e.g., Morris et al., 2005) in their theorizing efforts about different aspects of the entrepreneurial opportunities including their antecedents and consequences.
Second, by offering the construct of opportunity complexity, we contribute to the nascent body of work on opportunity variance (see Table 1.1) and improve the existing conceptualization by disentangling the actor aspects from the non-actor aspects. This is an important step in precluding the conceptual and empirical confounding that have been impeding the rigorous theory building and testing around the concept of opportunities in entrepreneurship research (Davidsson, 2015). Focusing on the characteristics of problem, solution and business model as the core foundations that form the gestalt of opportunity enables the entrepreneurship scholars to portray a more objective account of entrepreneurial opportunities and consequently more rigorous knowledge accumulation for the field.

Third, a complexity perspective on opportunities extends the scope of opportunities to encompass ventures whose primary purpose is not to generate economic benefits, including social and non-profit ventures, because the proposed elements of opportunities are generalizable to non-economic settings. There is very scant work on the characteristics of social opportunities (e.g., Zahra, Rawhouser, Bhawe, & Neubaum, 2008). It serves entrepreneurship research well to leverage a consistent conceptualization of opportunities in different settings and treat the venture purpose as a boundary condition in the form of a separate construct. This will be beneficial in enhancing the legitimacy of entrepreneurship as a field by incorporating a cohesive and unified theoretical grounding in studying different types of ventures.

Fourth, by introducing a fundamental heterogeneity in opportunities, this study encourages more rigorous and systematic research on the antecedents and consequences of opportunity within the processes of identification and exploitation. So far, entrepreneurship research has been mainly treated these opportunity processes in a dichotomous (e.g., Arenius
& De Clercq, 2005) or subjective (e.g., Ozgen & Baron, 2007) manner. By specifying the characteristics of opportunities through a complexity lens, theory development efforts can become richer because explanation and outcomes of objective variance in focal constructs are the main promise of any rigorous theory building effort. We demonstrated an example of this type of theory development by focusing on creativity, prior knowledge, and social ties as three main antecedents of opportunity identification.

Finally, Opportunity Complexity is not limited to the study of individuals. It can be used in conjunctions with actors at different levels including teams and organizations. In this sense, Opportunity Complexity can contribute, for example, to emerging research streams on corporate entrepreneurship opportunities (e.g., Bloodgood, Hornsby, Burkemper, & Sarooghi, 2015).

**Future Research Directions**

This study opens several avenues for future theoretical and empirical inquiries. First, there are opportunities for construct development projects. We intentionally theorized opportunity complexity at an abstract level to allow for generalizability across different settings and levels. To facilitate empirical inquiries, scholars can draw on our conceptualization and develop instruments to measure opportunity complexity in a more tangible way in specific contexts. This instrument should measure opportunity complexity as a formative construct. In formative latent constructs, as opposed to reflective constructs, indicators determine the construct of interest. In other words, indicators are the causes that form the construct (Diamantopolous, Riefler, & Roth, 2008). In this sense, we propose to measure Opportunity Complexity as a formative construct shaped by variation in problem complexity, solution complexity, and business model complexity. Each of these dimensions
in turn could be measured by multiple items. We specifically recommend a formative first-order, reflective second-order or a Higher-order formative modeling measurement strategy (Jarvis, MacKenzie, & Podsakoff, 2003; Diamantopolous et al., 2008).

Second, incorporating complexity to study phenomenon of entrepreneurial opportunity introduces great possibilities to leverage methodologies like NK models within a fitness landscape approach (Kauffman & Weinberger, 1989) to study the dynamics of the entrepreneurial process. This approach has been widely used in recent years to mathematically investigate the interactive nature of complex systems in different areas of management studies (e.g., Frenken, 2006; Nickerson & Zenger, 2004). In these models $N$ denotes to number of elements in a system and $K$ represents the degree of interaction (interdependency) between the elements. The combination of these two parameters determines the configuration of the fitness landscape that can be either rugged or smooth based on the interconnectedness of the system’s elements. In the case of Opportunity Complexity, different landscapes can be constructed to model the complexity of the problem, solution, and business model. Then, simulation could be used to study the effect of different choices in the design space of an opportunity on the landscape configuration. This in turn can be used to determine the appropriate configuration of the problem, solution and business model regarding different levels of inputs available in a hypothesized venture setting.

Third, future research can empirically examine the propositions offered in this study. In this regard, the survey based research project could be facilitated by the development of instruments to measure Opportunity Complexity in line with existing measures of creativity, prior knowledge, and social ties. Furthermore, the Opportunity Complexity is prone to
manipulation in experimental settings. The use of conjoint designs will be specifically useful as respondents could be exposed to different levels of complexity in the form of different opportunity scenarios. This recommendation is in line with recent calls for more use of conjoint studies in entrepreneurship research (Shepherd, 2015).

Fourth, in this research we focused on effectiveness of a number of factors in the initial identification of opportunities. Future research can focus on the relationship between Opportunity Complexity and subsequent exploitation of opportunities. Insights from transaction cost economics could be employed to investigate different modes of organizing (market, hierarchy, and hybrid) based on the level of complexity in opportunities (Hsieh et al., 2007).

Finally, future research can examine how external enablers (Davidsson, 2015) such as market dynamics and technological regimes can determine the level of complexity in the opportunities identified by entrepreneurs.
Selected References


Gruber, M., MacMillan, I. C., & Thompson, J. D. (2013). Escaping the prior knowledge corridor: What shapes the number and variety of market opportunities identified before market entry of technology start-ups?. *Organization Science, 24*(1), 280-300.


Shaping interdisciplinary research paradigms:
The intersection of institutional logics and informal immigrant entrepreneurship across developing and advanced economies

Lutisha Vickerie
Abstract
An interdisciplinary research agenda that focuses more on real world perspective and current lived experiences of immigrant entrepreneurs can be achieved by examining the conceptual space where informal immigrant entrepreneurship and institutional theory scholarship merges. This paper deconstructs extant literature that link informal immigrant entrepreneurship and institutional theory across developing and advanced economic contexts. To clarify the theoretical direction of the literature streams, systematic research synthesis is employed and qualitative interviews using grounded theory analysis are conducted. Initial findings show the intersection of informal immigrant entrepreneurship and institutional theory is embraced more in pedagogic, than andragogic research.

Keywords: institutional theory, informality, immigrant entrepreneurship, pedagogy

EXECUTIVE SUMMARY
Examining the boundaries of the conceptual space where informal immigrant entrepreneurship and institutional theory scholarship merges meets the management field’s target of developing interdisciplinary research that can span multiple societal levels. Even though institutional theory and informal immigrant entrepreneurship can be found together in a narrow subset of research, they must be first deconstructed in separate literary contexts. Separation allows for understanding how each concept has rigorously developed definitions, variables, and measures. Further, the aggregation of constructs into themes and theoretical relationships that link institutional logics and informal immigrant entrepreneurship across developing and advanced economic contexts can be assessed. However, the merit of the theoretical direction of the literature streams when combined is ambiguous and requires methodical clarification.
To bolster my claims on the extant literature, I employ the evidence-based method of systematic research synthesis to describe and explore the true boundaries of theory development within literature that brings together institutional logics, informality and immigrant entrepreneurship. Using a small initial subset, I conducted a general search of the Academy of Management’s publications database, yielding 17 articles that included all of the terms “institutional logic”, “informal”, “immigrant”, and “entrepreneur”. I also conduct qualitative interviews using grounded theory analysis to understand the practical experiences of the informal immigrant entrepreneur. Based on the mechanisms and processes used within each article, initial findings reflect that amongst the management field’s top journals, the intersection of institutional logics and informal immigrant entrepreneurship is embraced in pedagogical research more than andragogic (practical or process-oriented) research.

I introduce propositions and implications that influence how mechanisms and processes are being used within this interdisciplinary space. The paper creates a bridge to entrepreneurship education that is useful for the field by connecting the institutional view on informal immigrant entrepreneurship to pedagogical approaches using unique case studies and dynamic training programs.

1. INTRODUCTION

The informal economy has gained fresh traction in development economics, representing at least half of the economic transactions that take place in a majority of countries (McGahan, 2012). With increases in the socio-economic impact of the informal sector came a necessary increase in research attention on its participants within the economic and sociological fields (De Soto, 1989; ILO, 1985; Leonard, 2000; World Bank, 1989). Although these fields have used entrepreneurship and organization theories to explain venture creation, operation and
performance in a variety of informal contexts, management research has moved rather cautiously forward. To encourage more interdisciplinary scholarship, the Academy of Management dedicated an entire conference to developing a more comprehensive research paradigm on the informal economy (Bruton, Ireland, & Ketchen, 2012).

Accordingly, this article critically examines the intersection of institutional logics, informality and immigrant entrepreneurship by assessing each literary stream’s conceptual boundaries across multiple societal levels. Much of the literature has practical outcomes, focusing on constructs and relationships influenced by entrepreneurship policy in developing or advanced economies and immigrant entrepreneur responses to their business environment (Min & Bozorgmehr, 2000). In particular, economic development in urban environments is often positively bolstered by the informal operations of immigrant entrepreneurs in ethnic enclaves (Volery, 2007). However, tax evasion and missed opportunities for business expansion are examples of the negative consequences that tend to overshadow any benefits informal immigrant entrepreneurs receive (Robinson & Hayes, 2012). Understanding the lived experiences of informal immigrant entrepreneurs means examining the mechanisms and processes that influence the behavior of immigrant entrepreneurs in various environments.

Although the narrative of the immigrant entrepreneur operating informally nicely frames the conversation for using institutional theory, particularly institutional logics, literature that combines all of the key concepts discussed thus far points in a different direction. Institutional logics are “socially constructed rules, norms and beliefs constituting field membership, role identities and patterns of appropriate conduct” (Greenwood & Hinings, 2006). Thus, institutional logics guide the way people, organizations, and society behaves. This is the practical context to which merging the institutional logic, immigrant entrepreneurship and informality literature
streams seem to fit well and test developed theory. Yet, when these research streams are researched together, rather than independently, the story they tell is very different. Furthermore, since the Academy of Management put forth its 2012 call for more interdisciplinary research with an informal sector agenda, where has the field gone? This article, therefore, pursues the following research questions:

*What is the current orientation of the top journals in management for interdisciplinary research on institutional theories, immigrant entrepreneurship and informality? What mechanisms are used by the top journals to signify their orientation?*

The purpose of this article is to build the knowledge base while identifying a productive agenda for future research. Here, I use systematic research synthesis as an evidence-based approach to management, which is a rather novel methodology in informal sector studies. I provide a review of extant literature on immigrant entrepreneurship, informality, and institutional theory to identify the scientific evidence available in each literature stream. I give special attention to the informal sector literature, by distinguishing the studies according to emerging or advanced economic contexts. I then discuss my systematic research synthesis, which analyzes the key mechanisms and phases extracted and descriptively summarized using 17 articles from Academy of Management publications. My initial findings lean towards a pedagogical orientation on embracing interdisciplinary research between institutional logics and informal immigrant entrepreneurship. This paper focuses on the broad deconstruction of the extant literature as a foundation for the systematic synthesis. Finally, to further advance such interdisciplinary research, I offer propositions that seek to build comparisons of entrepreneur characteristics and behaviors across different institutional environments; in particular, the differences created by the institutional contexts of developing versus advanced economies.
2. LITERATURE REVIEW

Immigrant entrepreneurship, institutional logics and informality are the key concepts in my research. While each field has developed over the last three decades, the literatures are not talking to one another. As such, this multidisciplinary literature review will present a broad overview describing these topics, which will help to inform my grounded theory analysis. During theory building research, including a broad range of extant literature is important when comparing emerging theories against conflicting and similar literature (Eisenhardt, 1989). Further, this review will aid in the meritorious assessment of the systematic empirical observations conducted and discussed in the methods and findings. To understand the true evidence of the story we have so far on formal and informal immigrant entrepreneurship, as well as building our accumulation of knowledge, the systematic research synthesis will be extremely valuable.

2.1 Informal Economy Literature, Thus Far

While much of the informal sector literature looks at the less developed country context, the motivations for transitioning from formal to informal, and vice versa, are similar for entrepreneurs in developed countries. Yet, entrepreneurs across both types of economies use informality to leverage social networks against unemployment and marginalization, positioning informality as a “social and historical process, rather than a separate sector or economy,” (Leonard, 2000). Difficulties posed by institutional factors in developed countries, such as zoning laws, hamper the processes relevant to business registrations. As an economist, Portes (1994) looked at excessive and burdensome government policies and laws, which nascent entrepreneurs assess before starting a business. Business registration difficulties and high tax costs also provide incentives to start a company in the informal sector in order to bypass
regulations (Grosh & Somolekae, 1996). Research also finds that while burdensome regulations decreases entrepreneurship rates, surprisingly administrative considerations that entrepreneurs assess when starting a business are found to be unrelated to the startup process (van Stel, Storey, & Thurik, 2007; van Stel & Stunnenberg, 2006). Further, informal self-employment is still on the rise even in countries that have made major adjustments to their business administrative policies and now provide incentives for formal registration (Webb, Tihanyi, Ireland, & Sirmon, 2009). Expansion of the informal sector even where institutional barriers decrease indicates that there must be other factors at work that influence the entrepreneur’s perceptions and decision making.

McGahan (2012) reviewed informal transactions in the field of management, which are primarily discussed through lens that analyze the boundaries of the firm using such theories as transaction cost, more recently extended and termed organizational economics (Argyres & Zenger, 2012; Williamson, 1975, 1985), property rights and governance (De Soto, 1989), the resource-based view (Godfrey, 2011; Penrose, 1959), stakeholder theory (Porter & Kramer, 2011; Prahalad, 2004), labor economics and capacity development (Baum & McGahan, 2012), disruptive technologies and creative processes (Bhattacharyya, Khor, McGahan, Dunne, Daar, & Singer, 2010; George, McGahan, & Prabhu, 2012), institutional entrepreneurship and reform (Greenwood & Suddaby, 2006; North, 1990; Rosser, Rosser, & Ahmed, 2000), and organization legitimacy (Godfrey, 2011; Webb et al., 2009).

Organizational behavior research on human resources have identified trust in the government and institutional system as an important motivational factor in entrepreneurial decision making, heavily influencing whether or not the entrepreneur chooses the informal sector over the formal sector (Maloney, 2004; Rosser et al., 2000). Mixing social and institutional theory, scholars have pointed to the rise of informal networks to provide legitimacy (North,
1990) and resources for firms operating in the informal sector (Khavul, Bruton, & Wood, 2009). However, firms in the informal sector have also been noted to attain legitimacy also by mimicking the standards set by formal firms (Godfrey, 2011). While the demand for informal products and services is high, processes that would help to increase the revenue growth of informal firms require formalization or “the adoption of regulatory frameworks” (McGahan, 2012).

Literature on the informal sector has identified various factors as motivation for firm owners to maintain informal operations. Amongst the factors are interdependence with the formal economy and conditions of the government, market and population, as well as geographic access, and job variety. In order to access low-wage labor populations and discounted markets, firms target certain locations, which also lead to a mixed clustering of both formal and informal firms (Sassen, 1994). When looking at the ways the regulated economy is intertwined with informality, formal firms and immigrant communities stand out as providing a major part of the demand for informal goods and services (Sassen, 1994).

2.2 Significance of the Informal Economy on Development

Extant literature captures the debate on whether the informal economy benefits country development. Notwithstanding the differing views of scholars, the effect of the informal economy on development actually depends on the dynamic interaction involving supply and demand factors. Development trends in emerging economies are significantly linked to entrepreneurship, which supply and demand factors drive. Thus, discussing how supply and demand factors operate within, and subsequently effect, the informal economy and development is important.
Dating back to the 1970s, the debate on the informal economy’s benefits to economic development was sparked by Hart’s (1973) article on informal employment in Ghana, which brought to the forefront the need for scholarly research that contrasted both the formal and informal sectors’ impact on development (Leonard, 2000). Liberals and international organizations argued for a beneficial economic impact of informal enterprises (ILO, 1985; De Soto, 1989; World Bank, 1989). Whereas, socialists garnered a more negative forecast regarding the inability of informal enterprises to increase economic development based on the restrictive nature of capitalist ideals (Portes and Sassen-Koob, 1987; Castells and Portes, 1989). To date, neither side has won the debate as both have empirically shown the positive and negative effects of the informal economy on development. However, the dominance of the informal economy, alongside formal sectors proves that informality is not going anywhere and requires more research as a result.

Development in economies that have a mix of formal and informal economic activity is driven by economic, political, and social factors, experiencing heterogeneity through varying levels. Economically, informal economy entrepreneurs often earn their living off of subsistence farming incomes, street or market trade, housing construction, or other personal service jobs (Blades, Ferreira, and Lugo, 2011). Politically, developing countries with large informal economies typically have weak central governments and either a lack of institutions or have ancient institutions that do not work efficiently for a number of reasons, including corruption (Meagher, 2007). The social conditions that plague the population include lack of social security and policies for professional safety standards (Blades et al., 2011). The lag in improvement in these three areas highlights the need for further study on the informal economy’s impact on development.
Informal economy heterogeneity is long acknowledged as affecting the way informal economies are defined. Exclusion or inclusion of certain factors from the definition of informal economy dictates how an informal sector’s impact on development is measured (Mead and Morrisson, 1996). Further, defining informality across multiple countries becomes harder based on heterogeneity within informal sectors (Mead and Morrisson, 1996). Informal sector heterogeneity is traditionally categorized according to performance and capital levels, expressed as a dichotomy (Hart, 1972). Studies that look at performance in West Africa’s informal economy group entrepreneurs according to top performers and survivalists categories (Grimm, Knorringa, and Lay, 2012). Heterogeneity in the West African informal sector has also looked at capital levels, returning interesting findings. Surprisingly, entrepreneurs are able to pull extraordinary marginal capital returns when they are using extremely low capital stock levels (Grimm et al., 2012). Grimm, Knorringa, and Lay (2012) expand the scope of informal economy heterogeneity studies to include another group of entrepreneurs, which they aptly name constrained gazelles. Identifying the groups that factor into the heterogeneity within informality helps create more targeted informal sector policy measures according to the three groups of entrepreneurs and their different earning potentials.

Another important factor to tease out when discussing informal sectors is the nature of the economy the informal sector is located in, meaning whether you are dealing with a developed versus a developing economy. The economy’s nature will also be a cause of informal sector heterogeneity. However, while there is much heterogeneity between developed and developing informal economies, entrepreneurs in both economies similarly use informality as a coping strategy (Leonard, 2000). Specifically, entrepreneurs across both types of economies use informality to leverage social networks against unemployment and marginalization, positioning
informality as a “social and historical process, rather than a separate sector or economy,” (Leonard, 2000, p. 1082).

Regulatory and enforcement issues around supply-side and demand-side factors tend to negatively affect economic development (Palmade, 2005). Economic development is supported by social policies that advance demand-side factors, whereas supply-side policies are more likely to lead to market distortions (Palmade, 2005). Looking first on supply-side factors, policy studies normally focus on supply variables such as education, training, savings, and credit (Thomas, 1995). However, informal economy studies reviewing supply-side factors focus mostly on the labor supply mobility (Maloney, 2004; Funkhouser, 1997). Labor mobility between sectors, especially the formal and informal sectors, is important because both sectors pull from the same labor supply, yet have differing demands for employment (Galiani & Weinschelbaum, 2012). As such, where employment demands for the formal sector become too stringent, the informal sector’s ability to take in the unemployed is seen as beneficial (Leonard, 2000; ILO, 1985). Yet, it is the formally employed workers that are found to engage in just as much informal activity as the unemployed workers (Leonard, 2000).

2.3 Informal Sector Concepts for Emerging and Advanced Economies

The informal sector’s impact on economic and social conditions differs according to the economy’s level of development (Schneider, Buehn, and Montenegro, 2010). As a result of the informal sector’s link to development, the largest informal sectors are found in emerging economies.¹ Emerging economies are defined as,

“low-income, rapid-growth countries using economic liberalization as their primary engine of growth . . . [and] fall into two groups: developing countries in Asia, Latin America, Africa, and the Middle East and transition economies in the former Soviet Union and China” (Hoskisson, Eden, Lau, and Wright, 2000).

¹ Used interchangeably with developing economies.
Emerging economies are marked by difficulties with establishing strong market institutions, high levels of risk and uncertainty, inadequate infrastructures, lack of skilled labor, burdensome market regulations, and insufficient capital markets (Hoskisson, et al., 2000). Such emerging economy challenges tend to push low-income enterprises out of the formal sector and into informality in order to remain sustainable (London & Hart, 2004). According to the World Bank (2013), the informal sector represents between 1/5 – 4/5 of non-agricultural employment in developing economies. As of 2007, emerging economies in the Sub-Saharan Africa, Europe and Central Asia regions had the largest informal sectors (Schneider, Buehn, & Montenegro, 2010).

On the opposite end of the economic spectrum, characteristics of developed economies include strong institutions, increased regulations, larger pools of skilled labor, and modern infrastructure and technology systems. In 2010, developed economies accounted for 65.8% of nominal GDP worldwide (IMF, 2011). Of that amount, about 18% of GDP represents the informal economy (Schneider, et al., 2010).

Economic and social impact studies on the informal sector have been very narrow in scope. Most use emerging markets as the field of study. Positive impacts of the informal sector on emerging economies are seen in job creation and generation of income (World Bank, 2013). However, the social impact of the informal sector in emerging economies is often negatively reflected in concerns of health equity and health-associated expenditures from occupational injuries and diseases (Nastiti, Prabaharyaka, Roosmini, & Kunaefi, 2012). Since informal enterprises avoid the costs of occupational insurance and other forms of social protection guaranteed by national labor codes, informal workers bear the brunt of occupational injuries in the form of healthcare costs and even lost wages.
The informal sector also has a significant economic and political impacts in developed economies. Particularly in developed economies, the size of the informal sector is significantly impacted by regulations, the unemployment rate, and improved economic conditions (Schneider, et al., 2010). Other studies that look at established markets mostly explore issues of criminality within the informal sector. A smaller portion of the literature looks at the dichotomy between the positive innovation arising from informal firms in developing countries and how those innovations disrupt established firms in developed countries (McGahan, 2012).

The negative impact of informality is more easily seen in developed economies. Institutional structures are undermined by informal sector operations. Short term benefits will eventually be outweighed by long run harm to existing institutions. For developing economies, the informal sector is found to stagnate long term growth and prevents these countries from reaching their true economic potential. A developing country’s economic heights can be limited by negative externalities and distortions created by large informal sectors (Ordóñez, 2014) (Leal Ordóñez, 2014). In one particular example, Macias and Cazzavillan (2009) present the evolution of Mexico’s informal economy, concluding that the failure of government policy to reign in the informal sector has left a large segment of enterprises on the unproductive fringe of the economy. Taking their conclusion one step further by looking at the effects of taxation policy enforcement, Leal Ordóñez’s (2014) study found that Mexico’s labor productivity and output under complete enforcement would increase by 19% in a baseline model and by 34% in a monopolistic competition model.

The informal sector in many emerging markets is on its way to spiraling out of control. In emerging economies, the informal sector, thus far, has proven to have a more beneficial impact than harmful one. As a result of its beneficial impact, scholars support policies aimed at
providing incentives to conduct business in the informal sector, rather than policies with punitive implications. However, these incentives will only lead to more entrepreneurs starting businesses in informal economy, rather than adhering to regulations. Governments will have a very difficult time closing the flood gates once it has been opened to get entrepreneurs to make a switch to more formalized operations.

2.3.1 Processes of Informal Entrepreneurship. Entrepreneurship theory on the informal sector mainly assesses the process of entrepreneurship and how different factors regarding the entrepreneur can influence the process. Entrepreneurship theory is often concerned with performance or growth measures as positive outcomes. However, literature that looks at informal entrepreneurship dissects the process as contributing to a more negative side of entrepreneurship. When viewed in a negative light, the informal economy conjures “images of illegality, shadowiness, exploitation, evasion and lawlessness” (Khavul et al., 2009). Portes and his coauthors point to the negative side of informal entrepreneurship as symptoms of ineffective governance and poverty (Castells & Portes, 1989; Portes & Haller, 2005). Whereas, Smallbone and Welter (2001) and Szelenyi (1988) highlight the good in the negative and reference the informal sector as the “site of, as well as seedbed for, entrepreneurship” (Williams, 2009). Statistics further verify that a large amount of economic transactions happen in the informal sector (Webb et al., 2009).

2.4 Institutional Theory: Organization Legitimacy & Institutional Logics

Organizational legitimacy has two main streams – the strategic and institutional approaches (Suchman, 1995). The strategic approach uses an individual lens to assess how organizations use symbols to gain societal acquiescence around organizational actions. Through a broader lens, the institutional approach examines the societal pressures created across
particular sectors and result from the structure of society itself. Both approaches are further subdivided into three types of legitimacy – (a) “legitimacy grounded in pragmatic assessments of stakeholder relations, (b) legitimacy grounded in normative evaluations of moral propriety, and (c) legitimacy grounded in cognitive definitions of appropriateness and interpretability” (Suchman, 1995).

The definition of organizational legitimacy has evolved over the years from evaluative and purpose-oriented to cognitive-based and mechanistic perspectives. In the early 1970s, legitimacy focused on justification of an organization’s existence (Maurer, 1971). As the organization’s societal role became increasingly dynamic, so also did the evaluation of organizational legitimacy evolve as a match-up between social values with the organization’s purposeful actions and norms of the larger society (Dowling & Pfeffer, 1975). Assessing societal norms through a cognitive perspective, Meyer and Scott (1983) based legitimacy on a match between organizational environments with culture, meant to increase understanding of the organization’s existence. However, Suchman’s (1995) definition of organizational legitimacy achieves inclusivity by pulling in both the evaluative and cognitive aspects, as well existence justifications and societal norms. According to Suchman (1995),

> Legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (p. 574).

Suchman (1995) explains that excused departures from accepted norms, where organizations maintain their legitimacy, are either unique, go unnoticed, or are not publicly disapproved.

The reasons and methods for seeking organizational legitimacy also vary. Some organizations seek legitimacy to ensure continuity, while others need legitimacy to bolster credibility (Suchman, 1995). Continuity is gained through organizational replication, which
happens naturally once the organization becomes embedded in its surrounding cultural institutions (Suchman, 1995). Credibility is gained through a consistent collective understanding of the organization’s actions and rationale for taking certain actions (Jepperson, 1991). Continuity and credibility, however, are mutually reinforcing since resources that support continuity are more likely to flow towards an organization that has gained societal acceptance and an organization with sustainable resources is more likely to garner societal credibility (Parsons, 1960). Despite the mutually reinforcing nature of the reasons for seeking organizational legitimacy, the methods employed, passive or active support, are very distinct. Passive support only needs low legitimation as the organization is avoiding societal attention, rather than actively seeking societal approval, which requires a higher level of legitimation (Suchman, 1995).

2.4.1 Examining Organizational Legitimacy in the Informal Economy. Legitimation in the informal economy is used as both a strategic resource and as institutional belief systems (Suchman, 1995), although much of the existing literature focuses heavily on the latter. Institutional theories examining informality look at means versus ends; in other words, whether the informality is a part of the operational process or is the end itself (Webb et al., 2009).

The existence of the informal organization points to the fact that there is unresolved tension between formal and informal institutions. Webb and his colleagues (2009) state that,

Formal institutions refer to laws, regulations, and their supporting apparatuses (enforcement agencies, regulatory bodies, etc.)…informal institutions refer to norms, values, and beliefs that define socially acceptable behavior.

La Porta and Shleifer (2008) understood that the scope of institutional issues faced by organizations depends on the type of organization and where the organization is positioned. Organizations that align themselves with formal institutions are assessed using questions of
legality; whereas, organizations operating under informal institutions are assessed using questions of legitimacy (Webb et al., 2009). Perceptions of legality and enforcement mechanisms create institutional boundaries (Suchman, Steward, & Westfall, 2001), both formal and informal, with which entrepreneurs operating in the informal economy conform (Aldrich & Baker, 2001). The perceptions of legitimacy that guide informal organizations conflict with the prescriptions offered by formal institutions for carrying out activities via the entrepreneurial process, causing incongruence (Webb et al., 2009).

The incongruence between informal organizations and formal institutions and inconsistent enforcement of formal mechanisms affects entrepreneurial activity (Webb et al., 2009). Implications for the entrepreneurial process that flow specifically from institutional theory center on the impact of diverse policy changes and the effect of bureaucracy (Webb, Bruton, Tihanyi, & Ireland, 2013). Policy changes primarily create legitimate conditions that actually encourage informality (Webb et al., 2013). An uneven or ineffective change in policy across a region leads to enforcement in some higher income areas over others (Bromley, 1978; Stoller, 1996). Institutional polycentricity also presents itself as a condition that creates opportunities for informality since it is difficult for various government or institutional centers across one region to be in one accord in terms of their perspectives on formality (Ostrom, 2005; Ostrom, 1999). With inconsistent government or institutional centers, avoidance of taxes becomes a prevalent incentive for informality in developing economies than mature ones where there is stronger contract enforcement (Quintin, 2008). Inconsistent government also points to the harmful effect that bureaucracy has on entrepreneurship, particularly in developing countries with large informal sectors. The biggest harm comes from high costs and lengthy time requirements imposed by government regulation, involvement of numerous agencies (Portes & Haller, 2005),
and drawn-out application processes to obtain resources, such as commercial land (Grosh & Somolekae, 1996). Although policy changes may happen quickly, the underlying norms and values are slow to change and so are informal institutions.

### 2.4.2 Institutional Pressures and Decision Making

Entrepreneurial actions are guided by a variety of institutions, including labor institutions, economic/financial institutions, socio-cultural institutions, and political institutions. The various institutions simultaneously at work create pressures on informal economy entrepreneurs to act according to a set of norms, which exist outside of the norms prescribed by government. Accordingly, institutional theory gives a lot of importance to the agency of the informal firm’s management team for influencing the organization’s fit with the internal and external institutional environment based on structural choices. In their review of institutional work, Lawrence and Suddaby (2006) highlight the importance of institutional entrepreneurship, which “focuses attention on the manner in which interested actors work to influence their institutional contexts through [various] strategies,” such as regulatory change and structural reorganization. Looking at one set of interested actors, the organizational structure chosen by the entrepreneurial management team lays the path towards efficiency based on the internal and external operating institutional environment. As one of the insights gained from neo-institutionalized theory, Greenwood and Hinings (2006), note that “social expectations and [conditions] of legitimacy” place serious constraints on the way the organization chooses its structure, as well as the type of structure it chooses. Addressing social expectations and legitimacy maintenance, the true measure of organizational efficiency starts with identifying the organization’s primary mandate as a standard for assessing whether the way the organization is functioning efficiently fulfills the mandate and provides environmental fit. As suggested by Pugh and the Aston Group, one must start this assessment internally and with
the most influential roles within the organization, by using the environmental context to determine concentration of authority within and around the organization (Pugh & Hickson, 2007). Although this stream of management study is a bit outdated, it provides a good starting point to assess the institutional constraints placed on the informal entrepreneur’s decision making and how those decisions affects the organization’s legitimacy.

Certainly, then, the managerial decision-making process is influenced by the types of decisions the organization faces in the institutional environment. Turning to Lawrence and Lorsch’s (1969) viewpoint of the organization as a tool to acquire better solutions to problems faced in the environment, the external environment often presents the organization with unexpected problems, which the management team, as well as, other members in the organization, must be able to readily address. The steps taken to maintain an organization within its current institutional environment require on-going work by the authorized agents needed to “carry on institutional routines or diverting resources (i.e. taxation) required to ensure institutional survival” (Lawrence & Suddaby, 2006). In order to respond effectively, management and other members usually operationalize into a continuous process the type of steps necessary to resolve any issues that arise, such as the need to seek information about the environmental context. Describing the organization as a sense-making system, Aldrich and Ruef (2006) cite Weick (1995), who initiates organizational function as a system that recreates its self-perception to manage its external and internal environment in the most efficient way. Aldrich and Ruef (2006) also state that “[i]n addition to knowledge needed to perform their tasks, members also seek information for self-enhancing reasons, such as to confirm that they have taken the correct action, or that others positively evaluate them (Ridgeway, Boyle, Kuipers, & Robinson, 1998).” Such information seeking can be deemed as institutional work that enables the
maintenance of the rules that the organization operates under. For the informal firm, the type of institutional work that the managerial team will undertake within their decision-making processes will seek to manage unexpected problems posed by formal regulations, which their unregistered status attempts to evade, as well as facilitate conformity with acceptable standards.

3. METHODOLOGY & FINDINGS

I use two methods to understand the two conversations going on – the conversation with immigrant entrepreneurs and the conversation with the literature at the intersection of institutional logics, immigrant entrepreneurship, and informality. I employ the evidence-based method of systematic research synthesis to describe and explore the true boundaries of theory development within literature that brings together institutional logics, informality and immigrant entrepreneurship (Rousseau, Manning, & Denver, 2008). Using a small initial subset, I conducted a general search of the Academy of Management’s publications database, yielding 17 articles that included all of the terms “institutional logic”, “informal”, “immigrant”, and “entrepreneur” (see Table 1). One primary observation is that the majority of the articles, specifically 8 out of 17 were published to Academy of Management Learning & Education (AMLE), which is focused on highlighting pedagogical approaches. Also, the citation record for AMLE was the second highest out of all the publications.

<table>
<thead>
<tr>
<th>Publication</th>
<th>Citation Record*</th>
<th>Amount of Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Academy of Management Annals</td>
<td>980</td>
<td>3</td>
</tr>
<tr>
<td>Academy of Management Journal</td>
<td>35</td>
<td>2</td>
</tr>
<tr>
<td>Academy of Management Learning &amp; Education</td>
<td><strong>410</strong></td>
<td><strong>8</strong></td>
</tr>
<tr>
<td>Academy of Management Perspectives</td>
<td>86</td>
<td>2</td>
</tr>
<tr>
<td>Academy of Management Review</td>
<td>312</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 1. *Google scholar citation record for focal articles.

Some of the major processes of the phenomenon identified from the initial systematic synthesis are transitional events; entering strategies that led to institutional changes; processes
for preventing risky strategies backed by legitimate logics; specific occupational and professional processes; processes power of determination; processes explanatory uses; and key activities in the focal process. Some of the major mechanisms pulled from the initial systematic synthesis are as follows: aggregation of concepts; framework explanations for phenomenon; judgments on phenomenon; subordination of processes to outcomes; correlating phenomenon to ancillary outcomes and contexts; transferring meaning of concepts to phenomenon; key conditions/predictors identified; distinguishing features of the framework; and conceptual boundaries. Based on the mechanisms and processes used within each article, initial findings reflect that amongst the management field’s top journals, the intersection of institutional logics and informal immigrant entrepreneurship is embraced in pedagogical research more than andragogic (practical or process-oriented) research.

I also conducted qualitative interviews on African and Caribbean immigrant entrepreneurs using grounded theory analysis to understand the practical experiences of the informal immigrant entrepreneur. Two major initial themes diverged from what the extant literature identified as influential mechanisms explaining the choices of informal immigrant entrepreneurs. The first is that most of the informal operations are used to attain short-term opportunities, not just out of necessity. Take, for instance, the following quote:

“What do the informal entrepreneurs do?...do they actually have a main job?...it’s mostly blue-collar employees and blue-collared employees are not scared of hard work...Now, why it’s so prevalent in our society is that the people that are in informal businesses are these people that believe in having a side hustle - making some money from your gifts or talents. They don't want to see the big picture. Ask (your other participants) why they're
not opening a full-fledged business. It's usually that they don't want that extra problem. They just want to pay their bills and have some extra money for a nice [shoe].”

This negates the idea that the majority of informal entrepreneurs are necessity entrepreneurs, as purported in extant literature. Further, my initial findings introduce the idea of informal immigrant entrepreneurs avoiding full assimilation into their host environment. The following quote exemplifies this:

“It's not an empire-building thing they're looking for, because most of them are actually building an empire back home. They don't plan to stay here forever. They don't plan to retire, live here, and be shoved in a nursing home...Whatever it is they're doing here, they're taking their money back home to build a nice house and start a certain business. It could be selling or trading, but they're usually not trying to live here. Once you open a company, you go legit – for lack of a better word - you realize that you're really in. This is it. You have to follow through. Your kids will grow, and then, you have to follow through. Basically you're here. You're kind of stuck here. They don't want to do that.”

This quote indicates a mechanism and process at work for the informal immigrant entrepreneur that is more than just supporting family back home, which is a principle that the immigrant entrepreneurship literature identifies. These raise questions such as how long does it take for home country logics to assimilate to the logics of the host country? Also, how do informal immigrant entrepreneurs transition to the formal sector if their host country is not where their institutional logics began or currently reside? The next section will discuss propositions for advancing pedagogical approaches to answering these questions.

4. IMPLICATIONS FOR FUTURE RESEARCH & CONCLUSIONS

The entrepreneurial process in the informal economy tends to be used as a coping mechanism and a tool to exploit legitimate opportunities where one otherwise would not have
had the means. The entrepreneurial process includes “entrepreneurial alertness, opportunity recognition, opportunity exploitation, and decisions concerning growth” as the usual stages that entrepreneurs go through when they are trying to grow their business (Webb et al., 2009). The transformations in business activity that may occur within each of these stages will look different between necessity entrepreneurs, who normally do not seek growth, and opportunity entrepreneurs, who are more growth-oriented. Institutions set the boundaries between where formal business activities end and informal, but legitimate business activity begins (Webb et al., 2009). Volery (2007), citing Rath and Kloosterman (2002), characterizes the use of informality as a competitive strategy triggered by a great “temptation to apply informal practices with respect to taxes, labor regulations, minimum wages and employing children and immigrant workers without documents.” When making decisions concerning growth, the entrepreneurial process is key to the informal entrepreneur as it helps them navigate an institutional environment that lacks necessary support mechanisms.

**Proposition 1a.** Qualitative studies that track the narratives of informal entrepreneurs across different contextual environments, including advanced versus developing markets are more likely to capture nuances in the entrepreneurial process.

**Proposition 1b.** Creating typologies that match types and characteristics of informal entrepreneurs according to institutional context will build strong frameworks for explaining any variations in the entrepreneurial process used by informal entrepreneurs.

**Proposition 2.** Using the narratives and typologies will enable scholars to develop a pedagogical continuum along which informal entrepreneurs move, integrating a nuanced analysis of their status of formality, type of entrepreneurial activity, kind of business operated, industry sector and demographic characteristics.
4.1 Impact of Institutional Pressures on the Informal Economy

Much of the informal economy literature that references institutions base their assumptions on the rules, norms, and regulations that guide the actions of entrepreneurs located in the informal economy. The informal entrepreneur’s decision-making is heavily influenced by the external environment, in particular the social and economic context, in which organizations are embedded. The surrounding external environment holds significant institutional paradigms that provide acceptable norms for organizational structure (Greenwood & Hinings, 2006). The acceptable forms of organizational structure and behavior are defined by ‘institutional logics,’ which are “socially constructed rules, norms and beliefs constituting field membership, role identities and patterns of appropriate conduct” (Greenwood & Hinings, 2006). There is not much literature exploring institutional logics that support the formation, sustainability and growth of organizations in the informal economy (Bruton et al., 2012). According to institutional logics, organizations are formed as systems that underpin the social and cultural interests of its stakeholders and have multiple forms for which effectiveness in meeting the needs of stakeholders depends on the organization’s contextual fit (Greenwood & Hinings, 2006). Further, institutional logics provide guidelines through cognitive, normative, and regulatory processes that characterize how stakeholders interpret the organization’s internal and external context and define the extent of legitimate conduct (Greenwood & Hinings, 2006). Thus, understanding institutional logics is critical to examining the legitimacy of entrepreneurial decisions to position organizations in the informal sector.

Proposition 3. Researchers should use case studies to identify stakeholders critical to the informal entrepreneur’s context and assess the institutional logics that guide the entrepreneurship policies that can affect their business operations.
Informal economy entrepreneurs in the developing world are also prompted by the lack of institutions, framing the formation of informal business also as a reaction to market failure (Granovetter, 1995). With market failures as the catalyst of change, creating the informal business as a new organizational form, the dilemma of how these forms gain legitimacy through the process of institutionalization must be addressed. Developed by (Tolbert & Zucker, 1983; Tolbert & Zucker, 1996), this model of change contained within institutional theory describes a three stage process of pre-institutionalization, semi-institutionalization, and institutionalization (Greenwood & Hinings, 2006). Addressing pre-institutionalization as habitualization, Greenwood and Hinings affirm that in the first stage organizations are not obligated to follow new functional behaviors, which emerged in response to a specific problem. Over time and with the spread of knowledge that a new form exists, organizations objectify the value of the form through social consensus. The objectification experienced in the second stage leads to increased adoption rates by other organizations, which mimic successful forms (Greenwood & Hinings, 2006). The authors state that semi-institutionalization eventually results with the rise of cognitive legitimacy, as the incentives to adopt the new form shifts from probability of success to more normative and appropriate organizational behavior. Nicknamed sedimentation, the final stage of institutionalization is achieved when the organizational form has spread globally and a particular form of organization has been overlooked (Greenwood & Hinings, 2006). At this point, the possibility for change in the organizational field still remains. However, organizational change would probably need a major shift in the external and internal context.

While the stages of institutionalization are intuitive, the need for a major environmental shift to facilitate further change limits the application of Tolbert and Zucker’s framework. However, as it explains convergent change, the process of change within institutional theory can
be seen in processes that led to the rise of the informal economy, as a division from the formal sector.

*Proposition 4a.* Using the process of institutionalization will provide an unlikely foundation to explore potential pathways to creating change in informal entrepreneurs’ choice of formality.

*Proposition 4b.* Conducting a grounded theory study is more likely to identify the sources of consensus during the institutionalization process for informal firms. This is important for describing how informal sectors are replicated globally.

*Proposition 4c.* Under the process of institutionalization, effective change within the informal economy is more likely when there are conditions that affect the organization’s fit with some aspect of its environment, reflected by the pedagogical continuum mentioned above.

*Proposition 4d.* Use of qualitative methods to track processes of isomorphism in the informal economy will strengthen scholarly understanding of how entrepreneurial sense-making leads to conformity and legitimates the informal organization’s chance of survival.

My review of these fields is intended to identify relevant constructs to be used during future research. A bridge to entrepreneurship education is also useful for the field by connecting the institutional view on informal entrepreneurship to pedagogical approaches using unique case studies and dynamic training programs. To advance pedagogical approaches in entrepreneurship education, scholars should turn their attention to developing case studies of informal organizations as legitimate members of the business community. Teaching with the case study
methodology on informal entrepreneurship will help plant seeds of understanding in future managers, enterprise owners and global leaders at both the undergraduate and graduate levels.

Implementing dynamic training programs that use a two-tiered model of addressing both informal entrepreneurs and government agencies that work with them is important. Such requires that scholars recognize that the informal entrepreneur is well versed I their business enclave language, but must learn the language that gets them access to resources and support, both from the government and other types of venture capital. Conversely, the government must recognize that informal entrepreneurs are a special subgroup, many of which are immigrants in urban contexts. As such, the government needs to utilize specialized approaches that address their unique background and traditional methods for conducting business that address their unique background.

**Works Cited**


Saudi Arabian Female Entrepreneurs: Challenges and Success Attributes

Contributors:

1. Rahatullah, M. K, (Muhammad Rahatullah Khan)
   Director Business Innovation and Entrepreneurship Centre
   Associate Professor - Entrepreneurship and Management
   Effat University - Jeddah – Saudi Arabia

2. Norean R. Sharpe, Ph.D.
   Dean and Professor of Decision Sciences
   The Peter J. Tobin College of Business
   St. John’s University
   New York, NY
   USA

Correspondence Email

mkhan@effatuniversity.edu.sa

Abstract

The scholarly contributions apprising values and motivations of female entrepreneurs - whether it is work, life or family values - and factors that drive them to start businesses, are lacking, as noted by GEM, 2011; and MR Khan, 2013a. Even less is the information regarding Saudi Arabian females who are joining the Saudi entrepreneurial workforce to shape their economy and society. This exploratory study investigates female startup dynamics, antecedents, values, motivations, triggers, and effects, as well as the role of society, in propelling female startups in the Kingdom from different perspectives. Our study shows that various taboos attached to working outside the home are being shattered and that families and husbands are more cooperative in supporting female startups. A number of issues hinder the growth and development of these startups and opportunities are being explored. The entrepreneurship ecosystem can continue to benefit from stakeholder intervention and assistance at strategic levels of the entrepreneurial process and we provide recommendations.

Key words

Women Startups, Saudi Arabia, Entrepreneurship Ecosystem
Saudi Arabian Female Start-ups Challenges and Success Attributes

Introduction

There is general agreement among management practitioners and researchers that successful new ventures contribute to employment, political and social stability, innovation, and competition (Thurik & Wennekers, 2004; Zedtwitz, 2003; Hoffman, et al. 1998; and Dunkelberg, 1995). Similarly, the success of small and medium enterprises (SME’s) is also largely attributed to entrepreneurial activities (Dyer and Ha-Brookshire, 2008). As Zimmerman (2007) states, entrepreneurship is the "recognition or creation of an opportunity, coupled with action by an individual or group of individuals, to form a social, intrapreneurial, lifestyle, middle-market, or highly-liquid venture."

Entrepreneurship has also become a defining business trend in many countries. We know that entrepreneurship is most successful in an ecosystem where it is supported at both the strategic level (by governmental organizations) and the institutional level (MR Khan, 2013a). The long list of entrepreneurs world-wide now contains a sizable contingent of women (Dechant and Asya, 2005). As a result, research into the pathways of entrepreneurship as a general phenomenon, as well as a career option for women, has flourished in recent years (see, for example, Dechant and Al-Lamky, 2005; Kelly, et al, 2013). However, very little of this research has focused on female entrepreneurs in Arab countries, where now private enterprises (SME’s and entrepreneurial ventures) are viewed as a way for these nations to reduce their reliance on oil and dependence on an expatriate workforce (MR Khan, 2013b).

Morris (2001, pp vi) maintains that, "entrepreneurship is economic development is entrepreneurship." Developing and transitional economies, in particular, count on small business enterprise to stimulate economic growth, replace crumbling state-owned organizations and create job opportunities (Mazzarol et al., 1999). A more recent United Nations report points out that the deep and complex social and economic problems in Arab countries would benefit from the development of the small business sector (Fergany, 2002).

Many authors acknowledge that women entrepreneurs are important for the development of the small business sector. They also argue that women entrepreneurs can be instrumental in developing emerging economies. However, it is noticed that, unlike developed countries, there is a lack of studies that can be used to assess the experience of women entrepreneurs in Arab countries – especially Saudi Arabia. One exception is the research conducted by Dechant and Al-Lamky (2003), who employed semi-structured interviews to collect information on the background of Arab female entrepreneurs. Their research explored womens’ motivation to become entrepreneurs, their experience as entrepreneurs, and what problems confronted them as entrepreneurs in Bahrain and Oman. There was also a study conducted to understand women entrepreneurship in UAE and Saudi Arabia (Al Lamky 2005). However, the number of studies and the context of the research on Arab women has been limited.

Studies on Women Entrepreneurship in the Arab Region

The literature has often ignored the role of values in determining the choices of women entrepreneurs. Studies such as Begley and Boyd (1987) and Fagenson (1993), asserted that women join the work force out of a need for achievement and respect in society. More recent studies show that a major factor influencing women entrepreneurs is the level of constraints for women in the workforce, as suggested by Welter and Smallbone (2003) and Aidis et al, (2005). In some countries women have no access to capital or bank loans, while men have this advantage (Weeks, 2009).
Education and Employment

A recent report from the World Bank (2012) analyzed data from over 5000 companies in the Middle East and found that women owned approximately 13% of all firms and of these female-owned firms, only 8% were micro firms (with < 10 employees), while over 30% had more than 250 employees. The countries with the greatest percentage of “large” female-owned firms were Egypt, Morocco, and Saudi Arabia. The World Bank also found that female-owned firms hired more workers in Egypt, Jordan, Saudi Arabia and Gaza and the West Bank – with women composing a larger proportion of the employees at female-owned firms.

There appears to be a relationship between education and entrepreneurial activity. The 2012 GEM Report on women entrepreneurs demonstrated that in most regions, women entrepreneurs are more likely to have post-secondary education than women who are not entrepreneurs (30% vs. 26% for MENA/Mid-Asia) and more likely than male entrepreneurs (30% vs. 26% for MENA/Mid-Asia). For a comparison, 70% of female entrepreneurs in the U.S. and 55% in Israel have a post-secondary degree (Kelly et al, 2013). This agrees with the prior work of Mark et al. (2006) who found that the average level of education among women entrepreneurs in developed countries was higher than their counterparts in developing countries, including Arab nations. Much earlier studies, such as Gartner, 1988; Reynolds and White, 1997; and Aldrich et al. 1998 had been inconsistent about education and business ownership. Sharpe and Schroeder (2016) analyzed data from the World Bank and found that unemployment among women in the Middle East is relatively high, although it differs by country; it has been lower over the past five years in Lebanon, Israel, and Qatar (2-12%), compared to Egypt, Saudi Arabia, and Jordan (14 – 28%). These unemployment rates arise from numerous challenges that women face in the Middle East, as it is well documented that the perception of women outside the home varies by country and culture. These perceptions combined with the restrictions for women in banking and ownership make starting companies more difficult for women than for men in the Arab region.

Culture and Women Entrepreneurship in Arab Countries

Previous studies have revealed that culture is an important factor used to explain variations in entrepreneurship among societies (Cornwall, 1998; Wennekers et al., 2001; Stewart et al., 2003; and Dechant and Al-Lamky, 2005). In Arab countries, in particular, women participation in the labor force is influenced by culture, as well as by Islamic principles. The Dechant and Al-Lamky (2005) study pointed to some cultural practices that might prevent women from conducting their business as compared to men.

Nilufer’s (2001) work on socio-cultural factors in developing countries showed that there is a social influence on women's decision to become an entrepreneur. Such socio-cultural factors could be religious values, ethnic diversity and marital status. However, Carswell and Rolland (2004) did not find any relationship between socio-cultural factors, such as religious values, ethnic diversity, and the reduction in business start-up rate. On the other hand, Salehi-Isfahani (2000) noticed that married women in developing countries are less likely to participate in the country's labor force. She also found that there is limited women participation in the labor force owing to social norms where married women participation is less than single or widowed women. Her study established that married women have the lowest participation rate in the Iranian labor force. Similarly, Assaad and El-Hamidi (2002) found that female participation in Egypt is significantly less for married women. Shah and Al-Qudsi (1990) and Rahatullah (2007) concluded that single women participation is almost twice as much as married women participation in the Kuwaiti labor force.

One constraint is that different cultures have different domestication expectations. Ram (1996) determined that women entrepreneurs felt that they were overloaded with domestic responsibilities. The findings showed that 43.20% did not get any help for domestic responsibilities, whereas 37% received some help and 20% received help to a large extent. Among the persons rendering assistance in domestic responsibilities, maids were the primary
source of help (25%). Among the family, husbands rendered help in setting up businesses in 12% of the cases followed by children in 11% of the cases. In a study on home-based women entrepreneurs living in Ankara city (Ozgen and Ufuk, 1998), it was determined that 63% of the women did not get any help for domestic responsibilities. In addition to domestic responsibilities, the lack of time available due to family commitments has been documented as a constraint in studies conducted by Karim (2000) in Bangladesh and de Groot (2001) in Ivory Coast, Ethiopia, Mali, Morocco, Senegal, and Zimbabwe.

Finally, the external support for entrepreneurs varies by culture. Developing countries lack effective women organizations that enhance their own decision-making. Zewde and Associates (2002) pointed out that the absence of appropriate and effective women entrepreneurs' organizations and associations may have a negative effect on women enterprise development. Availability and use of money is a significant cultural challenge due to social position and family commitments of women in the Arab world. Carter et al. (2001) showed that women entrepreneurs find it difficult to raise the start-up capital and Ngozi (2002) demonstrated that since women do not have the required wealth, they cannot secure the required collateral to obtain a bank's loan. In addition, their social position limits their ability to establish a financial network and their ability to establish good relationships with banks, due to gender discrimination and stereotyping.

**Motivational factors**

Different factors motivate a woman to become an entrepreneur. Robinson (2001) referred to the push and pull factors. The push factor is associated with negative conditions, while the pull factor is attributed to positive developments. Examples of push factors include low household income, job dissatisfaction, strict working hours, or even a lack of job opportunities. The pull factors on the other hand include the need for self-accomplishment and the desire to help others. Dhaliwal (1998) found the push factor to be evident in developing countries, while Orhan and Scott, (2001) and Islam (2012) showed evidence that women entrepreneurs in developing countries were motivated by a combination of push and pull factors. They suggested earning money, family tradition, higher social status, self-employment, economic freedom, as the major pull factors, whereas a lack of education, dissatisfaction in current job, and family economic hardship were identified as the push factors. Empirical evidence on Bahrain and Oman in the study by Dechant and Al-Lamky (2005) showed pull factors, such as opportunities, the need for achievement, self-fulfillment and a desire to help others, motivated women to become entrepreneurs in most of the cases.

Dechant and Asya (2005) found that achievement was the primary driver for self-employment among the Bahraini and Omani female entrepreneurs. The scholars assert that this could be attributed to their relatively high socioeconomic status and educational levels. It might also be reasoned, however, that in Arab countries which are high in Power Distance and Uncertainty Avoidance and low in Individualism, women have "more difficulties in doing things their way since existing organizations and structures are less suited for them" (Wennekers et al., 2001). Study subjects may have chosen self-employment to meet their need for achievement in a society imbued with organizational and cultural constraints regarding the potential of women.

**Enterprise Characteristics**

Coleman (2002) confirmed that women tend to mainly participate in the services sector, since the sector facilitates more prospects for job opportunities. This conclusion was reached by Dechant and Al-Lamky (2005) who found that Bahraini and Omani women entrepreneurs chose the services sector for their investment. However, the study referred to other factors, such as previous experience, availability of opportunities, economics and cultural, that might influence women entrepreneurs' decisions.
Another factor dictating women's decisions to become entrepreneurs is the size of the business enterprise. Since women entrepreneurs are attracted to the services sector, the size of their businesses is relatively small. Women entrepreneurs are relatively small in size and are likely to employ fewer numbers of people mainly between 5 and 25. (Coleman, 2002; Robb, 2002; and Dechant and Al-Lamky, 2005). The latter study also identified use of social media as another characteristic of Arab women enterprises. Numerous examples exist of women using the Internet to start firms that engage in e-commerce to sell anything from clothing, to food, to educational services (see for example, Sharpe and Schroeder, 2016).

Another characteristic of female startups is their important use of “soft skills.” Riley (2006) and Heltzel (2015) demonstrated the importance of soft skills for startups and identified training regimes, where training is defined specifically by others as the development of knowledge, skills and/or attitudes required to perform adequately a given job (Armstrong, 2001; Sonmez 2015; Fillipo, 1984). The importance of soft skills is emphasized by Stuart (2013), who states that Human Resources workshops in training and development are important to provide employees continuous improvement in their skills and attitudes. Human Resources training ensures that the company’s optimal performance is achieved through leveraging human capital and aligning skills and performance with organizational goals (Elaine, 2002; Houghton and Prosico, 2001). A company with employees aligned on goals for the future is able to reach those accomplishments faster (Frost, 2013). These studies identify a number of soft skills required by startups, which range from basic business planning to financial feasibility analysis, and sophisticated business strategic skills.

A number of studies, such as Kaiser (2015); Nunez (2015); Lussier (1995); and Markku (2005), identified numerous startup, marketing, management and social skills necessary for startups; a total of 17 commonly stated skills encompass the above areas. These skills include communication, supervision, problem solving, leadership, conflict resolution, team working, flexibility, creativity, assertiveness, diplomacy, counseling, coaching and mentoring, negotiating and influencing, branding, sales and marketing, relationship building and networking.

Methods

Prior research shows that there is a lack of information on female entrepreneurship in Arab nations. We identify a number of areas, where more research is needed. These include: nature of the businesses started by women; roles of family, motherhood, spouse and society in the business; underlying motivations of female startups; assistance provided by Entrepreneurship Ecosystem stakeholders; and challenges faced by female entrepreneurs. This information is lacking not only for the Middle East, but more specifically for Saudi Arabia. Thus, we explore vital values, characteristics and features of female entrepreneurship in the Saudi context.

Given the difficulties associated with reaching out to female start-ups in Saudi Arabia, we placed a structured questionnaire on-line (using SurveyMonkey®) with a target sample of 50 diverse female entrepreneurs from across Saudi Arabia. The survey instrument was designed to measure the values, characteristics, motivations, skills required, challenges, and features of female startups in Saudi Arabia. Once the survey was posted, we asked the chambers of commerce in Jeddah, Riyadh, Madina Al Munawwara, Khobar, Tabuk and Makkah Al Mukarramah, to help secure responses from female startups. Some of the female startups known to the authors were also contacted.

This outreach was necessary for two reasons. First, numerous studies including MR Khan (2013); Assad and El Hamidi (2002); Baker, Gedajlovic and Lubatkim (2005); and Rahatullah (2009), pointed out the issues in reaching out to respondents -- and particularly female respondents in the Kingdom, owing to its tradition as a closed conservative society. Second, although on the rise, the current number of established female startups is limited in the Kingdom, as identified by Al-Qudaiby and Rahatullah (2014) and Dechant and Lamky (2005).
Our strategy proved successful and 80 female startups completed the questionnaire on SurveyMonkey®. The responses were then downloaded for data presentation and detailed analysis using SPSS. After the analysis had been conducted, external validity was achieved by conducting three interviews with entrepreneurs who had not responded to the survey. These established entrepreneurs have developed their businesses in the fields of event management, education and fashion. They started their businesses in the years between 2000 and 2002 in Jeddah and Riyadh – the main financial centers of the Kingdom. The names of these established female entrepreneurs are confidential and represent the fashion industry, the event management industry and the education industry.

The questionnaire included 28 structured close-ended questions in the following areas:

- Nature of business;
- Startup status (i.e., personal status, Marital Status, Motherhood status);
- Treatment received as a woman;
- Knowledge of government agencies;
- Assistance from families and husband;
- Interaction of female startups with entrepreneurship ecosystem;
- Startup challenges and motivations; and
- Attitude of society towards female startups.

Results and Analysis

Table 1 shows the location of all 80 female startups who responded to the survey. The highest numbers of participating female startups were from Jeddah, with 23 female startups, followed by Riyadh with 21, Khobar with 14 and, Makkah Mukarramah with 11. The number of female startups from Madina Munawwara and Tabuk were fewer.

<table>
<thead>
<tr>
<th>Al Madina Munawwarah</th>
<th>Jeddah</th>
<th>Khobar</th>
<th>Makkah Al Mukarramah</th>
<th>Riyadh</th>
<th>Tabuk</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>23</td>
<td>14</td>
<td>11</td>
<td>21</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The questionnaire had 16 business areas identified with an option for others. However, the respondents identified themselves as belonging to seven diverse activities as shown.

<table>
<thead>
<tr>
<th>Business Sector</th>
<th>Number of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jewelry related</td>
<td>8</td>
</tr>
<tr>
<td>Spa related</td>
<td>7</td>
</tr>
<tr>
<td>Clothing (including Abayas)</td>
<td>17</td>
</tr>
<tr>
<td>Food (home cooked and restaurants)</td>
<td>9</td>
</tr>
<tr>
<td>Beauty related</td>
<td>16</td>
</tr>
<tr>
<td>Event Planning</td>
<td>13</td>
</tr>
<tr>
<td>Graphic Design &amp; IT</td>
<td>10</td>
</tr>
</tbody>
</table>

The majority of female entrepreneurs in the study are married (59%) however, a noticeable number of single (25%) and divorced women (17%) also start businesses in Saudi Arabia. This might be a significant change and shift from the past. However, this cannot be substantiated, as we do not have relevant time series data. From Table 2, it is clear that women startups are mainly in jewelry related, spa related, clothing/boutiques, food related, beauty, event planning and graphic design industries.
The result that the majority of the startups were founded by mothers is a surprise and is a clear shift from the past. Saudi Arabia remains tagged a conservative society, where women are more likely to remain at home and raise a family than to work outside the home. Table 3 shows that motherhood has a profound effect on women’s perceptions. An overwhelming majority agrees that motherhood leads to better leadership qualities (>75%) and the ability to multi-task (> 80%). However, being a mother was perceived to have less impact on being lenient in dealing with clients or employees and being a better team manager.

Table 3 – Motherhood effects

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Strongly Disagree</th>
<th>Do Not Agree</th>
<th>Maybe</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better leadership Qualities</td>
<td>10</td>
<td>2</td>
<td>7</td>
<td>33</td>
<td>28</td>
</tr>
<tr>
<td>Too lenient with clients and employees</td>
<td>7</td>
<td>46</td>
<td>10</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Better team manager</td>
<td>8</td>
<td>34</td>
<td>9</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>Better at Multitasking</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>21</td>
<td>42</td>
</tr>
</tbody>
</table>

Table 4 provides information on the strategic stakeholders’ (government agencies) behavior and dealings with female startups. The larger portion of female startups point out that they do not get any preferential treatment or dealing by the government offices and strategic stakeholders (validated by MR Khan, 2013). The response on the women lobbying and support groups has been mixed; similar numbers of female startups recognize the efforts of such groups as those who do not.

Table 4 – Ecosystem Stakeholder dealings and behavior with female startups

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Strongly Disagree</th>
<th>Do Not Agree</th>
<th>Maybe</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>You get preferential treatment at government offices</td>
<td>6</td>
<td>46</td>
<td>21</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>The suppliers deliver on time</td>
<td>6</td>
<td>11</td>
<td>0</td>
<td>36</td>
<td>27</td>
</tr>
<tr>
<td>The suppliers and other stakeholders treat women differently than men</td>
<td>23</td>
<td>19</td>
<td>8</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td>The women lobbies and support groups provide help</td>
<td>6</td>
<td>27</td>
<td>6</td>
<td>25</td>
<td>16</td>
</tr>
</tbody>
</table>

Table 5 identifies the support provided by non-government agencies (institutional stakeholders of the entrepreneurship ecosystem) to female startups, as validated in Rahatullah (2016). It is evident that the majority of female startups disagree that agencies provide support for children education, mentoring, and transportation. However, project funding, education, and business licensing services are recognized by the startups as available.

Table 5 – Institutional Stakeholder dealings and behavior with female startups

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Strongly Disagree</th>
<th>Do Not Agree</th>
<th>Maybe</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children education support</td>
<td>56</td>
<td>10</td>
<td>11</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Project funding</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>8</td>
<td>71</td>
</tr>
<tr>
<td>Education of the entrepreneur</td>
<td>5</td>
<td>15</td>
<td>37</td>
<td>11</td>
<td>12</td>
</tr>
<tr>
<td>Mentoring of Entrepreneur</td>
<td>13</td>
<td>51</td>
<td>17</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Transportation facilities</td>
<td>62</td>
<td>13</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Business Training</td>
<td>14</td>
<td>35</td>
<td>15</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Business registration</td>
<td>2</td>
<td>1</td>
<td>36</td>
<td>35</td>
<td>6</td>
</tr>
<tr>
<td>Business Licensing</td>
<td>2</td>
<td>0</td>
<td>21</td>
<td>45</td>
<td>12</td>
</tr>
<tr>
<td>Funding till business is suitable</td>
<td>11</td>
<td>14</td>
<td>39</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Reaching beyond the demographic boundaries of serving only men</td>
<td>7</td>
<td>2</td>
<td>3</td>
<td>22</td>
<td>46</td>
</tr>
</tbody>
</table>
The Family and Husband Role

Figures 1 and 2 provide an insight into the role of families in female startups in Saudi Arabia. Our results seem to show the changing dynamics and variation in the social / family fabric of the society. There was a time when Saudi Arabia was known for its ultra conservative nature where the government and many of its citizens’ desire to preserve their religious values and ancient traditions (Rice, 2004). We believe the society is changing and so are the family values.

It can be seen that the majority of the female startups obtained moral support and financial assistance from their families; however, a number of the respondents’ assert that the families did not provide the business assistance, (i.e. practical support that includes preparing plans, conducting marketing and or developing budgets). It is hence conceivable that the families do not have the relevant acumen or financial capability to assist these start-ups. It can also be understood here that the families may not have the necessary funds for the startup, or they do not wish to contribute, since organizations like the Human Resource Development Fund (HRDF) pays salaries to startups till the business is stable.

Our data reveal that the role of husbands appears to be substantial (where applicable), which is a noticeable shift from the past (see Rice, 2004). Husbands in our sample seem to have been providing moral, financial and business assistance to their wives to establish the business.

Female Startup Interaction with the Ecosystem

Figure 3 shows the startup interaction with the ecosystem. A number of stakeholders in the ecosystem were identified on the survey to enable the respondents to show their recognition level and identify the assistance these organizations provide. Table 6 provides information on the organizations which may be lesser known. These organizations predominantly belong to the institutional level of the ecosystem (non-government agencies), yet a few are strategic level (government owned).
Table 6 – Information on the stakeholder organizations

<table>
<thead>
<tr>
<th>Organization</th>
<th>Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injaz Al Arab</td>
<td>Entrepreneurial and business training to school students</td>
</tr>
<tr>
<td>KAUST</td>
<td>King Abdullah University</td>
</tr>
<tr>
<td>NCB CSR Program</td>
<td>National Commercial Bank</td>
</tr>
<tr>
<td>Endeavour</td>
<td>Start-up / angel investors</td>
</tr>
<tr>
<td>Bab Rizk Jameel</td>
<td>CSR program of Abdul Lateef, Jameel group of businesses</td>
</tr>
<tr>
<td>Al Zamil Group</td>
<td>The CSR Program of the group</td>
</tr>
<tr>
<td>Khadija Bint Khuwailed</td>
<td>Women advocacy and development organization</td>
</tr>
<tr>
<td>Prince Sultan Fund</td>
<td>For startups and needs</td>
</tr>
<tr>
<td>HRDF</td>
<td>Human Resource Dev. Fund</td>
</tr>
<tr>
<td>Techno Valley</td>
<td>Established by Makkah Chambers, similar to accelerator</td>
</tr>
<tr>
<td>Centennial Fund</td>
<td>Funding organization</td>
</tr>
</tbody>
</table>

It can be seen from the graph that the majority of the respondents claim that they either had an interaction or know Injaz, Kaust, Bank al ahli (NCB), Khadija bint Khuwalied Center, Bab Rizk Jameel, Prince Sultan Fund, Centennial Fund or the Chamber of Commerce. The organizations mentioned above are training, lending and licensing organizations, whereas, Kaust is recognized across the Middle East as a premier research organization.

Figure 3 – Startup Interaction in Ecosystem

The techno valleys, Kacst etc., are less known because of the nature of their services. Most of the female startups are in traditional businesses that do not require high-end assistance and machinery or equipment. Since Al Zamil Group’s work is limited to a particular part of the country, therefore, it is less known among the startups across the Kingdom. Similarly, Technical and Vocational Training Centers (TVTC) are also male-oriented, hence fewer females know them. It is, however, surprising that the startups have little knowledge about the other lending institutions, such as, Al Jazira, Saudi Credit and Savings and other banks, lending institutions and funds.

Female Startup Challenges

Figure 4 identifies the major challenges being faced by the female startups in Saudi Arabia. It can be seen that the three main challenges are communication skills, managing business and family affairs concurrently, and knowledge
of the Saudi labor law, respectively. Other significant issues are knowledge of how to start a business, as well as the skills needed (i.e. business and strategic planning, marketing and budgeting and the governmental policies and procedures).

These are prominent concerns of the startups. These findings are similar to the Saudi Arabian ecosystem study (MR Khan, 2013). These findings suggest that Saudi startups require interventions by both the strategic and institutional levels of the ecosystem to strengthen enterprise. Female startups have endorsed the need for soft skills incubators, training institutes, mentors and coaches. Startups also have shown a need for government to publicize the laws and procedures and systems more. This suggests the need from Chambers of Commerce to provide further assistance to these first-stage female entrepreneurs. This also reveals the change in the culture of the Kingdom where the openness has taken its hold and the families do not hold restrictions on female startups.

Figure 4 – Female Startup Challenges

In order to better understand the challenges being faced by the female startups, a factor reduction using principal component analysis extraction method was used. The three factors arrived at in Table 7 show major areas of challenges for the female startups: Startup Related, Planning and Society, and Team issues.

The startup related challenges include lack of education; knowledge of Saudi labor law, government procedures and policies; launching the business; finding the right suppliers and organization for assistance; and developing communications skills. All these are relevant to startups and are common challenges for first-stage entrepreneurs and the need for the institutional level support is important. This also shows the lack of the contact between the institutional level stakeholders and the startups, as well as the lack of the necessary skills and knowledge possessed by the startups. This presents a huge opportunity for the organizations, such as incubators, universities, Chamber of Commerce and industry institutes to offer such training.
Table 7. Startup Challenges

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Component</th>
<th>Startup related</th>
<th>Planning</th>
<th>Society &amp; Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>.1606</td>
<td>.0163</td>
<td>.0100</td>
<td></td>
</tr>
<tr>
<td>Knowledge of business planning</td>
<td>.0639</td>
<td>.1064</td>
<td>.0079</td>
<td></td>
</tr>
<tr>
<td>Knowledge of marketing planning</td>
<td>.0607</td>
<td>.1267</td>
<td>.0783</td>
<td></td>
</tr>
<tr>
<td>Knowledge of strategic planning</td>
<td>.0607</td>
<td>.1579</td>
<td>.0126</td>
<td></td>
</tr>
<tr>
<td>Knowledge of operations planning</td>
<td>.0614</td>
<td>.1010</td>
<td>.0155</td>
<td></td>
</tr>
<tr>
<td>Knowledge of financial planning</td>
<td>.0594</td>
<td>.1389</td>
<td>.0261</td>
<td></td>
</tr>
<tr>
<td>Knowledge of budgeting</td>
<td>.0579</td>
<td>.1067</td>
<td>.0262</td>
<td></td>
</tr>
<tr>
<td>Knowledge of HR issues</td>
<td>.0524</td>
<td></td>
<td>.0578</td>
<td>.1441</td>
</tr>
<tr>
<td>Knowledge of Saudi Labor Law</td>
<td>.1106</td>
<td>.0419</td>
<td>.0113</td>
<td></td>
</tr>
<tr>
<td>Knowledge of How to start business</td>
<td>.1059</td>
<td>.0702</td>
<td>.0129</td>
<td></td>
</tr>
<tr>
<td>Societal taboos</td>
<td>.0245</td>
<td>.0553</td>
<td>.2055</td>
<td></td>
</tr>
<tr>
<td>Restrictions from family</td>
<td>.0111</td>
<td>.2311</td>
<td>.2055</td>
<td></td>
</tr>
<tr>
<td>Restrictions from husband</td>
<td>.0329</td>
<td>.0392</td>
<td>.2051</td>
<td></td>
</tr>
<tr>
<td>Managing family and business affairs</td>
<td>.0344</td>
<td>.0891</td>
<td>.1058</td>
<td></td>
</tr>
<tr>
<td>Finding right organization to approach for assistance</td>
<td>.1100</td>
<td>.0963</td>
<td>.0331</td>
<td></td>
</tr>
<tr>
<td>Knowledge of suppliers</td>
<td>.1206</td>
<td>.1656</td>
<td>.0173</td>
<td></td>
</tr>
<tr>
<td>Business communication skills</td>
<td>.1331</td>
<td>-.2791</td>
<td>.0293</td>
<td></td>
</tr>
<tr>
<td>Sales skills</td>
<td>.0602</td>
<td>-.2253</td>
<td>-.0850</td>
<td></td>
</tr>
<tr>
<td>Team building and maintaining</td>
<td>.0610</td>
<td>-.2060</td>
<td>.2059</td>
<td></td>
</tr>
<tr>
<td>Finding the right employees</td>
<td>.0552</td>
<td>-.1596</td>
<td>.2106</td>
<td></td>
</tr>
<tr>
<td>Knowledge of Governmental policies/procedures</td>
<td>.1001</td>
<td>.0121</td>
<td>-.0036</td>
<td></td>
</tr>
<tr>
<td>Knowledge of product launching</td>
<td>.1091</td>
<td>.0749</td>
<td>-.0237</td>
<td></td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Component Scores. Note, coefficients highlighted have a p-value < 0.05.

Challenges Faced by Particular Businesses

In order to further investigate and understand the challenges being faced by the startups in more detail, the businesses were divided into eight main areas. The challenges shown separately regarding the different kinds of planning were grouped into one category, i.e. the business planning challenge. A bivariate correlation was carried out and challenges are correlated here separately (not factor wise).

These correlations provide factual results. The most difficulties are being faced by the 1) interior design, 2) women related, clothing and lingerie and 3) dentistry clinic businesses. These businesses are new and, therefore, the graduates who start their own business in these industries face numerous difficulties. The women in 1) beauty parlor, therapies and Spa, 2) children entertainment, and 3) education seem to have the least challenges, most likely due to the fact that these are relatively more traditional businesses.
The majority of the female startups seem to have issues with planning, knowledge of Saudi labor law, team building, and governmental policies. These skills are not taught at most colleges and universities. Many startups also do not know the governmental procedures and policies, causing delays in obtaining their licenses. This can result in unnecessary interruption, suspension, or temporary lapses in the startups, as much of the work is done by expatriates. Obtaining visas and finding immigrant workers are already an issue, and a lack of knowledge of law and policies aggravates the situation.

Females commencing and establishing a startup in a social arena face the least difficulty, which is based on the fact that such projects are generally initiated by women belonging to wealthier families, who have established reputations and credentials. We have numerous examples of philanthropic and social enterprises being started by the women of leading business families in Saudi Arabia.

**Female Startup Motivations**

The findings as shown in Figure 5 somewhat support the work of Robinson (2001), Dhaliwal (1998), Orhan and Scott (2001), Islam (2012), Dechant and Al-Lamky (2005) and Dechant and Asya (2005), regarding the push and pull factors of motivation. However, the study refutes the narrative of Wennekers et al., (2001).
The push and pull factors for female startups vary a bit from what literature suggests as a general factor. The Saudi females seem to be more pulled than pushed in startups. As the society is becoming more and more liberal, female startups commence their venture to seek more social independence, recognition, enhance image, and become her own boss. The circumstances also have been pushing them to support their families, as they are largely motivated by ‘wanting to earn more money’ and be ‘financially independent,’ perhaps influenced by the recent downturn in the Saudi economy. Women startups are equally divided over their desire to contribute positively to society.

**Motivation Antecedents**

Table 9 shows the motivations by motherhood category (yes, no) and reveals interesting results. Being a mother seems to affect the family thought on the female startups in motivating them ‘to try to provide a better future for their families’ and ‘to be their own boss.’

Similarly, they are more concerned with enhancing the image of women, to be socially recognized, and apply the skills they learned. This is an exciting development in a society such as Saudi Arabia and can imply the ‘breaking of shackles.’ The non-mother females also desire to do something different and enhance the image of women.

A notable number of responses suggest that startups are purely commercial based and not created to support noble causes. It is mostly pull factors that help them to attempt to establish a startup. A notable number of responses did not start their business to support their family.

The correlations between ‘being a mother’ and motivations to start an enterprise reveal some interesting information, as shown in Table 11. It shows that intrinsic motivations are ‘to earn more money,’ ‘to support their
family,’ and ‘to provide a better future for their family.’ This shows that the female startups are now willing to take an active role in society and be productive both in the family and economy.

Table 10. Relationship between motherhood and motivations

<table>
<thead>
<tr>
<th></th>
<th>To earn more money</th>
<th>To support family</th>
<th>To contribute financially</th>
<th>To be socially independent</th>
<th>To be socially recognized</th>
<th>To apply the skills learned</th>
<th>To try and provide better future for family</th>
<th>To do something different</th>
<th>To enhance the image of women</th>
<th>To support a noble cause</th>
<th>To be your own Boss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being Mother</td>
<td>0.103*</td>
<td>0.162*</td>
<td>-0.015</td>
<td>-0.145</td>
<td>-0.112</td>
<td>-0.107</td>
<td>-0.170</td>
<td>-0.184</td>
<td>-0.196</td>
<td>-0.218</td>
<td>-0.212</td>
</tr>
<tr>
<td></td>
<td>0.003</td>
<td>0.002</td>
<td>0.895</td>
<td>0.200</td>
<td>0.324</td>
<td>0.346</td>
<td>0.131</td>
<td>0.102</td>
<td>0.082</td>
<td>0.052</td>
<td>0.060</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Soft Skills and Tools Required

The literature identifies a number of soft skills required by first-stage entrepreneurs to successfully commence a startup. Acknowledging the literature findings and seeking validation, a more relevant and newer question was asked, i.e. how can these skills be provided? What tools are more appropriate, and how can these skills be acquired? The responses are shown in Figure 6.

Figure 6 – Female Startups Soft Skills and their tools

The role of professional training institutes, mentors and incubators tops the other modes of skills development. The role of universities follows these top three. It has been pointed out by the respondents that the soft skills incubators can help build are creativity, influencing, communications, leadership, negotiations and problem solving skills. Whereas, the mentors can successfully help the startups develop their relationship building, branding, marketing, diplomacy, negotiations, flexibility, conflict resolution and problem solving skills. Similarly, the female startups seem to opine that professional training institutes can polish their leadership, conflict resolution, assertiveness, counseling, influencing and relationship building skills. This supports the older studies and justifies the work of MR Khan (2013).
Conclusions

It was witnessed in the literature review that there is a lack of evidence on female startups in general -- and for Saudi Arabian startups in particular. This research hopes to open the doors for further research and enhance our understanding of the deficiencies and efficiencies in the entrepreneurship ecosystem for women startups in Saudi Arabia.

The findings above have contributed both to our knowledge of female entrepreneurs in the Arab region and globally, however, there are some unique findings owing to different cultures and norms in Saudi Arabia. The Saudi Arabian female startup motivations and challenges emanate from their traditional culture, which as Afaf et al., (2014) states “is a masculine society… strongly affected by cultural traditions and religion. The separation of the genders is obligatory in Saudi cultures and societal norms impact on all sides of life.”

However, this study may hint that shackles on women empowerment are being broken and that societal taboos and restrictions are under transition to a society and cultural of adaptability. There are numerous indicators for optimism for the women startups alongside the risks. The Literature pointed out that in the Arab countries women participation in the labor force is influenced by culture and shaped by the Islamic principles. The Dechant and Al-Lamky (2005) study pointed to some cultural practices that might prevent women from conducting their business as compared to men. This study again provides an updated view that the society is more accommodating and supportive of female entrepreneurship. The role of family, husband and the society in general has been seen as a positive factor in contributing to female startups in Saudi Arabia. Similarly, it has been revealed that motherhood and economic conditions also affect the choice of females to commence a commercial venture.

Similarly, the motivational factors provide a stark contrast between Saudi female startups and elsewhere. Prior studies have asserted that in general women join the work force out of the need for achievement and desire for respect. However, in Saudi Arabia, in addition to independence and recognition, we also witnessed the economic reasons (push factors) to start a business.

Our findings on the challenges being faced by female startups are in contrast to those found by Nilufer (2001), Carswell and Rolland (2004), and Salehi-Isfahani (2000). Their findings were different than what we found in Saudi Arabia. Startup related challenges are quite significant in Saudi Arabia, as compared to the developed and industrialized countries, where an ecosystem is more evolved. This highlights the need to further strengthen the ecosystem’s institutional stakeholders so that they can enable enterprise.

Society and team related challenges are not highlighted significantly in the literature. The challenges envisaged by Ram (1996) and Ozgen and Ufuk (1998) determined some basic values and properties, whereas, this study points out specific challenges. We also show that the culture is evolving. The families and husbands are more cooperative and Saudi society is generally more accepting of women in business. However, a lack of business development and related support from the spouse continues to be evident.

Recommendations

The perceived deficiency in governmental support is clear from our findings. Many challenges can be eradicated with effective legislation and creation of enablers in the institutional and strategic levels of entrepreneurship ecosystem of Saudi Arabia as noted by Rahatullah (2016). For example, government can help train female entrepreneurs if they want to have a more profound impact on improving and modernizing their economy. There is a need to have women-specific legislation to ease the burden on female startups and to help them set up and manage their businesses effectively and efficiently.
Building on the work of Rahatullah (2016), who mapped the existing entrepreneurship ecosystem of Saudi Arabia, and then the evolution of the ecosystem, this study acts as a catalyst highlighting opportunities for potential institutional stakeholders. Aspiring entrepreneurs must be able to exploit the services like training and development, coaching and mentoring organizations, and freelancers. There is a clear need for lobbying professionals and firms to establish workshops, training, and other forms of assistance for female startups. The universities and institutions need to create courses in soft skills, project management, operations, basic finance, accounting, communications and branding. These organizations can also hold workshops and seminars for female startups on understanding the legal framework of the Kingdom and communicate any legal assistance that is available. Our study sheds light on the need for making the venture funding procedures simpler for the female startups knowing that they are taking initiatives and need support from key strategic and institutional stakeholders. Crowdfunding platforms could be an ideal forum for the venture funding and these platforms could take the shape of equity and philanthropic types.

We recommend that the government create a dedicated strategic-level advising body to oversee and catalyze the transition for female startup and growth into the second and third stage. This body should be able to convert the existing challenges into opportunities and build on the strengths of the ecosystem. Finally, we recommend a future comprehensive study on the risks associated with business failure. By identifying these risks and causes of failure, we can begin to identify feasible solutions to support more women startups in Saudi Arabia in particular, and in the Middle East in general. Since business failure is viewed differently in the Middle East, although it is a relatively common part of starting entrepreneurial ventures, we believe it is critical that the business community and government organizations collaborate to support businesses before they fail – and to provide safety nets for after businesses fail.

References

• Hatun U; Ozgen, O., (2001) Interaction between the business and family lives of women entrepreneurs in Turkey; Journal of Business Ethics; 31.2; 95-106
Holmquist, C. and Sundin, E. (Eds) (2002), Företagerskan: Om kvinnor och entreprenörskap, SNS Förlag, Stockholm
Naser, K; Mohammed, W, R; Nuseibeh, R., (2009) Factors that affect women entrepreneurs: evidence from an emerging economy; International Journal of Organizational Analysis; 17.3; 225-247
Nelson, C. (2005), Centre for Labour Market Research and Information (CLMRI), Tanmia.
• Smith-Hunter, A.E. (2003), Diversity and Entrepreneurship Successful Women Entrepreneurs, University Press of America, Lanham, MD
1. Introduction

A new generation of sub-Saharan Africa’s multinational enterprises is emerging. We define sub-Saharan Africa’s MNEs (SSA-MNEs) as companies originating from the sub-Saharan Africa region that produce goods and/or services in two or more national markets. The fast rising economy in many countries of the sub-continent (Fischer et al., 1998; Subramanian & Roy, 2001; Jerven, 2010; Young, 2012; McMillan & Harttgen, 2014; Rodrik, 2014) has fueled African enterprises with comparative advantage to look for opportunities in search of profitable new markets, outsourcing facilities, acquisitions and alliances (Olowu, 1998; Nwankwo, 2000; Helmsing, 2003; Baron, 2006) in a wide range of sectors across national borders. The search for profitable markets is increasingly first directed at emerging markets in other African countries (Kehl, 2007; Magnusson & Wydick, 2002; Kenny & Moss, 1998). The African Development Bank Group projects that, following a decade of average increases in real GDP exceeding 5%, African economies are expected to sustain high levels of economic growth over the next decade, boosted in part by domestic demand due to a steady increase in private and public investment. The top emerging sub-Saharan Africa’s consumer markets are Kenya, Uganda, Nigeria, Ghana and Senegal. According to data from UNCTAD, outward FDIs from sub-Saharan African regions have been increasing since the 1980s (see Table 1).
The rise of SSA-MNEs has caught the attention of observers, businesspeople from developed economies and scholars. These MNEs are expanding across the region, even into markets considered unprofitable, too complex or even dangerous by some global multinationals. Reports indicate that by 2015, as many as 200 million Africans will enter the consumer goods market, accelerating the internationalization SSA-MNEs. Following previous research, institutional, industry and firm-level factors contributed to the rise of SSA-MNEs. At the institutional level, changes in sub-Saharan Africa’s political and economic environments have set the stage for SSA-MNEs growth (Fischer et al., 1998; Peng et al., 2008; Peng, 2012; Cui & Jiang, 2010). At the industry level, factors such as industry evolution (Aldrich & Fiol, 1994; Vernon, 1966), asset intensity (Luo & Tan, 1997), concentration and growth (Chaterjee, 1990), technology intensity (Covin et al., 1990), profitability (Luo & Tan, 1997), and knowledge intensity (Covin et al., 1990; Kobrin, 1991) are important variables that influence international expansion. Finally, at the firm level, internal factors such as international orientation, organizational capabilities, resource leverage, international experience, capability for learning and networking (Tan & Mathews, 2015) account for international expansion. Given the novelty of the phenomenon, an interesting question is: What is the model of sub-Saharan Africa’s new generation of MNEs? Are SSA-MNEs different from multinationals originated from developed and new emerging economies? To what extent does existing knowledge of internationalization of MNEs from developed and emerging economies explain the behavior of SSA-MNEs?

To answer these questions, we have developed new knowledge grounded in data (Locke 1996, 2001; Miles & Huberman 1994; Strauss & Corbin 1990) from in-depth analysis of public documents—annual reports, websites, interview quotes with top executives, case studies conducted by third parties and independent reports—in 68 SSA-MNEs. Overall, this paper
argues that the behavior of SSA-MNEs presents similarities but also fundamental differences compared to multinationals from developed countries and those from emerging economies. Their continued expansion in times of recent global financial crisis attests to their ability of adapting to new domestic institutional environments and aligning growth strategies to positively affect industry and firm level variables alike.

In the following sections, we first summarize the literature on two areas of interest for this study: characteristics of new MNEs compared to traditional MNEs and motivations for foreign direct investments by new MNEs. Then, we describe our research context, the SSA-MNEs and the method we applied in collecting and analyzing the data. The characteristics of sub-Saharan new MNEs are then presented. We conclude with a discussion of the implications of the findings and offer future directions for research.

2. Multinational enterprises: a review of literature
2.1. New and traditional MNEs

If the trend of internationalization of companies originating from sub-Saharan Africa persists, these companies will represent the fourth cohort to be added to the global population of MNEs. The first three cohorts are MNEs from North America and Continental Europe during the 1950s and 1960s, the Japanese MNEs during the 1970s and 1980s and the new MNEs from emerging economies since the 1990s. Various categorizations of the “new” MNEs from emerging economies exist. Guillén & García-Canal (2009, p. 23) use four economic growth concepts to define these emerging economies: (1) upper-middle income economies such as Spain, Portugal, South Korea, and Taiwan; (2) emerging economies such as Brazil, Chile, Mexico, China, India, and Turkey; (3) developing countries such as Egypt, Indonesia, and Thailand; and (4) oil-rich countries such as the United Arab Emirates, Nigeria, and Venezuela.
With the emergence of multinational enterprises originating from countries outside of North America, Europe and Japan, one stream of research in global strategy focused on the internationalization process of these firms by comparing them to traditional MNEs from traditional and more developed economies. Guillén & Garcia-Canal (2009) summarizes this literature in two areas: comparison between new and traditional MNEs and motivations for foreign direct investments by new MNEs. Using six main features—speed of internalization, competitive advantages, political capabilities, expansion path, default entry modes and organizational adaptability—Guillén & Garcia-Canal (2009, pp. 27-28) compares the internationalization of the new MNEs from emerging economies to traditional MNEs. First, they note that new MNEs are characterized with an accelerated speed of internationalization as they attempt to close the gap between their market reach and the global presence of the MNEs from developed countries (Matthews, 2006; Casillas & Acedo, 2013; Casillas & Moreno-Menéndez, 2014; Chetty et al., 2014; Tan & Mathews, 2015). Shrader et al. (2000, p. 1227) defines accelerated internationalization as “the phenomenon of firms engaging in the international business activities earlier in their organizational life cycles than they have historically”.

Additionally, studies found that new MNEs from emerging markets are at a competitive disadvantage with traditional MNEs. This disadvantage is due to the fact that new MNEs are latecomers and often lack the resources and capabilities of established MNEs from the most advanced countries (Aulakh, 2007; Li, 2007; Mathews, 2006). In addition to competitive disadvantage, new MNEs have stronger political capabilities than traditional MNEs. Due to the fact that they originate from emerging economies, new MNEs are more used to dealing with unstable governments in their own countries (Cuervo-Cazurra & Genc, 2008). Traditional MNEs used a simple path of expansion, entering markets from less distant to more distant countries.
New MNEs are using a dual expansion path as they simultaneously enter developed and developing countries. While traditional MNEs expanded from within by establishing wholly owned subsidiaries in foreign markets, new MNEs are using alliances and acquisitions as the default entry modes (García-Canal et al., 2002; Rui & Yip, 2008). Finally, new MNEs have a high organizational adaptability because of their small international presence as opposed to a rooted structure and culture that characterize traditional MNEs (Matthews, 2006).

On the accounts of the internationalization process, the new MNEs appear diametrically different from the traditional ones: accelerated-gradual speed of internationalization; weak-strong competitive advantages; strong-weak political capabilities; dual path-simple path of expansion; external growth-internal growth as default entry modes; and, high-low organizational adaptability.

2.2. MNEs: motivations

The literature also identified motivations for new MNEs invested in foreign countries. Guillén & García-Canal (2009, pp. 28-32) summarizes this literature. They note that new MNEs’ behavior can be explained by the desire to (1) secure supplies of crucial inputs in the face of uncertainty or asset specificity (Fields, 1995; Lall, 1983; UNCTAD, 2006; Wells, 1983); (2) secure access to the market in the presence of asset specificity (Fields, 1995; Lall, 1983; UNCTAD, 2006; Wells, 1983); (3) attempt to overcome growth restrictions imposed by the government in their home markets (Lall, 1983; UNCTAD, 2006; Wells, 1983); (4) locate assets in different countries to manage risk (Lecraw, 1977); (5) invest abroad so that owners diversify their exposure to any one country (Well, 1983); (6) follow home-countries customers as they expand horizontally to other countries (UNCTAD, 2006; Wells, 1983); (7) minimize the threats of liberalization, deregulation
and/or privatization policies for firms enjoying monopolistic or oligopolistic positions in the home market (Goldstein, 2007; Guillén, 2005); (8) invest or acquire assets in more developed countries (Lall, 1983; UNCTAD, 2006); and (9) exploit firm-specific intangible assets including technology adaptation (Ferrantino, 1992; Heenan & Keegan, 1979; Lall, 1983; Lecraw, 1977; Tolentino, 1993), early adoption of new technology (Guillén, 2005; UNCTAD, 2006), ethnic branding (Ferrantino, 1992; Heenan & Keegan, 1979; Lall, 1983; Lecraw, 1977; Wells, 1983), efficient production and project execution (Amsden & Hikino, 1994; Goldstein, 2007; Guillén, 2000; Kock & Guillén, 2001; Mathews, 2006; UNCTAD, 2006), product innovation (Lall, 1983; UNCTAD, 2006), institutional entrepreneurial ability (Caves, 1996; Lall, 1983; Lecraw, 1993), expertise in the management of acquisitions (Guillén, 2005), networking skills (Buckley et al., 2007; Dunning, 2002; Mathews, 2006) and political know-how (Gracia-Canal & Guillén, 2008; Lall, 1983, Lecraw, 1977).

3. Data and methods

To investigate the characteristics of sub-Saharan Africa’s new generation of MNEs, we conducted a content analysis of companies’ annual reports ranging from 2010 to 2014, websites, interview quotes with top executives, case studies conducted by third parties and independent reports of 68 companies (Locke 1996, 2001; Miles & Huberman 1994; Strauss & Corbin 1990). The list of companies in the study was obtained from The Africa Report’s top 500 companies and top 200 banks in Africa for 2013, and an in-depth search of various contributing websites, including Mergent Online and Forbes. Because South Africa is one of the emerging economies in the world alongside with Brazil, Russia, India and China (BRICS), MNEs in that country were not considered in this study. We searched through each company’s history and evolution to make sure it meets the requirements of a MNE, that is, the existence of documented business
operations in other countries. This entailed a daunting research task, given the circumstances and the overall state of information technology available in most sub-Saharan Africa’s companies. From the original list of top 500 companies, we identified 45 MNEs. Twenty-three multinational banks were identified from the top 200 Africa banks. Data for the study were obtained from 68 MNEs which had subsidiaries in other countries. To determine the internationalization process, an examination of the company’s annual reports was conducted to identify targeted markets, year of expansion, motivations and descriptions applicable to global strategy.

Table 2 lists sub-Saharan’s new generation of MNEs by country, illustrating in effect the year of the foundation and the foreign markets each company operates in. Panel A shows companies that operate in industrial, consumer goods and services sectors. Panel B lists MNEs in the banking sector. Nigeria has the largest number of MNEs (13), followed by Mauritius (11), Kenya (8), Ivory Coast (7) and Zimbabwe (6). The breakdown of the sample into sectors, legal origin, regions and heritage is shown in Tables 3A through 3D. Sub-Saharan MNEs operates in diverse sectors: agribusiness, airlines, banking and finance, beverages, diversified, hotels and tourism, insurance, mining, oil, gas and refining, retail and telecommunications. The banking sector is the largest group of MNEs with 33.82% of the firms. This is consistent with the growth of the sub-Saharan banking sector over the past decade due to financial reforms in most countries. These reforms enabled the consolidation of the banking sector through mergers and acquisitions as strong established banks made inroads into large portions of the unbanked population. Three Nigerian-based banks are among the 2000 world’s largest firms for 2015 according to Forbes:
Zenith Bank (#1498), First Bank of Nigeria (#1595) and Guaranty Trust Bank (#1787) with US$ 7 billion in combined sales, 1,606 million in profits and 10.1 billion in market value.

The diversified sector is the second largest group of MNEs, with 20.59% of firms in the sample. These diversified companies are sub-Saharan Africa industrial conglomerates comparable to South Korean Chaebols. Because of their “giant” size in terms of assets controlled, they are known as “Kubwa”, Swahili for “big”. The Nigerian-based Dangote Cement is the first sub-Saharan company listed in the 2015 Forbes 2000 biggest companies (#1216) with US$ 2.4 billion in sales, 996 million in profits and 15.6 billion in market value. The agribusiness sector comes third with 7 firms accounting for 10.29% of MNEs firms. In most sub-Saharan African countries, agriculture is the largest economic sector, representing roughly 15% of the country’s total GDP. This sector has been growing at a rate of 2 to 5% per year. The oil and gas sector is the fourth largest 5 firms, representing 7.35% of MNE firms. Oil and related products from sub-Saharan Africa are important components of the supply and demand for oil worldwide today. Many experts argue that by 2015, African oil will represent roughly 13% of the world production. The remaining sectors—airlines, refining, retail, telecommunications, hotel and travel, insurance and mining—represent nearly one-thirds of MNEs in our sample.
With regard to legal origins (see La Porta, López-de-Silanes, & Shleifer, 2008), the large majority of sub-Saharan Africa’s MNEs (72.06%) originated from countries that adhere to common law as opposed to French civil law (27.94%). This dominance of English-speaking MNEs supports the legal origin theory that the “historical origin of a country’s laws is highly correlated with a broad range of its legal rules and regulations, as well as with economics outcomes” (La Porta, López-de-Silanes, & Shleifer, 2008, p. 285). Legal origin scholars argue that laws of common law countries are more protective of investors than the laws of civil law countries. Consequently, common law countries are more likely to show better financial performance than civil law countries. The Eastern region of sub-Saharan Africa has the largest number of MNEs, 31 (45.59%), followed by the Western region with 25 (36.76%), the Middle, 8 (11.76%) and the Southern, 4 (5.88%). The heritage, in terms of the year of the foundation of sub-Saharan Africa’s new MNEs, is indicative of their diversity. The majority (39.71%) has a colonial heritage, 14 (20.58%) were founded in the 1960s-1970s, 15 (22.06%) were incorporated in the 1980s-1990s and 12 (17.65%) were founded post-1990s.

The analysis of data collected from public documents—annual reports, websites, interview quotes with top executives, case studies conducted by third parties and independent reports—focuses on two main questions: How have they become international? What motivates them to invest in foreign markets?
4. Results
4.1. Motivations for international expansion

Our findings show that although the first sub-African firm in the sample went international in 1925, the internationalization of most SSA-MNEs started to intensify during the 1990s. These years coincide with the success or “turning point”, for the first time in decades, of the economic liberalization and adjustment programs in sub-Saharan Africa that resulted in a positive per capita growth rate (see Fischer et al., 1998). Although the internationalization of sub-Saharan MNEs differs not only by country, but also sector by sector, six main factors explain how firms in sub-Saharan Africa became international.

Firms became international when they invested in new markets in response to economic reforms in the identified host countries. As many reports indicate, economic reforms in sub-Saharan African countries include the removal of barriers to private sector involvement; deregulation of consumer and producer prices; elimination of taxes and subsidies; privatization of state enterprises; abolition of official monopolies and the opening of trade to competition (see Fischer et al., 1998; Peng et al., 2008; Peng, 2012; Cui & Jiang, 2010). Firms in various sectors seized the opportunity to accelerate their expansion of international operations. For instance, starting in 2008, the Nigerian-based United Bank for Africa intensified its footprint with the establishment of subsidiaries in several sub-African economies, including Cameroon, Ivory Coast, Uganda, Sierra Leone, Liberia and Burkina Faso. Similarly, another Nigerian-based bank, Skye Bank, penetrated the Sierra Leonean market in 2008 just 2 years after its inception. The company documents indicate that “Sierra Leone was considered a terrain for viable banking, given its rich mineral resources and post-war reconstruction focus”. The economic reforms throughout sub-
Saharan Africa inspired the Nigerian-based The Dangote Group, one of the conglomerates in sub-Saharan Africa to pursue an ambitious expansion program in its existing and new sectors.

Sub-Saharan Africa’s firms wished to expand abroad to take services and/or products to Africans in Diaspora. Although Africans in Diaspora are spread out all over the world, firms focused on those living in Europe and the United States as means to enter developed countries. Only firms with organizational capabilities for growth and expansion were able to do so (Tan and Mathews, 2015). This is the case of the Nigerian United Bank of Africa when it opened its New York office in 1984 to offer banking services to the growing population of Africans living in one of the most populous cities in the United States. This motive explains the entry of sub-Saharan Africa’s MNEs into developed countries. Besides the United States, firms also targeted the African Diaspora living in European countries that once colonized their country. For example, The First Bank of Nigeria established its first offices in the United Kingdom (UK) in 2002. Similarly, other Nigerian-based banks, Zenith Bank and Guaranty Trust Bank opened their offices in the UK in 2007 and 2008, respectively. The new Angolan-based bank Banco Africano de Investimentos entered Portugal in 2008, just 2 years into operations. Portugal is the former colonizer of Angola and there is a large Diaspora of Angolans living across that country. The Mauritius-based Mauritius Commercial Bank founded in 1838 opened offices in France in 1991.

The sub-Saharan Africa’s MNEs desire to address the scarcity of services and products for businesses and individuals in host countries is the third motive for international expansion. The economic reforms initiated by African governments in the 1990s and its “turning point” (see Fischer et al., 1998) resulted in a booming consumer market worth almost a trillion dollars a year for MNEs to tap into, according to the African Development Bank Group. The possibilities are
enormous for sectors from agriculture to banking, consumer goods, oil and gas, telecommunications and infrastructure. Several banks expanded to foreign countries to enter new segments with technology-driven, low-cost banking models that attract a huge population of unbanked customers, both individuals and small businesses (see Covin et al., 1990 and Tan & Mathews, 2015 on firm internal factors that stimulate international expansion). Ecobank Transnational Inc. based in Togo expanded into 39 new markets across the continent starting in 1988. From 1997, Kenya Commercial Bank has been expanding in East African countries of Burundi, Rwanda, Uganda, Tanzania and now South Sudan. The Atlantic Bank of Ivory Coast has expanded in Benin, Niger, Burkina Faso, Mali, Togo, Senegal and Cameroon since 2006. Illovo Sugar Limited of Malawi built a new distillery in Tanzania to supply potable alcohol to the local and regional beverage industry. Choppies Enterprises, the leading supermarket chain in Botswana, has been pursuing a geographic expansion since the entry into the South African market in 2008. The company opened a distribution center in Zimbabwe. The company’s foresight is to grow into East Africa, with emphasis in Tanzania and Kenya.

SSA-MNEs invested abroad to acquire firm-specific intangible assets (Lall, 1983; UNCTAD, 2006). While the economic reforms in many countries opened up to free competition, some domestic firms could not stand up and began selling their assets. This gave foreign companies strong organizational capabilities for expansion to acquire the assets owned by firms from more developed countries such as South Africa. This is the case of the Nigerian-based Access Bank when it acquired 90% of Banque Privée du Congo—Democratic Republic of Congo—which South African investors had established in 2002. This was Access Bank’s first international expansion since its inception in 1989.
Finally, the findings suggest that sub-Saharan Africa’s new MNEs invested in foreign markets to exploit firm-specific intangible assets (Lall, 1983; UNCTAD, 2006) such as firm growing reputation, product innovation and networking skills. Sub-Saharan Africa’s new MNEs capitalized on their growing reputation of a strong and African brand to invest in foreign markets. This motive inspired the Zimbabwean-born giant of telecommunications Econet Wireless to engage in an aggressive geographic expansion since its inception in 1993. The company says that its “focus is on the positive transformation of our customer’s lives and the communities in which we operate”. Similarly, Sonatel Mobiles of Senegal has been expanding in the West African markets of Guinea-Conakry, Guinea-Bissau and Mali. The expansion with building a strong brand has enabled firms to improve penetration by meeting their clients’ evolving needs. For instance, telecommunication companies rely on their strong brand to offer a wide range of services, including fixed line telephones, mobile telephones, internet service, television and corporate telecommunications in foreign markets. The success in one market meant it was possible to envisage creating a similar set-up elsewhere. The geographic expansion of the three sub-Saharan airlines—Ethiopian Airlines, Kenyan Airways and Mauritius Airlines—into developed and developing markets is also attributed to the exploitation of their strong brands. Ethiopian Airlines operates 82 passenger destinations in Africa, the Middle East, Asia, Europe and North America. Kenyan Airways connects passengers in 36 destinations Africa, Middle East, Asia and Europe. Mauritius Airlines provides flight services to European, African and Indian Ocean region markets. The Nigerian Dangote Group built a reputation for excellent business practices and high quality products and services—cement, sugar, salt, flour, pasta, noodles, poly products, logistics in port operations, real estate—recognized not only at home in Nigeria, but in seven other markets across Africa.
SSA-MNEs entered foreign markets to leverage their competency in product innovation. These multinationals entered foreign markets to offer innovative services and products to the new rising middle-income customers. For example, multinational banks expanded into new markets to fill the gap between traditional banks and micro-lenders with capabilities for offering credit and saving products to new customers. These banks were also able to process loan applications in minutes with sophisticated but simplified technology. Customers in new markets were enabled to use online banking and, more importantly, these customers were offered for the first time the option of corporate and investment banking. The Nigerian Skye Bank is a good illustration of the exploitation of product innovation to enter a foreign market: “The Bank has successfully developed its business and penetrated the market in Corporate Banking, Consumer Banking, Public Sector, Retail Banking, and exports segment in The Gambia”. Similarly, oil and gas companies from Nigeria and Angola entered neighboring countries—Ghana and Republic of Congo respectively—by licensing their exploration and refining innovative technologies.

The international expansion was also fuelled by the exploitation of firm in-house built capability for interconnection or networking skills (Buckley et al., 2007; Dunning, 2002; Mathews, 2006) between various businesses competing in multiple segments. Besides banks, diversified sub-Saharan Africa’s conglomerates exploited networking skills to enter foreign markets. Since its first international expansion into Madagascar in 1989, the Mauritius Ciel Group used its interconnection skills to establish subsidiaries and to acquire businesses in South Africa, Madagascar, Tanzania, Seychelles, Maldives, Botswana, Uganda, Kenya, India, Bangladesh, China, Hong Kong, France, UK and USA. The Mauritius-based conglomerate Ciel Group established subsidiaries, acquired firms, expended vertically and externalized textile operations.
in India, Bangladesh and China in 2005. The company operates in Mauritius, Africa and Asia in 5 business sectors: agro and property, textile, hotels and resorts, finance and healthcare.

4.2. “Neighborization” strategy
As argued above, the international expansion of sub-Saharan Africa’s new multinationals started to pick up in the 1990s. The expansion path is characterized by entry into neighboring countries—the “neighborization” strategy. As shown in Table 4, the vast majority of SSA-MNEs in our sample (65.65%) expanded into a neighboring country when they became international, 20% entered another sub-Saharan African country as their first destination for international expansion, 12.5% chose a developed country and 11% expanded into the former colonizer country. The geographic, cultural and in some cases linguistic proximity as well as similar economic patterns of countries explain the preference for expanding into neighboring countries as a preferred path (see Kang & Kim, 2008). As a result, the international expansion of SSA-MNEs is concentrated in two regions: Eastern and Western. The 13 Nigerian multinationals are expanding into neighboring West African countries of Benin, Togo, Ghana, Ivory Coast, Liberia, Sierra Leone, Guinea-Conakry, Cameroon, Sao Tome and Principe and Senegal. In the same region, the 7 Ivoirian multinationals are choosing the neighboring markets of Ghana, Burkina Faso, Mali, Togo, Benin and Senegal. The Gabonese firms are investing in the Republic of Congo and Equatorial Guinea while the Cameroonian multinationals have been investing in Equatorial Guinea, Sao Tome and Principe before moving to other countries such as Democratic Republic of Congo, Guinea-Conakry, Liberia, South Sudan and Zambia. In the Eastern region,
the 11 Mauritius are acquiring businesses in Madagascar, Seychelles, Comoros Islands, Mozambique, Zimbabwe, Kenya and South Africa. Similarly, the 8 Kenyan multinationals are investing in Tanzania, Uganda, South Sudan and Zambia. The “neighborization” is materialized through a combination and progression of various forms including establishment of trading centers, exporting, acquisitions, establishment of subsidiaries, joint-ventures and strategic alliances between domestic governments, local and foreign investors.

4.3. A model of multinational enterprise

SSA-MNEs are entering the global markets to compete with traditional multinationals from developed countries—North America, Europe and Japan—and new multinationals from emerging economies (see Guillén & García-Canal, 2009). What model of international firm characterizes sub-Saharan Africa’s rising multinationals? We build on Guillén & García-Canal (2009) to answer this question based on data collected. Table 5 presents a model of sub-Saharan Africa’s model of international enterprise.

As we discussed in the above sections, SSA-MNEs are investing in foreign countries in response to economic reforms in the host countries to take services and products to Africans in Diaspora in developed countries, address scarcity of services and products for businesses and individuals in the host countries, acquire firm-specific intangible assets and exploit firm-specific intangible assets—growing reputation, product innovation and networking skills. The new SSA-MNEs are expanding into neighboring countries as a preferred expansion path. They are also using a combination of exporting, establishment of trading centers, subsidiaries, strategic alliance,
acquisitions, and joint-ventures to enter foreign markets. We use the main features of the new multinationals from emerging economies, as compared to traditional ones put forth by Guillén & García-Canal (2009, p. 27), to position SSA-MNEs in the global firm model. Our findings show that SSA-MNEs share some dimensions of the model of both traditional and new emerging ones and contrast with them on other dimensions.

The first dimension is the speed of internationalization (Oviatt & McDougall, 1997; Shrader et al., 2000; Casillas & Acedo, 2013; Casillas & Moreno-Menéndez, 2014; Chetty et al., 2014, Tan & Mathews, 2015). Sub-Saharan Africa’s new multinationals are at an accelerated pace of internationalization. Given the number of markets they have entered (Prashantham & Young, 2011), the FDIs in those markets (Deng, 2004; Buckley et al., 2007; Gammeltoft, 2008; Guillén & Garcia-Canal, 2009; Gammeltoft et al., 2010; Rasiah et al., 2010; Ramamurti & Singh, 2009; Ramamurti, 2012) and the time elapsed form inceptions to international expansion (Pla-Barber & Escriba- Esteve, 2006; Shrader et al., 2000; Musteen et al., 2010). With this accelerated speed of internationalization, SSA-MNEs are comparable to new MNEs originated from emerging economies. Competitive advantages of MNEs over domestic firms is the second dimension. SSA-MNEs are expanding into foreign markets—other African countries for the most part—with moderate competitive advantages over domestic firms in terms of product innovation. They target the rising consumer middle class that have never been serviced before. They are not latecomers, but instead first-movers. For instance, banking and telecommunications are growing rapidly because of the size of the unbanked and unconnected population. In addition, SSA-MNEs have moderate competitive advantages because they compete among themselves to gain access to these markets overlooked by multinationals from more advanced economies. Those that expanded into developed economies to take products and services to Africans in Diaspora were
also first movers into segments of the markets overlooked by domestic companies. Their knowledge of the African market abroad gave them a slight advantage over domestic firms.

With regard to the third dimension, SSA-MNEs have strong political capabilities. SSA-MNEs originated from countries that have experienced instances of political, economic and social instability in the past. In fact, the “turning point” (see Fischer et al., 1998) came after decades of sluggish economic conditions and poor political governance. The expansion path for SSA-MNEs—fourth dimension—is a simple one that favors foreign investments into neighboring countries, a strategy of “neighborization” discussed above. In terms of the fifth dimension—default entry modes, SSA-MNEs are using a combination of external growth (exporting, trade centers, strategic alliances, acquisitions) and internal growth (establishment of wholly owned subsidiaries). Finally, SSA-MNEs have moderate organizational adaptability because they expand into foreign markets similar to theirs in which geographic, cultural and linguistic proximity reduce the need of high adaptability.

5. Discussion
5.1. Theoretical contributions

This study contributes to the literature by proposing a model of SSA-MNE. The behavior of SSA-MNEs presents similarities, but also fundamental differences with multinationals from developed and emerging economies.

The literature on motivations for MNEs to become international needs to include the particularity of developing economies in case of changes in political and economic environments (Fischer et al., 1998; Peng et al., 2008; Peng, 2010; Cui & Jiang, 2010). Some motivations to expand internationally are unique given the context of SSA-MNEs. First, the literature identified the
motivation to respond to economic reforms in the home country described as the firm’s monopolistic or oligopolistic position in the home market being threatened by liberalization, deregulation, and/or privatization policies (Goldstein, 2007; Guillén, 2005). The firm documents we reviewed indicate the opposite in the case of SSA-MNES. They expanded into other African countries for the most part to seize the opportunity offered by liberalization, deregulation and privatization policies in the host country. The same phenomenon occurred in the 1990s when MNEs from developed and emerging countries expanded into the Mexican markets, following a series of liberalization and privatization policies. The cases of Spanish banks, such as Santander and Banco Bilbao Vizcaya and the American giant of telecoms, AT&T, are some examples. Additionally, the motivation to take products and services to Africans in Diaspora is identified in the literature as following a home-country customer to foreign markets (Wells, 1983; UNCTAD, 2006). However, the emphasis on “Africans in Diaspora” in the documents we reviewed might indicate that, in their strategic planning, SSA-MNEs viewed “Africans in Diaspora” as a segment of the market that was underserviced by domestic companies- thus a good motive to internationalize operations in a developed country. Expanding into new markets to address the scarcity of products and services is linked to the fact that the growing consumer goods market is overlooked by traditional MNEs who did not identify them as a potential profitable market. The expansion of SSA-MNEs in the banking and telecommunication sectors is an illustration of this argument. Finally, the literature identified the motivation to expand into foreign markets to acquire firm-specific intangible assets described as firm investments or acquired assets in more developed countries (UNCTAD, 2006; Lall, 1983). However, with few exceptions, we found that the majority of firm-specific intangible assets were acquired in developing countries to which SSA-MNEs expanded.
The literature on accelerated speed of internationalization (Casillas & Acedo, 2013; Casillas & Moreno-Menéndez, 2014; Chetty et al., 2014, Tan & Mathews, 2015) also needs to consider the particularities of firms originated from developing economies. The literature argues that MNEs from emerging economies are trying to close the gap between their market reach and the global presence of the MNEs from developed countries (see Mathews, 2006). We attempt a different explanation for the accelerated speed of internationalization of SSA-MNEs. The market that was bourgeoning for decades just exploded with growth prospects in all sectors of the economy country by country. Sub-Saharan Africa’s enterprises found themselves with abundant opportunities which made it attractive for companies to adventure into foreign markets. They went where nobody or few have attempted to go before. It was a perfect combination of favorable institutional environments (Fischer et al., 1998; Peng et al., 2008; Peng, 2010; Cui & Jiang, 2010), industry factors (Aldrich & Fiol, 1994; Vernon, 1966; Luo & Tan, 1997; Chaterjee, 1990; Covin et al., 1990; Luo & Tan, 1997; Kobrin, 1991) and firm variables (Tan and Mathews, 2015). In this perspective, SSA-MNEs do not appear as latecomers lacking the resources that need to be upgraded (Aulakh, 2007; Li, 2007; Mathews, 2006). In the contrary, they are newcomers who take their available resources to build capabilities that need to be upgraded to improve penetration as the market evolves.

A stream of research has linked accelerated speed of internationalization to entrepreneurial new ventures of small and medium size enterprises (see Oviatt & McDougall, 1997; Shrader et al., 2000). It does not to be the case of SSA-MNEs expanding into foreign countries. The information in Table 2 shows that, on average, more than 15 years elapsed between inception and the first year of expansion for SSA-MNEs in our sample. The majority of SSA-MNES we studied are giant enterprises in their home countries, thus “Kubwa” as discussed earlier.
5.2. Implications for Entrepreneurship Education

The results of the study have implications for the study and teaching of entrepreneurship in the international context, specifically in Africa. The idea of understanding and teaching the expansion model of SSA-MNEs is particularly relevant for three main reasons. First, as mentioned earlier, if the trend of the internationalization of companies originating from sub-Saharan Africa persists, these companies will represent the fourth cohort to be added to the global population of MNEs. The first three cohorts are MNEs from North America and Continental Europe during the 1950s and 1960s, Japanese MNEs during the 1970s and 1980s, and new MNEs from emerging economies since the 1990s. More research analyzing the competitive and global strategies of firms from Africa could enrich our knowledge on global strategies and the corporate expansion of Frontier Market Multinationals. Second, Africa has long been considered a continental sleeping giant. The rise of a new generation of multinationals competing at a global level might signal a positive change in environmental conditions in many countries that now enable firms to expand. Finally, the expansion of multinationals originating from sub-Saharan Africa shows a “growth miracle” (McMillan & Harttgen, 2014; Rodrik, 2014) and “turning point” (Fischer, Hernández-Catá, & Khan, 1998). This growth has implications for local economic development in terms of creating and securing new jobs and involvement in social programs as these new multinationals prosper.

5.3. Limitations and future research

The study depended exclusively on online data—corporate reports, annual reports, websites, interview quotes with top executives, case studies conducted by third parties and independent reports. In addition, several sub-Saharan Africa’s companies were excluded from the sample because their corporate reports were unavailable. Future research should employ a larger sample
population and collect primary data. Although such large-scale research still presents significant challenges in data collection, the participation of sub-Saharan Africa in the global economy will probably lead more SSA-MNEs to make themselves available to academic research. Additional research in the area of global strategy of rising SSA-MNEs should focus on the analysis of global strategy by the main industrial sectors identified in this study: banking, diversified, agribusiness, oil and gas. Future research should expand and further analyze the “neighborization” strategy introduced in this study. Finally, it will be interesting to conduct comparative and longitudinal research on accelerated speed of internationalization in the context of SSA-MNEs.

6. Conclusions

This article analyzes the characteristics of a model of sub-Saharan Africa’s multinational enterprise. Regardless of the components of the identified model, particularly the “neighborization” strategy and the accelerated speed of internationalization, SSA-MNEs grew at an annual rate of 30% during the global financial from 2006 to 2009, much higher than the growth rate of traditional MNEs and MNEs from new emerging economies for the same period of time. Still, their expansion is still limited to sub-Saharan Africa. It might be too early to argue for a new theory to explain SSA-MNEs’ behavior. However, the arrival of multinationals originated from sub-Saharan Africa and their success so far in the competitive international market is a call for global strategy scholars to revisit the concepts that make up the field of internationalization of business.

References


Table 1.
Sub-Saharan Africa FDI outward per region (US$ million)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern</td>
<td>34</td>
<td>248</td>
<td>619</td>
<td>813</td>
<td>4,344</td>
<td>4,245</td>
</tr>
<tr>
<td>Middle</td>
<td>105</td>
<td>373</td>
<td>681</td>
<td>730</td>
<td>6,725</td>
<td>14,853</td>
</tr>
<tr>
<td>Southern*</td>
<td>6,000</td>
<td>15,570</td>
<td>27,978</td>
<td>32,377</td>
<td>84,656</td>
<td>96,824</td>
</tr>
<tr>
<td>Western</td>
<td>315</td>
<td>2,202</td>
<td>6,381</td>
<td>3,381</td>
<td>10,555</td>
<td>15,840</td>
</tr>
</tbody>
</table>

(* The Southern region includes South Africa.
Source: UNCTAD.

Table 2.
The Sub-Saharan MNEs in our sample*

<table>
<thead>
<tr>
<th>Panel A. Industrial and consumer goods sectors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company name</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>Sonangol</td>
</tr>
<tr>
<td>Oando</td>
</tr>
<tr>
<td>Kenolkobil</td>
</tr>
<tr>
<td>Société Nationale de Raffinage</td>
</tr>
<tr>
<td>Société Ivoirienne de Raffinage</td>
</tr>
<tr>
<td>Dangote Group</td>
</tr>
<tr>
<td>Ethiopian Airlines</td>
</tr>
<tr>
<td>Kenya Airways</td>
</tr>
<tr>
<td>Groupe SIFCA</td>
</tr>
<tr>
<td>Conoil</td>
</tr>
<tr>
<td>GML</td>
</tr>
<tr>
<td>Forte Oil</td>
</tr>
<tr>
<td>Namdeb Diamond Corp.</td>
</tr>
<tr>
<td>Innscor Africa</td>
</tr>
<tr>
<td>Econet Wireless</td>
</tr>
<tr>
<td>Air Mauritious</td>
</tr>
<tr>
<td>Sonatel Mobiles</td>
</tr>
<tr>
<td>Ireland Blyth Group</td>
</tr>
<tr>
<td>East African Breweries Group</td>
</tr>
<tr>
<td>Press Corporation</td>
</tr>
<tr>
<td>UAC of Nigeria</td>
</tr>
<tr>
<td>Ciel Group</td>
</tr>
<tr>
<td>Cecagadis</td>
</tr>
<tr>
<td>Meikles Africa</td>
</tr>
<tr>
<td>Nakumatt Holdings</td>
</tr>
<tr>
<td>Mohinani Group</td>
</tr>
<tr>
<td>Food and Allied Group of Companies</td>
</tr>
<tr>
<td>Company name</td>
</tr>
<tr>
<td>----------------------------------</td>
</tr>
<tr>
<td>Choppies Enterprises</td>
</tr>
<tr>
<td>Outspan Ivoire</td>
</tr>
<tr>
<td>Rogers Group</td>
</tr>
<tr>
<td>Eurofind Group</td>
</tr>
<tr>
<td>British American Investment</td>
</tr>
<tr>
<td>Seafalana Holding Co.</td>
</tr>
<tr>
<td>Groupe NSIA</td>
</tr>
<tr>
<td>Mauritius Telecom</td>
</tr>
<tr>
<td>Compagnie du Komo</td>
</tr>
<tr>
<td>New Mauritius Hotels</td>
</tr>
<tr>
<td>Société Multinationale des Bitumes</td>
</tr>
<tr>
<td>National Foods Holding</td>
</tr>
<tr>
<td>Namibia Breweries Limited</td>
</tr>
<tr>
<td>Illovo Sugar Limited</td>
</tr>
<tr>
<td>Sociedad Latinoamericana</td>
</tr>
<tr>
<td>Société Multinationale des Bitumes</td>
</tr>
<tr>
<td>National Foods Holding</td>
</tr>
<tr>
<td>Zambian Breweries Limited</td>
</tr>
<tr>
<td>Guaranty Trust Bank</td>
</tr>
<tr>
<td>Banco Africano de Inversiones</td>
</tr>
<tr>
<td>Skye Bank</td>
</tr>
<tr>
<td>The Mauritus Commercial Bank</td>
</tr>
<tr>
<td>Bank Name</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>Diamond Bank</td>
</tr>
<tr>
<td>Kenya commercial Bank Group</td>
</tr>
<tr>
<td>First City Monument Bank</td>
</tr>
<tr>
<td>BGFI Bank Holding</td>
</tr>
<tr>
<td>Afriland First Group</td>
</tr>
<tr>
<td>Equity Bank Group</td>
</tr>
<tr>
<td>CRDB Bank</td>
</tr>
<tr>
<td>NIC Bank</td>
</tr>
<tr>
<td>Atlantic Bank</td>
</tr>
<tr>
<td>Coris Bank Intl</td>
</tr>
<tr>
<td>AfrAsia Bank</td>
</tr>
<tr>
<td>Exim Bank</td>
</tr>
</tbody>
</table>

(*) companies ranked by revenues in 2012

a Year the company was created or incorporated

b Year the company became international

Sources: Authors, based on The Africa Report, corporate reports, company websites and media reports

Table 3A.
Sub-Saharan Africa’s MNEs per sector

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Number of companies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>23</td>
<td>33.82</td>
</tr>
<tr>
<td>Diversified</td>
<td>14</td>
<td>20.59</td>
</tr>
<tr>
<td>Agribusiness</td>
<td>7</td>
<td>10.29</td>
</tr>
<tr>
<td>Oil &amp; gas</td>
<td>5</td>
<td>7.35</td>
</tr>
<tr>
<td>Airlines</td>
<td>3</td>
<td>4.41</td>
</tr>
<tr>
<td>Refining</td>
<td>3</td>
<td>4.41</td>
</tr>
<tr>
<td>Retail</td>
<td>3</td>
<td>4.41</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>3</td>
<td>4.41</td>
</tr>
<tr>
<td>Beverages</td>
<td>2</td>
<td>2.94</td>
</tr>
<tr>
<td>Hotel &amp; Travel</td>
<td>2</td>
<td>2.94</td>
</tr>
<tr>
<td>Insurance</td>
<td>2</td>
<td>2.94</td>
</tr>
<tr>
<td>Mining</td>
<td>1</td>
<td>1.47</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Sources: Authors, based on The Africa Report, corporate reports, company websites and media reports

Table 3B.
Sub-Saharan Africa’s MNEs per legal origins

<table>
<thead>
<tr>
<th>Legal origins</th>
<th>Number of companies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common law (originated in English law)</td>
<td>49</td>
<td>72.06</td>
</tr>
<tr>
<td>French civil law (originated in Roman law)</td>
<td>19</td>
<td>27.94</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Sources: Authors, based on The Africa Report, corporate reports, company websites and media reports
### Table 3C.
**Sub-Saharan Africa’s MNEs per region**

<table>
<thead>
<tr>
<th>Regions</th>
<th>Number of companies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern</td>
<td>31</td>
<td>45.59</td>
</tr>
<tr>
<td>Western</td>
<td>25</td>
<td>36.76</td>
</tr>
<tr>
<td>Middle</td>
<td>8</td>
<td>11.76</td>
</tr>
<tr>
<td>Southern</td>
<td>4</td>
<td>5.88</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Sources: Authors, based on The Africa Report, corporate reports, company websites and media reports

### Table 3D.
**Sub-Saharan Africa’s MNEs per country**

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of companies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>13</td>
<td>19.12</td>
</tr>
<tr>
<td>Mauritius</td>
<td>11</td>
<td>16.18</td>
</tr>
<tr>
<td>Kenya</td>
<td>8</td>
<td>11.76</td>
</tr>
<tr>
<td>Ivory Coast</td>
<td>7</td>
<td>10.29</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>6</td>
<td>8.82</td>
</tr>
<tr>
<td>Cameroon</td>
<td>3</td>
<td>4.41</td>
</tr>
<tr>
<td>Gabon</td>
<td>3</td>
<td>4.41</td>
</tr>
<tr>
<td>Angola</td>
<td>2</td>
<td>2.94</td>
</tr>
<tr>
<td>Botswana</td>
<td>2</td>
<td>2.94</td>
</tr>
<tr>
<td>Malawi</td>
<td>2</td>
<td>2.94</td>
</tr>
<tr>
<td>Namibia</td>
<td>2</td>
<td>2.94</td>
</tr>
<tr>
<td>Tanzania</td>
<td>2</td>
<td>2.94</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>1</td>
<td>1.47</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>1</td>
<td>1.47</td>
</tr>
<tr>
<td>Ghana</td>
<td>1</td>
<td>1.47</td>
</tr>
<tr>
<td>Mali</td>
<td>1</td>
<td>1.47</td>
</tr>
<tr>
<td>Senegal</td>
<td>1</td>
<td>1.47</td>
</tr>
<tr>
<td>Togo</td>
<td>1</td>
<td>1.47</td>
</tr>
<tr>
<td>Zambia</td>
<td>1</td>
<td>1.47</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Sources: Authors, based on The Africa Report, corporate reports, company websites and media reports

### Table 3E.
**Sub-Saharan Africa’s MNEs per heritage**

<table>
<thead>
<tr>
<th>Heritage</th>
<th>Number of companies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colonial</td>
<td>27</td>
<td>39.71</td>
</tr>
<tr>
<td>1960s-1970s</td>
<td>14</td>
<td>20.58</td>
</tr>
<tr>
<td>1980s-1990s</td>
<td>15</td>
<td>22.06</td>
</tr>
<tr>
<td>post-1990s</td>
<td>12</td>
<td>17.75</td>
</tr>
<tr>
<td>Total</td>
<td>68</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Sources: Authors, based on The Africa Report, corporate reports, company websites and media reports
<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
<th>Sector</th>
<th>Neighbor</th>
<th>Developed</th>
<th>Metropolis</th>
<th>Other SSA</th>
<th>In</th>
<th>Out</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sonangol</td>
<td>Angola</td>
<td>Oil &amp; Gas</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Banco Africano de Investimentos</td>
<td>Angola</td>
<td>Banking</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Señalana Holding Co.</td>
<td>Botswana</td>
<td>Agribusiness</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Choppies Enterprises</td>
<td>Botswana</td>
<td>Retail</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Coris Bank International</td>
<td>Burkina Faso</td>
<td>Banking</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Afriland First Group</td>
<td>Cameroon</td>
<td>Banking</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>7</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>African Reinsurance Corp.</td>
<td>Cameroon</td>
<td>Insurance</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Société Nationale de Raffinage</td>
<td>Cameroon</td>
<td>Refining</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Ethiopian Airlines</td>
<td>Ethiopia</td>
<td>Airlines</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Compagnie du Komo</td>
<td>Gabon</td>
<td>Diversified</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>9</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Cecagadis</td>
<td>Gabon</td>
<td>Retail</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>BGFI Bank Holding</td>
<td>Gabon</td>
<td>Banking</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>6</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Mohinani Group</td>
<td>Ghana</td>
<td>Diversified</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Group SIFCA</td>
<td>Ivory Coast</td>
<td>Agribusiness</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Outright Afrique</td>
<td>Ivory Coast</td>
<td>Agribusiness</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>2</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Group NSIA</td>
<td>Ivory Coast</td>
<td>Diversified</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>12</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Eurofind Group</td>
<td>Ivory Coast</td>
<td>Diversified</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Atlantic Bank</td>
<td>Ivory Coast</td>
<td>Banking</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>7</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Société Ivoirienne de Raffinage</td>
<td>Ivory Coast</td>
<td>Refining</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>S. Multinationale de Bitumes</td>
<td>Ivory Coast</td>
<td>Refining</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>East African Breweries Group</td>
<td>Kenya</td>
<td>Beverages</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>NIC Bank</td>
<td>Kenya</td>
<td>Banking</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Kenya Airways</td>
<td>Kenya</td>
<td>Airlines</td>
<td>-</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Kenya Commercial Bank Group</td>
<td>Kenya</td>
<td>Banking</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Nakumatt Holdings</td>
<td>Kenya</td>
<td>Retail</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Equity Bank Group</td>
<td>Kenya</td>
<td>Banking</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Commercial Bank of Africa</td>
<td>Kenya</td>
<td>Banking</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Kenolkobil</td>
<td>Kenya</td>
<td>Oil &amp; gas</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>8</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Press Corporation</td>
<td>Malawi</td>
<td>Diversified</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Illovo Sugar Limited Group</td>
<td>Malawi</td>
<td>Agribusiness</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>5</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Bank of Africa Group</td>
<td>Mauritius</td>
<td>Banking</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>16</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>Rogers Group</td>
<td>Mauritius</td>
<td>Diversified</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>6</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>AfrAsia Bank</td>
<td>Mauritius</td>
<td>Banking</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>New Mauritius Group</td>
<td>Mauritius</td>
<td>Hotels &amp; Travel</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>British American Investment</td>
<td>Mauritius</td>
<td>Insurance</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Mauritian Telecom</td>
<td>Mauritius</td>
<td>Telecoms</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>GML</td>
<td>Mauritius</td>
<td>Diversified</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Food Allied Group of Co.</td>
<td>Mauritius</td>
<td>Agribusiness</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>9</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Ireland Blyth</td>
<td>Mauritius</td>
<td>Diversified</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Air Mauritius</td>
<td>Mauritius</td>
<td>Airlines</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ciel Group</td>
<td>Mauritius</td>
<td>Diversified</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>7</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>The Mauritius Group</td>
<td>Mauritius</td>
<td>Banking</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Commercial Bank</td>
<td>Namibia</td>
<td>Beverages</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>13</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>Namibia Breweries Limited</td>
<td>Namibia</td>
<td>Mining</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Namdeb Diamond Corp.</td>
<td>Namibia</td>
<td>Mining</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>UAC of Nigeria</td>
<td>Nigeria</td>
<td>Diversified</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>8</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>Guaranty Trust Bank</td>
<td>Nigeria</td>
<td>Banking</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>8</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>First Bank of Nigeria</td>
<td>Nigeria</td>
<td>Banking</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>First City Monument Bank</td>
<td>Nigeria</td>
<td>Banking</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Company</td>
<td>Country</td>
<td>Industry</td>
<td>Local Presence</td>
<td>Foreign Presence</td>
<td>Motivation</td>
<td>Main Features</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------</td>
<td>------------</td>
<td>----------------</td>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skye Bank</td>
<td>Nigeria</td>
<td>Banking</td>
<td>No</td>
<td>No</td>
<td>Become international:</td>
<td>Main Features</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United Bank of Africa</td>
<td>Nigeria</td>
<td>Banking</td>
<td>No</td>
<td>Yes</td>
<td>In response to economic reforms in the host countries</td>
<td>Accelerated speed of internationalization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zenith Bank PLC</td>
<td>Nigeria</td>
<td>Banking</td>
<td>No</td>
<td>Yes</td>
<td>To take products and services to Africans in Diaspora</td>
<td>Moderate competitive advantages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conoil</td>
<td>Nigeria</td>
<td>Oil &amp; Gas</td>
<td>Yes</td>
<td>No</td>
<td>To address the scarcity of products and services for businesses and individuals</td>
<td>Strong political advantages</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dangote Group</td>
<td>Nigeria</td>
<td>Diversified</td>
<td>Yes</td>
<td>No</td>
<td>To acquire firm-specific intangible assets</td>
<td>Simple path of expansion: “Neighborization”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Bank Group</td>
<td>Nigeria</td>
<td>Banking</td>
<td>No</td>
<td>No</td>
<td>To exploit firm-specific intangible assets</td>
<td>External and internal growth</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diamond Bank</td>
<td>Nigeria</td>
<td>Banking</td>
<td>No</td>
<td>No</td>
<td></td>
<td>Moderate organizational adaptability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oando</td>
<td>Nigeria</td>
<td>Oil &amp; Gas</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forte Oil</td>
<td>Nigeria</td>
<td>Oil &amp; Gas</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sonatel Mobiles</td>
<td>Senegal</td>
<td>Telecoms</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exim Bank</td>
<td>Tanzania</td>
<td>Banking</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CRDB Bank</td>
<td>Tanzania</td>
<td>Banking</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transnational Inc.</td>
<td>Togo</td>
<td>Banking</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambeef Products PLC</td>
<td>Zambia</td>
<td>Agribusiness</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Foods Holding</td>
<td>Zimbabwe</td>
<td>Agribusiness</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Econet Wireless</td>
<td>Zimbabwe</td>
<td>Telecoms</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa Sun Limited</td>
<td>Zimbabwe</td>
<td>Hotel &amp; Travel</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Innscor Africa</td>
<td>Zimbabwe</td>
<td>Diversified</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diaribord of Zimbabwe Ltd.</td>
<td>Zimbabwe</td>
<td>Retail</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meikles Africa</td>
<td>Zimbabwe</td>
<td>Diversified</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*#) Ranking by country
Sources: Authors, based on The Africa Report, corporate reports, company websites and media reports

Table 5.
A model of sub-Saharan Africa’s multinational enterprise

<table>
<thead>
<tr>
<th>Motivation</th>
<th>Main Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Become international:</td>
<td></td>
</tr>
<tr>
<td>• In response to economic reforms in the host countries</td>
<td>• Accelerated speed of internationalization</td>
</tr>
<tr>
<td>• To take products and services to Africans in Diaspora</td>
<td>• Moderate competitive advantages</td>
</tr>
<tr>
<td>• To address the scarcity of products and services for businesses and individuals</td>
<td>• Strong political advantages</td>
</tr>
<tr>
<td>• To acquire firm-specific intangible assets</td>
<td>• Simple path of expansion: “Neighborization”</td>
</tr>
<tr>
<td>• To exploit firm-specific intangible assets</td>
<td>• External and internal growth</td>
</tr>
<tr>
<td><em>Growing reputation</em></td>
<td>• Moderate organizational adaptability</td>
</tr>
<tr>
<td><em>Product innovation</em></td>
<td></td>
</tr>
<tr>
<td><em>Networking skills</em></td>
<td></td>
</tr>
</tbody>
</table>
A PILOT STUDY EXAMINING THE ROLE OF ENTREPRENEURIAL INTENT AND NEED FOR ACHIEVEMENT IN ACCOUNTING STUDENTS’ CAREER ASPIRATIONS

Marco Lam, Jay Azriel and Susan L. Swanger

Acknowledgements: The authors would like to thank Robert Lahm, Leroy Kauffman and anonymous reviewers for their helpful comments and suggestions.
Abstract

This study examines accounting majors’ intended career choices in order to better understand the factors that influence their career aspirations in pursuing a career in public accounting, particularly self-employment. In particular, we sought to uncover the role that a positive attitude toward entrepreneurship plays as an important role in determining accounting students’ career aspirations. Our findings suggest that accounting students who had a more positive attitude towards entrepreneurship were more likely to aspire to become a partner in an existing CPA firm or be the founding partner in their own CPA firm. Unlike prior research, we found no link between need for achievement and accounting majors’ career aspirations.

Keywords: Career aspirations, accounting education, entrepreneurial intent, need for achievement
The accounting profession remains one of the best vocations in the United States. Accounting jobs are expected to grow at 11 percent, which is faster than average, through 2024 (BLS, 2015). According to a report by US News (2015), accounting ranks number three in best business jobs, number five in STEM jobs, and an overall number 16 in “The 100 best jobs”. This may be due in part to it being characterized as a profession that is highly upwardly mobile, has above average flexibility, and has an average stress level. Despite this, accounting firms of all sizes report that attracting and retaining accountants are their top two problems (AICPA, 2015). In other words, accounting graduates have a variety of career paths from which to choose, from opening their own firm to joining a big four public accounting firm. American business students have responded positively to this trend as the number of accounting majors crossed the 250,000 threshold for the first time during the 2013 – 2014 academic year (AICPA, 2015).

Despite these marketplace trends, little research addresses questions that surround accounting student career choices. Thus, the objective of this study is to gain insights into the intended career choices of accounting majors in order to better understand why some graduates choose a career working for public accounting firms, while others prefer to work in corporate or governmental accounting jobs or eventually start their own firm. More specifically, we use an entrepreneurial lens to investigate the role that entrepreneurial intentions may play in accounting students’ career choices. We posit that accounting majors who select public accounting have many of the same characteristics, e.g., internal locus of control, work orientation, mastery orientation, and competitiveness orientation, that entrepreneurship students possess. These attributes play an important role as one moves up the ladder to partner, since attracting and
retaining clients and having profit and loss responsibilities are in a similar to running a firm. Some junior partners leave their employer to start a firm bringing with them clients.

Thus, this research has the potential to inform both undergraduate and graduate accounting curriculum, recruiters, and public accounting firm partners. The accounting curriculum may be enhanced to help students develop critical skills and the self-efficacy necessary to be successful in their aspired careers, whether on a partner track or a future CPA firm owner. The AICPA (2012), in its CPA Vision project, views the need for accounting education to be homogenous for all of its CPA professionals no matter:

The challenges of education, both pre- and post-CPA examination, are the same whether for a sole proprietor or a CFO. Demands to meet public, customer, employer, and client needs are founded in the same driving forces across the profession (p.5).

Hence, the AICPA implies that the required skill set and education are independent of the segment (i.e., public, corporate, governmental) that CPAs are working in. However, the AICPA’s position is based on the educational needs for its constituents (CPAs), when, in fact, many accounting professionals pursue different credentialing.

While prior research has addressed issues such as why undergraduate students seek accounting as a profession (e.g., Felton, Buhr, & Northey; 1994), accounting career plans (Nelson et al., 2008), accounting students’ public accounting career aspirations (Belkaoui, 1986), and accounting students’ personality profiles (Swain & Olesen, 2011), little research has been conducted that examines why some accounting graduates prefer to spend their career working for a public accounting firm or opening a firm where they are one of the founding partners. Prior accounting research reported that students’ need for achievement was one of the drivers of their career aspirations (e.g., Belkaoui, 1986).
The entrepreneurship literature suggests that business students who score high on the need for achievement are more likely to pursue more entrepreneurial jobs such as sales managers or small business owners (e.g., Sagie and Elizur, 1999). We contribute to this research by using an entrepreneurial lens to investigate the factors that drive accounting students’ career aspirations. This study seeks to extend the entrepreneurship literature through specifically studying the link between entrepreneurial intentions and accounting majors’ career aspirations. We build on Swain and Olson’s (2012) and Belkaoui’s (1986) studies by investigating how personality traits (i.e., need-for-achievement and entrepreneurial intent) of accounting students affect their short, medium, and long-term career aspirations. In addition, we expanded the focus from careers in public accounting to include accounting careers in industry, government, and the not-for-profit sectors. We developed and distributed a survey instrument that measured participants’ need for achievement, entrepreneurial intent, and career aspirations to test our hypotheses.

The remainder of the paper is organized as follows. In the next section, we discuss the prior literature. Then, we discuss the data collection process and survey development. The study’s results are presented in the following section. Finally, we discuss the results and implications of the study and suggest directions for future research.

**Literature Review and Hypotheses**

Prior research has investigated a number of dimensions related to students who major in accounting. For example, Nelson, Vendrzyk, and Qurin (2008) conducted a longitudinal study that examined demographic characteristics of accounting students between 2000 and 2006 in
order to inform both the accounting profession and educational institutions. They reported that 64 percent of the students surveyed preferred a career in public accounting. This was supported by students’ interest in certifications. The certification of choice for accounting students was CPA (89 percent), CIA (28 percent), and CMA (18 percent)\(^1\).

Students’ motivations for choosing accounting careers has been another area of interest (e.g., Ahmed, Alam, & Alam 1997; Felton, Buhr, & Northey, 1994; Nelson et al. 2002, 2008). Felton and colleagues (1994) found that students pursuing careers in accounting placed less emphasize on intrinsic values and initial earnings and more emphasis on long-term earnings and market conditions than other business students. Along the same lines, Nelson and colleagues (2008) reported that the single most important factor for accounting students’ career choice is the availability of jobs, while Ahmed and colleagues (1997) report that students in New Zealand pursuing a chartered accountant (CA) career placed more emphasis on financial and job-related factors than those who pursue a non-accounting career.

Swain and Olsen’s (2011) 15-year longitudinal study used the Myers-Briggs Type indicator to examine the personality profiles of accounting professionals from their first accounting course to becoming an accounting major, to pursuing long-term careers in accounting rather than in other business fields. They found that accounting professionals relied more on sensing than intuition. Therefore, accounting students and professionals were more likely to make decisions based on explicit information, focus on actualities and immediate experiences, rely on the five senses, and have a keen memory for detail. They found similar personality results for accounting students and accounting professionals. In particular, those who choose to have a long-term accounting career were much more likely to be sensors than intuitors.

\(^1\) The total is more than 100 percent due to some students selecting more than one certification.
**Need for Achievement**

Belkaoui (1986) examined accounting students’ need for achievement and their short, medium, and long-term career goals. After completing the Mehrabian (1969) Need-for-Achievement Scale, first semester intermediate accounting students were asked where in their public accounting career they would see themselves in five, 15, and 25 years. Belkaoui’s (1986) results suggested that the need for achievement was linked to the late career aspirations. Surprisingly, however, the proportion of very low need-in-achievement women in the study who aspired to become partner in 25 years was significantly larger than the proportion of high-need-for-achievement women in the study.

**The Always Changing Accounting Profession**

The AICPA (2012) identified eight forces that affect the accounting profession: non-CPA competitors, decline of new CPAs, technology displacement, leadership imperative, market value shifts, technological advances, borderless world, and pressure to transform from scorekeeper to business partner. The AICPA (2012) stated that “CPAs must rapidly develop new skills, gain new knowledge, and develop new competencies in broader areas of business practice so they are able to jump the experience curve” (p.21). The AICPA continued by saying:

As old methods of doing business and providing services begin to dissolve, new business practices, products and services are forming. The challenge is to concentrate on the emerging highly-valued business practices and strategies and not become trapped in the products and services that have outlived their value and usefulness (p.21).

These statement indicate both a great opportunity and need for students with entrepreneurial intent and organizations with an entrepreneurial orientation.
Attitude Towards Entrepreneurship and Entrepreneurial Intent

Thompson (2009) stated that “entrepreneurial intent is perhaps most appropriately and practically defined as a self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future.” Merz and Sauber (1995) defined entrepreneurial orientation as “the firm’s degree of proactiveness (aggressiveness) in its chosen product-market unit (PMU) and its willingness to innovate and create new offerings” (p. 554).

Şeşen and Pruett (2014) provided evidence that education is linked to entrepreneurial intent. Like accounting students who aspired to senior-level accounting positions (Belkaoui, 1986), small business students have a higher need for achievement (Sagie & Elizur, 1999). This high need for achievement, in turn, has a positive effect on the readiness to found a company and is a significant factor in entrepreneurial success (e.g., Sengupta & Debnath, 1994). Business students and graduates often see starting a business as an attractive alternative to wage or salary employment (Lühtje & Franke, 2003). Kolvereid (1996) argued that the increased interest in self-employment comes in part from the disappointment with traditional occupations.

Lühtje and Franke (2003) used Structural Equation Modeling (SEM) to model entrepreneurial intent. Their model included risk-taking propensity, internal locus of control, environmental support, and contextual barriers to predict propensity to start a new venture. Brockhaus (1995) defined risk propensity as “the perceived probability of receiving the rewards associated with success of a proposed situation.” Bonett and Furnham (1991) define internal locus of control as “the belief that one has influence over outcomes through ability, effort, or skill.” Chattopadhyay and Ghosh (2002) linked locus of control to entrepreneurial success. Lühtje and Franke (2003) reported that risk taking propensity and internal locus of control were
positively linked to attitude towards entrepreneurship. Attitude towards entrepreneurship, in turn, was positively correlated to entrepreneurial intent. Perceived barriers were also correlated (negatively and positively, respectively) with entrepreneurial intent.

Based on the prior literature we test the following hypotheses:

H1: Students with higher need of achievement are more likely to aspire to senior-level positions in accounting.

H2: Students with higher levels of entrepreneurial intent are more likely to pursue careers in public accounting while student with lower level of entrepreneurial intent are more likely to pursue careers in industry or government.

H3: Students with more positive attitudes towards entrepreneurship are more likely to pursue careers in public accounting.

---Insert Figure 1 Here---

---Insert Figure 2 Here---

Survey and Data Collection

The survey instrument measured the students’ need for achievement with items from the Work and Family Orientation (WOFO) scale developed by Spence and Helmreich (1983). The items measured work orientation, e.g., “I find satisfaction in exceeding my previous performance even if I don’t outperform others, mastery orientation”, “Once I undertake a task, I persist, and competiveness orientation”, and “It is important to me to perform better than others on a task.”
The items used to measure students’ attitude towards entrepreneurship, the external environment, and entrepreneurial intent were adapted to fit the accounting focus of our research from Lühtje and Franke (2003). Example items included: “I like to try new things (e.g., exotic foods, travel to new places, etc.)” to measure risk taking propensity; “It is hard to compete with existing CPA firms” to measure external environment; “I would rather be my own boss than have a secure job” to measure attitude towards entrepreneurship; and “If I opened an accounting firm I would be successful” to measure internal locus of control.

Entrepreneurial intent also adapted from Lühtje and Franke (2003) by making the questions specifically about an accounting career and was measured with the following three items; “How likely is it that you will start your own CPA firm after you graduate”, “Do you aspire to become partner in a CPA firm in the foreseeable future after you graduate”, and “How likely is it that you will become a partner in a CPA firm after you graduate”?

Finally, the items used to measure career aspirations were adapted from Belkaouï (1986) to include private accounting and governmental accounting in addition to public accounting careers. Participants chose between three career paths (public accounting, corporate accounting, and governmental/not-for-profit accounting) and indicated which level in their career (low, mid, senior) they anticipate to be in five, 15, and 25 years (hereinafter referred to as short-term, midterm and long-term, respectively).

We surveyed 122 graduate and undergraduate accounting major students at a mid-sized state university in the southeastern United States and a small private university in the northeastern United States to participate in the study. We received 120 responses for a response rate of 98.4 percent. We had 118 usable responses after two surveys were excluded from the analysis. One respondent indicated a different major and the other did not provide a major.
Nonresponse bias is not considered an issue in this study, because there was no basis to expect that nonresponse bias is different for students with different career aspirations.

The average (standard deviation) age of the respondents is 24.21 (6.525) years. The sample consists of 72 males (61 percent) and 46 females (39 percent). Of the 118 participants, 24 (20.3 percent) were graduate students, 60 (50.8 percent) were seniors, 31 (26.2 percent) were juniors, and 3 (2.5 percent) were sophomores.

Results

We used SPSS 21 and SmartPLS 2.0 (Ringle, Wende, & Will, 2005) to analyze the data. Of the respondents, 92 completed the questions on career aspirations. Our results indicate that while the majority of students (56.5 percent) initially would like to pursue a career in public accounting long-term (see Table 1 and Table 2, panel A), this percentage was much smaller over a student’s expected long term career (21.7 percent) (see Table 1 and Table 2, panel C). This percentage was similar for the male and female students, 53.6 percent and 54.1 percent respectively. The pattern suggested that both male and female students see their careers starting in public accounting, with the intention to move to corporate accounting, and finally intent to finish in a governmental or a not-for-profit career.

--- Insert Table 1 about here ---

--- Insert Table 2 about here ---

Consistent with Belkaoui (1986), we found no statistical link between need for achievement and short- to mid-term career aspirations. However, unlike Belkaoui (1986), the
link between need for achievement and long-term career aspirations is also insignificant (see Table 3)\(^2\). Hence, our first hypothesis was not supported.

Our results were consistent with Belkaoui’s (1986) findings that some students aspired to senior level positions in public and corporate accounting within the next five years. However, our sample, unlike Belkaoui’s, included Master of Accountancy students. Some of these students already have significant mid-level work experience.

--- Insert Table 3 about here ---

Students who scored higher on the entrepreneurial intent scale, as measured by the likelihood they would make partner in a CPA firm, were more likely to start careers in public accounting than careers in corporate accounting (See Table 4, Panel A, B, and C). The \(X^2\) test statistics for short-, medium-, and long-term career aspirations are 9.53 (\(p = 0.025\) one-tailed), 5.74 (\(p = 0.115\) one-tailed), and 3.16 (\(p = 0.266\) one-tailed), respectively. This partially supported our second hypothesis, which stated that accounting students with higher levels of entrepreneurial intent were more likely to pursue careers in public accounting. Specifically, accounting students who scored higher on the entrepreneurial intent scale were more likely to initially pursue careers in public accounting. However, this hypothesis was not supported for long-term career goals.

--- Insert Table 4 about here ---

We then looked at what drove students to aspire to careers in public accounting or nonpublic accounting (i.e., corporate, governmental and not-for-profit, or other). Results are

\(^{2}\) Comparing the lowest quartile to the highest quartile provides similar results.
reported in Table 5. We first examined students’ need for achievement. Anecdotal evidence suggested that the more driven students were more likely to pursue careers in public accounting. As reported in Table 5 Panel A, we found marginal evidence that students with a higher need for achievement were more likely to pursue careers in public accounting. The Z test statistics is -1.623 (p = 0.052, one tailed). Students with low need for achievement were equally likely to aspire to careers in public accounting and non-public accounting. However, students with high need for achievement were twice as likely to pursue careers in public accounting. As expected, students who aspired to become a partner in a CPA firm were more likely to initially pursue a career in public accounting. See Table 5 Panel B. The Z-statistic is -2.52 (p = 0.006, one-tailed). Interestingly, those students who did not aspire to become a partner in a CPA firm were equally likely to initially pursue careers in public and non-public accounting. Finally, students who scored high on the entrepreneurial intent scale were more likely to pursue careers in public accounting (Z = -1.94, p = 0.026, one tailed; See Table 5 Panel C). Students who scored low on the entrepreneurial intent scale were slightly more likely to pursue non-public accounting careers while those students that scored high on the entrepreneurial intent scale were twice as likely to pursue careers in public accounting. Hence our third hypothesis was supported for students’ short-term aspirations.

--- Insert Table 5 about here ---

We used structural equation modeling (SEM) to test our model for entrepreneurial intent in accounting students (See figure 1). As expected, internal locus of control and risk-taking propensity were statistically significant related to attitude towards entrepreneurship. Unlike prior entrepreneurship research, we found no statistically significant link between the contextual factor (i.e., perceived barriers) and entrepreneurial intent (aspire to start a CPA firm or to become a
partner in an existing CPA firm). As expected, the attitude towards entrepreneurship was statistically significant correlated with entrepreneurial intent.

--- Insert Figure 3 about here ---

Finally, we used SEM to test our three hypotheses simultaneously. Hypothesis one, Need for Achievement (work orientation, mastery orientation, and competitiveness orientation), was not significantly correlated with career aspiration (all p > 0.25). Consistent with our earlier findings, the correlation between entrepreneurial intent and aspired career path (public or non-public accounting) was statistically significant supporting H2. Finally, attitude towards entrepreneurship was correlated with entrepreneurial intent, which in turn was correlated with career path. This indirectly supported H3. In figure 4 below, the path coefficients and p-values are reported for short-term career aspirations. Similar results (not shown) were obtained for medium and long-term career aspirations. Note that the path coefficient for risk-taking propensity was statistically significant at the 0.05 level in Figure 3. However, when the additional variables were added (Work Orientation, Mastery Orientation, and Competitive Orientation) in Figure 4, risk-taking propensity was no longer significant.

--- Insert Figure 4 about here ---

**Conclusions and Implications**

Accountants work in a highly dynamic business environment, thus “CPAs must rapidly develop new skills, gain new knowledge, and develop new competencies” (AICPA, 2012). We investigated how accounting students’ personality traits (i.e., need-for-achievement and entrepreneurial intent) affected their short-, medium-, and long-term career aspirations. We found no evidence that a students’ need for achievement, as measured by the WOFO scale, was linked
to students’ career aspirations. However, we found (marginal) evidence that students who scored higher on the need-for-achievement scale were more likely to pursue careers in public accounting.

We found that students’ entrepreneurial intent and attitude towards entrepreneurship provided stronger evidence to predict their career aspirations. Specifically, students who scored higher on an entrepreneurial intent scale were more likely to aspire to initial careers in public accounting. Likewise, students who had a more positive attitude towards entrepreneurship were more likely to, initially, pursue careers in a public accounting firm. These entrepreneurially minded accounting professionals will likely be expected to attract new business and to develop innovative revenue sources as the business environment continues to rapidly evolve.

**Implications for Entrepreneurship Education**

These findings are important for educators, recruiters, and public accounting firm partners alike. Traditionally, accounting students have been among the top business students and these results indicate that the high achievers may need some additional exposure to entrepreneurship content in order to help them reach their long-term goals whether as a partner or owner of a public accounting firm.

Educators must prepare these students for the highly dynamic business environment that lies ahead for accounting graduates. This suggests that a more entrepreneurial general business curriculum might benefit business students in general and accounting students specifically. Entrepreneurial curriculum should be appropriately integrated into accounting courses from the program’s principles courses to more senior coursework. One outcome would be to cultivate a positive attitude towards entrepreneurship in addition to helping majors develop skills that will aid them in working with smaller business clients and prepare them for potentially starting a
CPA practice of their own. Students wishing to take additional courses toward the required 150 credit hours could be encouraged to take one to several entrepreneurship courses.

**Limitations**

This study has limitations. The strength of the survey method used in this research is in its external validity. However, the responses were self-reported and indicate career aspirations. As such, actual career paths that our sample pursued might be different from the aspired career path. While self-reported measures are a potential shortcoming of all survey research, a strong positive correlation between self-reported measures and objective measures has been found in prior research (e.g., Dess and Robinson, 1984; Ketokivi and Schroeder, 2004). As pointed out by Harris and Gibson (2008), attitudes towards entrepreneurship are often associated with becoming an entrepreneur.

**Future Research Directions**

This research can be extended in several directions. First, future research could investigate whether accountants who score high on the need for achievement scale obtain, rather than aspire to, different accounting careers. Second, a longitudinal study could investigate whether the entrepreneurial intent measure is stable over time. Third, accounting firms experience a high turnover rate. Future research could investigate whether students who have more positive attitudes towards entrepreneurship are more likely to stay in public accounting if they work for an accounting firm that scores high on the entrepreneurial orientation scale, i.e., is more entrepreneurial.
References


American Institute for Certified Public Accountants. (2012). *The CPA Vision Project and Beyond*.


Table 1: Number (Percentage) of Students with Short-, Medium-, and Long-Term Career Aspirations in Public, Corporate, and Governmental & Nonprofit Accounting.

<table>
<thead>
<tr>
<th></th>
<th>Short-term</th>
<th>Medium-term</th>
<th>Long-term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>53 (44.9%)</td>
<td>28 (23.7%)</td>
<td>20 (17.0%)</td>
</tr>
<tr>
<td>Corporate</td>
<td>31 (26.3%)</td>
<td>43 (36.4%)</td>
<td>25 (21.2%)</td>
</tr>
<tr>
<td>Governmental &amp; NFP</td>
<td>8 (6.7%)</td>
<td>19 (16.0%)</td>
<td>35 (29.7%)</td>
</tr>
<tr>
<td>Other</td>
<td>4 (3.4%)</td>
<td>7 (5.9%)</td>
<td>16 (13.6%)</td>
</tr>
</tbody>
</table>

Table 2: Number (Percentage) of Students with Career Aspirations in Public, Corporate, and Governmental & Nonprofit Accounting by Career Level.

Panel A: Short-term Career Aspirations

<table>
<thead>
<tr>
<th></th>
<th>Low (%)</th>
<th>Mid (%)</th>
<th>Senior (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>17 (18.5)</td>
<td>31 (33.7)</td>
<td>4 (4.3)</td>
</tr>
<tr>
<td>Corporate</td>
<td>16 (17.4)</td>
<td>12 (13.0)</td>
<td>1 (1.1)</td>
</tr>
<tr>
<td>Governmental &amp; NFP</td>
<td>4 (4.3)</td>
<td>3 (4.3)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td>4 (4.3)</td>
</tr>
</tbody>
</table>

Panel B: Medium-term Career Aspirations

<table>
<thead>
<tr>
<th></th>
<th>Low (%)</th>
<th>Mid (%)</th>
<th>Senior (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>0 (0.0)</td>
<td>15 (16.3)</td>
<td>12 (13.0)</td>
</tr>
<tr>
<td>Corporate</td>
<td>4 (4.3)</td>
<td>23 (25.0)</td>
<td>13 (14.1)</td>
</tr>
<tr>
<td>Governmental &amp; NFP</td>
<td>4 (4.3)</td>
<td>11 (12.0)</td>
<td>3 (3.3)</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td>7 (7.6)</td>
</tr>
</tbody>
</table>

Panel C: Long-term Career Aspirations

<table>
<thead>
<tr>
<th></th>
<th>Low (%)</th>
<th>Mid (%)</th>
<th>Senior (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>0 (0.0)</td>
<td>6 (6.5)</td>
<td>14 (15.2)</td>
</tr>
<tr>
<td>Corporate</td>
<td>2 (2.2)</td>
<td>4 (4.3)</td>
<td>18 (19.4)</td>
</tr>
<tr>
<td>Governmental &amp; NFP</td>
<td>2 (2.2)</td>
<td>16 (17.4)</td>
<td>14 (15.2)</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td>1 (1.3)</td>
</tr>
</tbody>
</table>

Table 3: Number (Percentage) of Students by Aspired Job Level and Need for Achievement
Panel A: Short-term Career Aspirations

<table>
<thead>
<tr>
<th>Need for Achievement</th>
<th>Career Level</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Mid</td>
<td>Senior</td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>16 (18.0%)</td>
<td>24 (27.0%)</td>
<td>1 (1.1%)</td>
<td>3 (3.4%)</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>19 (21.3%)</td>
<td>21 (23.6%)</td>
<td>4 (4.5%)</td>
<td>1 (1.1%)</td>
<td></td>
</tr>
</tbody>
</table>

Panel B: Medium-term Career Aspirations

<table>
<thead>
<tr>
<th>Need for Achievement</th>
<th>Career Level</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Mid</td>
<td>Senior</td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>5 (5.6%)</td>
<td>24 (27.0%)</td>
<td>12 (13.5%)</td>
<td>4 (4.5%)</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>3 (3.4%)</td>
<td>24 (27.0%)</td>
<td>15 (16.9%)</td>
<td>3 (3.4%)</td>
<td></td>
</tr>
</tbody>
</table>

Panel C: Long-term Career Aspirations

<table>
<thead>
<tr>
<th>Need for Achievement</th>
<th>Career Level</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Mid</td>
<td>Senior</td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>First Quartile</td>
<td>2 (2.2%)</td>
<td>11 (12.4%)</td>
<td>24 (27.0%)</td>
<td>7 (7.9%)</td>
<td></td>
</tr>
<tr>
<td>Second Quartile</td>
<td>5 (5.6%)</td>
<td>14 (15.7%)</td>
<td>21 (23.6%)</td>
<td>8 (9.0%)</td>
<td></td>
</tr>
</tbody>
</table>
Entrepreneurial Intent and Need for Achievement

**Table 4:** Number (Percentage) of Students by Entrepreneurial Intent and Career Field Panel

A: Short-term Career Aspirations

<table>
<thead>
<tr>
<th></th>
<th>Very Unlikely</th>
<th>Very Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>5 (5.6%)</td>
<td>10 (11.1%)</td>
</tr>
<tr>
<td>Corporate</td>
<td>6 (6.7%)</td>
<td>7 (7.8%)</td>
</tr>
<tr>
<td>Governmental &amp; NFP</td>
<td>3 (3.3%)</td>
<td>1 (1.1%)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (2.2%)</td>
<td>1 (1.1%)</td>
</tr>
</tbody>
</table>

Panel B: Medium-term Career Aspirations

<table>
<thead>
<tr>
<th></th>
<th>Very Unlikely</th>
<th>Very Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>2 (2.2%)</td>
<td>5 (5.6%)</td>
</tr>
<tr>
<td>Corporate</td>
<td>7 (7.8%)</td>
<td>10 (11.1%)</td>
</tr>
<tr>
<td>Governmental &amp; NFP</td>
<td>4 (4.4%)</td>
<td>3 (3.3%)</td>
</tr>
<tr>
<td>Other</td>
<td>3 (3.3%)</td>
<td>1 (1.1%)</td>
</tr>
</tbody>
</table>

Panel C: Long-term Career Aspirations

<table>
<thead>
<tr>
<th></th>
<th>Very Unlikely</th>
<th>Very Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>2 (2.2%)</td>
<td>4 (4.4%)</td>
</tr>
<tr>
<td>Corporate</td>
<td>3 (3.3%)</td>
<td>8 (8.9%)</td>
</tr>
<tr>
<td>Governmental &amp; NFP</td>
<td>6 (6.7%)</td>
<td>5 (5.6%)</td>
</tr>
<tr>
<td>Other</td>
<td>5 (5.6%)</td>
<td>2 (2.2%)</td>
</tr>
</tbody>
</table>

---

3 Self-Assessed Likelihood of Becoming a Partner in a CPA Firm
Table 5: Short-term Career Aspirations of Number (Percentage) of Students

Panel A: Need for Achievement

<table>
<thead>
<tr>
<th>Need for Achievement</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Accounting</td>
<td>22 (24.7%)</td>
<td>29 (32.6%)</td>
</tr>
<tr>
<td>Other</td>
<td>23 (25.8%)</td>
<td>15 (16.9%)</td>
</tr>
</tbody>
</table>

Panel B: Aspiring to become partner

<table>
<thead>
<tr>
<th>Aspire to become a partner in CPA firm?</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Accounting</td>
<td>38 (42.7%)</td>
<td>13 (14.6%)</td>
</tr>
<tr>
<td>Other</td>
<td>36 (40.4%)</td>
<td>2 (2.2%)</td>
</tr>
</tbody>
</table>

Panel C: Entrepreneurial Intent

<table>
<thead>
<tr>
<th>Entrepreneurial Intent</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Accounting</td>
<td>21 (23.6%)</td>
<td>30 (33.7%)</td>
</tr>
<tr>
<td>Other</td>
<td>23 (25.8%)</td>
<td>15 (16.9%)</td>
</tr>
</tbody>
</table>
Figure 1: Entrepreneurial Intent Model
Figure 2: Model

- Work Orientation
- Mastery Orientation
- Competiveness Orientation
- Career in Public Accounting
- Risk Taking Propensity
- Internal Locus of
- Attitude towards Entrepreneurship
- Entrepreneurial Intent
- External Environment
Figure 3: Entrepreneurial Intent

- Risk Taking Propensity: $0.193, p = 0.047$
- Internal Locus of Control: $0.367, p = 0.001$
- Attitude towards Entrepreneurship: $R^2 = 0.192$
- External Environment
- Entrepreneurial Intent: $R^2 = 0.217$

$0.443, p < 0.001$
$0.091, p = 0.576$
Figure 4:
Executive Summary

In majority of times when a potential start-up strikes a brilliant business idea, he/she has little knowledge of ‘how to move from there’. They lack information on the stakeholders of entrepreneurship ecosystem who can help and assist these startups in numerous ways and help them materialize their concepts. Availability of this information will help the ecosystem stakeholders to avoid replication and duplication of efforts. Similarly, knowledge of status quo helps identify opportunities and supports plan development to endeavor through right strategy for the start-up.

The objective of this paper is to establish the fact there exists an entrepreneurship ecosystem at strategic and institutional levels and a map of the levels helps the start-ups and entrepreneurs to secure assistance from right sources in time and cost effective manner. It will assist in knowing the deficiencies, efficiencies and proficiencies of the ecosystem. This in turn identifies further business and startup opportunities in areas where there is a death of activity in the ecosystem.

Research Design & Methods: A cross sectional basic study, where the existing sources of information are researched and in light of the literature measures are identified. Qualitative work also includes the interviews from professionals of the firms and governmental departments.

Findings: There does exist an ecosystem of entrepreneurship as this evolution study identifies the growth at both the strategic and institutional levels satisfying the premise that there is an entrepreneurship ecosystem development happening. There are strategic and institutional levels of ecosystem operating.

Implications & Recommendations: The mapping will help support the start-ups and entrepreneurs at all stages of the life cycle.

Contribution & Value Added: The originality of this work lies in developing a map of the strategic and institutional level entrepreneurship ecosystem.

Impact on Entrepreneurship Education

A brand new area of investigation and teaching introduced, i.e. entrepreneurship ecosystem with Strategic, Institutional and Enterprise level. The teaching will assist in further understanding the start-up context from ecosystem perspective.

Background and Introduction

This paper is further development of Rahatullah 2013 and 2016. The previous studies developed mapping structure of an entrepreneurship ecosystem proposed by Szabo identifying strategic and institutional levels of the ecosystem. Similarly, Isenberg (2011) took a step further and identified domains of an entrepreneurship ecosystem. These were, Strategic, Support and Culture domains with numerous elements. The Rahatullah 2013 and 2016 took the studies further and mapped the ecosystem with domains and levels together.

It is seen that when the potential startups struck an idea and are in initial, early or later stages of the startup development, majority of times they do not know where to get what kind of assistance. Similarly, they have little idea on the sources of funding, intellectual property rights and legal framework of the country. At times they get trapped and due to difficulty in finding the right organization for assistance they simply give up the idea.

Therefore, it is pertinent to provide correct, latest and efficient information on key stakeholders in the ecosystem so that first and second stage entrepreneurs secure information in time and cost effective manner. Such knowledge would include data on, coaching, mentoring, venture capital, training and development, consulting, personal development, soft skills, incubator or accelerator facilities required, research and development, patent and copyrighting, legal and others.
The second benefit of such information is for stakeholders at both strategic and institutional levels to identify efficiencies, deficiencies and proficiencies in the ecosystem. This will avoid replication and duplication of efforts.

In the following pages the strategic and institutional levels of Saudi Arabian Entrepreneurship Ecosystem for years 2015 and 2016 are shown. A brief commentary is provided with the maps.

For complete evolution and maps from 2013 to 2017, please visit [www.meeen.org](http://www.meeen.org).
It can be seen that the strategic level of the Saudi Arabian ecosystem has evolved and new services and organizations are being added. Most importantly, an authority on SME development and growth has been established. This authority was proposed in Ramahlan, 2013.

<table>
<thead>
<tr>
<th>SAGIA</th>
<th>HRDF</th>
<th>SIDF</th>
<th>SCSB</th>
<th>MOL</th>
<th>MOI</th>
<th>CF</th>
<th>KACST</th>
<th>CSC</th>
<th>MODON</th>
<th>SME Authority</th>
<th>IFC</th>
<th>BADIR</th>
</tr>
</thead>
</table>

New organizations and services have been added at the strategic level of entrepreneurship ecosystem of Saudi Arabia

www.meeen.org 15-12-2016
The Institutional Level

The institutional level added a number of organizations in 2015 from 2014 as evidenced in Rahatullah 2016. The venture capital firms and investors started to pour into the eco adding to its dynamism.
In 2016 a huge change is observed again. A number of new activities in the domains identified by Isenberg 2011 are added in institutional level put forth by Szabo 2006 and 2007.
OPPORTUNITY RECOGNITION AND FIRM SUCCESS: A STUDY OF NOVICE AND EXPERIENCED ETHNIC MINORITY ENTREPRENEURS

SherRhonda R. Gibbs, Ph.D.
Associate Professor
The University of Southern Mississippi
College of Business
119 College Drive Box 5077
Hattiesburg, MS 39406
phone: 601-266-5344
fax: 601-266-4327
email: sherrhonda.gibbs@usm.edu

Alisa L. Mosley, Ph.D.
Professor
Tennessee State University
1700 E. Cold Spring Lane
Baltimore, MD 21251
phone: 443-885-3433
fax: 410-885-8252
email: amosley@tnstate.edu

Harold W. Lundy, Jr.
PhD Candidate
University of Maryland Eastern Shore
Department of Business, Management & Accounting
Princess Anne, MD 21853
phone: 410-651-6523
email: hlundyjr@umes.edu

Mary M. White
Associate Professor
Jackson State University
1600 J. R. Lynch Street
Jackson, MS 39201
phone: 601-979-2541
email: mary.m.white@jsums.edu

(Submitted for consideration for presentation at the 2017 United States Association for Small Business and Entrepreneurs Conference)
Opportunity Recognition and Firm Success:
A Study of Novice and Experienced Ethnic Minority Entrepreneurs

ABSTRACT

In regards to business survival and success, minority entrepreneurs lag behind mainstream entrepreneurs. To explore the disparity, we examine whether opportunity recognition and entrepreneurial experience can ascertain differences between minority entrepreneurs who are successful, and those who are not. Using data collected from 232 minority entrepreneurs, we found that entrepreneurs in our study were much more likely to have pursued internally-stimulated opportunities than externally-stimulated opportunities. Experienced entrepreneurs were more likely to pursue internally-stimulated opportunities, have higher levels of opportunity recognition perceptions and behaviors, and firm success. Practical and academic implications are discussed and future research directions are offered.

Key Words:

Minority entrepreneurs, opportunity recognition, firm success, novice entrepreneurs
Executive Summary

Synopsis:
We examine whether opportunity recognition can ascertain differences between ethnic minority entrepreneurs who are successful, and those who are not.

Methodology:
The study uses cross-sectional data from 232 ethnic minority entrepreneur members of three entrepreneur support organizations. We use descriptive statistics, cross tabulations, and one-way ANOVAs to test hypotheses and examine study data.

Findings:
We found that the entrepreneurs in our study – all of whom had achieved moderate success – were much more likely to have pursued internally-stimulated opportunities than externally-stimulated opportunities. Study findings also indicated that experienced ethnic minority entrepreneurs were much more likely to pursue internally-stimulated opportunities, had higher levels of opportunity recognition perceptions and behaviors, and had greater firm success. In the analysis, significant differences were found to exist between certain opportunity recognition processes and firm performance. As a final point, the data suggests that ethnic minority entrepreneurs who are more proficient at opportunity recognition experience greater firm success than those entrepreneurs who are less proficient at opportunity recognition.

Conclusions and Implications for Theory/Practice:
In general, we can conclude that heightened opportunity recognition and entrepreneurial experience play a significant role in the success of minority firms. Many studies have sought to examine factors which can account for firms succeeding and failure. Our study indicates a succinct need to increase the training and business exposure of ethnic minority entrepreneurs.
Entrepreneurship educators and practitioners seeking to improve success levels of minority entrepreneurs should incorporate training programs which specifically focus on opportunity recognition. Policy makers interested in the success of minority entrepreneurs must focus program goals and funding towards enhanced opportunity recognition training. This study is one of the first to examine the opportunity recognition processes and success of minority firms. It is merely a first step in ascertaining how to close the success gap between minority and mainstream entrepreneurs.

INTRODUCTION

Entrepreneurship and new venture creation are major drivers of economic growth (Audretsch & Thurik, 2001; Reynolds, 2007; Reynolds, Carter, Gartner, & Greene, 2004; Schumpeter, 1934) and job creation (Birch, 1987; Kirchoff & Phillips, 1988; Scarborough, Wilson, & Zimmerer, 2009; Van Stel & Storey, 2004). Cornwall (2008) estimated that about 50 percent of the United States’ GDP now comes from entrepreneurial activity. The ongoing global economic slowdown has adversely affected many Americans; however, one sub-group of the U.S. population that has been more severely impacted is minority. In July 2011, the U.S. Department of Labor reported the nation’s unemployment rate to be 9.1 percent. But, for minorities, unemployment rates were 17 percent for blacks, nearly twice that of white Americans (8.5 percent), 11.3 percent for Latinos, and 7.7 percent for Asians. PRWEB (2011) reports that the unemployment rate for Native Americans ranges from 15.2 percent to a staggering 85 percent. This long-term unemployment difference between minority and white Americans is one of the major contributors to the significant disparity in household income and wealth.
There is a clear economic need for increased entrepreneurial activity within the minority community. Entrepreneurship represents a viable alternative to unemployment and can provide a clear path for wealth-building (e.g., Light, 1979; Moore, 1983; Sowell, 1981). Research has shown that minorities are more likely to hire other minority job seekers, than are white business owners (Bates, 1994). One solution is increasing minority firm startup and success. Up to this point, however, minority firms have lagged behind mainstream firms in regards to revenues and performance (MBDA, 2008). Reasons for this disparity are not known, however, research by Singh, Knox, and Crump (2008) point to the fact that opportunity recognition may in part, help explain the disparity. Opportunity recognition is the critical factor in new venture creation and success (Shane, 2000). As opportunity recognition is a key prerequisite for venture success then it is important to explore whether or not the lack of success for some minority entrepreneurs is due to deficiencies in the opportunity recognition process. Given opportunity recognition’s role in venture success, investigating whether or not minority entrepreneurs have the training and background to fully exploit the opportunity recognition process, may help to close the success gap.

So What?

In this study, we focus our attention on the opportunity recognition processes and firm success of ethnic minority entrepreneurs. We consider ethnic minority entrepreneurs as U.S. citizens or permanent residents who affiliate as Black, Hispanic, Native American or Asian. Entrepreneurs in the current study have completed minority certification compliance required by minority entrepreneur support organizations (ESO). Understanding the opportunity recognition processes employed by entrepreneurs can help explain reasons for startup and the likelihood of firm survival (Singh & Hills, 2003; Singh, Knox, & Crump, 2008). As a point of emphasis, we examine differences between novice and experienced entrepreneurs. Much can be learned from
previous business failures which may add to the entrepreneur’s stock of knowledge. Prior
studies have investigated subpopulations of entrepreneurs (i.e. novice, habitual), their likes and
dislikes, similarities and differences (Birley & Westhead, 1993; De Koning, 1999; Kolvereid &
Bullvag, 1993); however, there is a paucity of opportunity recognition literature investigating
venture success among ethnic minority entrepreneurs.

The vast majority of studies examining subpopulations of entrepreneurs have been
completed within the past decade (Baron, 2006; Baron & Ensley, 2006; Delmar & Davidsson,
2000; Ucbasaran, Wright, & Westhead, 2003; Westhead et al., 2003, Westhead et al., 2004;
Westhead & Wright, 1998a, 1998b; Wright, Robbie, & Ennew, 1997; Wright, Westhead, & Sohl,
1998). In their research, Westhead and Wright (1998a, p. 174) argue that “there is a need to take
note of the heterogeneity of types of entrepreneur and to consider the entrepreneur as the
appropriate unit of analysis rather than simply the firm”. Much of the extant opportunity
recognition research is replete with theoretical and empirical research on opportunity recognition
and its antecedents. More insight is needed to better understand entrepreneur experience and
opportunity recognition.

A lingering question that has yet to be answered in entrepreneurship literature is whether
or not ethnic minorities as a group employ opportunity recognition processes in the same manner
as their majority counterparts. In this paper, we seek to extend minority entrepreneurship literature
by examining the opportunity recognition processes and firm success of minority entrepreneurs.
Primary research questions include:

• Does prior entrepreneurship experience determine the type of opportunity pursued?

• Will the type of opportunity pursued be more indicative of success among minority
  entrepreneurs?
Do higher levels of opportunity recognition perceptions and behaviors determine success for ethnic minority firms?

The paper proceeds with a review focusing on findings related to minority entrepreneurs and pertinent opportunity recognition literature followed by the development of five formal research hypotheses. We then describe the sample used to test the hypotheses and present the empirical results. Findings are discussed and practical and research implications offered. We conclude with directions for future research.

MINORITY ENTREPRENEURSHIP: CURRENT REALITY

Currently, there remain higher barriers for minorities that wish to engage in start-up businesses. Ethnic minority owned businesses have higher failure rates, lower sales, lower profits, and less employment due in part to lack of three vital factors: skill level and capability of the entrepreneur or the management team, access to financial resources and venture capital, and market accessibility for the products or services provided by the enterprise (Bates, Jackson, & Johnson, 2007). In 2004, President Bush attempted to pool the resources of the The U.S. Small Business Administration (SBA), the Department of Commerce's Minority Business Development Agency (MBDA), and other Federal entities to provide one-stop centers for business training, counseling, financing, and contracting (FDCH, 2004). Government statistics also offer some encouragement. From 2002 to 2007, minority business ownership increased at more than twice the national rate with 45 percent more minority businesses created versus only 18 percent growth of all U.S. businesses (U.S. Census Bureau, 2011).

Historically, access to capital has been a hindrance for minority firms. However, minority entrepreneurs who are able to secure venture capital, more often than not, are
successful. A study by the Ewing Marion Kauffman Foundation (2011) found that blacks in particular are about 50 percent more likely to engage in start-up activities than whites. The average venture capital investment in a minority business firm was $562,000 and it generates an average net return of $1,061,500.

Entrepreneurs will play an important role in helping the global and domestic economy rebound and minority entrepreneurs should be represented in the next wave of business activity. President Obama believes that diverse entrepreneurs will play an important role in our economic resurgence (Benton, 2010). Obama hosted The Presidential Summit on Entrepreneurship on April 26-27, 2010, inviting over 250 entrepreneurs from over fifty countries to join The United States in promoting global entrepreneurship (The White House, 2010). The Obama Administration also hosted an Urban Entrepreneur Summit (UES) at Rutgers University’s Newark campus in June 2011 to specifically encourage business investment activity of minorities. Minorities, who account for 35% of America's population, own 4.1 million businesses. Minority-owned businesses currently generate about $700 billion in revenue; employ nearly 5 million workers in the U.S. (Brown, 2011).

Government officials are seeking polices that fairly remedy the lack of access to capital minorities face while also preserving the free market system. Successful entrepreneur Robert L. Johnson stated that the 51 percent equity minority ownership requirement for gaining access to government preferences might be outdated. Market relationships should decide the percentage of minority ownership and base ownership should not only be based on equity control but other factors such as: ‘Is the minority the founder of the company? Is the minority the key revenue driver in the company based on his or her intellectual capital, i.e. Oprah Winfrey? (Johnson, 2010).
According to Hills and Singh (2004) many scholars now realize the importance of opportunity to entrepreneurship. Bygrave and Hofer (1991) proposed to define an entrepreneur as someone who perceives an opportunity and creates an organization to pursue an opportunity. Opportunity recognition can vary by population characteristics. For example, Blacks are more likely than other groups to engage in externally stimulated opportunity recognition and less likely than others to engage in internally stimulated opportunity recognition (Singh, Knox and Crump, 2008). There is a surprising lack of research in the area of opportunity recognition for minority entrepreneurs. The success of minority entrepreneurs might be increased by studying the processes shown to improve venture success and sustainability; for which opportunity recognition is one. Singh, et al. (2008), suggests that in addition to financial and economic factors, more research is needed on a broader range issues that limit minority entrepreneurship. The following section summarizes relevant literature underlying current opportunity recognition research, including Bhave’s (1994) model of opportunity recognition processes that was used to examine minority entrepreneurs in this study.

OPPORTUNITY RECOGNITION AND FIRM SUCCESS

No matter how one defines entrepreneur, opportunity recognition is the critical first step in the entrepreneurial process (Acs & Audretsch, 2003; Hills 1995; Shane & Venkataraman, 2000; Singh, 2000; 2001). We agree with Lumpkin, Hills and Shrader’s (2004, p. 74) definition of opportunity recognition as “perceiving a possibility to create new businesses, or significantly improving the position of an existing business” which results in new profit potential. This broad definition allows for the possibility of different recognition processes and accepts that
opportunity recognition does not end with the founding of the firm; it is an ongoing activity undertaken by entrepreneurs.

Identifying and selecting the right opportunities is an important ability of successful entrepreneurs (Ardichvili, Cardozo & Ray, 2003). Opportunity recognition is a continual process that spans the life of a firm if it is to survive, and it may be the result of serendipity or deliberate search (Chandler, Dahlqvist, & Davidsson, 2002). Researchers have offered numerous models of opportunity recognition incorporating factors considered to be antecedents of opportunity recognition, such as entrepreneurial traits, prior knowledge, social networks, cognition, and entrepreneurial alertness (Bhave, 1994; Hills, Lumpkin, & Singh, 1997; Ozgen, 2003; Shane, 2000; Singh, 2000; Venkataraman, 1997). There are many models and constructs that make up the opportunity recognition process, but it appears to be an iterative, non-linear, cyclical process (Baron, 2006; Lumpkin, et al., 2004; Timmons & Spinelli, 2007) that consists of identifying new venture ideas that can become entrepreneurial opportunities (Singh, 2000).

**Bhave’s Model of Venture Creation**

Bhave (1994) proposed a process model of venture creation with opportunity recognition being the key early stage in the sequence of events leading to the creation of the venture. In the model, Bhave (1994) identified two types of opportunity recognition based on Cyert and March’s (1963) earlier typology which divided opportunity recognition into two categories: externally-stimulated and internally-stimulated opportunity recognition.

An externally-stimulated opportunity is one where the decision to start a venture precedes opportunity recognition. In this situation, an individual decides to become an entrepreneur and then seeks out opportunities that can lead to a firm. Entrepreneurs who recognize the opportunities for their businesses through this process engage in an ongoing search for
opportunities which they filter, massage, and elaborate on before selecting one and founding their firms.

An alternative venture creation path results from internally-stimulated opportunity recognition. Here the entrepreneur discovers a problem to solve, or an unmet market need, and decides to create a venture to address the problem or need. The entrepreneur may not have been actively attempting to create a new venture, but the opportunity presented itself and led to a new entrepreneurial firm. Using PSED data, Singh and Hills (2003) found significant differences between nascent entrepreneurs who were pursuing internally-stimulated opportunities versus externally-stimulated opportunities in terms of the financial potential of their opportunities, their motivations for founding new ventures and their expectations for success.

The authors reported that those entrepreneurs whose opportunities were internally stimulated had higher net worth and higher educational attainment levels. In addition, Singh and Hills (2003) found that those who pursued internally-stimulated opportunities projected higher revenues for their ventures than those who pursued externally-stimulated opportunities. These findings suggest a difference in the types and quality of the opportunities recognized and pursued by entrepreneurs based on the process used to recognize their opportunities. Given the paucity of research on opportunity recognition and minority entrepreneurs, we drew from Singh et al. (2008) research on black and white entrepreneurs’ opportunity recognition processes to develop study hypotheses. In an extension to Singh and Hills’ (2003) research, Singh and his associates (2008) explored and found significant differences between black and white nascent entrepreneurs within the PSED with respect to recognizing internally-stimulated opportunities versus externally-stimulated opportunities. More specifically, Singh et al. (2008) found that black
nascent entrepreneurs were significantly more likely to pursue externally-stimulated opportunities than white nascent entrepreneurs.

The authors speculated that whites may be *pulled* toward entrepreneurship by opportunities they wish to pursue and blacks may be *pushed* toward entrepreneurship due to real or perceived inequities in the labor market. Whatever the cause, the difference in the type of opportunity resulted in black nascent entrepreneurs pursuing lower projected revenue opportunities than white nascent entrepreneurs. This leads the authors to question whether or not this trend occurs in other minority entrepreneur groups. Interestingly, regression results provided other insights into the nature of the differences between black and white nascent entrepreneurs. Controlling for age, education, and net worth, choosing to pursue externally-stimulated opportunities resulted in lower projected revenue ventures. When race was added to the regression model, there was no difference in projected revenues. The significant difference in the projected new venture revenues (i.e., quality of the opportunities) pursued by black and white nascent entrepreneurs could be explained by the different ages of the two groups, the significant difference in net worth, and the opportunity recognition process chosen.

The study by Singh *et al.* (2008) showed that black and white nascent entrepreneurs differ with respect to the type of opportunity pursued (i.e., internally-stimulated or externally-stimulated), and their results suggest that this difference may play an important role in the potential success of new ventures. Unsurprisingly, Singh *et al.* (2008) called for further study of the opportunity recognition processes of black entrepreneurs, and research that assists scholars in understanding non-financial factors that may be impacting black entrepreneurship.

The fact is, successful new venture creation requires the ability to recognize market opportunities and to respond by creating strategies to meet marketplace needs (Griffeth, Noble,
The ability to see a market need is consistent with internally-stimulated opportunity recognition. Based on the findings of Singh and Hills (2003) and Singh et al. (2008) discussed above, nascent entrepreneurs who pursued internally-stimulated opportunities were more likely to pursue ventures that were expected to produce larger, higher-revenue firms, suggesting the possibility that these are better opportunities. Singh et al. attributed the success of nascent firms to choosing internally-stimulated opportunities. Similarly, we propose that this same pattern of success will occur among minority entrepreneurs. As a result of these findings in the literature we hypothesized the following:

**H1**: Minority entrepreneurs who found firms based on internally-stimulated opportunities will report higher levels of firm performance (e.g. firm age, revenues, business performance) than those who founded firms based on externally-stimulated opportunities.

**H2**: Minority entrepreneurs who pursue internally-stimulated opportunities will differ significantly from minority entrepreneurs pursuing externally-stimulated opportunities with respect to firm performance (e.g. firm age, revenues, business performance).

**ENTREPRENEURIAL EXPERIENCE, OPPORTUNITY RECOGNITION, AND FIRM SUCCESS**

Entrepreneurship literature has evolved with regards to how entrepreneurs are classified. Recognizing that entrepreneurship may not be a single event action (Westhead & Wright, 1998a), researchers investigated the characteristics of various types of entrepreneurs (i.e. novice, habitual). This stream of research is important given that entrepreneurs may start several businesses before a successful venture is launched (Ronstadt, 1982). Although there seems to be general agreement about novice entrepreneurs being first-time business owners, definitional clarity for serial and portfolio entrepreneurs is much more onerous. While various scholars have offered numerous useful and pertinent definitions of nascent, novice, serial, and habitual
entrepreneurs (see Birley & Westhead, 1993; Kolveried & Bullvag, 1993; Donckels, DuPont & Michel, 1987; Westhead & Wright, 1998a; Ucbasaran & Westhead, 2002), we adopt a more simplistic definition which considers novice entrepreneurs as first time business owners, and experienced entrepreneurs as individuals who have started a more than one business (which may or may not have been successful). We argue that the experience of attempting new venture creation provides idiosyncratic knowledge which provides an advantage to those who undertake the process.

In what may be considered the most extensive review of types of entrepreneurs, Westhead and Wright (1998a) examined the parental background, work experience, age at startup, personal attitudes to entrepreneurship and source of funds for 621 novice, serial, and portfolio entrepreneurs. They also discovered that while no differences in firm performance existed among entrepreneur types, significant differences were found in regards to parental background, work experience, reasons for startup and attitudes towards entrepreneurship.

In another study, Westhead et al. (2004) asserted that cognition leads to new insights and exploitation of windows of opportunity. They examined the differences among novice, portfolio and serial entrepreneurs and cognition, and found that larger proportions of experienced entrepreneurs considered themselves to have greater cognitive mindsets and to be more creative and innovative than novice entrepreneurs.

Other researchers (Alsos & Kaikkonen, 2004; Ucbasaran & Westhead, 2002) have noted that prior knowledge and experience can explain why experienced (e.g. habitual) entrepreneurs are better at opportunity generation and identification than other entrepreneurs (e.g. novice). Entrepreneurs’ ability to identify opportunities is based on cues or signals from the environment that they filter out (Krueger, 2003). Singh and colleagues (1999a) make note of the fact that over
time, serial entrepreneurs recognize more opportunities due to experience and more extensive social networks. This finding infers that serial entrepreneurs may be more adept at opportunity recognition than nascent entrepreneurs. Considering that experience influences entrepreneurs’ confidence in their ability to recognize opportunities (Ucbasaran & Westhead, 2002), it can also be theorized that entrepreneurs with extensive entrepreneurial experience may pursue more internally-stimulated opportunities when compared to novice entrepreneurs. More recent studies by Baron (2006) and Baron & Ensley (2006) also found that the pattern recognition and opportunity prototypes of experienced entrepreneurs are more profound than that of novice entrepreneurs.

Collectively, we believe that race may have little to no impact on the type of opportunities pursued by minority entrepreneurs. However, given the modest venture success rate among minority entrepreneurs, and previous findings from Singh and Hills (2003), and Singh et al. (2008), it is important to consider race in the current study. Consequently, we sought to test the possible link between entrepreneur experience and type of opportunity recognized. More formally, we hypothesized the following:

**H3:** Experienced entrepreneurs will report higher levels of internally-stimulated opportunities than novice entrepreneurs.

**H4:** Novice entrepreneurs will report higher levels of externally-stimulated opportunities than experienced entrepreneurs.

**H5:** Experienced entrepreneurs will differ significantly from novice entrepreneurs in the type of opportunity pursued (internally- versus externally-stimulated opportunities)
RESEARCH METHODOLOGY

Sample and Data Collection

Three entrepreneurial support organizations agreed to distribute the web-based survey to their entrepreneur members. Participating support organizations are members of a national minority supplier development organization with a common mission of increasing business opportunities and business growth for minority business enterprises (MBEs). They also certify minority businesses for public, private and government contracting opportunities. The organizations were located primarily in the south central and southwestern regions of the United States. Because of their reciprocal certification programs, support organizations entrepreneur members were located in various regions of the U.S. The vast majority of firms were located in the southcentral and southwestern regions of the U.S.

Response Rate

The cross-sectional sample of entrepreneur respondents was drawn from a sampling frame of 1321 entrepreneurs. A total of 251 entrepreneurs responded to the survey, yielding an overall response rate of 19 percent. Of the returned surveys, 19 were found to be incomplete and removed from the sample.

The final sample consisted of 232 entrepreneurs representing a usable response rate of 17.6 percent. This usable response rate is similar to those obtained in previous opportunity recognition studies which range from 15 percent to 25 percent (see Singh, 2000; Corbett, 2002; Ucbasaran and Westhead, 2002; and Ozgen, 2003).

Study Variables
To assess the data we used variables measuring firm age, company revenues, business performance, entrepreneurial experience, and type of opportunity pursued. Information concerning the nature of the variables as outlined below.

**Firm Age.** Measured the average length of time a firm has operated.

**Company Revenue.** Revenues were delineated into six categories. Ratings of zero represented no revenues, 1 - less than $100,000, 2 - $100,000 to $249,999, 3 - $250,000 - $499,999, 4 - $500,000 - $999,999, 5 - $1,000,000 to $9,999,999, and 6 - $10,000,000 and above.

**Business Performance.** A seven-point Likert scale was used to measure business performance. Questions asked entrepreneurs to rate how their business performed in regards to Sales, ROI, and profitability. Summated mean scores were used in the analysis.

**Prior Entrepreneurial Experience.** Entrepreneurs were categorized as either novice entrepreneurs, individuals currently engaged in running their first business endeavor with no previous business experience; or experienced entrepreneurs, individuals who have established at least one other business prior to start-up of the current new venture (Westhead & Wright, 1998a). Entrepreneur type is a categorical variable where “0” was coded to represent novice entrepreneurs, and “1” was coded to represent experienced entrepreneurs. The survey makes this distinction by asking questions such as “Including your current firm, how many businesses have you founded or co-founded” and “Is this the first business you have ever owned”?

**Type of opportunity pursued.** Using Bhave’s Model (1994), we measured whether entrepreneurs in the sample decided to first found a firm and then worked to recognize the opportunity for their business (e.g. externally-stimulated opportunity recognition), versus recognizing an opportunity first and then founding a firm (e.g. internally-stimulated opportunity recognition). The question posed to entrepreneurs consisted of the following: “Which of the
following describes how you founded your current firm?” with corresponding answers of 1) “I first decided to start a business. I then conducted a search for opportunities which led to my firm,” and 2) “I first recognized an opportunity for my business. I then started my business to take advantage of it.” Entrepreneurs selected items 1 or 2 and were grouped accordingly.

Demographics and Sample Characteristics

Study respondents consisted of entrepreneurs affiliated with three entrepreneurial support organizations primarily located in the Southern regions of the U.S. Study participants were diverse in terms of gender, racioethnicity, industry and experience. The sample consisted of 62% men and 36% women. The largest groups represented in the sample were Black/African Americans (63%), Latino/Hispanics (22%), South Asians (5%) and Asians (4%). Several industries were represented in the sample with the largest number of firms being in the Service (55%), Construction/Manufacturing (14%), Distribution/Logistics (10%), and IT/Engineering (8%) industries. On average, entrepreneurs in the study reported having 12.64 (s.d.=8.99) years of experience in their business industry prior to starting their ventures.

The majority of entrepreneurs in the study were married (e.g. 71%), operated their businesses full-time (e.g. 92%), were college-educated, and primarily located in the south central (e.g. 52%), southwestern (e.g. 29%) and southeastern (e.g. 9%) regions of the United States. Given that company revenue was ranked from 1 (less than $100,000) to 8 ($100,000,000 or more), entrepreneurs’ annual revenues fell in the range of $500,000 - $999,999 (M=3.63, s.d.=2.25). Hence, firms in the study were relatively successful. Approximately 24% of entrepreneurs reported revenues of $1,000,000 - $9,999,999 and 27% reported revenues of less than $100,000. When asked about having a business mentor, 37% of entrepreneurs reported having a mentor while 63% did not have mentors.
The mean age of entrepreneurs was 48.26 years (s.d.=9.97) and mean firm age was 9.89 years (s.d =9.22). In regards to entrepreneur type, the final sample was comprised of 51% novice entrepreneurs and 49% habitual entrepreneurs. Table 1 provides a summary of demographic information and characteristics of the sample.

--------------------------------------------------------
Insert Table 1 about here
--------------------------------------------------------

ANALYSIS

To answer research questions and test hypotheses, we employed multivariate analysis and descriptive statistics. These included power analysis, testing of assumptions and multicollinearity, reliability and validity tests, mean scores, cross-tabulations and analysis of variance. The data met the assumptions for multivariate analysis and satisfied reliability, validity, and tests for multicollinearity.

RESULTS

Cross Tabulations

For the sake of simplicity, we used cross tabulations to examine hypothesis 1, hypothesis 3 and hypothesis 4. In hypothesis 1, we assessed whether or not minority entrepreneurs who founded firms based on internally-stimulated opportunities reported higher levels of firm performance than entrepreneurs who founded firms based on externally-stimulated opportunities. Firm performance is measured using three variables: firm age, company revenue, and business performance). Results showed that for firms founded on internally-stimulated opportunities $M_{(firm \, age)} = 10.49$, $M_{(company \, revenue)} = 3.44$, and $M_{(business \, performance)} = 4.27$; whereas for firms
founded on externally-stimulated opportunities $M_{(firm\,age)} = 4.03$, $M_{(company\,revenue)} = 3.12$, and $M_{(business\,performance)} = 4.27$.

Table 2 shows that on all performance measures, entrepreneurs who founded firms based on internally-stimulated opportunities reported greater levels of firm performance than firms founded on externally-stimulated opportunities. Thus, hypothesis 1 was supported. While preliminary, this finding indicates that pursuing internally-stimulated opportunities accounts may eventually lead to greater levels of venture success.

Hypotheses 3 explored whether experienced entrepreneurs reported pursuing more internally-stimulated opportunities than novice entrepreneurs. Table 3 shows that a greater percentage (e.g. 85.6 percent) of experienced entrepreneurs pursued internally-stimulated opportunities when compared with novice entrepreneurs. This trend in the data provides support for hypothesis 3. Similarly, hypothesis 4 tested whether novice entrepreneurs reported pursuing more externally-stimulated opportunities than experienced entrepreneurs. The data indicates that in fact, greater percentages of novice entrepreneurs (e.g. 21.4 percent) reported pursuing externally-stimulated opportunities. Thus, hypothesis 4 is supported.
Analysis of Variance

The primary focus of this study was to examine the opportunity recognition processes and success of minority entrepreneurs. To assess overall firm success we tested whether or not differences existed between type of opportunity pursued and firm age, company revenue, and business performance. It was expected that firms founded on internally-stimulated opportunities would be more likely to survive over the longer term and that these firms would achieve greater revenues than those firms founded on externally-stimulated opportunities. To assess differences in firm age (the first component of business performance) and type of opportunity pursued, we conducted a one-way ANOVA. The data showed that there were far more firms in our sample that had survived for at least 9 years that were founded based on internally-stimulated opportunities than externally-stimulated opportunities (see Table 4). For firm age, results were significant \( F(1,227) = 6.033, \ p < .01 \).

With respect to firm revenues, the data did not conclusively show any benefits from internally-stimulated opportunities. A smaller percentage of firms that were based on externally-stimulated opportunities achieved $1 million or more in revenues, but the difference was not statistically-significant. We also conducted \( t \)-tests on the mean revenues and found that while the mean revenue for businesses based on internally-stimulated opportunities was higher, the difference was again not significant.

For business performance, we found no differences between firms pursuing internally-stimulated opportunities and those pursuing externally-stimulated opportunities. Although those firms pursuing internally-stimulated opportunities, on average, had higher scores on business performance, the data did not indicate any distinct advantages. Based on the statistical findings,
there was only partial support for hypothesis 2. Implications for the study findings are discussed in detail in the discussion section.

-------------------------------------------

Insert Table 4 about here

-------------------------------------------

In our sample, the overwhelming majority of entrepreneurs (80 percent) reported that finding a business opportunity preceded business startup (internally-stimulated opportunity). Just 20 percent had used an externally-stimulated opportunity. This result was surprising because it was significantly different from the breakdown of internally- versus externally-stimulated opportunities for nascent entrepreneurs in the PSED as reported by Singh and Hills (2003) and Singh et al. (2008).

Analysis of Variance was used to ascertain potential differences among novice and experienced entrepreneurs and type of opportunity pursued. Overall, we found that novice entrepreneurs did not differ significantly from experienced entrepreneurs with regards to the type of opportunity pursued ($F_{(1,227)}=1.866, p = .173$). Accordingly, hypothesis 5 was not supported. Despite these findings, a larger percentage of experienced entrepreneurs (e.g. 95 percent) pursued internally-stimulated opportunities. Table 5 displays findings for the data.

-------------------------------------------

Insert Table 5 about here

-------------------------------------------

**DISCUSSION**

Relatively few studies in entrepreneurship literature focus on the issues and challenges that have resulted in lower levels of black entrepreneurship. Our findings provide much needed
insight into the opportunity recognition processes of minority entrepreneurs. In general, we found that while experienced minority entrepreneurs are more adept and proficient at opportunity recognition, they do not differ significantly from novice entrepreneurs on certain measures of firm performance and the type of opportunity they chose to pursue (internally- versus externally-stimulated).

These results were somewhat surprising given that two of the formal hypotheses were not fully supported. However, upon further reflection of our data and prior findings in the literature, we were encouraged by the results. Trends in the findings suggest that internally-stimulated opportunities are better suited for longevity. This may be an artifact of the data, but it is consistent with the possibility that firms founded on internally-stimulated opportunities are more likely to survive and succeed.

Consequently, study results were consistent with hypotheses, although not all were statistically significant. On average, firms in the current study had been in existence for almost nine years. Thus, the sample consists of entrepreneurs who have survived the liability of newness (Stinchcombe, 1965) and achieved certain levels of success. Prior studies concluded that there were no significant differences in the firm performance of experienced and novice entrepreneurs (Westhead & Wright, 1998a). However, our study found that for ethnic-minority entrepreneurs, differences do exist in performance depending upon the type of opportunity pursued. Considering the large number of firms in the study who reported starting their firms with an internally-stimulated opportunity, our findings comply with Bhave’s model of new venture creation and success. Discovering non-economic ways to improve firm founding rates among ethnic-minority entrepreneurs is particularly important with government budget reductions all levels (federal, state, and local) as a result of the ongoing global economic
slowdown. Unfortunately, the reality is that the need for increased minority entrepreneurship exists, but resources for new public policy initiatives are not available.

Limitations and Future Research Directions

The cross-sectional nature of the data limits overall study results. It would be useful to conduct field research or longitudinal studies that capture information about the number of firms that fail over time. Trends in study data indicate that over time, internally-stimulated opportunities may lead to higher levels of minority venture success. However, it is necessary to conduct longitudinal research to verify patterns evident in the data. Such research could confirm the proposition that internally-stimulated opportunities are superior to externally-stimulated opportunities as implied by the results of this study. Self-reports on key variables may limit generalizability of findings. In hindsight, having multiple raters directly observe and assess whether entrepreneurs pursued internally-stimulated versus externally-stimulated opportunities would have added a multidimensional perspective to the study. However, Davidsson (2004) contends that data gathered directly from entrepreneurs adds a valuable perspective to entrepreneurship studies with theoretically-relevant samples.

Entrepreneurship scholars may also benefit from comparative research on opportunity recognition. Future research should investigate how and why women may be different from men as it relates to opportunity recognition. Women entrepreneurs are founding businesses at faster rates than any other group (Morris, Miyasaki, Watters, and Coombes, 2006), yet remain underrepresented in high growth ventures as they were in the current study. Ethnic-minority women entrepreneurs lag behind male counterparts. A recent study by Gibbs (2014) found that black women lag severely behind black male entrepreneurs in opportunity recognition and venture performance. Entrepreneurship scholars are encouraged to commence opportunity
research women entrepreneurs who may soon become the majority of entrepreneurial populations in the U.S. Entrepreneurs and practitioners alike would benefit from in-depth comparative studies of opportunity recognition among subpopulations of ethnic-minority entrepreneurs of all types and gender.

**IMPLICATIONS AND CONCLUSIONS**

Through the current study, we advanced knowledge on ethnic minority entrepreneurs and types of opportunities pursued as it relates to differences among novice and experienced entrepreneurs. Our intent is to make scholars more aware of this important topic, for much work is still needed. More broadly, the study contributes to the base of knowledge about opportunity recognition and adds to empirical results of studies which focus on Bhave’s (1994) model. At a minimum, we can conclude that heightened opportunity recognition and entrepreneurial experience play a significant role in the success of ethnic minority firms.

There exists a succinct need to increase training and business exposure of ethnic minority entrepreneurs. By working with nascent minority entrepreneurs to teach market analyses/orientation skills, there may be ways to improve the odds of these entrepreneurs identifying internally-stimulated opportunities. If these opportunities are, in fact, better quality/potential opportunities, then it would yield greater success for those entrepreneurs who pursue them. If the link between internally-stimulated opportunities and entrepreneurial success can be further verified for ethnic minority entrepreneurs, as well as entrepreneurs in general, it would be a major finding within the entrepreneurship literature.

Entrepreneurship educators and practitioners seeking to improve success levels of minority entrepreneurs should incorporate creativity and opportunity recognition exercises into pedagogy and programming. Similarly, policy makers must focus program goals and funding
toward opportunity recognition training for ethnic minority entrepreneurs whose venture success rates lag behind others. This study highlights the importance of opportunity recognition and is merely a first step in ascertaining how to close the success gap between ethnic minority and mainstream entrepreneurs.

SELECTED REFERENCES


Table 1

*Sample Characteristics and Profile (n=232)*

<table>
<thead>
<tr>
<th>Race</th>
<th>%</th>
<th>Gender</th>
<th>%</th>
<th>Marital Status</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latino/Hispanic</td>
<td>22%</td>
<td>Male (144)</td>
<td>62%</td>
<td>Married</td>
<td>71%</td>
</tr>
<tr>
<td>Native American</td>
<td>2%</td>
<td>Female (84)</td>
<td>36%</td>
<td>Divorced</td>
<td>11%</td>
</tr>
<tr>
<td>Black/African-American</td>
<td>63%</td>
<td>No Response (4)</td>
<td>2%</td>
<td>Single</td>
<td>12%</td>
</tr>
<tr>
<td>Asian</td>
<td>4%</td>
<td></td>
<td></td>
<td>Live w/Sig. Other</td>
<td>3%</td>
</tr>
<tr>
<td>South Asian (Indian/Pakistani)</td>
<td>5%</td>
<td></td>
<td></td>
<td>No Response</td>
<td>3%</td>
</tr>
<tr>
<td>Other (biracial, etc.)</td>
<td>3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Response</td>
<td>1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Industry</th>
<th>%</th>
<th>Annual Revenues</th>
<th>%</th>
<th>Education</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales/Service/Consulting</td>
<td>55%</td>
<td>Less than $100,000</td>
<td>27%</td>
<td>High school degree</td>
<td>4%</td>
</tr>
<tr>
<td>Construction &amp; Mfg</td>
<td>14%</td>
<td>$100,000 - $249,999</td>
<td>12%</td>
<td>Some college</td>
<td>28%</td>
</tr>
<tr>
<td>Retail &amp; Merchandising</td>
<td>3%</td>
<td>$250,000 - $499,999</td>
<td>11%</td>
<td>Bachelor’s</td>
<td>25%</td>
</tr>
<tr>
<td>Oil Services/Energy &amp; Gas</td>
<td>2%</td>
<td>$500,000 - $999,999</td>
<td>10%</td>
<td>Some grad school</td>
<td>11%</td>
</tr>
<tr>
<td>IT &amp; Engineering</td>
<td>8%</td>
<td>$1,000,000 - $9,999,999</td>
<td>24%</td>
<td>Grad. Degree</td>
<td>18%</td>
</tr>
<tr>
<td>Distribution/Logistics/Transportation</td>
<td>10%</td>
<td>$10,000,000 - $49,999,999</td>
<td>6%</td>
<td>Professional degree</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>$50,000,000 - $99,999,999</td>
<td>1%</td>
<td>Terminal/Medical</td>
<td>3%</td>
</tr>
<tr>
<td>No Response</td>
<td>5%</td>
<td>$100,000,000 or more No revenues</td>
<td>6%</td>
<td>No Response</td>
<td>7%</td>
</tr>
</tbody>
</table>
### Table 2

*Crosstab of Firm Performance Measures based on Type of Opportunity Pursued*

<table>
<thead>
<tr>
<th>Opportunity Type</th>
<th>Business Performance (Mean)</th>
<th>Firm Age (Mean)</th>
<th>Company Revenue (Mean)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internally Stimulated</td>
<td>4.27 (81.1 percent)</td>
<td>10.49 years</td>
<td>3.44 (81.3 percent)</td>
</tr>
<tr>
<td>Externally Stimulated</td>
<td>4.03 (18.9 percent)</td>
<td>6.68 years</td>
<td>3.12 (18.7 percent)</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>206 (100 percent)</strong></td>
<td><strong>228 (100 percent)</strong></td>
<td><strong>214 (100 percent)</strong></td>
</tr>
</tbody>
</table>

*Note.* Twenty-six entrepreneurs did not respond to our question on business performance. Four entrepreneurs did not respond to questions on firm age, and eighteen entrepreneurs did not respond to questions concerning company revenue.

### Table 3

*Crosstab of Type of Entrepreneur and Type of Opportunity Pursued*

<table>
<thead>
<tr>
<th>Opportunity Type</th>
<th>Novice Entrepreneurs</th>
<th>Experienced Entrepreneurs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internally Stimulated</td>
<td>92 (78.6 percent)</td>
<td>95 (85.6 percent)</td>
</tr>
<tr>
<td>Externally Stimulated</td>
<td>25 (21.4 percent)</td>
<td>16 (14.4 percent)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>117 (100 percent)</strong></td>
<td><strong>111 (100 percent)</strong></td>
</tr>
</tbody>
</table>

*Notes:* N=228. Four participants did not respond to this question in our study.
Table 4

*One-way Analysis of Variance for Bhave’s Model (Internally-Stimulated vs. Externally-Stimulated)*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>1</td>
<td>486.524</td>
<td>6.033</td>
<td>.015*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>226</td>
<td>80.644</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>227</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Company Revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>1</td>
<td>3.279</td>
<td>.728</td>
<td>.395</td>
</tr>
<tr>
<td>Within Groups</td>
<td>212</td>
<td>4.506</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>213</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>1</td>
<td>1.825</td>
<td>.773</td>
<td>.380</td>
</tr>
<tr>
<td>Within Groups</td>
<td>204</td>
<td>2.363</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>205</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p* < .05.

Table 5

*One-way Analysis of Variance for Type of Entrepreneur (Novice vs. Habitual)*

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhave’s Model</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>1</td>
<td>.275</td>
<td>1.866</td>
<td>.173</td>
</tr>
<tr>
<td>Within Groups</td>
<td>226</td>
<td>.148</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>227</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Five entrepreneurs did not respond to the study question.
A REVIEW OF CHALLENGES IN WOMEN’S ENTREPRENEURSHIP: A CONTEXT OF ETHNIC MINORITY IN VIETNAM

Q.K. Thieu¹, A.K. Das¹* and Q.T. Nguyen¹

¹Department of Commerce and Management, RMIT University Vietnam
702 Nguyen Van Linh Boulevard, Ho Chi Minh City, Vietnam

s3501346@rmit.edu.vn, *ashish.das@rmit.edu.vn, quynh.nguyenthi@rmit.edu.vn

Academic Abstract

Purpose

This paper aims to investigate and review socio-cultural challenges confronted by ethnic minority women in the North region of Vietnam.

Findings

Although the proportion of ethnic minority is significantly small in comparison to Kinh group, their role and contribution to the Vietnamese economic engine have remained unclear. The value and positions of ethnic minority women have been neglected and their share in entrepreneurial activities and productivity is undoubtedly depressed. Inherently, these women experience tremendous hurdles from different fronts, such as government policies, socio-cultural environment, low levels of education and high drop-off school rate, and barriers in accessing financial source.

INTRODUCTION

Vietnam, a culturally diverse society, comprises of 54 different ethnic groups encompassed 7 different languages. The Kinh ethnic group constitutes about 85% of the total population, and
therefore dominates the plain areas where connection with the outside world is facilitated by its strategic locations. The rest of the population, which consists of minority groups remain mostly in remote areas, especially the northern midland and highland regions of the country (Table 1). Trieu (2014) notes that, even though many minority groups have been developing and approaching the modern world with wide extension of living areas, others undeveloped ones such as Mong, Dao and Co Ho, still live on hilly and mountainous areas, midlands, or the border line. Thus, these minority groups struggle with the bad topography, harsh climate, and especially far away from basic amenities of life such as good roads and education. Singhal and Beck (2015) are of the view that the longer the distance to the center, the more complex it gets to access social amenities and also, the higher the cost of transportation. In other words, Vietnam has its ethnic minorities distributed unequally.

Table 1. Minorities Distribution

<table>
<thead>
<tr>
<th>Key economic zones</th>
<th>Minority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red river delta</td>
<td>1.55%</td>
</tr>
<tr>
<td>Mekong delta</td>
<td>8.03%</td>
</tr>
<tr>
<td>Southeast Vietnam</td>
<td>6.48%</td>
</tr>
<tr>
<td>Central Highland</td>
<td>35.29%</td>
</tr>
<tr>
<td>Midland and northern highland</td>
<td>54.68%</td>
</tr>
<tr>
<td>North central Coast</td>
<td>9.6%</td>
</tr>
</tbody>
</table>

Note. Adapted from CÁC DÂN TỘC VIỆT NAM, by UNFPA, 2011. Copyright 2011 by UNFPA.
Recently, the Vietnamese women have taken lead roles in running business and becoming entrepreneurs. One remarkable phenomenon about female entrepreneurs in Vietnam is that they are from Kinh group and a very few entrepreneurship cases are from ethnic minorities. For instance, the most well-known Vietnamese food and beverages brand, Vinamilk, is operated by a female Chief Executive Officer; or one of the top 10 richest people in stock exchange market is another female leader who owns over VND 2,461 billion (equivalent to USD $107 million) of stocks (Bizlive, 2016); or another chairwoman of the board directors of Quoc Cuong Gia Lai, a real estate company, at about VND 8,000 billion (equivalent to USD $348 million) of owners’ equity (Vietstock, 2016); or on the smaller scale, it is common to see Kinh woman who have just graduated from universities, become successful in starting business, such as a female baker who owns baking ingredients and tools business (TBCKVN, 2016). Although they may come from different background, they have one thing in common. They are from Kinh ethnic. Thus, it clear that the gap between ethnic minority and Kinh women remains large in the respect of women embarking on entrepreneurial route and making successful businesses.

The main purpose of this paper is to provide a critical review of the challenges that ethnic minority women face towards entrepreneurial pathway. Holistically, this assists policy makers in strategically providing a framework that empowers women’s strengths in terms of financial hurdles as well as their social status.

METHODS

The study compiled secondary data from the Vietnamese online sources, Business Source Complete (EBSCO), Emerald Insight, ProQuest and SCOPUS, using a combination of
Vietnam, Entrepreneurship, Rural, Minority and Ethnicity keywords as a digital search tool. Although “Rural” and “Ethnic” carry different meanings, the “Rural” area is used whilst searching. This is to avoid any missing relevant data and information. As a result, a list of 296 English journal articles and 598 Vietnamese news publications from 1986 to date was established. This period is chosen because the “Doi Moi” reform policy was commenced in 1986, aiming at boosting the economy and reducing poverty. From the empirical research, there are only 13 articles that are relevant to this study. Hence, a pool of various reports is used in this study for the reviewing purpose.

FEMALE ENTREPRENEURSHIP IN VIETNAM

Shah and Saurabh (2015) state that in developing countries where the poverty rate is high especially in rural areas women have to take the risk for their survival of their families. In term of statistics, it is reported that although the number of South Asian woman entrepreneurs is only accounted for 13%, the percentage of businesses owned by them is 37% across the world and its financial value ranges USD $29-$36 billion. Following another report, Tran (2014) claims that a number of women participating in the Vietnamese economic engine are growing in recent years. Hence, undoubtedly these figures have become a valuable evidence to demonstrate the urgent need of advocating the role of women entrepreneurs in Vietnam.

In addition, Tambunan (2009) asserts that SMEs are an important part of the wealth of Asian developing countries since these types of organization make of more than 95% of total firms and employ about 90% of a country’s workforce, especially youth and women. This is so because of the fact that SMEs have the advantage of low barrier to entry with low level of
initial investment in skills, expertise and technologies. It brings the opportunities for ethnic minorities and particularly for ethnic women to start their own business. For instance, a data obtained between 2006 and 2011, the ratio of female owned- enterprises has increased dramatically from about 10% to nearly triple, 26% (GSO, 2016). In a similar vein, women-led SMEs contributed to Government budget through taxes an amount of VND 61,800 billion (equivalent to USD $2,687 million). Although this amount is only 10% of total SMEs taxes, it is surprising that tax per employee of women-led firms is higher than men-led firms (MekongBiz Hawasme, 2016).

Following another study, it is reported that the female leaders at large size companies enhance the value and their positions of women in Vietnam as they represent the “fundamental value of the nation”, and, therefore, significantly contribute to the development of the nation Debroux (2013). Furthermore, in the same study, the author emphasizes on the supportive activities that are available for females to access and engage in establishing or nurturing businesses, such as peer-to-peer activities to improve skills on manufacturing traditional products, and technology and communication training programs. Interacting with these activities enables potential opportunities for women to break out of poverty, but not acts as a gateway for them to enter Small and Medium-sized Enterprises (SME). The above statistics and facts demonstrate an inherent growth in equality and women’s empowerment in the Vietnamese economy.

Conventionally, most the Vietnamese women play a central role of being a housewife with little voice, rather than contributing financial supports and decisions to household economics. However, due to the recent open economy and Government policies, women now enjoy the liberty to attain higher level of education and especially, easier capital raising (Hua, 2013).
However, according to Nham (2012), gender gap remains a prevalent phenomenon in term of business performance. His research shows that male-led firms generate better outcome than female-led firms. He explains the gap by pointing out the fact that female-entrepreneurs not only are more risk adverse, but also lack access to loans. However, in term of financial contribution of women, they point out that women entrepreneurs tend to increase family living standard.

**ENTREPRENEURIAL CHALLENGES AMIDST ETHNIC WOMEN MINORITY**

**Socio-norm and gender gap**

Historically, Vietnamese women was not well empowered in many social aspects. This significant gap between men and women is resulted from ancient perceptions – patriarchy. According to USAID (2010), Vietnamese women are more likely to get lower level of education and health. Moreover, in term of economics, the discrimination is revealed in the rate of economic participation as well as the average wage between male and female. The gender gap in Vietnam increases depending on people’s socio-economic status. It is observed that women in rural areas and women in minority groups experience lower level of fairness in their workplace. Hence, Vu (2010) states that in northern mountainous region in Vietnam, women suffer a great deal of gender inequality as they are deprived the right to lay claims on ownership of land. Land is often considered as a possession of the father and is expected to pass down to sons. Even in a situation that there is no son to inherit such property, male cousins will claim the land. Land’s ownership plays an important role not only as a collateral for borrowing funds, but also a motivational factor for women to move from low-paid jobs to actually join the productive activities (Menon, Rodger, & Kennedy, 2016).
Hua (2013) reports that due to Paternalism, there is a significant discrimination within the context of family institution. While men are given the main part in financial income, women may not be able to give her financial-related final decisions. Thus, paternalism also results in the unequal treatment between boys and girls because of the gendered role that is played in the communal setting. Girl(s) seem to be under financially and materially supported by their family when opening a new venture. Whilst females play an important role in households, the matter is grappled with the question of how to manage their home along side their business. A study by Le and his colleges points out the inequality in the time usage between men and women when they find that women have to manage both business and housework without the increase in housework time-contribution from men (Le, Nguyen, Pham, Do, & Dao, 2011). In another research, it is said that whilst women undertake businesses responsibility of commencing an enterprise, they also have to maintain their socio-perception of a housewife, which is to manage family chores (William, Andrey, Anthony, & Shultz, 2006). William et al. (2006) also highlights the differences between urban and rural entrepreneurs while asserting that a large number of female entrepreneur enterprises which are located in “isolated countryside”, have less opportunities to receive educational support, they suffer from inaccessible finance and credit as well as a low level of moral support from family.

In relation to economics, The World Bank (2009) report shows the extent of institutionalized systemic violence directed towards women and female children in Vietnam. The results revealed that most ethnic women and children can neither read, write nor even speak Vietnamese language, in other words Kinh language, in an intelligible manner. They are reluctant to go to the crowded market in the fear of not being able to effectively communicate or properly bargain. Another study explains that ethnic minorities who do not know the Kinh language is 1.9 times more likely to be poor than those who can speak the language fluently.
(Baulch, Nguyen, Phuong, & Pham, 2010). The World Bank (2009) also mentions that although the matrilineal system among some ethnic groups, Ede and Mnong, where women have strong influence in important decision making with high status in family, this system has been faded over recent years due to the fact that men who are more likely to speak Vietnamese language, gradually taking place of leadership role in villages. Hence, traditional norm is of matrilineal system becomes threatened among such ethnic minorities, where women empowerment gets gradually weakened in their corresponding societies.

**Educational Background Amidst Gender and Communal Groups**

According to Dang (2012), the education gap between male and female becomes larger as the level of poverty increases. While men seem to have slightly higher level of education and literacy, women have higher drop out rate. As reported by Nguyen (2011), although Vietnam has high level of literacy with minor gap between male and female, women and girls in remote areas have a hard time to gain access to education than men due to sociological importance that is attached to male child. The data from UNFPA (2011) shows the differences not only in gender, but also in different ethnicity in term of education level. Surprisingly, with in primary and secondary school, the attendance rate of girls is usually higher than boys, regardless of their ethnicity. However, moving upward in the ladder of education, the rates drop significantly in higher education levels, only 3.7% for college and 9.6% for university. This may due to the fact that the entrance exams in Vietnam are perceived to be difficult. Moreover, when enrolling on the higher education level, the gender gap is widened. Whilst a number of Kinh and Tay females embark on various higher education levels, a proportion of males from other ethnic groups is higher in both colleges and universities than their counterpart, females. This may be due to the fact that Tay ethnic
people live in low mountainous areas of northern Vietnam, which is located closely to urban areas, and therefore, they receive more influence from the Kinh Ethnic. However, Thai, Muong and Kho-me have significantly low enrollment rate, especially from upper secondary school, and Mんong has the lowest rate when the percentage of enrollment in upper secondary level is only 6.6%, and only 0.2% in higher education institutions.

Financial Constraints

In Vietnam, Debroux (2013) points out that there are too few opportunities for most women to work, especially in rural areas where most of them have to work in informal labor market as in family-business. He claims that while the countryside is revolutionized by the reforms of agriculture privatization, a high number of women lost the access to land due to the lack of formal ownership right. Consequently, they are forced to migrate to big cities and become self-employed as roadside petty sellers in order to earn a decent living. Ironically, it poses a question about the allowance of husband to let his wife to work individually as Menon et al. (2016) report from their interview that women who have land-use certificate are more likely to be allowed to work outside by her husband. It may due to the fact that women may feel and actually have higher status when their name is on the land-use certificate.

Similarly, William et al. (2006) points out a factor that particularly restrain entrepreneurs is the mindset of escaping poverty being the driving force for starting up a business. The authors highlight the pattern where women tend to make expenses on their households in order to improve their living standard, rather than re-investing on widen business operation. They assert that there are two reasons for the under development of small female-commenced business: (1) women often distrust banks and, thus, they rather solely spend on personal
purposes than putting money into saving accounts, and (2) the existing under-developed credit system restrains female from making financial investment.

The difficulty in accessing loans and credits has widespread amidst ethnic minority women. As discussed above, ethnic minority women are restricted to the ownership of lands. Kinny and Avin (2014) mention that the lack of collateral reduces the chance to get loans, especially high value ones from banks. The authors also show that women perceive the loan process as more complex, and less flexible than men do. Although it may be resulted from financial knowledge and experience gap between men and women, it is still one of the factors that restrain women from approaching banks for credits.

Another study from Niethammer (2013) emerged the fact that women have lower number of bank accounts than men do, especially in South Asia. Evidently, only 25% of women have a bank account, compared to 41% of men. Beside the common reasons, such as the long distance to the banks or initial costs for opening a bank account, women actually do not own a bank account due to the fact that someone in her family has already had one. This phenomenon indicates that there is a passive thinking toward financial services amidst women, which may restraint the development of entrepreneurship. While financing business is a very important step for an entrepreneur to start is or her own business, women entrepreneurs are more likely to claim that accessing to finance is one of the hardest challenges to start or establish their businesses.
Entrepreneurship Perception and a Lack of Business Relations

Milagrosa (2010) and William et al. (2006) identify a common perception of women’s responsibility in their corresponding households, such as bearing and focusing on nurturing their offspring. These inner instincts amidst female eventually prevent them from effectively approaching business opportunity, forming entrepreneurial intentions and having a lower level self-confidence than their counterpart, men. Furthermore, women in Vietnam perceive that they are socially disadvantaged in networking compared to men (Scheela & Tran, 2004). Women entrepreneurs have to rely on networking with Government officials rather than banks. The authors explains that although female entrepreneurs believe in the importance of networking in the start-up of their business, one of the participants trust the bank only because of her relationship with a bank’s manager. Vuong and Tran (2009) propose the same point of view in the relation to the networking constraint. The authors state that relationship is the crucial factor to develop the business because it generates trust through connections. As for SMEs, women entrepreneurs have been suffered from the unequal relationship with banks when they want to acquire capital. Based on another report from Le and Raven (2015), SMEs are experiencing many difficulties in accessing credit from banks. For instant, 39.7% of a total SMEs firms cannot bear the high interest rate, and also 19.8% does not have sufficient assets to obtain high value of loans and 6.3% is rejected due to bad debts in their financial statements. Although SMEs companies use debts as a way to leverage whilst endeavoring to expand businesses through the route of low corporate tax or tax reduction (Harvey, 2014), an inaccessibility to debts restraints and stops these firms from strengthening business in terms of size and performance.
A report claims that Vietnamese women in distressed regions associate entrepreneurialism with self-employment, and that is the reason why policy makers and governments should not undermine the performance of familial micro-enterprises (Poon, Thai, & Neybor, 2012). The lack of accessibility to credit acting as the constraint to self-employment is repeatedly highlighted in Poon and colleagues’ study. Evidently, members of the Vietnamese Women Union, let alone other ordinary women, are not aware of finance and account information which is considered to be vital to the sustainable development of business. Le and Raven (2015) report that women received significant benefits from peer-to-peer learning approach or informal training. Interacting with these women in the peers, women enhance their knowledge, which can subsequently channelize through business operation in order to maximize business’s revenue and profit.

Moreover, Santarelli and Tran (2012) found out that the negative relationship between experience and profitability of entrepreneurs’ enterprise is resulted from their risk preference. This means negative experience in obtaining credit, on the other hand, may bring on women’s innovation and their corresponding business bodies are likely to receive insurmountable growth, such as profitability and branding values. In the same vain, another study examined the same relationship between risk adverse behaviors and business performances, but between men and women (Fletschner, Anderson, & Cullen, 2010). The finding underlines the fact that the proportion of women who want to take risk is much less than men, and, therefore, the likelihood of women take risk become much less when the nature of risk becomes more unpredictable and peril. Hence, both reports above conclude that entrepreneurs who are reluctant to bare higher risk often obtain lower profit and as the result, the entrepreneurs’ performance is highly affected due to the loss of opportunities.
CONCLUSIONS

Throughout of the analysis, it appears that ethnic minority women suffer from common gender discrimination, and from that, financial difficulty and low educational level exist. In addition, female from minority groups face gender biases stemming from socio-economic factors or specific biases in laws such as inheritance laws. This has become a major constraint on various bodies, including governmental and international organizations to develop innovative spirit among women in conducting business. In addition, the social recognition value for women from minority groups is not as valuable as their counterpart women from Kinh and subsequently, has become an intangible hurdle for their corresponding societies to create a value in its concept of changing the social norm among women in terms of developing more successful entrepreneurial activities.

Finally, in order to measure the conclusive challenges and how these obstacles deeply affect women from minority groups in establishing entrepreneurial intentions and activities, it emerges a real and urgent need to conduct an evidence-based study to validate the known factors and hidden patterns that prevent women from being entrepreneurs. Once the magnitude of obstacles is clearly identified, a strategic framework can be developed.

Based on consistent evidence throughout the study, undoubtedly boosting the productivity from the entrepreneurial path amidst women from the minority groups paves the way to empower women’s strengths in terms of financial aspect and social status. This indirectly and significantly contributes to the outcomes of the “Doi Moi” policy that the government has endeavoured to effectively implement thus far. Reasonably technological route is suggested to exploit, such as a deployment of social media pages that attract more women’s intention to
entrepreneurship, and increase the level of innovation, women’s awareness about their rights and accessibility of information related to financial sources. At the same time, from the managerial point of view, developing a framework that combines informal training related to entrepreneurship whilst easing financial policies certainly brings enormous benefits to women in particular and the corresponding society in general.
REFERENCES


Demombynes, G. (2013). Tại sao nhóm dân tộc thiểu số ở Việt Nam nghèo dai dẳng?


Mekongbiz Heasme (2016), “Doanh nghiệp nhỏ và vừa do phụ nữ làm chủ tại Việt Nam: Thực trạng và khuyến nghị chính sách”.


Vuong, Q. H., & Tran, T. D. (2009). The cultural dimensions of the Vietnamese private entrepreneurship by Quan Hoang Vuong, Tri Dung Tran: SSRN. The IUP Journal of Entrepreneurship and Development, VI(3,4), 54–78. doi:10.2139/ssrn.1442384

A Process Model for Social Entrepreneurship: Case Study Evidence of Compassion and Strategic Openness

Thomas G. Pittz, Ph.D. Laura Madden, Ph.D. David Mayo
University of Tampa East Carolina University East Carolina University

ABSTRACT

This manuscript considers the ethical motivation of compassion as the genesis of social entrepreneurship to extend existing research on opportunity recognition. Five cases of social entrepreneurship are evaluated and our findings indicate that compassion leads to an integrated problem-solving mindset that encourages diverse input and involves an open decision-making process. The result is a process model that suggests social entrepreneurship opportunities are recognized collectively and that novel solutions and positive externalities are enhanced by the inclusion of stakeholders in the entrepreneurial process.

Scholars have called for increased attention to collective action when studying social entrepreneurship as the knowledge required to address complex and dynamic social problems is not found in a single individual but dispersed across multiple actors. Additionally, the locally embedded nature of social enterprises requires that researchers explore the interactions between social entrepreneurship and their constituents, particularly when used to inform the design of policies and interventions.

Our research explores the phenomenon of broad participation in the strategy process and attends to scholars who suggest that entrepreneurial agency is embedded within a larger social context. Our model demonstrates that social entrepreneurship activity—and the chosen mode of problem solution—depends upon integrative thinking and contextualizes the motivations of the social entrepreneur. Thus, while explanatory variables may encourage an entrepreneur to explore the causes of suffering, it is through open dialogue and participation of other stakeholders that he or she becomes aware of the social entrepreneurship opportunities to extend the benefits of their work.
Researchers generally agree that entrepreneurs’ socially responsible behavior and community economic health are intricately intertwined. However, relatively little research examines social responsibility in the small business realm. Prior research in this area suggests that although men and women do not differ in their propensities to engage in helping behaviors, gender is an important consideration. We extend this viewpoint by integrating the sorting model used in the civic engagement literature with self-construal theory to examine how social sorting via education and social priority values influences social responsibility engagement for entrepreneurs, as well as, how gender gives context to these relationships.

Entrepreneurs owning and operating small businesses are widely acknowledged to serve as pillars of social responsibility since their activities generally directly benefit the community in which the entrepreneur lives and works (Besser, Miller, & Perkins, 2006; Fitzgerald, Haynes, Schrank, & Danes, 2010; Niehm, Swinney, & Miller, 2008). As the leader of the small business, the entrepreneur serves as the primary decision-maker, and fosters the adoption of norms and values important to him/her (Jenkins, 2006); thus, the small business serves as a vehicle through which the entrepreneur communicates those values via socially responsible behavior (Hemingway & Maclagan, 2004; Hemingway, 2005). The limited research in this area suggests that social responsibility and prosocial behaviors hold significant importance to entrepreneurs’ operation of their small businesses, yielding economic and civic health benefits to their communities (e.g., Blanchard, Tolbert, & Mencken, 2012; Lähdesmä & Takala, 2012; Thompson et al., 1993; Tolbert et al., 1998). The context related to why and how entrepreneurs engage to create a more meaningful presence for their businesses via small business social responsibility, however, is under-investigated.

The drivers of entrepreneurs’ social responsibility engagement are not currently well-understood, despite myriad antecedents and influences that may exist (Besser & Miller, 2004; Peake, Cooper, Fitzgerald, & Muske, 2015a). Reviews of the literatures on helping in civic engagement and
volunteerism suggest that education, as a social sorting mechanism, provides the most pervasive effect in promoting prosocial behaviors (e.g., Campbell, 2006; Campbell, 2009; Putnam, 2000; Taniguchi, 2006; Zúñiga & Valenzuela, 2011). However, these literatures likewise suggest that being male strengthens the relationship between education level and these behaviors (Campbell, 2009; Nie, Junn, & Stehlik-Barry, 1996; Schlozman et al., 1994), and that men and women undertake different types of behaviors (Besser & Jarnagin, 2010; Wilson & Musick, 1997) based on their self-construal and gender roles (Cross & Madson, 1997; Eagly, 2009). As such, we draw from complementary literatures in civic engagement, helping, and gender to provide additional context to entrepreneurs’ engagement in small business social responsibility.

The sorting model applied in civic engagement research suggests that an individual’s education relative to his/her reference group proxies status and that status is a key factor in competitive environments (i.e., elections, business) (Campbell, 2009; Nie et al., 1996). Further, with higher status, awareness of collective betterment improves (Persson, 2011). Indeed, education has been considered as a controlling factor in small business social responsibility research, but has not leveraged the implications of the sorting model. Scholars utilizing the sorting model to address civic involvement and volunteering behaviors argue that accounting for additional context is critical in understanding how education plays such an important role in driving these behaviors (Campbell, 2009; Hillygus, 2005). Gender has been found to serve as an important contextual factor for the sorting model, since it appears to apply more to men than women (e.g., Campbell, 2009; Nie et al., 1996), suggesting that gender may strengthen or weaken the model with a moderating influence. The helping literature generally appears to support this assertion, since although men and women have not been found to exhibit differences in propensity for prosocial behavior (Besser & Jarnagin, 2010), they do differ in the motivation for and types of behaviors undertaken (DeHart-Davis, Marlowe, & Pandey, 2006; Eagly, 2009; Mesch, Brown, Moore, & Hayat, 2011).

The tenets of self-construal theory further clarify the context that gender provides in choice of helping behaviors. Self-construal suggests that women more often engage in helping behaviors that focus on smaller groups that allow them to develop close relationships (Wilson, 2000; Wilson & Musick, 1997; Zúñiga & Valenzuela, 2011), due to their interdependent self-construals. Conversely, men are generally associated with more independent self-construals; thus, research on helping suggests that men more frequently engage in helping behaviors that have an audience, an opportunity to exhibit chivalry, and are related to their jobs (Eagly & Crowley, Wilson & Musick, 1997).

We extend sorting model theory to the small business social responsibility domain and examine the context of gender via self-construal in these relationships for 282 entrepreneurs owning and operating small businesses, based on the following hypotheses:

**H1:** Higher education level is positively related to social responsibility participation for small business owners.

**H2:** Social value priority is positively related to social responsibility participation.
H3: The gender of the entrepreneur moderates the relationship between education level and level of engagement in social responsibility, such that men will report greater social responsibility participation than women for higher levels of education.

H4: The gender of the entrepreneur moderates the relationship between social value priority and level of engagement in social responsibility, such that men will report higher levels of social responsibility participation than women for reporting priorities on social goals.

We examine each of our hypotheses for the three dependent variables: Employee work environment and development, Employee well-being, and Local and civic responsibility via linear regression in SPSS 23. Table 1 below highlights the support, or lack of support, for each hypothesis examined.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H1: Higher education level is positively related to social responsibility participation for small business owners.</strong></td>
<td>Employee work environment and development: Not supported</td>
</tr>
<tr>
<td></td>
<td>Employee well-being: Not supported</td>
</tr>
<tr>
<td></td>
<td>Local and civic responsibility: Supported</td>
</tr>
<tr>
<td><strong>H2: Social value priority is positively related to social responsibility participation.</strong></td>
<td>Employee work environment and development: Not supported</td>
</tr>
<tr>
<td></td>
<td>Employee well-being: Not supported</td>
</tr>
<tr>
<td></td>
<td>Local and civic responsibility: Supported</td>
</tr>
<tr>
<td><strong>H3: The gender of the entrepreneur moderates the relationship between education level and level of engagement in social responsibility, such that men will report greater social responsibility participation than women for higher levels of education.</strong></td>
<td>Employee work environment and development: Marginally supported</td>
</tr>
<tr>
<td></td>
<td>Employee well-being: Supported</td>
</tr>
<tr>
<td></td>
<td>Local and civic responsibility: Supported</td>
</tr>
<tr>
<td><strong>H4: The gender of the entrepreneur moderates the relationship between social value priority and level of engagement in social responsibility, such that men will report higher levels of social responsibility participation than women for reporting priorities on social goals.</strong></td>
<td>Employee work environment and development: Supported</td>
</tr>
<tr>
<td></td>
<td>Employee well-being: Not supported</td>
</tr>
<tr>
<td></td>
<td>Local and civic responsibility: Not supported</td>
</tr>
</tbody>
</table>
The contexts of social responsibility type and gender lend important academic implications, as well as opportunities for future research. This study provides a unique perspective on small business social responsibility by offering the sorting model as a theoretical lens through which to view small business engagement in socially responsible behaviors. Further, we offer context to when and how these behaviors might occur through both considering the context of gender and exploring a broad range of socially responsible activities. We expand on these contributions further in the subsequent discussion.

The sorting model has long been used by political scientists to explain why individuals may engage in civic-oriented behaviors, as education has been found to serve as a strong predictor of engagement in myriad contexts (Campbell, 2009; Nie et al., 1996; Putnam, 2000). We extend the prior literature in small business social responsibility by drawing our theory base from this literature to examine how an entrepreneur’s education level relative to other entrepreneurs may influence engagement in social responsibility. Unexpectedly, education did not exhibit the pervasive direct effects generally reported in the civic engagement and volunteering (Campbell, 2006, 2009; Hillygus, 2005; Nie et al., 1996; Putnam, 2000; Taniguchi, 2006; Verba et al., 1995; Wilson, 2000), or even earlier small business social responsibility research in which education has been offered as a control (Fitzgerald et al., 2010; Peake et al., 2015a; Peake et al., 2015b). Further, as the sorting model suggests that those with increased awareness will engage more heavily out of an enhanced view for the collective (Campbell, 2006; Persson, 2011), we are surprised by the partial support for the relationship between social value priorities and social responsibility; however, as the civic engagement literature suggests, when we consider local and civic involvement, the relationship is positive and significant, as hypothesized. We believe this points to the importance of the consideration of context, of both type of social responsibility undertaken and the gender of the initiator.

Our results likewise vary, depending on the type of social responsibility under consideration. The limited prior research in small business social responsibility, suggests that small business owners may direct their efforts at differing types of social responsibility with varying levels of zeal (Besser & Jarnagin, 2010; Fitzgerald et al., 2010; Niehm et al., 2008; Peake et al., 2015a; Peake et al., 2015b). For example, in our model social values priority directly impacts the level of local and civic involvement, but does not directly impact employee-oriented initiatives such as employee professional development or employee well-being. Community-targeted social responsibility has an element of embeddedness in which the owners’ personal and business lives are intricately intertwined; thus, customers may introduce perception bias in that they fail to differentiate between these two realms (Niehm et al., 2008; Peake et al, 2015a). Our broad view of social responsibility, focused both internally and externally, with varying levels of discretion, allows the field additional insight into contextual differences.

When we consider gender in addition to a broad view of socially responsible behaviors, we provide additional perspective to the small business social responsibility literature. Both self-construal and gender role theories suggest that women, with relatively more interdependent self-construals, tend to take on more informal, helping tasks; whereas, men, with relatively more independent self-construals focus more on social responsibility associated with their work (Eagly, 2009). Researchers purport that the sorting model applies more to men than women (Campbell, 2009; Nie et al, 1996), and our results suggest that this may indeed be true with
regards to engagement in small business social responsibility. Across our models, the slope of women’s participation in small business social responsibility shows no statistical differences for education level. Men’s participation, however, changes significantly with higher levels of education. Prior research in environmentalism (Zelezny et al., 2000) suggests that women are naturally more socialized to care about others and the environment but that education may assist in conditioning men to engage more in such activities. The sorting model, congruent with self-construal theory, indicates that perhaps the more independent self-construal of men drives them to engage in such behaviors to jockey for status in a competitive marketplace more than women (Campbell, 2009; Schlozman et al., 1994). The same results also hold in our model for social priority values. When men and women report low social value priority, women exceed men in their level of focus on employee work environment and development. However, when men and women report higher levels of social priority values, men exceed women in their reported level of engagement. These results appear to suggest that women do provide more informal care and support (Besser & Jarnagin, 2010; Wilson & Music, 1997; Wilson, 2000). Conversely, researchers argue that men are more likely to engage in volunteering or socially responsible behaviors if they are a part of their job (Wilson & Musick, 1997; Wilson, 2000). Thus, when we consider the type of social responsibility at hand, as well as the gender of the respondent, we gain valuable insight into how and when engagement in social responsibility may occur for entrepreneurs in small businesses.

The importance of context lends valuable practical implications to both business and education. Community development officers can benefit from better understanding what types of community activities may be most likely to be undertaken by men and which are more appealing to women. This will assist in targeting participants and appealing to those targets. Further, the work on employee motivation suggests that employees identify with and commit to firms that are more socially responsible (Brammer, Millington, & Rayton, 2007). Thus, understanding, how and when such engagement is likely to take place can be helpful to human resource professionals and managers in understanding traditionally who engages in these initiative and perhaps what drives them to do so.

Perhaps most importantly, educators can use this information in social entrepreneurship and business ethics courses to enhance their instruction for both their male and female students. Prior research suggests that raising awareness is an important key in facilitating prosocial behaviors (Persson, 2011); thus, if educators understand how and when managers typically engage in socially responsible behaviors by gender, then instruction can assist in better conditioning both male and female students to care and appropriately credit themselves for their behavior in making more meaningful organizations.

*Results tables and references are available from the authors upon request.*
Many corporations in the U.S. are controlled by a large shareholder group, typically founding families (Villalonga & Amit, 2006a, 2006b, 2009a, 2009b). Family involvement occurs when a family exerts control over the firm through ownership and management (Chrisman, Chua & Litz, 2004; Chrisman, Chua & Steier, 2005). Accordingly, family-controlled publicly-traded firms are those in which the founders or family members are officers, directors, or blockholders, either individually or as a group (Villalonga & Amit, 2009a, 2009b). When family involvement leads to the pursuit of particularistic goals and strategies (Carney, 2005), family firm behavior is expected to be distinct from those in non-family firms. Despite the inherent differences between family and non-family firms and among family firms themselves, family involvement configurations are under researched in organizational studies, which limits the generalization of findings and leads to theoretical ambiguity. One under-researched corporate governance dynamic among publicly-traded family firms is women family members’ involvement through ownership, management, and/or board membership and how this may influence organizational outcomes.

Within the context of corporate governance, publicly-traded family firms tend to exhibit less severe principal-agent agency conflicts due to the separation of ownership and management, because of the direct involvement of family owners in management as well as the ability to monitor the managers through their direct involvement in firm governance (Maury, 2006). However, these firms are believed to exhibit more severe principal-principal agency problems arising between controlling and non-controlling shareholders, owing to families’ significant
stock ownership and control over the top management team and board of directors. This can allow families to pursue their own interests (if they intend to), that are likely to be different from those of non-controlling owners (Ali et al., 2007; Maury, 2006). Indeed, some families may exhibit more interest in the private benefits of control (i.e., benefits appropriated by large shareholders at the expense of minority shareholders) (Shleifer & Vishny, 1997) and the preservation of socioemotional wealth to achieve non-economic goals (Berrone et al., 2010; Gomez-Mejia et al., 2007) over increasing shareholder wealth. Research also shows that some family involvement configurations (e.g. founding family control vs. descendant family control, family vs. nonfamily CEO, the degree of board independence, and family firm types) can enhance or mitigate the family’s ability and willingness to pursue non-economic vs. economic goals primarily benefiting family members, rather than increasing shareholder wealth (e.g., Anderson & Reeb, 2003a, 2003b; Miller & Le Breton-Miller, 2006; Villalonga & Amit, 2006).

These different configurations of family involvement can be associated with firm value positively or negatively or exhibit no relationship (O’Boyle et al., 2008; Peng & Jiang, 2010).

Contrary to the Agency perspective, a considerable number of family firms exhibit stewardship tendencies when family firm members assign firm objectives higher priority than their individual objectives (Zahra, 2003). Consistent with what would be expected in Stewardship Theory, family firm research shows that family business members tend to demonstrate high levels of trust and unity (Tagiuri & Davis, 1996; Habbershon & Williams, 1999) that lead to superior performance and competitive advantages. Accordingly, family firms can conceivably “inspire greater employee care and loyalty” (Habbershon & Williams, 1999: 4) which pays off in the long-run in terms of productivity and good will. However, to date, we do
not know enough about the corporate governance mechanisms facilitating a stewardship environment particularly in publicly-traded family firm context.

While the impact of family involvement configurations on publicly-traded firm performance appears paradoxical with the possibility of both Agency and Stewardship tendencies, we propose that certain family members, particularly women, can make a difference in corporate governance and publicly-traded family firm outcomes. This difference occurs through unique leadership styles (e.g., interpersonal and transformational) with concerns for the well-being of the firm and all stakeholders, rather than only the family group (Eagly & Carli, 2003; Rosener, 1990). More specifically, we expect that women family members may buffer family owners’ potential negative impact on firm performance by overriding negative agency effects with positive stewardship effects. Thus, this paper applies Agency Theory (Fama & Jensen, 1983; Jensen & Meckling, 1976) with a focus on principal-principal agency issues and Stewardship theory, as well as the extant literature on women’s leadership style to develop a model addressing how and why women’s involvement in corporate governance may affect family firm performance. Longitudinal regression results based upon 10,858 firm-year observations in S&P 1500 manufacturing firms support the hypotheses that women family members’ involvement help improve firm performance, primarily by overriding the negative impact of family ownership on firm performance.

This paper contributes to the literature in several ways. First, the model enhances the development of the theory of the family firm by drawing upon Agency and Stewardship theories to explain whether women family members’ involvement may affect firm performance. In doing so, this paper contributes to an enhanced understanding of the heterogeneity among family firms as well as family business owners. Second, research suggests that women may exhibit different
leadership styles than men and that the relative success of women and men in leadership roles depends on context (Eagly & Carli, 2003). The investigation of women family members’ involvement is an important step in explaining distinctive corporate governance dynamics in family controlled publicly traded firms. Third, to our knowledge, this is the first longitudinal study on women family member’s involvement in $S&P1500$ family firms capturing changes for about two decades. Hence, this paper contributes to the literature by incorporating insights from Agency theory with a focus on principal-principal agency problems, Stewardship theory, and women family members’ involvement into the developing theory of the family firm.

In the remainder of this paper, a theoretical overview on Agency and Stewardship Theories as well as Women’s Leadership style is provided. Then, the hypotheses are proposed and tested. Finally, a discussion of results, future research opportunities, and implications for entrepreneurship theory, education and practice are presented.
Effort perceptions versus autonomy concerns: How does conflict dissatisfy members on nascent entrepreneurship teams?

Chihmao Hsieh*
Associate Professor of Entrepreneurship
Yonsei University

WooJin Lee
Assistant Professor of Entrepreneurship
Kookmin University

ABSTRACT: We look at determinants of satisfaction of team members on nascent entrepreneurial teams, specifically focusing on how conflict mediates the effects of effort perceptions of teammates, as well as the effects of preferences for autonomy (one’s own as well as those of teammates). Using data collected from 120 team members across 36 nascent entrepreneurship teams we show that relationship conflict and task conflict mediate the effects of effort perception on satisfaction in one’s team, and satisfaction in one’s own role, respectively. Furthermore, in the eyes of a team member, we evidence that need for authority found elsewhere within a team positively relates to one’s own general satisfaction in the teamwork, but has a negative interaction effect as one’s own need for authority increases. Based on our findings, we offer some future research directions in investigating the roles of effort perceptions, autonomy concerns, conflict, and satisfaction on nascent entrepreneurship teams.

Keywords: teamwork, autonomy, conflict, satisfaction, gestation, nascency, social loafing

JEL classifications: L26, M13

* Accepted to 2017 USASBE conference, competitive papers track. We thank seminar participants at the Tinbergen Institute for valuable comments. An earlier version of this paper was a finalist at ACSB Jakarta September 2016 for Best Conference Paper, all tracks.
Much conceptual and empirical entrepreneurship research looks at entrepreneurial team performance in terms of survival on the way to success (Gimeno et al. 1997). Harvest notwithstanding, survival generally requires avoiding or resisting exit due to failing in the external environment of the market (Sarkar et al. 2006), and avoiding or resisting a catastrophic breakup from failing to manage the internal environment of the team. Certainly, one way to prevent a catastrophic breakup in the team is to allow for team member turnover (e.g. Ucbasaran et al. 2003). However, turnover can also lead to termination of the nascent entrepreneurial effort (e.g. Hellerstedt and Aldrich 2008). Understanding nascent entrepreneurial team cohesion becomes important, and member satisfaction is a well-known outcome of team cohesion (Picazo et al. 2015, Tekleab et al. 2009).

What is it about other entrepreneurial teammates’ behaviors that will affect a team member’s satisfaction? Atypical complexity potentially emerges when we put hopefuls all on the same entrepreneurship team. Startups are rife with uncertainty not only about the desired outcome, but also about the formulation of the problem or project itself (Green 1992, Hsieh et al. 2007). It thus often becomes meaningless to measure the planned or expected actions or activities of team members insofar that the entrepreneurial problem or project is always at risk of changing (Carter et al. 1996, Foo et al. 2006). That vagueness exacerbates the non-verifiability of a teammate’s effort. Perception of others’ effort becomes particularly relevant.

Second, consider the concerns relating to the preference for autonomy within an entrepreneurial team. Theory suggests and evidence supports that people interested in entrepreneurship also prefer autonomy and like to be their own boss (Hamilton 2000, Prabhu et al. 2012). But on a team of entrepreneurship-oriented people, it’s difficult to expect that everybody can have complete autonomy. An entrepreneur looking for autonomy could indeed attempt to hire onto his entrepreneurial team only those with no preference for autonomy, but we hold that those willing to join risky startups with risky shelf-lives expect to
be compensated in part via autonomy of their own. Overall then, our framework in this paper is that one’s satisfaction on an entrepreneurial team is significantly based on effort perceptions and autonomy concerns, where we define entrepreneurial autonomy concerns in terms of fulfilling one’s own preference for autonomy in light of others’ autonomy preferences. Building on the work by van Gelderen (2016) and Foo et al. (2006) on autonomy in entrepreneurship, and Khan et al.’s (2015) work on conflict in entrepreneurial team performance, we examine how conflict mediates the effects of autonomy to determine satisfaction of individual entrepreneurial team members.

We believe it is particularly important to include both effort perceptions and autonomy concerns when studying individuals’ satisfaction on entrepreneurial teams. Entrepreneurship typically requires effort amid uncertainty (Liao and Gartner 2006), and entrepreneurs are known to have a preference to be their own boss. From a participant’s standpoint, I might perceive that a teammate is working hard, which may increase my satisfaction as a member of the team, but if s/he is also simultaneously trying to be everybody’s boss, this may lead to conflict and reduce my satisfaction. Furthermore, from an observer’s standpoint these two types of variables could be confounding; the effects of a teammate’s (perceived) effort might be hiding the effects of preference for autonomy (an individual difference). Finally, at the team level, if entrepreneurship-oriented teammates only provide effort when they expect complete autonomy, the team is at risk of falling apart, since not everybody likely has complete autonomy of their own on a team. The upshot is that the perception of a teammate’s effort and then his/her actual preference for autonomy should be disentangled, especially when it comes to assessing determinants of one’s own satisfaction.

To help link effort perceptions and autonomy concerns to one’s satisfaction, we include the mediational variable of conflict.

1 The term “effort perception” is rarely used in the literature, if at all. Our concept is related to the well-researched topic of “perceived social loafing” (e.g. Liden et al. 2004, Mulvey and Klein 1998) but is intended to be more general. While the latter term has a derogatory connotation, our term does not. Furthermore, social loafing is usually associated with quantity of effort. Our paper also considers quality of effort and professionalism of effort.
Using data from 120 members across 36 new venture teams in entrepreneurship programs at universities in South Korea and the Netherlands, we test our hypotheses by collecting data on preference for autonomy beforehand, and afterwards collecting survey data on each participant’s experience with their teams. We find that perception of teammates’ quality and professionalism of effort are both positively related to one’s satisfaction in the teamwork, partially mediated by relationship conflict. We also find that surprisingly, when a teammate does more work than is required or sufficient for their role(s), task conflict mediates in lowering a team member’s satisfaction in his own role or work. Finally, while we find no evidence of need for autonomy on nascent entrepreneurial teams, we do evidence that, in the eyes of a team member, the need for authority found elsewhere within a team positively relates to one’s own general satisfaction in the teamwork, but has a negative interaction effect as one’s own need for authority increases. In other words, everybody’s individual satisfaction in the teamwork drops when everybody has a high need for exercising authority. Our data analysis nevertheless suggests that conflict is only a moderately powerful mediator. We suggest that future work should delve more deeply into the relationships among effort perception, autonomy concerns, conflict, and satisfaction on nascent entrepreneurial teams.

The paper proceeds as follows. First, we develop theory and present hypotheses linking satisfaction, conflict, and determinants of conflict, making sure to point out reasons for the mediation framework. In subsequent sections, we present our data and methods, discuss, and conclude.
References


Born Globals from Emerging Markets: The Synergy of Context and Capabilities

Tatyana Tsukanova
Assistant Professor
St. Petersburg University,
Graduate School of Management
e-mail: tsukanova@gsom.pu.ru

Xiaotian Zhang
Assistant Professor
University of Southern Denmark, Denmark
e-mail: zhang@sam.sdu.dk

Principal topic

Born globals become significant players in emerging economies. At the same time the knowledge of advantages that enable firms from emerging economies to go international almost from inception remains limited.

China is one of the leading emerging markets with very ambitious expansion strategies. Today ‘going global’ is not only a Chinese government policy but also a rational decision of business owners and executives facing severe competition and increasing costs in Chinese market (Backaler, 2015). China is now increasingly integrated in the global economy. Many experts believe that today ‘going overseas for Chinese companies is a prerequisite for success’ (The Economist, 2005).

The aim of this paper is to explore the key factors that influence the early and rapid internationalization of firms from China. More specifically, we focus on institutional leverage capabilities as all firms are institutionally embedded (Landau et al., 2016). We anchor our arguments in internationalization theory. A solid body of research has used this lens to analyze a firm’s internationalization process (Andersen & Buvik, 2002) and the drivers of internationalization (Robertson &
Wood, 2001). Prior research has documented that networks and knowledge are important for internationalization (Hadley & Wilson, 2003). Outside this well-documented role, there remain gaps in our understanding of how the interaction between internal knowledge and external networks and institutions affected the emergence of Chinese born globals. We focus on ‘three-pillar’ framework by considering the role of knowledge, networks and institutions as the meaningful antecedents of early and rapid internationalization of Chinese companies and as the core elements of the institutional leverage capabilities. We next explore if networks abroad and institutional supportiveness at home can help companies overcome deficiencies in their knowledge about foreign market.

Methodology.
To test our idea, we employed the data on companies from China. We targeted at four Chinese provinces – Anhui, Guangdong, Jiangsu and Zhejiang – as the most internationalized regions. Companies were contacted in 2010-2011 and asked to complete the questionnaire. The final sample includes 372 companies, and 119 companies (31.99%) were classified as born globals, companies that have entered at least two other continents besides their home continent, and reached a 25% export share within three years since foundation.

We performed a hierarchical logistic regression because our dependent variable is binary. Standard errors are clustered at the regional level to account for the possibility of non-independence of observations, as the observations are nested within different regional contexts.

Main results and implications
The findings showed that knowledge about foreign markets, networks with foreign partners, and domestic institutional support are all have significant direct effects on the likelihood of early and rapid internationalization of Chinese companies. In addition, the lack of knowledge about foreign markets didn’t prevent firms from going abroad earlier because they could utilize foreign contacts and home institutions to build their advantages.

The results imply that firms from emerging economies face multiple managerial challenges concerning internationalization strategy and their ability to leverage multiple factors and internalize them for their own benefits increase the success of early and rapid expansion overseas. The study extends our understanding of international expansion of born globals and integrates the idea of institutional leverage capabilities as a source of heterogeneity among internationalizers in emerging economies.
References


NATIONAL POLICY AND COMPARATIVE INTERNATIONAL ENTREPRENEURSHIP OUTCOMES
Shelby Solomon, Joshua Bendickson and Matthew Marvel

ABSTRACT

Understanding how national policy can spur firm creation is central to entrepreneurship. Drawing from a sample of 21 countries spanning 2004-2011, we investigate the direct and joint effects of market freedom and social spending national policies. We find that market freedom positively impacts firm creation. However, an interaction exists, as firm creation is bolstered when market freedom is complemented with social spending. Findings suggest that mixed national policies that combine market freedom and social spending are best positioned to spur firm creation. Our findings have implications for both the entrepreneurship and economic development literature.
Critical success factors for entrepreneurship training programs development on Russian market

Alexey Baboshin, Russian Association for Entrepreneurship Education

Academic Abstract

The research focuses on critical factors contributing success of entrepreneurship training programs on Russian market.

As a result of data analysis it identified the critical factors for successful launching and development of entrepreneurship training program on Russian market; concluded set of recommendations based on key findings, which will help to launch and develop entrepreneurship training programs on Russian market successfully.
For the Love of the Craft: Uncovering Thematic Reflections in Complex Ventures

Academic Abstract

Laura Munoz, Richard Miller and Kevin Hurt

Complex startup ventures, which involve multiple intricacies, such as significant financial resources, artisan skill, and business knowledge, can offer a unique understanding and uncover patterns and themes that advance the reality of setting up and launching such ventures. Through a thematic analysis of craft brewery owners, we uncover that complex startup ventures offer three major themes as part of their set up and startup process: production versus artisan struggle, freedom agents, and an inverse domino effect. Furthermore, a metamorphosis occurs within the entrepreneurs that allows the transformation and growth from an immature startup to a mature venture is also observed.
Key Issues for Family Businesses in the 21st Century: Results from a Grounded Theory, Ethnographic Case Study in Pennsylvania

Morgan Clevenger, David Graff and Britton Heim

Abstract

Key findings of issues for family businesses will be shared from a grounded theory, ethnographic case study in Pennsylvania of 342 family-owned businesses. The research was conducted in 2014-2016 in 8 counties in Northeastern PA, including Bradford, Lackawanna, Luzerne, Schuylkill, Sullivan, Summers, Wayne, and Wyoming counties. Family-owned businesses are participated in a survey and potential follow-up interview.

The purpose of this research project was to explore family business needs and issues in the 21st Century. In doing so, we can grasp the knowledge of business owners and how their family dynamics are managed along with their business operations and governance. Key questions included: (1) What are the most pressing issues for family businesses today? (2) What will the next iteration of family businesses have to face? and (3) What variances exist among family businesses based on industry or geography?

This research is a mixed methods and mixed mode approach using the Dillman, Smyth, and Christian (2014) mixed mode methodology. The study was built from the ground up and is a grounded case study (Glaser & Strauss, 1967; Merriam, 2009). During 2014-2015 initial work included participant selection and recruitment in Northeastern PA (NEPA). Minimum criteria for participation included 2 or more full-time employees, $10,000 or more in capital investment, and non-national brands unless headquartered in the region. Participants were mailed a postcard pointing them to an online survey using SurveyMonkey; non-respondents were mailed a printed copy of the survey 5-7 weeks later. From the survey, individuals self-identified to be interviewed.

Findings will influence topics for training and development offerings through the Family Business Alliance. Additional research may be conducted in North Dakota with interest from a university there to replicate the study for cross-state comparison.

Family business in the United States has been a foundation of the American economy since its founding (Astrachan & Pieper, 2013; Buchholz, Crane, & Nager, 1999; Emens & Wholper, 2004). Many businesses have now succeeded to third and fourth generations. Newer family businesses may be owned in the first or second generation. Current trends and hot topics of interest included next generation development, transitioning to the next generation, succession and estate planning to protect the family and the business, family governance diversity, business strategic planning, and ownership considerations. Family businesses have always had unique challenges when compared to traditionally owned firms due to the fact that there is a complex work and family relationship between employees. This research project hopes to uncover some of the newly developing challenges that family businesses must face in the 21st Century.
References


Cohn, M. (2011). *Keep or sell your business...how to make the decision every private company faces*. Chicago: Deaborn Trade.


Danco, L., & Jonovic, D. J. (1990). *Someday it'll all be...who's? The lighter side of the family business*. Cleveland, OH: The University Press.


Koenig, N. N. (1999). *You can’t fire me I’m you’re father! What every family business should know*. Franklin, TN: Hillsboro Press.


Abstract
This paper is introduction to Indian SME- family run businesses. Considering the unique characteristics of Indian family run business the paper initially describes the nature of the businesses keeping in mind the challenges they face and looking at the growth and development of the same. Indian Family businesses have a huge legacy and are specific to certain sectors and have made contribution to the economic growth. The second part of the paper describes the role of a premier B School in India to cater to the development and training needs of the sector. While the family owned business have grown considerably they at the cross roads now as the second generation entrepreneurs need professional managerial expertise and skills to develop the business. The paper explains the Journey undertaken by a School of business Management in evolving a unique program for family businesses. It dwells in the design of curricula, stakeholder engagement practices adopted and pedagogical innovations. By doing this the B School has created a niche for itself in the Country and is recognised for developing and conducting a management program specific to the needs of family run businesses.
Analysis of the impact of perceived entrepreneurial barriers to attitudes and intention to set up new businesses: the application of structural equation modeling

Roya Eshraghi Samani, Alireza Poursaeed, Shahrzad Barani and Kiumarz Zarafshani

Abstract

Despite the effective role of entrepreneurial ventures in development, entrepreneurship failure around the world (20% survival rate among businesses with over three years of establishment) in one hand and an overwhelming reduction new ventures have created a challenge among potential entrepreneurs. Moreover, entrepreneurship barriers have always created a challenge for entrepreneurs. In other words, potential entrepreneurs with weak coping capacity have experienced failure during the start-up phase. Therefore, this study sought to investigate the influence of perceived barriers of entrepreneurial orientation on student’s attitude and intentions in starting a new business. The population of the study consisted of agricultural students in Islamic Azad University in Ilam Province (N = 320). Using simple random sampling, 169 students were selected through Bartlet table of sample size. A structured questionnaire was used as a research instrument to collect data. Confirmatory factor analysis was used to test validity of research instrument and Cronbach’s alpha coefficient was used to test reliability of the questionnaire yielding 0.95 indicating a valid instrument. Results revealed that students hold medium intention to start a new venture. Moreover, perceived barriers had direct and negative influence on students’ attitude, self-efficacy, and intention towards entrepreneurial behavior. Interestingly, perceived risk was considered as a main barrier in students’ entrepreneurial orientation. Lack of capital and financial support, entrepreneurial skill and training were among other perceived barriers. The findings of this study have implications for agricultural higher education. For example, risk management, optimism, entrepreneurial internship, role models, and demonstration projects may be used to overcome perceived entrepreneurial barriers.

Key words: Perceived entrepreneurial barriers, entrepreneurial intention, self-efficacy, risk management.

Figure: Structural Equation Model (research findings)
Do They Know What We Think they Know?

Paula Englis

Executive Summary

We explore the predictive ability of business panel assessments of business planning and startup firm success in a University-based incubator context. We use a sample of 213 entrepreneurs who participated in an incubator over a three-year period. These entrepreneurs entered the program in a series of 10 groups ranging in size from 5 to 27; there was overlap in program residency between groups. The program was designed to span roughly an 8 to 12 month period for each entrepreneur. Approximately ~13% of entrepreneurs were female. Many of the entrepreneurs were from the University and this was their first experience commercializing a technology into a business. Logit regression analysis was used to test our hypothesis that business panel experts would predict firm survival in high tech, knowledge intensive startup firms. Our hypothesis was supported with experts able to predict survival 93.3% of the time. The overall model was also significant (chi-square 10.9, p<.05). Our study contributes toward an understanding of the use of the business panels in evaluating business planning to predict startup firm survival in University-based incubator contexts. We contribute to the literature on business planning and its impact on performance for startup firms by moving beyond the formal outcome of the planning effort (such as the existence of written business plans) by analyzing the content of the business plan and the business presentation by business panel experts.
Evaluation of entrepreneurial skills of students enrolled in technology education institutions

Fariha Gull

Abstract

The current study aims to evaluate entrepreneurial skills of students enrolled in technology education institutes after studying business courses. Secondary aim of the study is to examine the effect of demographic factors on skill level of students. In total 1867 students took part in the study selected through multistage sampling. A business plan template was used as an instrument to collect data. The results indicate that students have low level of entrepreneurial skills. The results also present that students with family background of business and having current or previous experience of running a business have better entrepreneurial skills.
Does Globalization Help Inclusive Growth? An Opportunity Structure Perspective

Hao Liang, Sunny Li Sun and Chris Marquis

ABSTRACT

We examine how different types of country-level globalization and the industry structure of microfinance institutions (MFIs) affect organization-level microcredit interest rates which crucially affect the poor's entrepreneurial opportunities. We develop an opportunity structure perspective that argues that MFI interest rates can be reduced by social globalization, increased during the early stages of economic globalization, and then reduced in the later stages economic globalization. Moreover, stronger presence of nonprofit organizations in the microfinance industry lowers interest rates. Furthermore, these three forces moderate the relationship between MFIs' outreach to the poor and average interest rate. Analyses of 2,559 MFI observations across 74 countries from 2002 to 2012 largely support our hypotheses.
Entrepreneurs and other “preneurs”: Using text mining and sociolinguistics to explore implicit gender associations within entrepreneurship

Mandy Wheadon and Nathalie Duval-Couetil

Executive Summary

Though rates of women working as entrepreneurs have increased, gender gaps in entrepreneurial participation and differences in outcome expectations for male and female entrepreneurs persist. Scholars have shown that entrepreneurship has been inextricably linked with masculine culture in society, and that these gendered associations are evident in analysis of the language used to describe entrepreneurs. Linguistic associations to entrepreneurship are especially significant when considered in regard to their impact on identity construction, gender norms, social expectations, and valuation. Though powerful methods of analysis for extracting factual information about concrete concepts from vast amounts of data, in isolation they currently lack the methodological refinement necessary to draw large-scale inferences about social, cultural, contextual, and relational data from lexical and syntactical features. This study expands on existing research by developing a modified mixed methods approach that adapts traditional computational linguistics and text/data mining techniques by refining search criteria to increase sensitivity to sociolinguistically significant data indicative of associative meaning creation. Using this computational sociolinguistics approach, an empirical study was conducted to extract large amounts of contextual, implicit, and relational information from contemporary media sources, and then analyze the discourses and expectations being constructed about women as entrepreneurs in Western society. A comprehensive 2 million word corpus was curated from English language sources on the internet, specifically focusing on texts containing the “-preneur” suffix, to compare and contrast the origin word being studied (“entrepreneur”) with as many modern examples of novel “-preneur”-suffixed word variations as possible, and then the integrated computational sociolinguistics method was used to analyze variables indicative of the target populations most often described as something other than an “entrepreneur” and the directionality of variant-term assignment (i.e., whether individuals commonly chose to call themselves something besides “entrepreneur” or whether they were being assigned this label by others).
Knowledge management (KM) program development has historically been a major obstacle for small and midsize enterprises (SMEs’) to achieve. In this theoretical study, we illustrate how many SMEs struggle to develop knowledge management programs along with general knowledge transfers. Therefore, the authors will link the competency cluster validation model, the Motivations-Attributes-Skills-Knowledge Model (MASK), with the SMEs’ knowledge management program development to address the challenges a SME faces in developing a KM program. The MASK is an upward focused, sequential competency validation model providing ease and speed of implementation for SMEs when developing a knowledge management program. The Motivations-Attributes-Skills-Knowledge Competency Cluster Validation Model (MASK) could successfully serve as a foundation and process for the construction of a knowledge management program in a SME. It also addresses the main challenges facing SME’s as they struggle to develop knowledge management programs along with general knowledge transfers. This paper follows a format provided in A. T. Arikan’s Interfirm Knowledge Exchanges and the Knowledge Exchanges Capability of Clusters (Arikan, 2009) in that it illustrates eight (8) proposal that could aid a SME in developing a knowledge management program. This theoretical study also followed the Critical Incident Technique (CIT) method as this methodology provides a productive practical framework for this theoretical study (Flanagan, 1954). This research outlines several proposals pertaining to each step in the MASK and how they serve as strong foundation for SME’s to develop a KM program. Further, this theoretical study relates each step of the MASK and how it functions in developing a SME knowledge management.
An Examination of University Entrepreneurship Accelerators in North America

Lynn Metcalf, Thomas Katona and Jonathan York

Despite the growth in the number of university startup accelerators and the resources devoted to them, there is little information about how universities define what an accelerator is; how they are structured and operate; what programmatic goals and outcomes are important; and what their desired impact is. An online survey was distributed with sixty-seven university respondents, thirty-three from university entrepreneurial accelerator directors. The results establish a baseline knowledge of the complexity of the university accelerator landscape and enable further research on the success of university accelerators relative to their goals and the outcomes achieved.
A Strategic Approach for Post-Initial Public Offering Enterprises

Cheng (Andy) Tseng and Chien-Chi Tseng

Executive Summary

Innovation is essential for private enterprises to go public and obtain investments and resources from public markets. However, once a firm goes public, the internal innovation performance at that firm decreases. The firm also experiences substantial employee turnover and the key inventors, who received higher returns and incentives for their innovation prior to the IPO, leave after it goes public. In addition, the productivity of inventors who choose to remain at the public firm declines. This research clarifies the relationship between innovation strategies and post-IPO internal innovation performance by exploring three research questions. Theoretical backgrounds and definitions are provided for innovation, IPO, innovation performance, and mergers and acquisitions. By organizing, integrating, and evaluating previously published materials and identifying them in a comprehensive research, we aim to discover strategies that could be utilized to increase a firm’s internal innovation performance and the relationship between strategic innovation practices and the post-IPO firm’s internal innovation performance. We argue that post-IPO enterprises have a responsibility to practice these strategies. Though obtaining external mergers and acquisitions may be more cost effective and may compensate for the decline in the internal innovation performance, the employees and health of the enterprise as a whole would benefit if the enterprise adopts our strategies aimed to increase internal innovation performance. For this research, we first identified key words to use in the literature search: innovation, IPO, innovation performance, and mergers and acquisitions. Second, we identified the databases to search. All of the several electronic databases, including Stanford University’s electronic library and journal and book sources, were used, as well as Google Scholar and online library resources. Moreover, we build a framework to explore the strategies used to increasing innovation performance at Post-IPO enterprises. Finally, conclusion, suggestion, and implication are addressed based on the outcomes we found from this research.
STRATEGIC ANTECEDENTS OF INNOVATION: VARIANCE BETWEEN SMALL AND LARGE FIRMS

Phillip Davis and Josh Bendickson

ABSTRACT

Our study explores differences in enhancing innovation based on firm size. We theorize and test multiple antecedents of innovation including dynamic capabilities, strategic planning and organizational structure. To test our hypotheses, we have two samples based on firm size. Through the use of a hierarchical regression analyses, our findings reveal that dynamical capabilities partially support innovation in both small and large firms, that strategic planning is significantly valuable for small firm innovation but not for large firm innovation, and that organizational structure has a positive and significant impact on large firm innovation but not on small firm innovation.

Key Words: Innovation, Strategic planning, Structure, Dynamic Capabilities, Small and large firms
Mapping the Entrepreneurial Ecosystem in Tijuana: Analysis and Recommendations

Lorena Santana and Guadalupe Sanchez

Executive Summary

Policies directed at promoting entrepreneurship represent strategies to incentivize the creation of companies with innovative offerings. These companies provide goods and services that provide value added solutions across product lines and markets, while promoting prosperity and quality of life in the process. In 2014 and 2015, in the city of Tijuana, Baja California, Mexico, an event entitled Emprende Tijuana took place. Emprende Tijuana stakeholders proposed the development of leaders who could invest on innovation and creativity and become key actors in the economic, social, and cultural development in Tijuana.

The purpose of this research paper is to compare the Emprende Tijuana initiative to relevant models associated with the development of meaning entrepreneurial ecosystems. This will allow key players in the local entrepreneurial ecosystem adapt their approach in line with well-established and innovative approaches. The end result will be the development of an entrepreneur-friendly culture that will benefit the region. After an extensive review of the relevant entrepreneurship development models, the Entrepreneurial Ecosystem Diagnostic Toolkit developed by Aspen Network of Development Institute was found to provide an important benchmark for Emprende Tijuana. This model uses a multi-dimensional approach to assess the entrepreneurial ecosystem within developing countries. This model considers the following dimensions: Finance, support, policies, markets human capital, infrastructure, research and development and entrepreneurial culture. This model was contrasted with Emprende Tijuana, which yielded data that served to identify the individuals and organizations involved in the entrepreneurial ecosystem, while also identifying actions not involved with the entrepreneurial ecosystem, but who are essential for the creation of a sustainable ecosystem.
When do family businesses transition from family CEO to professional management?

Xi Yang

Executive Summary

In this paper, I analyze the decision to hire a professional management on family firms. The external managers could play both negatively and positively in the operation of family firms. On the one hand, employing non-family managers would be at risk of causing conflicts since the external managers are more likely to hold different objectives comparing with those who belong to the part of the family. On the other hand, it may be helpful to hire professional external managers so that the firm could obtain valuable management skills and additional human resources. The purpose of this research was to examine when a professional management appointment on family firms. We will find past firm performance and negative media coverage have negative influence on the likelihood of professional management appointment. Degree of unrelated diversification and connection have positive influence on the likelihood of professional management appointment. Furthermore, this paper proposes when the new CEO is hired from outside the non-family firm. I also showed family firm’s preference for diversification than non-family firm. I realize that a professional management in this important position will decrease bad performance and increase diversification so that making their firms more successful. Therefore, family businesses should carefully select an external manager. It can be helpful to establish professional ties to external partners and create a long-term company development.
The Relationship Between Open Innovation and Globalization: Focused on Collaboration Modes of R&D SMEs

Rara Jeon

Executive Summary

Innovation is essential for an organization’s growth (Horibe, 2003) to sustain competitive positioning and to strengthen it (Baregheh, Rowley, & Sambrook, 2009). Innovation can be defined by the management of the process of idea generation, technology development, and manufacturing and marketing of products and/or services (Trott, 2011; Stojmanovski, Viktor, et al, 2013), and business modeling (Baregheh et al., 2009). Our central theme, open innovation was first proposed by Henry Chesbrough to describe how knowledge and technology is increasingly benefiting from the integration of ideas and capability from multiple sources (Chesbrough, 2003). Among typologies of open innovation including business model, product, technological, and managerial innovation (Park, 2007), we focus only on technological innovation since this is a crucial issue for high-tech SMEs. Innovation is originally linked to the role of R&D which is the most significant strategy in technological companies (Conte & Vivarelli, 2014). This is why our study focus on R&D in high-tech industry. After innovation, the second most important theme in our study is globalization. Intensive competition in domestic markets may give a reason for firms to expand their technology into new markets overseas (Lee & Jeong, 2010; Kang, 2012). However, the uncertainty in the global marketplace has caused a fundamental change in firms’ innovation strategies (Lee & Jeong, 2010; Kang, 2012). To mitigate this confusion and secure global markets, open innovation has become commonplace in organizations, and needs to be studied (Zhang, 2011; Qiuyan, 2012). Most large and multinational firms commonly implement open innovation (Wynarczyk, 2014) whereas SMEs are reluctant to conduct this because of lack of experiences and case studies targeting their situation (Kang, 2012). We demonstrate that globalization could be simply done if firms, regardless of size, collaborated with buyers and/or distributors. When it comes to open innovation, collaboration, need to be study. However, most SMEs utilize open innovation at the commercialization and/or promotion phases in order to expand their global channel whereas large firms are focused on early stage of open innovation, R&D phase. As for the methodology, we use multiple case analysis in order to explore the pattern of each firm’s global strategy. Our findings will be applied to SMEs not only in the high-tech industry, but also in other industries and other countries, and we will encourage firms to utilize open R&D and innovation with global partners. As for practicing firms, our case study will help them to obtain ideas of how to apply open innovation to achieve globalization. For academia, we have filled this theoretical gap and we propose future research: how different phases of open innovation activities influence globalization and succeed.
Teaching Note: Stallion Deliveries: The Acquisition Dilemma of a Successful Student Startup

Shahid Qureshi, Centre for Entrepreneurial Development, IBA Karachi
squareshi@iba.edu.pk
Sarfraz A. Mian, State University of New York. Oswego, NY
sarfraz.mian@oswego.edu

Summary

This case describes the entrepreneurial journey of two undergraduate students, Hassan and Ibrahim studying at a prominent South Asian business school. After chronicling their successful startup journey of Hassan and Ibrahim it focuses on their dilemma to decide between two acquisition offers. Their journey commenced from an entrepreneurship course at the School started when they first met in an entrepreneurship course. After a slew of missed opportunities and failed businesses, they finally found an opportunity which grew while studying entrepreneurship and the Principles of Effectuation.

During their journey, Hassan and Ibrahim found an office at a subsidized rate at their School’s incubation center. They avoided capital expenditures like purchasing motor cycles, and hired people who already owned them. During the expansion of their business, instead of renting out offices in different cities, they struck partnerships with different courier companies. With the help of a School Alumni, they developed an online booking portal at lower cost. They eventually raised funding from external sources leveraging the Incubator network. The case further discusses the acquisition dilemma of the founders, where they had received two competing bids from reputable companies. The case highlights the young entrepreneurs’ parsimonious use of resources, ability to bootstrap and to raise capital in innovative ways for their ever-growing business in the context of a developing country having an entrepreneurial ecosystem in its infancy. It is written to be used in
an entrepreneurship course in the BBA-MBA program to explain the effectuation principles. This case adds value towards the entrepreneurship literature on developing countries.

Hassan and Ibrahim are a classic example of a bootstrapping entrepreneur. They could not afford to hire experienced employees, and had to learn everything about the business themselves. They were able to raise the money, first using their personal savings, they invested Rs. 25,000 each and then they were able to Raise Rs. 200,000 from their family and get an interest free loan of Rs. 150,000 from the entrepreneurial center.

**Key Words**


**Questions for the Case**

1. Explain the entrepreneurial characteristics of Hassan and Ibrahim. How did they evolve over a period of time?

2. How did Hassan and Ibrahim recognize and evaluate this opportunity? Apply the various principles of effectuation theory mentioned in the reading to decipher the opportunity creation process.

3. Where did Hassan and Ibrahim find the money to launch their Company and explain their bootstrapping practices?

4. What shall they do with the various acquisition offers?
Based on the Effectuation theory of Entrepreneurship asks the students to identify the various principles by creating a table on the black board and fill in the comments. Sample answers are given below in the table.

<table>
<thead>
<tr>
<th>The crazy quilt principle:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hassan &amp; Ibrahim built partnerships with self-selecting stakeholders. They obtained pre-commitments from these key partners early on in the venture, and reduced the uncertainty and added value to this industry with its interested participants. Some of the partners and Stakeholders with whom Hassan and Ibrahim built partnerships and relationships were</td>
</tr>
<tr>
<td>• Hassan and Ibrahim partnered with the entrepreneurial center so that they could rent out an office space at a subsidized rate and use their vast network to get initial customers and orders</td>
</tr>
<tr>
<td>• They enrolled in the accelerator program which gave them access to even more subsidized office space and the ability to network with industry leaders such as Sarwar Saleem.</td>
</tr>
<tr>
<td>• They got a BTL (Below the line activity) project from Women Entrepreneurship project</td>
</tr>
<tr>
<td>• They negotiated with Createch Solutions for development of their online portal; they were able to negotiate a good price since the founders of Createch solutions were Alumni.</td>
</tr>
<tr>
<td>o They partnered with different courier companies to outsource their outstation deliveries, the companies with whom they partnered were Express COD Deliveries, Panda Express, Extreme Logistics</td>
</tr>
<tr>
<td>• They partnered with vendors on different occasion such for Deliveries or the Mother’s day campaign. They negotiated discounted rates from vendors.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The bird in hand principle:</th>
</tr>
</thead>
<tbody>
<tr>
<td>They started with their means: who I am, what I know, and whom I know. Then, they explored the possibilities that originated from their means.</td>
</tr>
</tbody>
</table>

**Who I Am**

- Common Personality characteristics:
  Obsessed with opportunities, Team players, Team builders, High learning ability, Keen observers, Take responsibility, Different/complimentary skills
- Hassan and Ibrahim knew from the start that they had contrasting personalities. Hassan was far more comfortable handling the sales and operations of the business, whereas, Ibrahim was happy handling the finance and technology. This knowledge of knowing themselves helped them divide the work according to their skill sets and each neither founder would poke his nose in the other founder’s work

**What I Know**

- **Educational background:**
  o Both founders were studying BBA from a leading business school in south east Asia. They were majoring in entrepreneurship with a minors in supply chain management and Finance.
Entrepreneurship: Setup and run a business in the first year of university
Supply Chain Management, Finance
Experience at various places: FME I & II (BBA Entrepreneurship): Learned how to convert an idea into a sustainable business
Launched at least 3 different businesses (failed) before finally getting success with Stallion

**Whom I Know**

- **Family**
  - Ibrahim came from a family business, he had prior experience in managing a small business and had developed a few contacts.
  - Hassan came from a middle class family, his family knew people who wanted courier services such as the one offered by Stallion Deliveries.

- **Entrepreneurial Center Network**
  - By renting out an office at the center, Hassan and Ibrahim had surrounded themselves with other startup companies and entrepreneurs. Talking with these entrepreneurs helped them build a network, they got services at a cheaper rate, since all companies were startups and everyone tried to help out each other in any way possible.
  - The incubation center was also a morale booster. Ibrahim and Hassan had lost hope in their venture on multiple occasion, however, other incubates would help them keep their morale high and push them towards success.
  - The center also helped them in securing the Women Entrepreneurship marketing project. Later on, when the project was completed, Ibrahim and Hassan were able to gain exposure from the program and attract new clients.

- **Friends and Family**
  - Family helped out by giving Hassan and Ibrahim capital for running the business. They were able to raise Rs. 200,000 from their families.
  - Their friends helped in marketing the service. One friend, Sara Lone was particularly helpful, since she brought in a lot of women entrepreneurs using her network

**The affordable loss principle:**
They limited his risk by understanding what they can afford to lose at each step, instead of seeking large all-or-nothing opportunities. They invested only that much amount which they could afford to lose at each and every step of the journey. Their affordable loss in terms of time effort and money:

**Time:** Hassan and Ibrahim were undergraduate students, in their fifth semester, their workload for the semester was low, therefore, they were able to give about 5 – 6 hours every day

**Effort:** This business required managerial skills. They hire employees to make deliveries. However, they would occasionally make deliveries when the work load was high and their employees could not make all the deliveries themselves. They would market the service themselves, making cold calls, circulating emails and going to meet with prospective clients

**Money:** They could each afford to lose Rs. 25,000
The Lemonade principle:
They were always open to the surprise factor. Instead of making “what-if” scenarios to deal with worst-case scenarios, they treated the surprises as potential clues to create new opportunities. Some of the surprises they had to deal with:

Slow uptake of the business: Stallion Deliveries had only managed 33 orders in the first three months of business, and the founders were very demotivated with the figures, they had even thought about closing the business and cutting their losses short.

WomenX project: The project came as a surprise to the founders because this was completely different to the service they were offering, however, in the long run this project became a blessing because they were able to attract a lot of participants of the programs.

Reduction of Payback Cycle: The reduction of the cash payback cycle by their competitors was a big surprise, because their competitors were copying Stallion Deliveries USP.

Meeting with Mr. Ahsun: The meeting with Mr. Ahsun was a surprise because they had gone to the meeting thinking that he had called them to discuss terms and conditions for provision of services to his online venture, whereas he had called them to discuss the acquisition of Stallion Deliveries.

The pilot in the plane principle:
They focused on activities within their control and had a strong conviction that their actions will result in the desired outcomes. They had a belief that the future is neither found nor predicted, but rather made. They continuously strived to improve their service, they did this by:
- Developing an online portal
- Getting ZONG services for customer support
- Starting operations in different cities of Pakistan.
- Personally making calls to customers and taking feedback
- Setting monthly targets for themselves and their teams and measuring actual performance against expected performance

Epilogue
On 1st March 2015 the founders signed the agreement to sell the company to Mr. Ahsun, the chairman of PRO Group. The founders made the decision based on the personality of Mr. Ahsun, although they had hardly known him, they felt at ease with him when they talked to him and they felt that at PRO they would have the best possible resources available to them for marketing and promotions. The final valuation method used was the factor multiple method, whereby the equity of the founders was multiplied by a mutually agreed number.
Today Stallion Deliveries has a network of over 30 cities, employing over 100 people delivering over 10,000 parcels every month. The company is catering to some of the biggest online store of Pakistan, stores like Daraz.pk and kaymu.pk. Although the journey ahead is long and hard, the founders believe that one day soon, the company will be able to rival the giants of the courier industry.
THE RAIL TRAIL FLATBREAD CO.

Adam Sulkowski, Babson College
Angela F. Randolph, Babson College
Benjamin Luippold, Babson College
Jennifer Bailey, Babson College

CASE OBJECTIVES AND USE

This case is designed to highlight the interdisciplinary nature of entrepreneurship – how key take-ways from accounting, entrepreneurship, law, and operations can be helpful when making difficult decisions in starting-up a business. It works well as an introductory case for MBA coursework to help students understand how the different academic disciplines are really tangled together like “multiple strands in a plate of spaghetti.” There are four parts to this case. The first part concerns whether to accept an unforeseen opportunity that at first appears unattractive for a number of reasons. It challenges students to ask what further information they would want before making a final decision. It also challenges them to consider whether they would accept an offer to enter into a verbal agreement with a lack of specific and certain terms involving real estate. The second part ultimately asks whether, in the place of the protagonists, the reader would be flexible and alter their original vision when confronted with new ideas. The new ideas arise as creative ways to work around obstacles or in response to idiosyncrasies in the physical space. The third part challenges the reader to consider how one would actually start attracting and serving clients. Finally, the fourth part reveals a typical problem of start-ups – failing to adequately plan for roles and operations, such that duties are adequately delegated and a
constructive culture maintained. The questions of how to expand and bring in an additional partner are also raised.

**CASE SYNOPSIS**

Karim and Michael met at Babson’s MBA program. Karim, at the age of nine, developed a passion for pizza, whether freshly made or in microwave package form. One of the reasons Karim came to Babson was to explore his idea of a pizza business, featuring a mobile pizza oven in a delivery truck. During the first year of his MBA program, Karim met Michael, who grew up working in his Greek family’s pizza business in Massachusetts. As part of MBA work, Karim and Michael worked together to investigate options for starting a pizza business. A year after their MBA program, they started to explore options. Michael’s uncle had a vacant space in Hudson. The town of Hudson was seen as an economically collapsed mill town one hour’s drive west of Boston on the “outer beltway” of I-495, past suburbs of the city, in the semi-rural outskirts. As of 2011, the population was roughly 15,500 with a per capita income of about $35,400. This case explores the issues and obstacles entrepreneurs face as they pursue their entrepreneurial opportunities.
A New Angel’s Investment Decision: What Does She Consider?

Monica Zimmerman, Ph.D., CPA
Professor of Management
Management Department
West Chester University of Pennsylvania
312 Anderson Hall
West Chester, PA  19383
610-436-2930
mzimmerman@wcupa.edu

Acknowledgement: Thank you to the Keiretsu Forum Mid-Atlantic, Howard Lubert, PhD, and Dan Mazzucco, PhD for providing information used to write this case.
Abstract
This case addresses an angel investor who is considering investing in ZSX Medical, an early stage medical device company. The company is positioned to experience dramatic growth and to exit through acquisition in three to five years. The case captures the angel’s experience in evaluating investment in the company. It identifies four aspects of the company she carefully considers, i.e., the exit strategy, capital raise, financial position, and management team. It also provides some term sheet information. The case introduces students to angel investors and what they consider in evaluating investments.

Introduction
As the company founder, president and CEO completed his presentation to the Keiretsu Forum, Ann was intrigued. The breakthrough technology addressed a significant market need, the target market was huge, and the stage of development of the company’s lead product indicated that an exit was achievable in a few short years.

ZSX Medical, LLC was launched just two years prior to the presentation to the Keiretsu Forum angel network. The company developed Zip-stitch™ clips, a simple and fast method of internal surgical closure. The pre-clinical stage medical device Zip-Stitch™ clips is “a breakthrough platform of surgical closure products designed specifically for use in closing internal surgical incisions.” The company’s initial target market is women’s health (Mazzucco, 2016b: 16).

What most caught Ann’s attention was the experience and expertise of the team. Dan Mazzucco, Ph.D., the company founder and CEO, has 15 years of experience in the medical
device industry. He earned a “doctorate in medical and mechanical engineering from Harvard Medical School and the Massachusetts Institute of Technology.” His co-founder Eric Rugart is the CEO of Feta Med, Inc., a medical supply business to the obstetrics and gynecology community. Rugart is an experienced entrepreneur, and an angel investor (ZSX Medical, 2016).

**A Business Angel**

Ann was a tenured business school professor who taught and researched entrepreneurship. She and her husband owned a small medical device business which her husband ran. The business was successful, and the couple’s assets qualified them as accredited investors. They had made a few investments in privately held businesses over the years. One of their investments resulted in a successful exit, a second resulted in a modest return, and the third resulted in a loss. The couple had a large portfolio of investments in publicly traded companies, but they were tired of the lackluster performance of their investments in publicly traded companies. Using her entrepreneurship research, Ann was eager to invest in early stage companies.

Much of Ann’s research had focused on the management team of early stage companies. She understood the importance of the team and its credentials, network, and experience especially in relationship to funding. She studied the importance of the founder/entrepreneur and the management team of early stage companies in relationship to the success of the company, especially in terms of raising funds and exit strategy. She believed her investments would have great potential if she could find companies operating in growing industries, with a large target market, and a strong founder and team. She also liked the idea of investing in innovative technology that could benefit society. She was especially interested in life science companies.
Ann’s research on angel investors introduced her to the advantages of angel groups. She reviewed several angel groups and was most impressed with the Keiretsu Forum. Its deal flow and due diligence process were very strong. The idea of networking with angel investors and the sharing of insight on potential investments was attractive. Ann liked the Keiretsu Forum’s rigorous due diligence process. She understood that the rigor mitigated some of the risk of angel investing. She believed that if she would carefully select her investments she could generate very positive returns.

Angel Investors

An angel investor is an accredited investor who invests capital in privately held companies in exchange for convertible debt or stock. An accredited investor is an individual who the Securities and Exchange Commission (SEC) has deemed appropriate to invest in privately held companies. Appropriate because they have a level of sophistication and assets to protect them from the risks inherent in privately held companies. The term angel investor was first used to refer to wealthy individuals who funded theatrical performances. Later the name was applied to wealthy individuals who funded privately held companies, most often startup and early stage companies. Angel investors are also known as angels and business angels (BA). Before most angels will invest, the company must provide proof of concept, i.e., proof that the business concept is viable. Some angels invest in the seed round of funding. Other angels prefer to invest at a later stage such as the Series A round. Angels invest amounts ranging from $5000 to $500,000.

Angel capital is considered smart and active money. It is smart because angels use their expertise and knowledge to benefit the companies in which they invest. Many angels are
entrepreneurs who have successfully exited their business. Others are successful business persons, some of whom are retired. Many of angels want to invest not only their financial resources but also invest their experience, insight, and network to build the companies. Angels are active investors, investing both time and money in companies. Such active investment can take the form of a management team position, seat on the board of directors, advisor role, or consultant role. Involvement in the companies enables angels to monitor the use of the personal assets that they invest.

Angels are not startups’ first funding source. An entrepreneur’s first round of funding is often his/her personal resources and those of family and friends. The first round of funding is often referred to as the 3 Fs: founder, family, and friends. High growth companies can quickly exhaust the entrepreneur’s resources and those of their family and friends. Bank loans are often difficult to secure without sufficient collateral, and they require regular interest payments on the loan.

Another source of capital for early stage high growth companies is venture capital. Venture capital investments are typically made at the B or later rounds of funding for $1 million or more. And so there is a funding gap between what friends, family and founders fund and what VCs fund, as well as the amount of capital that startups need and investors want to/can invest. Angels fill that gap.

Although the investments made by individual angels are significantly smaller than those made by VC funds, angel groups and or angel networks collectively can raise funds equal to the amount that a VC fund would invest. According to the Angel Resource Institute’s 2015 Halo Report, investments by angels are increasing. The mean size of angel round investment in 2012
was $833,000. In 2013 it was $829,000, in 2014 it was $835,000, and in 2015 it increased to $1,164,000 (Angel Resource Institute, 2015).

Both angel capital and venture capital are considered venture capital, but the former is considered “informal” venture capital and the latter is “formal” venture capital. In addition to the amounts and stages at which angels and VCs invest, there are several other differences between angel and venture capital. Angel capital is considered patient capital. Angels have a longer investment time horizon and lower return on investment (ROI) expectations than VCs. Angels seek an exit in five to seven years and a 2 times (2X) to 3 times (3X) return. VCs seek an exit in 3 to 5 years and seek at least a 10X return.

Angels consider many factors when investing. These factors include projected rate of return, capital growth, cash flow time to exit, tax benefits, the management team, growth potential of market, uniqueness of product or service, deal structure, competition, stage of market development and barriers to competition, stage of company development, industry characteristics, exit mechanism and relevance to previous experience, industry sector, proximity to home or work, and potential for fun (e.g., Hindle and Wenban, 1999).

The management team is a significant factor considered by investors. Many investors consider the entrepreneur to be the most important factor. Angels “bet on the jockey, not the horse,” which means that the entrepreneur is the most important factor considered in an investment. It is the entrepreneur who wins the race.

Location of the company is another factor that angels consider. According to the 2015 Halo Report, 75% to 80% of angel investments are made in the angel investors’ geographic
region” (Angel Capital Association, 2015). Most angels invest close to home. In some regions, angels investing in groups are more likely to invest outside their region (Angel Resource Institute, 2015).

Some angels invest independently. They identify potential investment opportunities through their personal and business networks, and they independently evaluate and fund companies. Other angels invest through angel groups (AGs) and/or business angel networks (BANs). Members are composed of accredited investors who identify deal flow, share insight on potential investments, and work together on the due diligence. Some AGs collectively invest or pool their money to invest. BANs are more loosely organize and members typically do not pool their money to invest. The number of angel groups and networks has grown dramatically from 1999 when there were less than 100 groups. In 2011 there were over 350 groups (Angel Capital Association, 2012). The world’s largest angel investment network is the Keiretsu Forum.

**The Keiretsu Forum**

The Keiretsu Forum was founded in 2000 with a mission to provide “Great Association With Quality Deal Flow.” Keiretsu is a Japanese term describing “a group of affiliated corporations with broad power and reach” (www.keiretsuforum.com/about/). The network has over 2500 members located on three continents. Keiretsu Forum is organized by chapter. The structure and processes are designed to enhance deal flow, support portfolio companies, expand markets from which entrepreneurs can access resources, and provide opportunity for inter-chapter member collaboration (www.keiretsuforum.com/global-chapters/).
In 2014, members invested $45.3 million in 79 ventures. The average investment was $573,114. Investments range from $250 thousand to $2 million. Members make individual investment decisions but collaborate on the due diligence. Investments were made in the following areas: 35% Life Science, 31% Technology, 31% Real Estate, and 3% Consumer/Retail Products (Anderson, 2015).

The Keiretsu Forum is recognized for its “thorough and comprehensive due diligence process” outlined in the 400 page Keiretsu Forum due diligence handbook. The handbook content “represents more than a decade of knowledge and best practices vetted by over a thousand Keiretsu Forum investor members world-wide.” Members from around the globe can access a due diligence report when it is published on the organizations’ secure cloud based platform (http://www.keiretsuforum.com/investors/due-diligence/). “The goal of the Keiretsu Forum’s Due Diligence (‘DD’) process is to provide Keiretsu Forum members with the information needed to make an informed decision about investing in a company” (Keiretsu Forum, 2015:1). The due diligence report “dictates the terms of the deal between investors and entrepreneurs, guaranteeing that all details, facts and figures are clear and agreed upon by both parties. This sets the foundation for a strong angel investment relationship based on trust and solidarity” (Keiretsu Forum Mid-Atlantic, 2016.)

Ann joined the Keiretsu Forum Mid-Atlantic region six months before hearing the ZSX Medical presentation. The Mid-Atlantic region was Keiretsu Forum’s fastest growing region. Ann liked the organization’s growth-oriented angel funding philosophy. She liked the two stage scrubbing and screening process that the presenting companies passed through. Ann also liked that the presenters and their company received coaching, legal assistance, mentoring, and exit
strategy guidance. She recognized that the due diligence and cultivation process befitted the angel investors as well as the entrepreneurs and their company.

Based upon her experience with the Keiretsu Forum Ann felt confident that ZSX Medical had been carefully screened prior to the presentation. She also knew that the due diligence report would provide sufficient detail on the investment for her to make an informed decision.

**The Company: ZSX Medical**

As Ann listened to the ZSX Medical presentation she was impressed with the company. She was looking for a new investment, and ZSX Medical looked like a great choice. The company looked like a promising investment due to its many positive aspects. Dr. Mazzucco clearly knew the market, the competition and the technology. He and his team had a large network of surgeons and healthcare providers, and Ann liked that the company’s headquarters was located approximately an hour from Ann’s home. Four aspects of the company were especially attractive to Ann: the exit strategy, the capital raise, the financial position, and the management team.

The exit strategy Dr. Mazzucco presented to the Keiretsu Forum members centered on an acquisition by a large healthcare company. Many early stage high growth companies propose an Initial Public Offering (IPO) as an attractive angel exit. Ann preferred acquisition as an exit strategy. She was familiar with the IPO process including the extensive regulatory compliance, the dedication of resources to take a company public, and the risks that newly public companies face. Ann preferred the shorter time frame of an acquisition compared to the lengthy and highly regulated IPO process.
Dr. Mazzucco’s presentation indicated that an exit could occur within three years after launching the Zip-stitch System. He noted that a likely suitor would be a strategic partner or large medical device manufacturer. Dr. Mazzucco stated that many similar exits in women’s health and surgical closure had recently taken place, and those exits and other comparable companies suggest a valuation of ZSX Medical at exit between $50 to $250 million (Mazzucco, 2016a). Ann liked the sound of an exit in three years and the valuation. Three years was shorter than the typical five to seven year investment period angels typically experience.

The second attractive aspect was the capital raise. ZSX Medical was raising $1,500,000 in this round of funding to be used for identifying strategic manufacturing and distribution partners. Earlier in the year, the company had raised $660,000 of the $1.5 million, and so $840,000 was available to Keiretsu Forum members. In addition to the $1.5 million capital raise the company was awarded a $500,000 National Science Foundation (NSF) matching grant. The 2 to 1 non-dilutive matching grant would match 50% of new money raised by the company up to $1 million without diluting the equity (Rowan Innovation Venture Fund, 2015: 4). Ann considered the $1.5 million raise in the context of the company’s previous $4,000,000 capital raise and pre-money valuation of $7,500,000 (Mazzucco, 2016a). She felt positive about the company’s past success in raising money and the pre-money valuation.

Third, the financial position of the company looked strong. Ann reviewed the financial projections ZSX had presented to the Keiretsu Forum. See Table 1. She noted the upward trend in revenue. Revenue is projected to increase 660% between 2014 and 2018. Expenses are projected to decrease 31% during the same period. She noted a fluctuation in the 2017 revenue,
but she was not concerned because in 2018 the company projects a net profit of $1.14 million. This is 66% of the 2018 revenue.

---

The fourth aspect of the company that Ann found attractive was the management team. Many investors consider the management team to be the most important factor in evaluating a potential investment in an early stage company. Many angels view the entrepreneur and his/her team to be the most important factor in an investment, more important than the product, the industry, the target market, and/or the financial position. The experience and education of the entrepreneur and team are two of the characteristics which investors consider.

The team is composed of Dr. Mazzucco and Eric Rugart, both of whom were experienced entrepreneurs and had successfully raised capital. Dan Mazzucco, Ph.D., the company founder and CEO, has over 15 years of experience in the medical device industry. He has experience in managing the FDA approval process from initial manufacturing activities through Phase III clinical trials. Dr. Mazzucco earned a doctorate in medical and mechanical engineering from Harvard Medical School and the Massachusetts Institute of Technology, as well as a degree from Dartmouth College. Eric Rugart is the CEO of Feta Med, Inc. He led several companies prior to Feta Med, including a financial service company and a biometric security technology company. He earned a degree from the University of Pennsylvania and is an experienced investor in early stage companies (ZSX Medical LLC, 2016).
Analyzing the Deal

After Dr. Mazzucco concluded his presentation and left the room, the angels discussed the company and the investment opportunity. The group agreed that Dr. Mazzucco was well positioned to lead the company. Mazzucco and Rugart had knowledge of and experience in startups and the industry in which they were operating. They also liked the Mazzucco’s and Rugart’s network and experience. In addition, the technology was a novel and valuable technology, the initial target market was large, and the investment terms and the exit strategy were very attractive.

At the meeting, Ann expressed interest in investing in the company. Following the meeting she received an email from Dr. Mazzucco with an invitation to invest and a link to ZSX Medical’s due diligence report and other related documents posted on the Keiretsu Forum’s secure platform.

Ann carefully reviewed the 35 page due diligence report looking closely at the financial statements. When she reviewed the financial statements she learned more about the company’s financial position. The revenue fluctuation she noted earlier was due to grant funding. She also learned that the company’s seed round was led by Eric Rugart and Feta Med, Inc. Together Rugart, Feta Med, Inc., and Mazzucco owned a majority stake in ZSX Medical. Ann liked that the team had invested a significant amount of money in the company. They had “skin in the game.”

Ann also read about the company’s sales strategy. She liked ZSX Medical’s strategy to sell its product through strategic partners rather than employ a sales and marketing team. The
company’s plan to use strategic partners to roll out and soft sell the Zip-stitch System rather than build its own sales and marketing team (Rowan Innovative Venture Fund, 2015: 8) would allow the company to focus on research and development rather than use its resources to build a sales and marketing team. It looked to Ann that the team was shaping the company to be an attractive acquisition target.

Ann read the term sheet. ZSX Medical had a pre-money valuation of $7.5MM. The company was selling participating preferred stock with preferences of 20% warrant coverage. The liquidation/liquidity preference was 1X. Terms also included priority to investors for distributions, anti-dilution protection pre-emptive rights, and future co-investment rights. “The preferred units would yield an 8% dividend. The investors participating in this round would be protected against dilution if a down round (i.e., funding) occurred by receiving additional preferred interest at the lower price” (Rowan Innovative Venture Fund, 2015: 5). Ann liked the terms of the deal. Down round and anti-dilution protection were desirable, although she did not expect the need for such protection.

One thing that Ann noted was that the company had not yet received Federal Drug Administration (FDA) approval for the Zip-stitch System. It looked like a rather straightforward medical device approval process. The estimated window of time for the FDA to approve the Zip-stitch System was eleven months and would cost approximately $1.7 million (Rowan Innovative Venture Fund, 2015: 4). Eleven months was a relatively short period compared to the long, costly, and complex FDA drug approval process. Ann remembered that Dr. Mazzucco had successfully managed the FDA approval process of a medical device. She also noted that
prototypes of the Zip-stitch applicator and clips had been successfully used in a pilot efficacy study.

**The Decision to Invest**

Ann felt very positive about ZSX Medical, LLC. Yet she was unsure about investing. In the six months she had been a member of the Keiretsu Forum, she had made two investments in Keiretsu Forum companies. Ann knew that early stage companies have the potential to generate a high return. She also knew that early stage companies face many risks.

Anne thought that the company’s management team was excellent, the target market was strong, and the industry was growing. She remembered the comments made by Keiretsu Forum members about the strength of the team. She knew from her research how important the team was to the success of the company and to generating a high return on investment.

Ann reviewed the due diligence report one more time. She reviewed the financials and the exit strategy one more time. She also reviewed the management team section and read the background check report. The due diligence report was quite positive. Anne knew members of the due diligence team, trusted that their analysis was thorough, and knew that they planned to invest.

Ann called John, a member of the Keiretsu Forum who was on the due diligence team. John had a reputation as a successful angel. She asked him what he thought of ZSX. John shared that he planned to invest $100,000 in the company. His number one reason for investing in the company was the founder and his team. Dr. Mazzucco and Mr. Rugart were experienced and capable. He mentioned that he made many investments over the years. Some of them were in
companies operating in growing industries with attractive target markets, but they did not generate a positive return. Some even failed. John also shared that he invested in companies operating in stable industries with questionable technology, but the companies did well. John attributed the difference to the strength of the entrepreneur and the team. He encouraged Ann to trust her instincts, the positive due diligence report, and her own analysis. If all were positive, he recommended that she invest.

Ann was encouraged. Because she was a new member of the Keiretsu Forum, she did not want to invest a large amount of her portfolio in a single early stage company. Ann’s goal was to diversify her investments across ten early stage companies. She decided that if she invested she would invest $50,000. She calculated the Return on Investment (ROI). If the company exited in five years at a 2X return, her ROI would be $100,000. A 3X return would generate a return of $150,000. She asked herself one last time, “Is this opportunity to good to pass up or am I putting myself at risk?”

References


http://www.angelresourceinstitute.org/~/media/Files/Halo%20Report%202015%20Annual%20vFinal.pdf


Keiretsu Forum Mid-Atlantic. “Startup Investors Are Smart About Their Money.”


https://k4-ma.com/.

<table>
<thead>
<tr>
<th>Item</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$260,000</td>
<td>$610,000</td>
<td>$870,000</td>
<td>$240,000</td>
<td>$1,720,000</td>
</tr>
<tr>
<td>Expenses</td>
<td>$840,000</td>
<td>$730,000</td>
<td>$1,600,000</td>
<td>$560,000</td>
<td>$580,000</td>
</tr>
<tr>
<td>Net</td>
<td>($580,000)</td>
<td>($120,000)</td>
<td>($730,000)</td>
<td>($320,000)</td>
<td>$1,140,000</td>
</tr>
</tbody>
</table>

Teaching Note: A New Angel’s Investment Decision: What Does She Consider?

Case Description:
This case addresses an angel investor, Ann, who is considering investing in ZSX Medical, LLC, an early stage high growth company. Ann is a new member of the Keiretsu Forum, an angel network. She has made a few investments prior to joining the network. The case captures her experience in evaluating a potential investment.

The case approaches the funding process of an early stage high growth company from the investor’s perspective. The case introduces students to angel investors. It provides insight on what angel investors consider and how they make investment decisions. The case includes information on a high growth early stage company seeking funding. The case also describes the benefits of working with an angel network.

The company in which Ann is considering an investment, ZSX Medical, is an early stage medical device company which has launched a breakthrough technology. The company is positioned to experience dramatic growth and to exit through acquisition in three to five years. The case highlights the management team, financial information, abbreviated deal terms, and exit strategy.

The case provides an opportunity for students to review the decision making process of an angel investor. The case contains a description of angel investors as well the relationship among different early stage capital sources. It describes the benefits of angel network and highlights the company characteristics that angels consider when investing.
Case Update

Ann decided to invest $50,000 in ZSX Medical, LLC. The company raised $4,000,000 as of June 2016. The company is on target to receive FDA approval and to soft sell its product through a strategic partner.

Case Synopsis

Ann is a new member of the Keiretsu Forum, the world’s largest angel investor network. Prior to the case, she has invested in a few companies with mixed results. The company, in which she is considering an investment, ZSX Medical, LLC, is a high growth, pre-clinical stage medical device company which was started two years prior to presenting to the Keiretsu Forum. The company’s exit strategy is acquisition by a large healthcare company, specifically a strategic partner or large medical device manufacturer. The exit is projected to occur within three years after launching the company’s technology, the Zip-stitch System. The company is raising $1,500,000 in this round of which $660,000 was raised earlier in the year. The funds will be used for strategic manufacturing and distribution partners. The company’s pre-money valuation is $7,500,000.

In the case, Ann recognizes the great potential of the company. The management team consists of two experienced and well qualified members. They are very familiar with startups as well as the industry in which they are operating.

The company developed Zip-stitch™ clips, a simple and fast method of internal surgical closure. It is “a breakthrough platform of surgical closure products designed specifically for use in closing internal surgical incisions.” The initial application of Zip-stitch is women’s health. (Mazzucco, 2016a).
The company’s financial projections indicate a trajectory of growth. Sales are projected to increase over 660% from 2014 to 2018 while expenses decrease 260%. The net income in 2018 is projected to be approximately 66% of revenue.

**Research Methodology:**

The information to write this case was based on the personal experience of the author.

**Intended Audience and Instructional Placement:**

The intended target audience for the case is a graduate level entrepreneurship class and/or a junior or senior level undergraduate entrepreneurship class. The case is intended to provide students with information on angel investors, an important funding source for high growth early stage companies. It describes funding of an early stage company from the perspective of an angel investor who is considering investing in the company. While it does not contain a full term sheet it does contain some deal terms. The case is written from the perspective of an angel investor to provide students with insight on what angels consider in making investment decisions. It also addresses the benefits of angel investors to early stage high growth companies and how they are similar and dissimilar to other investors. The case includes some of the key considerations angels use in evaluating companies and the value they place upon them. It also presents information on angel groups and angel networks.

**Primary and Secondary Use**

Primary course titles in which the case could be used include

- Entrepreneurship

Secondary course titles in which the case could be used include

- Strategic Management
- Entrepreneurial Finance
Major Concepts and Issues Discussed/Instructional Goal and Learning Objectives

The instructional goal of this case is to address funding of early stage high growth companies from the perspective of an angel investor. The learning objects include the following:

1. Review funding sources of early stage high growth companies
2. Present characteristics that angel investors consider when reviewing early stage companies
3. Introduce the benefits of angels
4. Review deal terms
5. Identify the risks faced by angel investors and how they mitigate the risks
6. Evaluate strengths and weaknesses of a high growth early stage company.

Teaching Strategies

The case is designed for a class discussion. Because the case is rather long, it is recommended that the students read the case before class. To facilitate the class discussion, it is recommended that the students work in small groups. We recommend that the instructor reviews the case by reading the case description and asking some general questions about the case. We then recommend that the class break into small groups for 15 to 20 minutes to address the case questions. Finally, we recommend that the class reconvene to discuss answers to the questions.

Case Questions and Responses

1. What are the strengths and weaknesses of ZSX Medical, LLC?
2. Why did Ann like that the team invested a significant amount of money in the company, that they had “skin in the game”?
3. What benefits do angel investors offer entrepreneurs? Are there any disadvantages to working with angels? If so, what are they?
4. What are the risks that angels face? How do angels mitigate the risks?

5. What are the advantages of angel networks and groups? What are the disadvantages?

6. How do angels and VCs differ?

7. What are the terms of the deal?

8. Did Ann overlook anything when calculating the ROI?

9. Do you think Ann should invest in ZSX Medical? Why?

Responses

1. What are the strengths and weaknesses of ZSX Medical, LLC?

ZSX Medical LLC is a high growth pre-clinical stage medical device company which was started two years prior to presenting to the Keiretsu Forum. The company has many strengths including the management team, technology, sales strategy, financial position, exit strategy, and deal terms.

a. Team: The team consists of two experienced and well qualified members. They have knowledge of and experience in startups as well as the industry in which they are operating. Both also have an extensive network of surgeons and healthcare providers.

Dan Mazzucco, Ph.D., the company founder and CEO, has over 15 years of experience in the medical device industry. He has experience in managing the FDA approval process from initial manufacturing activities through Phase III clinical trials. Dr. Mazzucco earned a doctorate in medical and mechanical engineering from Harvard Medical School and the Massachusetts Institute of Technology, as well as a degree from Dartmouth College. Eric Rugart is the CEO of Feta Med, Inc. He led several companies prior to Feta Med, including a financial service company and a biometric security technology company. He earned a degree from the University of Pennsylvania and is an experienced
investor in early stage companies. The team has invested a significant amount of money in the company (ZSX Medical, 2016).

b. Technology: The company developed Zip-stitch™ clips, a simple and fast method of internal surgical closure. It is “a breakthrough platform of surgical closure products designed specifically for use in closing internal surgical incisions.” The company’s initial application of Zip-stitch clips is women’s health. Prototypes of the Zip-stitch applicator and clips had been successfully used in a pilot efficacy study (Mazzucco, 2016b).

c. Sales strategy: The company’s sales strategy is to use its strategic partners to sell its products. The company plans to roll out and soft sell the Zip-stitch System through its partners rather than build a sales and marketing team (Rowan Innovation Venture Fund, 2015: 8).

d. Financial position: Revenue increased significantly from 2014 to 2018, while expenses as a percentage of revenue decreased. Sales are projected to increase from 2014 to 2018 over 660%. The expenses as a percentage of revenue will decrease 260% during that period. The net income in 2018 is projected to be approximately 66% of revenue (Mazzucco, 2016b).

e. Exit strategy: The company’s exit strategy is acquisition by a large healthcare company, specifically a strategic partner or large medical device manufacturer. The exit is projected to occur within three years after launching the Zip-stitch System. Similar exits that occurred recently suggest a valuation of ZSX Medical at exit between $50 million and $250 million (Mazzucco, 2016a).

f. Deal terms: ZSX Medical is raising $1,500,000 in this round and will be used for strategic manufacturing and distribution partners. The company had raised $660,000 of
the $1.5 million earlier in the year; $840,000 was available to Keiretsu Forum members. The company was also awarded a $500,000 National Science Foundation (NSF) matching grant. The grant is a 2 to 1 non-dilutive matching grant. It will match 50% of new money raised by the company up to $1 million without diluting the equity. The company previously raised capital of $4,000,000 and has a pre-money valuation of $7,500,000. The investors in this round will receive participating preferred stock with 20% warrant coverage. The liquidation/liquidity preference is 1X. Terms also included priority to investors for distributions, anti-dilution protection pre-emptive rights, and future co-investment rights. The preferred units’ dividend yield is 8%. Down round dilution protection provided by additional preferred interest at the reduced price (Mazzucco, 2016a).

Ann had only two concerns about the company. The first is that the company had not yet received Federal Drug Administration (FDA) approval for the Zip-stitch System. The second is that the team consists of two persons. With regard to the FDA approval, the approval process looks like a straightforward medical device approval process. The estimated window of time for the FDA to approve the Zip-stitch System is eleven months, and the cost is approximately $1.7MM. Dr. Mazzucco has experience with the FDA approval process. With regard to the small team, the sales strategy and exit strategy suggest that a large team is unnecessary. Furthermore, the two members are well qualified to lead the company and take it through FDA approval, launch the technology, and develop relationships with potential exit partners.

2. Why did Ann like that the team invested a significant amount of money in the company, i.e., that they had “skin in the game”?
“Skin in the game” refers to the management team taking a risk by investing in the company they run. The fact that the team invested their own money in the company indicates that they believe in their company and that they expect a return on their investment. It also aligns the interest of the management with the interest of the investors.

3. What benefits do angel investors offer entrepreneurs? Are there any disadvantages to working with angels? If so what are they?

Angels provide many benefits to entrepreneurs. While commonly recognized for financial motivations many angels are also motivated to contribute to their community, advance society at large, to mentor entrepreneurs, and to experience the startup journey. Angel capital brings with it the monetary resources of the angels, as well as their expertise, experience, and network. Also angels take on risks that other funding sources (e.g., venture capital and banks) are unwilling to consider. Yet another benefit of angels is that they fill the equity funding gap between what friends, family and founders can provide and what VCs invest. According to Aernoudt, San Jose, and Roure (2007) angels have been argued to best address the equity gap because of their 1) low transaction costs, 2) shorter decision cycle, 3) knowledge, and 4) lower risk-return problem.

For decades angels have played an important role in the US economy, and that role continues today. The contribution to startups of angel capital and the know-how of angels is unparalleled (Lipper and Sommer, 2002: 357). According to the 2015 Halo Report the mean size of angel round investment in 2015 was $1,164,000 (Angel Resource Institute, 2016).

The disadvantages of angel investors are the 1) active role that angels take in the companies in which they invest, 2) the equity dilution of the initial investors, and 3) the due diligence process. First, because angels invest their personal assets and want to ensure that
their money is used wisely many angels take an active role in the companies in which they invest. This can take the form of a management team position, a seat on the board of directors, an advisor role, or a consultant role. While this involvement can be beneficial, it can also be intrusive. Second, with regard to dilution of equity, while the investment that an angel makes in a company typically dilutes the equity of the initial investors, the growth resulting from the angel’s investment can increase the value of the initial investors’ equity. Finally, many angels especially angel groups and networks, require a due diligence report. The due diligence process includes research on the company, background checks on the team, technology validation, etc. This can be quite costly to complete and requires some time. The time and money invested in preparing a good quality due diligence report, however, is considered by many as a cost of raising capital.

4. **What are the risks that angels face? How do angels mitigate the risks?**

The biggest risk that angels face is the loss of the money they invest in a company. Unlike venture capitalists, angels invest their personal assets. In addition to losing the money they invest, angels also face opportunity costs, i.e., they could use the money they invest in early stage companies elsewhere and generate a higher return. Given the time value of money and that angels typically hold the investment for 5 to 7 years, the loss could be substantive. Angels also risk the time that they invest in a company and the network connections they share. Another risk is the illiquid nature of the investment. Unlike stock in publicly traded companies or publicly traded bonds, no public market is available for the stock of the early stage companies. There is also a risk that follow on funding will dilute the angel’s equity.

Angel investors are considered by the Securities and Exchange Commission (SEC) to be accredited investors, deemed appropriate to invest in privately held companies. Given the
amount of assets they own and their annual income they are considered to have a level of sophistication and sufficient assets to protect them from risky investments in privately held companies. Many angels invest in multiple companies to diversify their investment portfolio. To mitigate the risks, some angels take an active role in the companies in which they invest. This can take the form of a management team position, board seat, advisory role, or consultant role. Because of this many angels invest in companies local to their geographic location. Another step that angels take to mitigate risks is to require companies to have a proof of concept, i.e., proof that the business concept is viable. Angels also mitigate their risks by doing their due diligence which typically includes background checks, analysis of the technology, verification of the intellectual property, analysis of the financial projections, etc.

5. **What are the advantages of angel networks and groups? What are the disadvantages?**

While some angels prefer to invest alone others prefer to invest as part of an angel group (AG) or business angel network (BAN). AG and BAN members are composed of accredited investors who identify deal flow, share insight on potential investments, and collectively engage in due diligence. AGs often invest as a group. BANs are more loosely organized; they typically do not make a collective investment decision or pool their money. The number of angel groups and networks has grown dramatically from 1999 when there were less than 100 groups. In 2011, there were over 350 groups (Angel Capital Association, 2012).

The growth of angel groups (AGs) or business angel networks (BANs) is a significant factor in angel investing. AGs and BANs are recognized for their screening and due diligence process. AGs and BANs provide their members with increased deal flow, shared expertise, and greater amount of collective funding. Many groups and networks syndicate their deals
allowing other group members to participate in the opportunity. BANs can serve as an intermediary “in the informal investment marketplace. . . . they reduce the search costs of entrepreneurs and investors by enabling them to connect with each other” (Aernoudt, San Jose, Roure, 2007: 74).

The collective nature of groups and networks provides capital for angels to seek the same high-risk/high-return opportunities as venture capitalists. Groups and networks can increase the rigor of the screening and vetting above what individuals can provide. The size of investments made collectively by AGs and BANs is similar to the size of investments made by VCs. Furthermore, entrepreneurs report a similar experience in seeking capital from AGs/BANs and VCs (Rice, 2016).

6. How do angels and VCs differ?

The investments made by individual angels are significantly smaller than those made by VC funds. Both angel capital and venture capital are considered venture capital, but angel capital is considered “informal” venture capital while venture capital is “formal” venture capital. Angels typically invest in a seed round or A round of funding. VCs invest in a B or later round.

In addition to the amounts and stages at which angels and VCs invest, there are several other differences between the two. Angel capital is considered patient capital. Angels have a longer investment time horizon. Their return on investment (ROI) expectations are also lower than those of VCs. Angels seek an exit in five to seven years and a 2X to 3X return. VCs seek an exit in three to five years and a 10X return. Angels invest their personal funds, while VCs invest funds they raise from institutional investors, insurance companies, university endowment funds, and high net worth individuals. Venture capitalists professionally manage
the funds they raise from investors. The funds are organized as limited partnerships in which the VCs are the general partners and the investors are the limited partners. Angels’ deal terms also differ from VCs. Angels typically take a smaller portion of the company and require less protection than VCs.

7. **What are the terms of the deal?**

ZSX Medical is raising $1,500,000 which will be used for strategic manufacturing and distribution partners. The company raised $660,000 of the $1.5 million earlier in the year leaving $840,000 available to Keiretsu Forum members. The company has a pre-money valuation of $7,500,000. The company is selling participating preferred stock with preferences of 20% warrant coverage. The liquidation/liquidity preference is 1X. Terms also include priority to investors for distributions, anti-dilution protection pre-emptive rights, and future co-investment rights. The preferred units’ dividend yield is 8%. Down round dilution protection is provided by additional preferred interest at the reduced price.

8. **Did Ann overlook anything when calculating the ROI?**

One thing that Ann overlooked is the time value of money. She did not consider the interest that could have been generated with the money she invested. She also did not consider opportunity cost of the investment. She could have invested the money in other opportunities from which she could make a profit. Another thing that Ann did not consider is the risk that future rounds of funding might dilute her equity. She might not have considered this to be a risk because the terms of the deal include anti-dilution protection.

9. **Do you think Ann should invest in ZSX Medical? Why?**

Yes. Ann was impressed with the company. In addition to the four areas that she found especially valuable, i.e., the company’s exit strategy, capital raise, financial position, and
management team, the company also had valuable technology and focused upon a strong
target market. Although she was concerned about the pending FDA approval and the small
team, after closer examination she realized that the FDA approval was not a significant risk
and that the small team was an advantage. Ann carefully analyzed the investment opportunity
including the due diligence report. It is interesting to note that Ann is a relatively new angel
investor. If she were more experienced, Ann might not have repeated her analysis when the
results were positive.

Additional readings and references


http://www.angelcapitalassociation.org/data/Documents/Resources/ACAandAngelGroupBac
ckground09-12.pdf.


Presentation, Philadelphia, PA.

Mazzucco, D. 2016b. “ZSX Medical LLC.” Keiretsu Forum Mid-Atlantic, January Forum
Meeting Program, pp. 16-17.


TRANSIT TEAM CASE STUDY (ABRIDGED)

Jay Ebben, University of St. Thomas
Alec Johnson, University of St. Thomas

Contact: Jay Ebben
University of St. Thomas
Schulze School of Entrepreneurship
2115 Summit Ave.
St. Paul, MN 55105
(651) 962-4118
jjebben@stthomas.edu
Abstract: This case is intended for an undergraduate entrepreneurial finance course to illustrate how valuation and deal terms impact risk and reward potential. The case details the path of Mike Richter, who at the age of 27 is about to acquire an $18 million transportation company, where he has worked for the previous two years. Students are given details on an original and revised deal and asked to compare the two in terms of the risk to Mike in taking over the business.

Introduction

As he began to sign his name, Mike Richter felt his heart leap. The contract in front of him would make him the owner of an $18 million company. It would also put him on the hook for $4.5 million to the current owner and make him solely responsible for the transportation that thirty-thousand elderly and disabled citizens relied on in their daily lives. He had wanted this for two years and knew he was ready for it, but at twenty-seven years old it was a big jump in responsibility. He wondered how long it would take for him to sleep at night.

Personal Background

Mike Richter graduated from the University of St. Thomas in December of 2005 with degrees in Finance and Entrepreneurship. After taking two months off to ski in Colorado and Utah, he started his job search and landed at Cherry Tree, a boutique investment banking firm, in May of 2006.

Most of Cherry Tree’s customers were mid-sized businesses ($10 million to $200 million in revenue) that hired Cherry Tree to help them find a buyer for their firm or to find other
companies to acquire. In addition to research on these companies and their industries, Mike prepared proposals for prospective clients, managed the due diligence process for clients, negotiated agreements, and more. As Mike proved himself, the managing directors gave him more and more responsibility over the three years he was there.

As a start to his career, it was invaluable learning in terms of deal structure and company interaction experience. But as important, the long hours and attention to detail in investment banking taught Mike how to work. “In investment banking, it’s not an acceptable culture to leave work before your boss, whether or not you actually have something productive to do,” he said. “And you need to minimize mistakes. So, you know, re-reading things a million times, rechecking your numbers a million times to make sure you're not making mistakes, because every time you make a mistake it slows up the entire process for everything. And it makes you and your firm look silly.”

Transit Team

In the fall of 2007, Cherry Tree was hired by Transit Team, Inc. to find a buyer for the company. The company was owned by a married couple, Joyce and Harlan, who were in their early sixties. They had owned the company for twenty-five years and were now looking to retire.

Transit Team operated the Metro Mobility buses in the west metro district of Minneapolis/St. Paul for the Metropolitan Council. The Metro Mobility program run by the Met Council provided transportation at a discounted cost mainly to seniors and disabled citizens who qualified for the program. The program was set up on five-year contracts, with the state owning the vehicles and private companies like Transit Team managing the day-to-day operations.
Despite the fact that it was a very profitable business with approximately $2 million in annual cash flow, Cherry Tree had a difficult time getting interested buyers. Joyce and Harlan were looking for the high-end of a 3x to 5x multiple of EBITDA (or a price of $10 million), but offers were coming in at about half that price.

So, Mike and his managers gave Joyce and Harlan a few suggestions before ending their engagement with Transit Team: 1) Take the $4 million in cash out of the business as a distribution; 2) Find someone you can groom to run the business after you sell it; and 3) Get the next five-year contract, and then we can try again.

The Original Deal

A few weeks after Cherry Tree ended its engagement with Transit Team, Mike received a phone call from Joyce. She asked if Mike was interested in becoming the general manager. She liked the fact that Mike was young and energetic, and she had been impressed with his work ethic.

Transit Team’s five-year contract with the Metropolitan Council was set to expire in July of 2010, and Transit Team would need to prepare a proposal for the next five-year contract at the end of 2009. Mike had been clear about his interest in buying the company, so the plan was to get Mike comfortable in his new role for six months, secure the next contract, and then work on transitioning the company to Mike.

Transit Team was awarded the new contract in early March 2010, and talks about acquisition numbers began. Because of the valuations Cherry Tree had done, Joyce was set on an asking price of 5x EBITDA, or $10 million. To put the money together, Mike approached Stacie’s father, who had sold his own business a few years earlier and was looking to make some
investments. In addition, he met with the lender for Transit Team, Northeast Bank, asking for a $5 million loan.

But, a combination of the economy and Mike’s young age (he was 27 at the time) made Northwest uncomfortable with the deal. And Mike wasn’t comfortable enough with it himself to convince them: all of the financial modeling he had learned at Cherry Tree made him question whether he would have enough money to service approximately $1.2 million in debt repayment each year. So, Mike told Joyce that he couldn’t do the deal.

**Coming Back to the Table**

Joyce had been very upset when the original deal fell through, and they didn’t talk about it for quite a while afterward. That fall, Mike started investigating other opportunities. One that he and Stacie were very serious about was a frozen custard operation that was started in Stacie’s hometown in Ohio. Mike and Stacie visited the company’s headquarters and were negotiating exclusive rights to franchise Minnesota.

But before they were able to complete the deal, Joyce hit her tipping point with Transit Team. “She comes back the next morning and she said, ‘You still want to do the deal?’ And I said, ‘Yeah, but I’m not getting the 10. It’s just, it’s not going to happen.’” She said, ‘I don’t care. We need to do a deal. We need to get it done.’”

Joyce told Mike that all she wanted was what she and Harlan were taking out of the business in compensation along with rent (she and Harlan owned the building) and insurance for the next three years. This came out to a little over one million dollars per year. In addition, she wanted to take $2.4 million in cash out of the business.
Mike immediately met with Northeast to talk about loan options so he could do some financial modeling. The response he got was that Northeast was receptive to doing a deal and wanted to keep Transit Team as a customer. But they were worried about whether Mike would have enough cushion after taxes to repay $1 million of his loan plus interest each year.

So Mike leaned on his M&A experience with Cherry Tree. With the help of his accountant, he proposed a new deal to Joyce, in which he would pay $1.5 million more than what she asked, that would consist of these elements:

• $2.4 million in cash taken out of the business
• $1 million seller note at 0.24% annual interest (the federally-mandated minimum amount that must be charged on a personal loan), to be paid monthly over three years
• $3.25 million in a consulting agreement, paid over three years
• $250,000 non-compete agreement, paid over three years

Conclusion

It was now July of 2012, which they had targeted for a closing date to give Mike exactly three years left on the contract. Mike finished signing his name and slid the contract across the table to Joyce. It was going to be an interesting few years.
Springfield Auto Collision: The Decision to Implement Lean Six Sigma Principles in a Struggling Entrepreneurial Company

Daniel Jensen, Matthew Houseworth and Mary McCord

Abstract
Entrepreneurs and small businesses would like to benefit from the lean production models they see in larger businesses, but often have non-standardized processes. Unlike larger organizations with specialized tasks, employees of entrepreneurial small businesses perform many different functions, which makes the adoption of Lean Six Sigma methods daunting. Using an auto collision company as a case in point, this paper gives prescriptive processes for Lean production in small, non-standardized workplaces. The case clearly follows the Six Sigma Implementation Framework, but also shows how Phillips and Stone’s training model is incorporated as management and workers are trained in Lean Six Sigma.

The Situation

Craig Lindquist had entered his family business during a time of crisis. His father Carl, the founder and owner of Springfield Collision, was gravely ill and awaiting a heart transplant. Suddenly, Craig was thrust from his white-collar career into the blue-collar auto body industry that his father had hoped his children would escape. Now, years have passed since Carl’s brush with death; Carl was still recovering, and Craig was still managing the business.

Carl’s entrepreneurial history started when he founded Springfield Auto Collision in November of 2001. A great ‘body man’, Carl and his workers provided a variety of automotive collision services including expert frame and unibody repair, parts repair and installation, and an industry-standard water-borne repainting process. The shop serves Springfield, a Midwestern town with population around 19,000 and the surrounding county towns.

For the first 12 years, the business averaged revenues of $700,000, but never grew beyond that point. Presently, Springfield Auto Collision is a small collision center operating in a
10,000 square-foot facility. It employs 16 individuals, including one General Manager, one Owner, two Customer Service Representatives (CSRs), one Front-Office Estimator, one Parts Specialist, one Production Manager/Expert Repair Planner, five Collision Technicians, two Porters, two Paint Preparation Specialists, and one Painting Technician. As a team, the professionals at Springfield Auto Collision perform the following collision repair functions:
<table>
<thead>
<tr>
<th>Step</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Estimation</td>
</tr>
<tr>
<td>2</td>
<td>Wash</td>
</tr>
<tr>
<td>3</td>
<td>Meticulous Disassembly</td>
</tr>
<tr>
<td>4</td>
<td>Action Plan Design</td>
</tr>
<tr>
<td>5</td>
<td>Parts Procurement</td>
</tr>
<tr>
<td>6</td>
<td>Action Plan Approval</td>
</tr>
<tr>
<td>7</td>
<td>Body Repair</td>
</tr>
<tr>
<td>8</td>
<td>Paint Preparation</td>
</tr>
<tr>
<td>9</td>
<td>Paint</td>
</tr>
<tr>
<td>10</td>
<td>Reassembly</td>
</tr>
<tr>
<td>11</td>
<td>Polish</td>
</tr>
<tr>
<td>12</td>
<td>Detail</td>
</tr>
<tr>
<td>13</td>
<td>Customer Delivery and Resale</td>
</tr>
</tbody>
</table>

Craig was frustrated professionally and could see no way to use his MBA education and past executive experience to improve a blue collar business where every car was different and no production process was standardized. Like the rest of the auto body industry, this organization was plagued by ineffective communication procedures, inefficient work and part supply processes, and experienced high turnover rates of critical employees. The company lagged behind industry averages with longer repair cycle time and higher defect rates. All these factors concerned Craig, but it was the unsatisfactory work/life balance for himself and the majority of his employees that became the most motivating factor for implementing change. Craig explained, “It seemed no matter how many hours we put in, we rarely saw any sustained improvement. Our structure was set up in such a way that I didn’t even have time to eat lunch, go to the bathroom, or spend time with my family” (personal communication, 2016).

It was at this point that Craig began to question whether or not he should continue in the business: “I had developed a disdain toward the collision industry, and I hated going to work every day” (personal communication, 2016). He knew something had to change, and he recognized this change had to come from within himself. As he considered his options, Craig had an eye-opening conversation with one of his paint vendors. The vendor suggested he consider implementing Lean Six Sigma or what he referred to as the “Lean Collision” process for Springfield Auto Collision. Craig had not only heard of Lean Six Sigma, but he had studied it in his MBA program at a local university. After some consideration and intense research, he
was confident that if implemented correctly, Lean Automotive could work and not only improve
the company, but also potentially transform the entire collision repair industry.

Craig wondered, could Lean Six Sigma training and implementation address all of
Springfield Collision’s organizational challenges? He considered the following list of problems:
1) Stagnation of Growth within the business which saw relatively flat revenues for a decade; 2)
High Employee Turnover Rate which exceeded the industry’s average turnover rate; 3) High
Cycle Rate which exceeded the industry average for the amount of time needed to process a
vehicle from initial estimation, repair process, to customer delivery; 4) High Defect Rate which
exceeded the industry average for breakdowns during the collision repair process; 5)
Unsatisfactory/Unsustainable Work-Life Balance for Manager and Employees most of whom
were averaging 80 hours of work per week; 6) Inefficient Communication Procedure/Plan for
Managers, Employees, and Customers.

Standardizing the collision repair process is arduous since every car that is serviced
requires a different repair. The only constant that Craig could see was that all businesses in this
industry had the same problems: high worker turnover, dirty greasy shops, worker tendency to
hoard parts and clutter their workspace, wasted time spent looking for lost items, and
commission pay structures that did not encourage quality work. In addition, industry pay
practices pitted management against worker, creating distrust between management and workers,
contributing to the high worker turnover.
Commonly in the automobile industry, auto body workers receive 60% of the repair fee as payment for fixing the car. Since this is a commission-based system, if a shop were low on business, auto body workers would begin to seek employment at a different shop. If they needed a bigger paycheck, they were tempted to skimp on quality in order to move cars through the repair cycle faster, thereby increasing their ability to work on more vehicles. On the other hand, management at a collision repair center are compensated with annual salaries. Distrust arises between these two groups because managers are responsible for attracting the customers who ultimately provide the capital to pay the body workers. If the shop does not have enough customers, the workers begin blaming the managers. Conversely, management can distrust the quality of the repairs, leading to micromanagement of employees.
Distrust between management and line workers created high barriers to adopting the Lean Six Sigma approach or any cultural change. In addition, organizational trust, culture issues, and the non-standard nature of auto repair blinded managers to the possibilities of Lean Six Sigma process improvement. The auto repair process before implementing Lean Six Sigma is outlined in Figure 1. This case reports Springfield Auto Collision’s progress stemming from the implementation of Lean Six Sigma over a four-year period. In order to achieve successful outcomes and return on investment at Springfield Auto Collision, trust building, Six Sigma Lean processes, and training had to be integrated.

**Leadership**

Craig Lindquist was established as the leader of Springfield Auto Collision, in some ways, by default. As Carl’s health was in life-threatening decline, Craig temporarily stepped in to run the operation until a long-term solution could be determined. His MBA and business experience made him the logical choice in the interim. Following a successful heart transplant, Carl returned to work a new man with a new outlook on life. He realized that he no longer wanted the stress of managing the business; instead, he simply wanted to do what he loved – work on cars. This left Craig with a choice to make: find someone else to manage the business or fully commit to leading the organization. Craig decided to step up to the leadership challenge. However, Craig had a few hurdles to jump before he could introduce a radical change like the implementation of Lean Six Sigma process at Springfield Auto Collision – hurdles that would take more than a decade to navigate.

**Customer Focus**
In the collision repair industry, especially in a small town, customers are at the mercy of the technicians working on their vehicles and the insurance companies that will foot the bill. Because there is so little competition, Craig had not needed to value customer satisfaction more than delays in the repair cycle or rework that was sometimes required.

**Measurement & Process and People Management**

Craig’s employees had years, in fact decades, of experience in the industry, while he was a novice. His suggestions about moving towards a more efficient, team-based operation were met with disdain. “We talked about teams back in the 80s. They don’t work,” quipped Carl. “Did you try them back then? Had anyone actually worked on a team?” asked Craig. “Nah. Ah, well, I don’t think I worked with anybody who was on a team. I just heard about it from Bill” (personal communication, 2016). So Craig went to Bill to find out more. The business’s use of teams turned out to be a secondhand rumor with no basis in reality. Craig realized that he would need to get more credible information and share it with his workers, but he would need to proceed with caution. He knew that their resistance to improvements would counteract any change initiative.

**Automotive Collision Repair Industry**

**Industry Norms.** The automotive industry has its own well-established sets of expectations and codes of conduct: “Whenever we have a problem, we throw stuff across the room, or go outside and fight it out, or shout, ‘To heck with you – I’m leaving’” (personal communication, 2016). Therefore, Craig knew making changes would involve changing the culture as well as practice. The typical attitude was, “I’m just here to fix cars. I’m not here to come together as a team. That team stuff will just chew up hours ... I’ve worked at twenty different body shops in the last twenty years. I don’t want to settle in. I need to look out for myself.” These unyielding
attitudes defined the auto body worker’s definition of self. They were well entrenched, and Craig questioned whether they could be altered.

After eight years of pressure, long hours of work, and rare opportunities to get away, Craig had had enough. “It started at the end of 2011 with me getting ticked off enough to decide to make some changes. I recognized that I just wasn’t happy in this industry – so some things were going to have to change. Either I was going to leave the industry, or we were going to change our operations…change the industry…be a model for the industry. That was the turning point for me. I decided to stay; I looked in the mirror and said, ‘You know what, you are the problem right now, and you need to be all in.’ I needed to quit complaining and whining about it and figure out what I could do to fix the situation!” (personal communication, 2016). The bottom line: the change would need to start with him, but it wouldn’t be good enough for him to recognize the possibility for change and simply come back to tell his employees. He wanted them to see the potential for change; they needed to believe in it, too.

Making a Case for Change. In order to move forward, Craig had to gain support from his father, as well as his other employees. As the owner of Springfield Auto Collision, Carl Lindquist would need to be convinced that an investment in a Lean Six Sigma process could work. Craig shared, “Dad may not be the most agreeable person in the shop. He can be very outspoken about what he feels and believes. On the one hand, it's good because you know his position, but he can be tough to manage sometimes” (personal communication, 2016). However, something shifted for Carl when he saw his son’s commitment to change and once he learned that Lean Six Sigma was being applied successfully in other auto body shops. “It's the joke now. Dad learned so much, that now you would think it was his idea in the first place! It's been hard, but the family is still
together and he and I have a good relationship – a better relationship than before” (personal communication, 2016).

Craig began looking for specific tools to make things better. In conversations with his automotive paint supplier, they recommended that he and his team attend a ‘Lean for Collision: Green Belt’ training, a four-day introduction to lean principles specifically for their industry. Craig remembered, “At that point, my eyes were opened to the fact that you could apply Lean. Maybe what I had learned in college could actually be applied in industry!” While he knew that training like this was going to be necessary, he also knew it was going to be expensive.

In spite of the cost, Craig decided to make the investment in Green Belt training designed specifically for the auto collision repair industry. As he put it, he “saw the light” when he realized that “big no longer beats small” and that slowing down would allow the organization to go faster. But he was up against the mindset and attitudes of a highly entrenched workforce that considered all of that “Deming bunk” to be irrelevant. Craig reflected on his belief at the time, “You can’t apply it to the car industry. These are men. They work with their hands. They don’t know this touchy-feely stuff coming out of the University. They don’t want stupid icebreakers or to go on retreats. Give me a break” (personal communication, 2016). Even though this training would run counter to his employee’s values, Craig knew that it was necessary for the success of the business.

Training Implementation

While most businesses might send a select number of representatives from different areas of the business for training, Craig sent everyone (managers, estimators, body techs, painters, and the company secretary). Fees per person for the training were $2,500, plus expenses for transportation, hotel accommodations, and not to mention their hourly pay while attending the
training. This was a major investment for a struggling small business, but the impact was substantial.

Upon returning to Springfield, Craig closed the shop for one afternoon, and the entire team met together to lay out the case for change. They reviewed their feedback from the training, and collectively made the decision to implement Lean. “Let's do it! Let's try it!” (personal communication, 2016), and that's what they did.

Craig found a shop that was implementing the Lean Six Sigma team concept and took all of his employees on a field trip. Craig rented a 15 passenger van, everybody jumped in, and the team headed to nearby Jackson and took a tour of Cooper’s Auto Body. “Wow, this place is cool!” It’s like the Taj Mahal!” “This is great!” were only a few of the comments from the Springfield workers. Mr. Cooper was a gracious host to the employees, and he allowed them free range of the shop to ask his employees “what they like, what they don’t like, what works, what doesn’t work” regarding Lean and the collision automotive industry.

In the week following the team’s return from their visit to Cooper’s Auto Body, Craig hired a Lean Six Sigma consultant to help them implement the new systems and processes they had been studying. The employees debriefed on what they had learned in their training as well as the site visit, allowing for an open and honest discussion about what they thought would and would not work. Craig’s team was struck by the atmosphere at Cooper’s Auto Body. "They all seemed happy…low stress. They said when they go home at night, they don’t have to worry about work. As soon as they leave, they just leave. Work stays at the door. I don’t see the downside.” Since workers at Springfield felt an inordinate amount of daily stress, shifting toward this type of relaxing environment was one of their top priorities.
With high levels of enthusiasm, Craig and the Springfield Auto Collision team began implementing Lean Six Sigma. They outlined their change initiative under the guidance of their Lean consultant. The pilot program initiated isolated, small-scale changes across time. Using the 5S Workplace Organization principles, the team identified key performance metrics and designed a visual control system for the collision center as a starting point for improving throughput performance and productivity.

Following a series of rapid improvement workshops (called “Kaizen Events”) conducted by their Lean consultant, Craig felt it was time to implement a large-scale change that would involve multiple people and processes. In order to eliminate production waste, the shop began implementing the X-Ray Repair Planning™ and X-Ray Estimating™ methodologies (MVP Business Solutions, n.d.). These included visual mapping to identify authorized repairs, meticulous disassembly of the vehicle and discovery of hidden damage, procurement of required parts, pre-repair activities, scheduling the vehicle for repair, and verifying quality of the repair.

In the past, if a technician were preparing a vehicle for a scheduled pick-up by the customer and discovered a missing or broken part, he or she would implement a quick fix which usually overused materials and cost the business money. However, when applying Lean principles, each vehicle has a complete “kit” of the specific parts necessary to complete the repair in its entirety. Craig shared the improvement, “We have made it easier for the technicians and the shop is now getting paid because we are sourcing everything up front and billing to insurance. For example, we’ve got a little baggie that says ‘Lower Bumper Retainer’, another that says ‘Outer Side Retainer’, etc., and I take all of these little baggies and I put it in one big baggie that says, ‘Front Bumper’. Now I've got a ‘Front Bumper Kit’ and I can literally hand this kit to anybody and say,
‘Build this bumper’.” Best practices like these enable any technician to perform the repair and reassembly regardless of who performed the disassembly tasks.

In order to effectively communicate across all departments in the shop, Craig invested in a web-based customer relationship management (CRM) system that would allow everyone on the team to have real-time access to information about customers, their insurance companies, repair estimates, scheduling, and additional tools to help make the shop more efficient. Every employee was trained on the use of the system, and large screen televisions were hung where anyone could log-in to the system and see the details of the work being completed. Along with these large monitors, dry-erase white boards with daily goals and accomplishments were hung around the shop to immediately communicate the production schedule and performance metrics (like cycle time to complete a car, number of cars completed for the day, etc.).

**Updated Process**

Progress was being made, and Craig could see the results simply by looking around the shop, not to mention by looking at the bank account. Customer traffic was increasing and revenues were climbing rapidly. While the Kaizen Events were held occasionally for the initial period of implementation, Craig realized that he needed to add in a more consistent and integrated opportunity to provide training to the entire team. He started with himself and made a commitment to finding “2-minute improvements” every day. To prove the point, he recorded himself in a Youtube video putting Lean Six Sigma processes to work in his own office! This launched a daily training event, the “Morning Meeting.”

The work day at Springfield Auto Collision starts at 7:30 a.m. When the team arrives, they are not allowed to touch a car until after the Morning Meeting. Craig explained, “We give everyone about an hour to make an improvement which could be anything from sweeping, to cleaning, to
making a process improvement. Then we come together as a group, share our ideas, and go through the scoreboards. We also learn something new during the meeting. We finish by presenting the production plan and sharing any good news that we have. Then we go fix cars. It’s usually an hour and a half every day.”

For the first 18 months, Craig ran the Morning Meeting as its lead trainer. He would drill the team on the 5S’s and the 8 Types of Waste, talk about past performance metrics and goals for the day, and highlight the production schedule and job assignments.

Craig was proud of the way the team had rallied around their Lean Collision transformation, and their willingness to share their successes and set-backs with one another in a transparent way. The employees created their own system of reviewing their performance on a daily basis with the Morning Meetings. He explained, “Our sales board is basically a front office estimator sales board. Then we have a production scoreboard which is basically everything in the shop. We have a daily scoreboard that we do for the paint department so they know whether they are ‘winning or losing’ in terms of whole jobs being completed. It’s when the car goes home. That’s the whole job.”

Beyond production metrics, the team also began to focus on cross-functional development. To enhance their team model, each member of the team cross-trained on a range of business processes – not just their own job, but the jobs of others. Then they created an evaluation of proficiency in each of the areas: ‘beginner’ if they are new, ‘novice’ if they can apply, and ‘expert’ if they can train others. Craig then provides feedback on where each member of the team is rated. This also gets posted on the company scoreboard for everyone to see.

Springfield Auto Collision faced some challenges in implementing their Lean Collision methods, but Craig eventually got enough buy-in and support to fully implement. After 18 months of Craig leading the daily Morning Meeting sessions, he realized that the team was ready to begin
leading the sessions themselves. They created a rotating leadership roster where everyone on the
team would take the responsibility for facilitating the entire session. Each was responsible for
researching and posting scoreboard numbers. At this point, the team was completely behind the
initiative. Craig reflected, “If I went back to the team and said, ‘There’s no Morning Meeting
today.’ They’d go, ‘What the heck? We can’t work without Morning Meeting!’ When before it
was like, ‘We ain’t got time for a morning meeting. I feel like I should be fixing a car.’ Now, if
I’m not there, the Morning Meeting still happens. It’s all about repetition” (personal
communication, 2016).

Thanks to their Green Belt and Kaizen training, the concept of the “2-second
improvements” had become a part of each employee’s daily life. The 45 minutes prior to the
Morning Meeting were dedicated to finding waste and eliminating it. Craig shared countless
examples of what each employee had come up with. One technician converted a rolling toolbox
into a personally customized tool management system complete with Kanban foam organizers
where only the correct tool would fit in its assigned slot. A customer service specialist created a
“tickler” system to remind them to contact customers proactively about scheduling their vehicle
for service. One employee redesigned the company break room; everything has a place and
everything and stayed in place because of strategically located magnets. Even the salt and
pepper shakers were magnetized to the table, so they could never be misplaced!

Craig remembered, “They pull all of the data and not me; that’s why we taught them how
to use the management system…not just to write estimates, how to take pictures, how to
document the file, to see if the parts are here or not…but to create spreadsheets, decipher that
information from a spreadsheet, transfer it to our visual scoreboard that’s handwritten. They
actually hand-write it on the board. They hand-write it, because they ‘connect’ to the
information…they ‘feel’ it. ‘Are we winning? Are we losing?’ Then they present it to the team as they lead our morning meeting.” One of his goals was to develop the individuals on the team as leaders – not just technicians. “You’re going to learn how to run a meeting. Keep people on task. Lead a discussion. Pull scoreboards. Interpret the data like a manager would. They’re doing all that. It’s no longer about me; it’s all about them.”

**TEACHER’S NOTE**

**Introduction to Teacher’s Notes**

This undergraduate case addresses two practices that are not normally part of the entrepreneurial domain. First, prescriptive practices for adopting Lean Six Sigma tools in a nonstandard entrepreneurial environment are explained. These practices are further illustrated by the case. Second, the discussion questions raise the issue of computing ROI, a practice rarely performed by entrepreneurs, and almost never performed in family businesses. Theoretically, entrepreneurial research is furthered through the alignment of Kumar, Antony and Tiwari’s Six Sigma Implementation Framework (2011) with Phillips and Stone’s training model (2000) as a prescription to train management and workers in Lean Six Sigma.

**Implementation of Lean Six Sigma**

Entrepreneurs and small businesses often have non-standardized processes and would like to benefit from the lean production models they see in larger businesses. But, for various reasons, the lean six sigma production literature proposes models that don’t apply to entrepreneurs with small to medium businesses. Some lean models assume that businesses already have data collection systems, some models weren’t operationalized and therefore couldn’t be implemented, and others didn’t take into account the resource constraints of small businesses (Kumar, Antony & Tiwari, 2011). Since most Six Sigma research had no suggestions
on how to operationalize or implement the model being proposed, there was little practical
benefit of Lean methods to entrepreneurs.

In practice, entrepreneurs struggle when attempting to implement Lean approaches.

Antony (2008) reasoned 1) the entrepreneur has many distractions in their business and may not
stay focused, 2) unlike larger organizations with specialized tasks, employees of entrepreneurial
small businesses perform many different functions, and 3) senior management leadership is
important, but entrepreneurs are usually focused on fighting fires involving easy-to-accomplish
tasks or easy-to-solve problems. Another study (Kumar & Antony, 2008) found that the barrier
to adopting lean techniques lies with senior management, which for entrepreneurs is often the
owner. They believe that their culture and existing systems are sufficient, that Lean can’t apply
to them, and that these processes are a fad which will quickly pass on. On the other hand, Rose,
Deros, Rahman, and Nordin (2011) found some advantages for small companies implementing
lean processes; 1) they are more agile, and 2) it is easier to get management support and
commitment.

Trust and Organizational Change

Moving any business of any size from the processes outlined above to a Lean Six Sigma
workplace requires large-scale change. This means altering work systems, beliefs, social
relationships and culture (Huy, 2001), and each element of change requires some intervention.
As a matter of normal behavior, people and systems are resistant to change in their status quo.
Lewin (1951) proposed that unfreezing the status quo to allow change required either
strengthening the drivers, weakening the barriers, or both. The most effective method was
weakening the barriers to change in behavioral, cognitive, and emotional responses. Also,
management would not want to force change, since an adversarial approach only strengthens the barriers to that change and leads to failure.

**Lean Six Sigma Terms and Definitions**

Many terms are used interchangeably or together to describe lean production processes. That is because most businesses are pursuing a strategy of Total Quality Control, and are using the tools and methods called Six Sigma, Lean Production, Theory of Constraints (TOC), and Just-in-Time (JIT) simultaneously (Stamm, Neitzert, & Singh, 2009). There are differences in the methods according to their focus. Two of the techniques, Lean Production and Six Sigma, have been combined into a method called Lean Six Sigma. It is this method that was adopted by Springfield Auto Collision.

**Lean Production** is a systemic way of removing waste (Womack, Jones & Roos; 1990). It incorporates two tools: Just-in-Time and autonomation. Just-in-Time means ensuring the right parts reach the worker just as they are needed. Autonomation refers to intelligent automation, where the machine: 1) detect process malfunctions or product defects, 2) stops itself, and 3) alerts the operator.

**Six Sigma** has a hierarchy of expertise, (Master Black Belt, Black Belt, and Green Belt) and uses a change in management methods to reduce variation. An important part of Six Sigma is training of managers and workers into thinking about processes and continual improvement. It has four major steps: Measure, Analyze, Improve, and Control.

**5 S:** For implementing Lean Six Sigma methods in a shop or business, workers use the mnemonic “5S” for sort, set in order, shine, standardize and sustain.

An additional strength of this teaching case is that it shows students how two theoretical models can be combined. Figure 3 shows how Phillips and Stone’s training model and Kumar’s
Six Sigma Implementation Framework overlap and support each other. This combination strengthens explanatory and prescriptive power. As the case follows the sequential steps of the Six Sigma Implementation Framework, it also shows how Phillip’s training model was followed as management and workers were trained in Lean Six Sigma. The two models are combined in Figure 3.

Figure Three: Integration of Lean Six Sigma implementation and 5 Steps of Training

Across the top of the model in Figure 3 are five phases of training (Phillips & Stone; 2000) which align sequentially with the five phases of Six Sigma Implementation. A workforce begins with the first training level: “Reaction/Satisfaction Objectives, which corresponds to Phase 0 of Six Sigma Implementation model: ‘Readiness for Six Sigma’. As the workforce moves to ‘prepare’ for Six Sigma Implementation, they use set training objectives at the ‘learning level’. As a workforce initializes Six Sigma, they train for ‘application and behavior change’. With that level of success, a workforce can move to ‘institutionalize’ Six Sigma Lean
processes, using training objectives focused on ‘Business Impact’. Finally, Six Sigma implementation is sustained, and training’s Return-On-Investment is measured. Further explanation of Phillip and Stone’s (2000) training phases show how closely they can be aligned with the training required for Six Sigma implementation.

Phillips and Stone: 5 Levels of Training

**Level 1: Reaction/ Satisfaction Objectives.** According to the authors, this particular level’s focus is on participants reacting positively, not negatively, to the activities associated with training (Phillips & Stone, 2000). During this level, “it is important to obtain feedback on the relevance, timeliness, thoroughness, and delivery aspects of training” (p. 39). In addition, the data associated with this level should be routinely collected in order to facilitate adjustments, or even a redesign of the training program.

**Level 2: Learning Objectives.** Phillips and Stone (2000) state that the learning objectives associated with Level 2 “are critical to measuring learning because they communicate the expected outcomes from the training and define the desired competence or performance necessary to make the training successful” (p. 39). In addition, not only do learning objectives emphasize what participants must learn during training, but also provide a framework to evaluate their learning. Measuring learning and communicating expected outcomes encompasses the first three steps of Kumar’s model: 1) recognize the need for change, 2) show top management commitment (outcome expectations), and 3) education and training.

**Level 3: Application/Implementation Objectives.** According to Phillips and Stone (2000), application/implementation objectives of Level 3 “define what is expected and often what level of performance, when knowledge and skills learned in the training are actually applied in the work setting” (p. 39). While similar to learning objectives in Level 2, application/
implementation objectives “reflect actual use on the job”. They assert application/
implementation objectives are critical to the training process in that they illustrate outcomes in
the “intermediate area between the learning of new knowledge, skills, tasks, or procedures and
the performance that improved” (p. 39). These objectives also provide a framework for
evaluation of “on-the-job changes and performance”. This phase of training is used to identify
the best processes for a pilot study and train the champions of change.

**Level 4: Impact Objectives.** Phillips and Stone (2000) note impact objectives at Level 4
include “key business measures that should be improved when training is applied in the work
setting” (p. 42). According to the authors, impact objectives are critical to “measuring business
performance” due to the fact these objectives “define the expected outcome of the training”
(Phillips & Stone, 2002, p. 42). These objectives illustrate business-unit performance that should
be associated with the training initiative. In addition, impact objectives provide a framework for
measuring the effects of “the application of skills and knowledge learned” during training (p.
42). At this point in Kumar et. al’s (2011) model, the first metrics of increased performance are
being communicated before organization wide training.

**Level 5: Return-On-Investment (ROI) Objectives.** According to Phillips and Stone
(2000), the fifth and final level of objectives includes the “expected return on investment” from
training activities (p. 44). The authors note that at this level, ROI objectives “define the expected
payoff from the training and compare the input resources, as well as the cost of training, with the
value of the ultimate outcome-the monetary benefits” (p. 44). For example, if a return of
investment is 0%, then the training program is considered a break-even training a solution. On
the other hand, a return of investment of 50% indicates the “cost of training is recaptured and an
additional 50% in earnings” is realized (2000, p. 44). Simultaneously, Kumar et. al’s (2011)
Quantifiable and Useful Objectives

Among the various training objectives discussed above, Impact and Return-on-Investment (ROI) objectives tend to be the most quantifiable in terms of the type of data that is collected at each level. For example, impact objectives are associated with measuring both hard data (output, quality, costs, and time) and soft data (customer service, work climate, and work habits) (Phillips & Stone, 2000, p. 43). Impact objectives can “define the expected outcomes” from training and “measure the consequences of the application of skills and knowledge learned through training activities” (p. 42). ROI objectives, on the other hand, define the expected payoff from the training activities. In addition, ROI objectives compare input resources, as well as the cost of training with the value of the outcome associated with the training initiative (p. 44).

The Six Sigma Implementation Framework

In an attempt to give entrepreneurial and small businesses a model of Lean Six Sigma that could be implemented, Kumar et. al. (2011) identified ten small businesses going through the process. They found five major phases of implementation: 0) Readiness for Six Sigma, 1) Prepare, 2) Initialize, 3) Institutionalize, and 4) Sustain. The first phase is numbered zero, rather than one, because many small businesses can’t decide where to begin and never get started. Inside each of the remaining 4 phases, Kumar et. al. (2011) have identified three steps, resulting in a twelve step model. Below, each phase and step is explained. Our case study describes how the entrepreneur progressed through the model, step by step.

Phase 0 – Readiness for Six Sigma. Previous researchers have studied the preparedness of the business to adopt lean techniques and from these studies Kumar et. al. (2011) created a
readiness index. The business should be at least a ‘3’ on a 4 point Likert scale to consider going forward with adoption of lean standards. The five criteria to measure a small business’s readiness to implement Lean Six Sigma were identified as: 1) Leadership, 2) Customer focus, 3) Measurement and Process, 4) Systems and Control, and 5) People Management. All are equally important when assessing whether a business was ready to implement six sigma. It is suggested that only small businesses that achieve a minimum of 3 on all criteria should embark on Lean Six Sigma practices (Kumar and Antony, 2010).

Phase 1 – Prepare. In Phase one, the steps help a small business understand the rationale behind the change. It also measures the commitment from the entrepreneur(s) to invest resources into the change.

Step 1: Recognize the need for change. The entrepreneur identifies his/her need for Six Sigma, and justifies a launch of lean methods. External elements such as customers and vendors can create a need for change, as well as internal elements such as employees, equipment or management. These may be intertwined. In our case, the entrepreneur himself identified a need for change arising from his quality of work/life balance.

Step 2: Strong leadership and top management commitment. Entrepreneurs are at an advantage during this step, since they usually are the top management, and the leadership consists of few people. Little time is spent gaining consensus or commitment from a large group of people. Their level of commitment drives the commitment of the program, which works best from the top down. At this point the entrepreneur defines the purpose (outcomes) and scope (entire business) of Lean Six Sigma, and links it to the mission and vision of their business.

Step 3: Education and training at the senior management level. Training must start with the entrepreneur at the top of the organization, and waterfall down the ranks. In entrepreneurial
businesses, the organizational structure is usually flat, meaning knowledge transfer can happen quickly. Entrepreneurs have an advantage in that they don’t need a Six Sigma ‘steering committee’ or need to choose change champions. On the other hand, Step 3 is where resource constraints usually stop entrepreneurial small businesses from moving forward. The entrepreneur must commit to time, financial resources, technical investments, and other resources to train their leadership.

**Phase 2 – Initiate.** In Phase 2, leadership begins to implement the change on a pilot basis. The literature (Kumar et. al., 2011) suggests beginning with a few selected and motivated employees. For entrepreneurs with a small workforce, it may make sense to start with a pilot process.

Step 4: Identify and train the best people for the first wave of Six Sigma. For most businesses, this step is where they find the best, most talented employees with good leadership skills to be part of the first wave of training on Lean Six Sigma. For small entrepreneurial businesses, it is suggested that they conserve resources and avoid the Master Black Belt and Black Belt training costs of their first wave of employees. The complexity of small businesses’ problems are not as great as a large business. In practice, one Black Belt can be used to train the other employees, and not all employees need a Black Belt level.

Step 5: Identify the core business processes. In this step the entrepreneur identifies the core processes and prioritizes those that are critical (that have greater stakeholder or financial value). They develop a process map or value stream map, then a measurement plan and metrics for the core processes. Once the metrics are established, they review the current performance of the critical processes and create benchmarks for them.
Step 6: Selecting Six Sigma pilot processes. Initial pilot programs should focus on key problem areas for which an early win is possible. This increases buy-in and commitment to the Six Sigma initiative.

**Phase 3 – Institutionalize.** The entrepreneur implements Lean Six Sigma across all employees and processes. Here the entrepreneur creates a business culture of process and statistical thinking, and continuous improvement becomes embedded in the business.

Step 7: Communicate the initial success. The entrepreneur should communicate to everyone the success of changes – using metrics from step 5. Employees engaged in Six Sigma success are recognized. Suggestions include: celebrate success of pilot projects, recognize and appreciate top management and supervisors, and share challenges and pitfalls.

Step 8: Organization-wide training. In Step 4, it was suggested that rather than train several employees as Black Belts, just one employee be trained for the purpose of training others. During this step, all the training needs are identified, and an ongoing system of training is put in place. Then, the Black Belt trains the rest of the employees to the level needed. Continual training should not only focus on statistics and techniques, but include ‘soft’ skills such as change management, leadership, and culture.

Step 9: Establish Methods for evaluating progress. The metrics and measurement methods identified in Step 5 now become a standard procedure/system for recording and reporting results. This reporting includes successful as well as poor results to all employees. Members of a supervisory team, not the entrepreneur, are responsible for reporting results in their individual areas. It is suggested that the entrepreneur establish a monthly review of ongoing projects, performance trends, progress reports and then revise strategies.
Phase 4 – Sustain. At this point the entrepreneur should be pursuing steps that spread the knowledge acquired so far across the entire organization. For an entrepreneurial small business, this may have been happening during the previous steps, if the pilot group of employees is actually the entire company.

Step 10 – Commitment to continuous improvement. The challenge to the entrepreneur during this step is that they continue their commitment in the face of business challenges or declines in the economy. Entrepreneurs that can do so should create a generation of managers committed to the Lean Six Sigma.

Step 11 – Linking Six Sigma to intrinsic motivation of employees. Employees now become the source of ideas and innovation. Their knowledge and expertise are harnessed to implement new Lean processes. The employees are empowered for improving processes, continue training and development, and are given rewards and recognition.

Step 12 – Progression towards learning organization. There are regular project meetings to enable management and employees to share experiences and progress on projects. These increase individual and organizational learning, and give regular review of training needs.
DISCUSSION QUESTIONS

Discussion Question 1: What Would You Do? Springfield Auto Collision currently has $700,000 in revenues, and would have to spend over $50,000 up front to get Lean Six Sigma training for Craig and his team, plus an additional $260,000 to continue implementation across the three coming years. If you were Craig, would you commit to Lean Six Sigma and spend this money? Why or why not?

Teacher’s Notes

The following four responses explore varied perspectives addressing the question: If you were Craig, would you commit 100% and spend $310,000?

1) No - Craig’s employees feel Deming to be irrelevant. Craig should listen to this advice. This opinion is supported by research (Kumar & Antony, 2008) which found that the barrier to adopting lean techniques lies with senior management, which for entrepreneurs is often also the owner. Entrepreneurs believe that their culture and existing systems are sufficient, that lean processes can’t apply to them, and that these processes are a fad which will quickly pass on.

2) No - There is little history of success for Lean Six Sigma for entrepreneurs. Research cited from the case said that past research had found little practical benefit of Lean Six Sigma to entrepreneurs (Kumar, Antony and Tiwari, 2011). In addition, Springfield Auto Collision has all 3 components for failure of implementation as identified by Antony (2008). The first is that the “entrepreneur has many distractions in their business and may not stay focused.” Craig and his father have so many distractions, they can’t even go to the bathroom or go to lunch together. Craig is constantly interrupted for employee guidance. The second reason from Antony is that “unlike larger organizations with specialized tasks, employees of entrepreneurial small businesses perform many different functions.” This is perhaps the major reason Springfield Auto Collision should not adopt a Lean Six Sigma culture/management method. The auto collision repair business lacks specialized, repeating production tasks that can be streamlined. Thirdly, Antony says “senior management leadership is important, but entrepreneurs are usually focused on fighting fires involving easy-to-accomplish tasks or easy-to-solve problems.” Again, Springfield Auto Collision management, Craig and his father, are constantly distracted and fighting fires. They cannot focus on a large managerial change while simultaneously keeping the daily operations functioning. Springfield Auto Collision is small and doesn’t have the resources of time or money to implement Six Sigma Lean.

3) Yes - Craig is unhappy as a manager of an unmotivated workforce. This has become a personal, rather than business decision. Therefore, it is emotionally necessary if Craig is to
continue in the family business.

4) Yes- Craig has an MBA, and is familiar with the advantages Six Sigma Lean can bring. He is willing and able to be trained. Since he is willing to commit 100%, he should go for it. Rose, Deros, Rahman, and Nordin (2011) found some advantages for small companies implementing lean processes; 1) they are more agile, and 2) it is easier to get management support and commitment. Since “management” is Craig and his father, and his father is willing to try the new approach, Springfield Auto Collision has the necessary support and commitment. Also, Craig can be flexible and tailor the rollout of Six Sigma Lean training and implementation to his own small company. Large corporations don’t have this agility, and have to work hard to get the method adopted throughout the company.

Discussion Question 2: Would you commit to all of the costs in Table 1, or would you commit to parts of it over time? If you choose to implement Lean Six Sigma over time, which elements of training should Craig choose to do first? Why? Prescribe an implementation plan below. If you feel all elements should be implemented at once, then include them all in the “Elements done first” section. See Table 1 for breakdown of the budget for Lean Six Sigma adoption.

Teacher’s Notes

In most adoptions of Six Sigma Lean methods, all employees are not sent for training all at once. Even in smaller firms, the roll-out of a Six Sigma Lean plan is done gradually. Management training should always be done first, then a champion worker should be trained, and they can then train others. Your students may choose to delay training some of the employees.

Sigma training costs are shown in Table 1. Revenues over the time of Lean Six Sigma implementation are shown in Table 2. Using these figures, determine the Return on Investment (ROI). Return on Investment can include any benefit from the program. Net Benefit = Net Income – Program Costs. ROI% = (Net Program Benefits/Program Costs) x 100.

Over the full implementation period, ROI = 773%. The program was worth the expense. ROI estimation is not an exact science. A simplistic way to compute this ROI is to see it through the eyes of an entrepreneur – How much did revenues increase? Since previous Revenues were $700,000, and the training was completed in 2012, sum the incremental increases in Revenue (Revenue for the year less 700,000) for 2012, 1013, 2014, and 2015 together. Divide this Revenue incremental increase by the total cost of the training program of $310,524.50. The result is 773%.

Springfield Auto Collision (Annual Revenues)
<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Annual Revenue Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$700,000.00</td>
</tr>
<tr>
<td>2012 (Training Year)</td>
<td>$1,000,000.00</td>
</tr>
<tr>
<td>2013</td>
<td>$1,400,000.00</td>
</tr>
<tr>
<td>2014</td>
<td>$1,900,000.00</td>
</tr>
<tr>
<td>2015</td>
<td>$2,100,000.00</td>
</tr>
</tbody>
</table>

Return-On-Investment Calculation

Sum of Revenue Increases for 2013, 2014, 2015 / Training Program Investment = ROI x 100

$400,000 + $900,000 + $1,100,000 / $310,524.50 = 7.73 x 100 = 773% ROI

Discussion Question 3 (for higher level students): Do suggested actions in Kumar, Antony and Tiwari’s Six Sigma Implementation Framework steps truly match Phillips and Stone’s training model phases? Why or why not?

Until further research is done on multiple entrepreneurs adopting Lean Six Sigma, this alignment between the two models cannot be assumed. It may be only a happy coincidence. Further study is required. Students can give case examples of quotes that do match training phases. Due to the generic nature of some of the training phases, they could be matched with more than one of the steps in Kumar et. al. ‘s model.
### Springfield Auto Collision Lean-Collision Training and Implementation Initiative Costs

#### Table One: Analysis, Design, and Development

<table>
<thead>
<tr>
<th>Craig Lindquist (General Manager) as Training &amp; Development Department</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Research ($35/hr x 40 hrs)</td>
<td>$1400.00</td>
</tr>
<tr>
<td>Books/ Resource Materials</td>
<td>$100.00</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$1,500.00</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Delivery of Training (Off-Site) Minneapolis, MN</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Belt Lean Training Tuition ($2,500 x 8 Employees)</td>
<td>$20,000.00</td>
</tr>
<tr>
<td>Green Belt Lean Training Tuition for Craig Lindquist (General Manager) ($2,500 x 1 Manager)</td>
<td>$2,500.00</td>
</tr>
<tr>
<td>Training Time for 8 Employees (Salary &amp; Benefits) ($204.80/hr x 40 hrs)</td>
<td>$8,192.00</td>
</tr>
<tr>
<td>Training Time for Craig Lindquist (Salary &amp; Benefits) ($35/hr x 40 hrs)</td>
<td>$1400.00</td>
</tr>
<tr>
<td>Fuel and Rental Vans (75 Gallons x $3.50 per gallon x 1 Vans = $525) ($800 Rental Fee)</td>
<td>$1325.00</td>
</tr>
<tr>
<td>Lodging ($100 x 4 Rooms x 5 Nights)</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>Lost Sales/Production (7 Vehicles x $2,100 per Invoice)</td>
<td>$14,700.00</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$50,117.00</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Delivery of Training (On-Site) Springfield Auto Collision</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lean Consultant (6 Kaizen Events) ($250.00/hr x 48 hrs)</td>
<td>$12,000.00</td>
</tr>
<tr>
<td>Craig as Training Participant ($35/hr x 585 hrs)</td>
<td>$20,475.00</td>
</tr>
<tr>
<td>Employee Training Time ($384.5 x 585 hrs)</td>
<td>$224,932.50</td>
</tr>
<tr>
<td>Training Materials (Flat Screen TV $1,000) (Training Manuals $31.25 x 16 Manuals = $500)</td>
<td>$1,500.00</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>$258,907.50</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grand Totals</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis, Design, and Development of Training</td>
<td>$1,500.00</td>
</tr>
<tr>
<td>Delivery of Training (Off-Site)</td>
<td>$75,605.00</td>
</tr>
<tr>
<td>Delivery of Training (On-Site)</td>
<td>$256,907.50</td>
</tr>
<tr>
<td><strong>Total Training Costs</strong></td>
<td><strong>$310,524.50</strong></td>
</tr>
</tbody>
</table>
References


EXPLORATION STRATEGY TEACHING CASE

ANTARCTICA-THE RACE TO THE SOUTH POLE

Mark Pomerantz, Worldshapers!

Contact: Mark Pomerantz
2101 S. Ocean Dr., #1002
Hollywood, FL 33019
E-mail: marklp2@comcast.net
Phone: (206) 354-3052
This teaching case relates to a famous exploration case and the strategy lessons to be learned from it. It looks at the leaders of two competing expeditions, their strengths and weaknesses and how those strengths and weaknesses influenced their decisions and the outcomes of their expeditions. One leader was overburdened by having a dual focus and unclear priorities. The other leader had clear focus and was single-minded in achieving his goal while his competitor wavered in where to concentrate his energies. His failure to understand how to get the most out of his equipment and his team cost him dearly.

Introduction

It is 1910 and men have sent exploring expeditions to all of the continents. The least explored is Antarctica. The most remote and inaccessible part of Antarctica is the South Pole, the last great challenge for explorers. There are two great questions. “Who will be the first to reach the South Pole and why go there at all?” The answers to the second question are obvious; prestige, the chance of finding important minerals and natural resources, and the desire to increase knowledge. The answer to the first question is more moot. In the past expeditions from the U.S., Belgium, Germany, and the UK have either skirted or landed in Antarctica. The Germans and Japanese are said to be planning Antarctic expeditions, but it is Cmdr. Robert F. Scott of the British Royal Navy who announces his intention of a scientific expedition to Antarctica with a further goal of reaching the South Pole. Scott had led a prior expedition there in 1902. Lt. Ernest Shackelton of the Royal Naval Reserve who had served under Scott in 1902 had led another Antarctic expedition in 1909 that had reached within 111 miles of the Pole.
As Scott was preparing to begin his journey there was a further development. Roald Amundsen, a Norwegian merchant marine captain had previously announced his intention to reach the North Pole. He now unexpectedly sent a telegram to Scott stating he too was going to the South Pole. Scott had the benefit of government support including money and Royal Naval personnel. Amundsen was a private entrepreneur. He considered himself a professional explorer. He had no government money and more fundraising to do, but he had less government regulation and red tape to deal with. There was now a race. Who was the most likely to win?

The Players

Roald Amundsen

Amundsen was an experienced Norwegian captain, navigator and explorer. He was a veteran of several previous polar expeditions. He was an Entrepreneur/Explorer who thought he could finance new expeditions based on successful outcomes of previous expeditions. He took reasoned risks and pioneered better equipment and rations for his men. His leadership style was a hybrid. Often he was charismatic and autocratic as consistent with a merchant marine captain. But he was less concerned with rank and class then the British.
Robert F. Scott

Scott was a Captain in the British Royal Navy. He was a veteran of one previous polar expedition. His motivation was to achieve promotion in the Navy through leading a successful expedition to the South Pole. Support from the Royal Geographic Society necessitated that his expedition have a dual mission; reaching the South Pole and undertaking scientific research. His leadership style was charismatic and autocratic as consistent with his role as a naval captain. While he often took risks they were not always reasoned risks since he did not familiarize himself adequately with polar conditions.

Analogy with Business Development

It may not seem evident to some but mounting a polar expedition has many analogies to being an entrepreneur and starting a new business (see Figure 1 below). Amundsen and Scott both needed to develop business strategies to amass the resources and follow through to success their plan for reaching the South Pole.
Opportunity Recognition

Leader

Team Formation

Initial Resource Development

Overall Venture Plan

Figure 1. Analogy with Business Development and Entrepreneurship

In Table 1 we see how some of their strategies differed. For example Scott’s reluctance to use dogs as inhumane and inconsistent with British polar exploration tradition. Later on we will see the impact of those differences.

Table 1. Business Strategies

<table>
<thead>
<tr>
<th>Scott (British)</th>
<th>Opportunity Recognition</th>
<th>Team Formation</th>
<th>Initial Resource Development</th>
<th>Overall Venture Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fame, Knowledge gathering</td>
<td>Navy personnel &amp; scientists</td>
<td>Support from Government and Royal Geographic. Soc., private fundraising</td>
<td>Carry out scientific program and use dogs, tractors, ponies, and manhauling to reach the Pole.</td>
</tr>
<tr>
<td>Amundsen (Norwegian)</td>
<td>Opportunity Recognition Fame, Wealth Generation</td>
<td>Team Formation</td>
<td>Initial Resource Development Loan of ship and private fundraising</td>
<td>Overall Venture Plan Use dog teams to reach South Pole</td>
</tr>
</tbody>
</table>

Planning Stage: Preparation for the Journey

In Table 2 we see the organizational styles of the leaders and how those styles contributed to the success and failure of their expeditions. While both leaders had an autocratic nature at times Amundsen was the better listener and was clearer in his directions.
### Table 2. Organizational Leadership

<table>
<thead>
<tr>
<th>British</th>
<th>Charismatic-Autocratic/Transactional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scott emphasized Courage and Will Power</td>
</tr>
<tr>
<td>Scott was the Boss. His orders were unquestioned, even when unclear. Confusion about his orders led to aborting of rescue attempt by dog team. Had unclear focus on which was most important, scientific or polar trek. Didn’t prepare adequately for the Polar Trek</td>
<td>Scott had inadequate food for man hauling. Dissipated his men’s strength through overwork and lack of caloric intake and vitamins</td>
</tr>
<tr>
<td></td>
<td>Scott did not carry out adequate caching of supplies. Overstretched supplies by adding extra man to Polar Party</td>
</tr>
<tr>
<td>Norwegians</td>
<td>Charismatic-Autocratic/Transactional</td>
</tr>
<tr>
<td>Amundsen</td>
<td>Amundsen emphasized Expertise as much as Courage</td>
</tr>
<tr>
<td>Amundsen was the Boss. But he empowered his men to make suggestions and he listened to them. Was clear that focus was getting to Pole first</td>
<td>Amundsen tried not to overtax his men’s strength. Tried to make the trip somewhat enjoyable</td>
</tr>
<tr>
<td></td>
<td>Amundsen ordered adequate depots. Ten times as much food was cached as the British. Turned back after initial start was too early</td>
</tr>
</tbody>
</table>

In Table 3. we see how the leaders got the most out of their equipment or were negligent in so doing. Amundsen was fanatical about maximizing the efficiency of his gear and getting and keeping his men in top shape. Scott knew less about the equipment and failed to learn as much as he could. He relied too much on using equipment “as is” from the manufacturer instead of “fine tuning” it as Amundsen did.

In Table 4. we see a burdensome leadership issue that Scott failed to overcome, having a dual focus to his expedition, science and exploration.
Table 3. Organizational Assets and Equipment

<table>
<thead>
<tr>
<th>British</th>
<th>Had skis and ski instructor (but most didn’t become good skiers). Walked a good part of the way. Couldn’t move as fast so were out later in the season and met extreme cold</th>
<th>Had dogs and trained dog handlers But didn’t have enough skill so man hauled and pony hauled sledges much of the way. Ponies were dead before they got to the pole. Dogs were not used by final Polar Party.</th>
<th>Used Burberry wool clothes with separate head gear. Wind penetrated into gaps. Didn’t use furs much since they made them sweat too much when man hauling. But they were freezing when not moving.</th>
<th>Relied more on canned goods than fresh meat when in camp. Scott didn’t check if men actually ate the fresh meat they were given. Sledging ration had extra fat but lacked vitamins and didn’t provide enough calories for man hauling.</th>
<th>Made modifications to sledge runners but didn’t reduce weight as much as Norwegians did, used tents “as-is”, even though they took substantially more time to erect than Norwegians tents, used oil cans “as-is” even though leather stoppers were known to leak. Made some improvements to their ski bindings, and boots.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norwegians</td>
<td>A champion skier led the way, all were competent skiers able to go faster and get back earlier.</td>
<td>Used dogs all the way and were competent dog handlers Were able to use skis more than British because of dogs.</td>
<td>Used wool clothing with attached head covering and fur clothing obtained and copied from Netsilik people</td>
<td>Ate lots of undercooked seal meat with more vitamins. Also brought preserved berries with high Vitamin C content. Prevented scurvy. Sledge ration had more vitamins and calorie content</td>
<td>Modified sledges for extra strength and lightness, modified tents for quicker assembly, modified storage boxes for easier and quicker access, modified stoppers on oil cans to eliminate evaporation</td>
</tr>
</tbody>
</table>

Table 4. Organizational Focus and Readiness

<table>
<thead>
<tr>
<th>British</th>
<th>Dual Focus: Scientific Knowledge and First to the Pole</th>
<th>Had to plan for both and allocate resources for both</th>
<th>Scott not good at delegating authority so had to attend to too many details. Did not always pick people with best capacities. Was not strict on work quality</th>
<th>Preparations were substandard for Polar journey, re: equipment, food, and transport</th>
<th>Preparations were excellent for Polar journey re: food, equipment, and transport (as reflected later in ease of carrying it out)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norwegians</td>
<td>First to the Pole</td>
<td>All resources to the Polar Trek</td>
<td>Amundsen delegated work to men handpicked to be able carry it out. But he didn’t compromise on the work quality</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Operational Stage: Race to the Pole

Figure 2. Routes of Scott and Amundsen 1911-12

Both Scott and Amundsen spent a year preparing for the polar journey once they arrived in Antarctica. Scott’s party concentrated on scientific research and preliminary journeys to lay depots, as well as getting their gear in order. Amundsen’s group focused on refining their equipment and laying as many depots as possible. They stored in depots ten times as much food as Scott’s party.

Outcomes

As most people know Amundsen won the race to the South Pole arriving in December 1911 (see Table 5 below). Scott and his party made it there over a month later in January 1912.
Scott and his entire party encountered terribly cold unseasonable weather and perished in March 1912 making it within 11 miles of a depot that might have saved their life. But by the time Scott and the last two members of his group died they were suffering from frostbite that would have necessitated amputations of toes and feet. Some people suspect that is why they did not push on even after a blizzard abated. Scott’s death did not become known until over year later. He was regarded as a hero by the British public and Amundsen was treated contemptuously by the British press and even blamed for Scott’s death. As we see below however, there were many other reasons for Scott’s failure.

Table 5. *Organizational Outcomes*

<table>
<thead>
<tr>
<th>British</th>
<th>Lost the race and the Polar Party (The British died from exposure and hypothermia complicated by starvation, frostbite, and possibly scurvy)</th>
<th>Obtained Important Scientific Knowledge from work done in camp and by Northern Exploration Party</th>
<th>Received popular acclaim for “heroic failure”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norwegians</td>
<td>First to the Pole (Norwegians gained weight on the trek back)</td>
<td>Did not receive popular acclaim. Blamed for Scott’s death by Press</td>
<td>Thought to be “Unsportsmanlike” Given professional respect but not support.</td>
</tr>
</tbody>
</table>

**Conclusions and Implications**

Scott refused to concentrate on the importance of dogs and skis because he was so focused on the prior history of British polar expeditions which used man-hauling (see Figure 3, Lesson 1, below).

Scott was distracted by his dual focus, and did a poor job on planning the Polar journey. He also didn’t make sure that preparations were adequate (See Lesson 2 below)
Amundsen was constantly refining skis, sledges, boots, tents, rations, containers during the Antarctic winter months. Scott made some modifications to equipment but not as skillfully (see Lesson 3 below).

Scott failed to use the opinions of others to find the best course of action. Members of his expedition had only a limited understanding of the reasons behind his decisions (see Lesson 4 below).

Scott’s detachment, emphasis on rank and social hierarchy, and unilateral decision-making style created barriers to team bonding. Amundsen was autocratic at times but tried to be inclusive and reduce conflict (see Lesson 5 below).

Scott was always cutting things too close, didn’t have enough depots or mark them adequately. He had to waste time searching for them while Amundsen’s were always clearly marked so he didn’t have to go out of his way to find them. Amundsen did not travel as late in the year so did not encounter the low temperatures that eventually killed the Scott party (see Lesson 6 below).

Scott didn’t always pick the right people (he was forced to use mainly naval personnel), define jobs properly, or make sure they were done (see Lesson 7 below).

Scott failed to realize that man hauling safely for so long at high altitude required more calories than he could provide. He was ultimately done in by the unseasonably cold weather late in the season. Amundsen’s dog sled teams consumed fewer calories per man, left earlier, went faster, and got back before the worst of the cold weather hit (see Lesson 8 below).

In summary, Scott was an amateur and Amundsen an entrepreneur and a professional. Still due to his courage and persistence Scott probably would have made it back safely, though not without injuries, if not for encountering extremely cold weather in March 1912, the Antarctic
Fall. His underestimation of the risks, refusal to take the best advice regarding the use of dog teams, and other errors of judgment cost him dearly. His dual focus, though not of his own doing, made his job harder and he failed to compensate for that by easing the burdens on himself and his men.

<table>
<thead>
<tr>
<th>1. Be Open to New Ideas.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Focus on the most important part of your mission</td>
</tr>
<tr>
<td>3. Tailor Your Tools</td>
</tr>
<tr>
<td>4. Use the Collective Knowledge of the Group</td>
</tr>
<tr>
<td>5. Create Strong Team Bonding</td>
</tr>
<tr>
<td>6. Have a Margin for Error</td>
</tr>
<tr>
<td>7. Make Sure Things Get Done</td>
</tr>
<tr>
<td>8. Understand Your Key Strategy Issues!</td>
</tr>
</tbody>
</table>

*Figure 3. Strategy and Leadership Lessons*
References


McKay, B. & McKay, K, (April 22 2012), The Art of Manliness (blog) *What the race to the South Pole can teach you about how to achieve your goals*,


O’Connell, F. (February 17, 2015) Fergus O’Connell (blog) *Leadership lessons from the race to the South Pole: Why Amundsen lived and Scott died*,


Reference


https://hbr.org/2011/12/the-leadership-lessons-of-the
NOTE TO INSTRUCTORS

This case is intended for an undergraduate business entrepreneurship, strategy or leadership course. It uses an intriguing exploration case while making an analogy to a business start-up. The main discussion points of analyzing key issues, team building, team listening, and making sure things get done properly, are crucial to any business or organizational start-up.
ShotSpotter

One of the most interesting and positive uses I have seen of Big Data and analytics technology is ShotSpotter. --Bernard Marr, Forbes Magazine

Donna Stoddard

Abstract

The ShotSpotter case is a great example of a social venture; a venture whose mission is to do good and to make money. Its customer base is primarily police departments in inner city areas where gun violence is rampant. The case is also a great example of the Internet of Things (IOT) and Big Data, given SST’s use of sensors and data to solve the problem of gun violence.

In August 2016, Ralph Clark, CEO of SST, Inc., a company which provided its customers with a scalable and reliable gunfire alert system, reflected on the growth of the company. Clark, who joined SST in 2010, had overseen a change in the company’s business model and had encouraged the establishment of strategic partnerships in the Smart City arena. As he looked to the future, Clark wondered what actions should be taken to foster the continued growth of the company.

Company Overview

In August 2016, SST’s had two products: ShotSpotter Flex and Secure Campus. Both products leveraged proprietary acoustic surveillance technology that used sensors and software to detect shots fired. SST possessed thirty-three patents resulting from nearly two decades of innovation in the area of acoustic gunshot location technology.

ShotSpotter Flex customers consisted of over 90 police departments/municipalities. When a customer subscribed to the service, SST installed sensors on light poles or rooftops to detect shots fired. The software employed sophisticated classification algorithms to weed out sounds that were not gunshots. When the system triangulated the location of a shot, a specially trained technician at SST headquarters listened to the audio clip to confirm that it was gunfire; if confirmed, the technician then pushed a button to send an alert to the police department, within one minute of the shot being fired. SST Inc. guaranteed that the sensors could locate a gunshot within a 25-meter radius. One police chief noted that on average, the ShotSpotter sensors notified the department of gunshots five minutes faster than calls to 911; but many times, there was no call to 911.


©2016. This case was written by Professor Donna Stoddard at Babson College as a basis for class discussion rather than to illustrate an effective or ineffective administrative situation.
Clark noted,

The alert shows up in our Incident Response Center (IRC) as a dot on a map, along with other meta data including round count and type of firearm. An audio clip and meta data are reviewed by our specially trained acoustic reviewers. Once they are comfortable that the sound is a gunshot, they push a button and through the Internet, an alert will Pop-up for someone monitoring at a [police] dispatch center or in a patrol car. The information sent to the police department is organized as a screen. On the right is a map with a dot on it, and on the left is all the metadata. When the police arrive on the scene, they know what to expect, for example the type of firearm used, the number of rounds shot, whether there are one or more shooters, and if the shooters are on the move, the direction they are going.

ShotSpotter investor, Gary Lauder noted, “ShotSpotter is a compelling example of an implementation of the Internet of Things (IOT). However, SST existed before that term was coined.”

SST also offered SecureCampus, a system designed to detect gunshot within buildings. According to the company website,

SecureCampus is like a fire alarm in an active shooter situation: fire alarms don't prevent fires but can offer a life-saving time advantage in the rare event a fire breaks out. That time advantage can mitigate the damage and save lives. SecureCampus technology immediately alerts the police and also provides police with critical real time information such as an interior floor plan with how many and where the shots were fired.4

Robert Showen, PhD, came up with the idea for ShotSpotter while working as a research scientist in the radio and acoustic technology area at Stanford Research Institute in the early 1990s. Showen explained,

I was working at Stanford Research Institute, which was located close to East Palo Alto, a city ridden with drug trafficking. I was convinced that radio and acoustic technology could be deployed to help police departments identify the location of gun shots being fired, real-time. I created a prototype and did a proof of concept test in 1994.

By 2016, Showen had been issued nine patents for SST’s innovative ShotSpotter technology. In total, SST’s solutions were protected by thirty-three patents and had other domestic and foreign patents pending. In 2014, Showen was recognized by Silicon Valley Intellectual Property Law Association (SVIPLA) as “Inventor of the Year,” for his invention of the SST ShotSpotter gunshot detection location technology.

In August 2016, SST was a privately held company and backed by investors including: City Light Capital, Claremont Creek Ventures, Labrador Ventures, Lauder Partners, Levensohn Venture Partners, Motorola Solutions and Norwest Venture Partners. According to Black Enterprise, the company had 67.93 million in total equity funding.5 SST, Inc. had global installations in North America, Central America and South America and covered more than 300 square miles in over 90 U.S. urban and suburban geographic areas.

---

5 Lynn, op. cit., p. 29.
Gun Violence – The Problem

Gun violence is a big problem in many major cities. For example, by Labor Day 2016, Chicago Illinois had over 500 homicides, more than NY and LA combined. The Chicago PD planned to expand its use of ShotSpotter technology.

According to SST, Inc. less than 80% of shots fired are reported to the police.\(^6\) NYPD which piloted the system in 2015, found that 75% to 80% of gunfire incidents in NY went unreported to 911\(^7\). Without the data that SST, Inc. collects and analyzes, cities use homicide rates and non-fatal injuries to approximate the number of shots fired, a measure which vastly underreports the level of gun violence.

The Evolution of the ShotSpotter Business Model

When the company was started in the late 1990s, SST sold systems to police departments; customers had to pay for the hardware, software and maintenance. When Clark arrived that the company, which had been around for more than a decade, SST had only 30 customers. The systems cost about $250,000 per square mile to install; maintenance and operations, also handled by the cities, could total up to $40,000 a year. Clark noted, “From a police department point of view, ShotSpotter was a significant and risky IT project.”\(^8\)

Shouen explained.

When Ralph joined the company, he led our shift from selling computers and sensors to selling a service. Today, we are a service business. We own the hardware and have an Incident Response Center (IRC) at our headquarters in Newark, CA that is staffed 24X7. Our technology can do a good job of detecting shots; but trained humans can do an even better job.

Clark switched the business model to a subscription model which required a minimum coverage area of three square miles. SST performs the installation of the sensors, operates the system, and charges an annual fee of $65,000 per square mile for the service (plus a $10,000 installation fee). According to Clark, “The minimum of the three mile coverage area is important because more coverage leads to better results and a greater likelihood of a city renewing its subscription.”\(^9\) In 2016, 97% of clients renewed each year.

By 2016, the ShotSpotter solution included sensors, which are essentially small computers with a microphone and a GPS with a synchronized clock, that is running Linux and proprietary software. The Flex solution takes advantage of cellular networks to transmit data from a sensor to one of SST’s two datacenters. Scott Beisner explained, “Each sensor has software, hardware, a modem and a GPS. The sensors are tuned to hear impulsive sound. Gun Shots are very loud, 150 – 170 decibels, so they are easy for our sensors to detect.”

Beisner continued,

\(^8\) Harvard Alumni Magazine.
\(^9\) Ibid.
This is a great example of the use of Big Data to change policing. Over time, departments can see the location of hot spots and make data driven decisions as to where to deploy officers. For example, if the department notices that shots are fired frequently at a particular address, they can investigate. Even celebratory gun fire is dangerous. The bullets and casings eventually come down and can hurt people.

Data about a loud noise that could be a gunshot is sent to one of the SST datacenters. Software analyzes the sound wave from multiple sensors to determine if it likely a gunshot; it also triangulates the data to consider time of arrival of the sound and the angle of arrival to figure out the location and direction of the perpetrator, if he or she is moving.

If the system concludes that the noise is gunfire, a specially trained technician in the Incident Response Center listens to a short clip of the gunshot and looks at the graph of the soundwave. If the technician concurs that it is gunfire, a message is sent to the police within 45 seconds of the incident. The message tells the police department the time and location of the incident and the type of weapon(s) fired.

In areas where ShotSpotter is installed, 100% of shots fired are reported to the police. Researchers examined gunshots detected in Washington DC neighborhoods equipped with ShotSpotter. They found that between 2006-2013, prior to the installation of ShotSpotter only 1 in 8 gunfire incidents let to a 911 call for “shots fired” in the covered areas. When the police respond to a shots fired notification, even if the gunman is gone, their swift arrival may save a life. Further, they can collect shell casings and use that evidence to trace a weapon.

In addition to getting police quickly to the scene when shots are fired, which may save a life and lead to the apprehension of the perpetrator, another benefit of ShotSpotter Flex, is improved relations between the police and residents of areas besieged with gun violence. When police respond quickly, residents feel the police care, and may therefore be more willing to cooperate with the police.

**The ShotSpotter Gunfire Index**

Since 2013, ShotSpotter has published a National Gun Fire Index. They reported that in 2015, the 62 cities that had their system installed for the year, saw an average of 34.7% decrease in gunfire incident volume in the first two years of ShotSpotter use.

In the SST National Gunfire Index report, Clark noted:

> 2015 has been a remarkable year for reduced gun violence in the United States. While many cities reported an uptick in reported homicides, the results of our gunfire index [highlights] the fact that many cities and regions have experienced a significant reduction in gunfire. These cities are demonstrating measureable declines in shooting incidents with comprehensive focused deterrents leveraging people, process and technology. We are very proud to be a part of these positive trends in disrupting the new normal of gun violence.11

The SST 2015 National Gunfire Index also found that SST reviewed and published 54,700 incidents of gunfire in 2015 which translated in to 165,500 shots fired. New Year’s Eve,

---

New Year’s Day and July 4th are the busiest days for “Celebratory gunfire.” Excluding those days, the busiest day was December 25th, with 266 incidents; 39 in one city. ShotSpotter data shows that 45% of all gunfire happens in the late evening to early morning (9PM-1am).

**Next Steps**

By August 2016, ShotSpotter Flex was deployed in over 300 square miles in 90 cities across the US. Clark noted, “We think there’s probably a need in about 1,000 cities in the US and around the globe.” He continued.

We’ve got the opportunity to be deployed in more cities, working with more agencies, [and] helping agencies develop more effective gun violence abatement strategies. The technology is invented….so we have the opportunity to spend much more of our time with outcomes – how you respond, how you investigate. We are moving up the food chain to that level. We consider ourselves, frankly, gun violence abatement consultants.

In early 2016, SST announced a partnership with GE where ShotSpotter Sensors will be integrated into every “Intelligent” LED streetlight that GE installs, around the world. That means SST would no longer incur installation costs; rather, if a city lights the lights, it would simply have to subscribe to the ShotSpotter Flex offering. Clark noted, “We [would] just have to flip a switch.”

Board member and investor Randy Hawkes continued,

I am very excited about our collaboration with GE. ShotSpotter is well positioned to be part of the backbone of the Smart Cities movement. And that may lead to another significant change to the Shot Spotter business model.

As Clark looked forward, he wondered what additional steps he should take to further expand ShotSpotter’s reach.

---

The ShotSpotter case is a great example of a social venture; a venture whose mission is to do good and to make money. Its customer base is primarily police departments in inner city areas where gun violence is rampant. The case is also a great example of the Internet of Things (IOT) and Big Data, given SST’s use of sensors and data to solve the problem of gun violence. This is a great case for an introductory entrepreneurship course.

This case has been successfully used in an undergraduate entrepreneurship course that is focused on emerging technologies. This is also a great case to engage campus police. The case author invited campus police to class; they commented on the importance of this technology to enable community policing.

You can start the class by asking the students about the business model for SST. 

What kind of company is SST? Would you consider ShotSpotter a social venture? Why or why not? What technology enables SST? What challenges do you see with the technology and or business model?

SST is a technology company that was formed to address a social problem: gun violence. The company is over 20 years old but has recently gained traction as all of the pieces of the technology infrastructure needed for this solution are now readily in place, namely GPS technology, sensors, cellular data network, analytics software, geo mapping applications.

Some might consider SST as a social venture, but its mission is clearly to make money. As a social venture, how much of a return is appropriate? In terms of its technology, some have said that the company is putting the infrastructure in place to invade the privacy of citizens. How can they balance this?

Why did ShotSpotter move to a cloud offering? What are the advantages for the customer? What are the advantages for SST?

Initially customers had to purchase the hardware and software and then staff their dispatch center with an employee that understood how to use the SS station. This was another role for the police dispatcher, and with the early offering, there was not trained human to review the sound data to verify that a gunshot had been heard. This resulted many false positives which hurt the reputation of the company. By shifting to a cloud service delivery model, SST will no longer have to train customer personnel. Rather, SST will have trained technicians that can monitor their network across customers.

Why is this a compelling example of Big Data and IOT?

This company uses data captured with sensors to solve a compelling social problem. Their customers can use this data to dispatch police to area where there is a lot of gun violence.

How would you value this company?

Based on the data supplied in the case, revenue of this company is ranges from 20M ($65000 per sq mile * 3sq miles* 90cities= $17,550,000) to $30,000,000 if you assume that the 90 customers have on average 5 Sq miles installed. Challenge the students to put a multiple on revenue to value the company.

What should Clark do to continue the growth of the company?

At the beginning of the case, it states that Clark has established an alliance with GE. GE seems to be a natural partner for SST. Other large companies who supply equipment and transformers used by utilities would also be good partners.

What other issues do you see with this technology?

Residents of areas with ShotSpotter Flex installed may be concerned about issues of privacy, given that each sensor contains a microphone.
Wen-Szu Lin and Joseph Sze had a difficult decision to make. It was 2011, and the two men who had bought the rights to Auntie Anne’s Pretzels in China were having to rethink their strategy in that country. They had opened their franchise in Beijing with a great flourish in 2008 in the midst of the country’s hosting of the Olympics, but things had not gone as well as they had hoped. Now they knew they must consider developing a turnaround strategy or closing the franchise doors. Although Lin was of Chinese extraction and had been born in Taiwan, he considered the possibility that the primary factor in the company’s difficulties might have been a cultural problem.

Background on Auntie Anne’s

In 1988, Anne Beiler began making pretzels and other snacks and selling them at a farmers’ market in Downingtown, Pennsylvania. The recipe for the pretzels changed sharply one day when she ran out of the ingredients to make her pretzels. Being resourceful, Anne decided to use ingredients that she already had in her kitchen. This change in the recipe was well received by the company’s customers, and sales began to increase rapidly. The recipe she developed in 1988, was still being used in 2011.

The successful channel of distribution for the pretzels was shops in malls and transportation hubs. Much of the appeal of the product was that the brand had inspired a sense of nostalgia among customers. The marketing of the product was very simple. Beiler never spent money on the traditional type of advertising for this kind of product such as television, radio or print media. Instead, the company’s employees offered samples of hot pretzels to people who walked by the store.

In the early 2000s, Anne sold the company to her cousin, Sam Beiler. He had started with the company as a regional representative. When he became the owner, he began focusing his efforts on franchising and away from self-owned stores. With this strategy, he sold off the majority of the company-owned stores to pay off the debt he incurred when buying the company.

By 2011, the company’s primary product pretzels along with dipping sauces and beverages were being sold in 1,330 outlets in 46 states and 25 countries. The company had also introduced such innovations as the Pretzel Pocket, Funnelz, and even pizza.

Wen-Szu Lin and International Franchising

When Wen-Szu Lin was seven years old, his family moved from Taiwan to the United States. After Lin graduated from high school, he undertook an MBA from the Wharton School of Economics at the University of Pennsylvania. It was there that he met Joseph Sze who would later become his partner in the Auntie Anne’s business venture. After graduating from Wharton, Lin joined a global strategy consulting firm.
His friend, Joseph, was working for a private equity firm that dealt in real estate in Washington, D.C. Both men wanted to build and operate their own business. When the two began discussing the possibility of buying into a franchise, the Auntie Anne franchise came to their minds. Lin had recently seen some statistics on GDP in China as compared to other countries of the world, and he decided that would be a good place to locate a new business. (See Exhibit 1 entitled “GDP Adjusted for Purchasing Power – 2004.”) In addition, China was one of the largest markets in the world with over 1.3 billion people.

Lin discovered that Auntie Anne’s had done quite well in Asia. In Bangkok alone, there were 85 Auntie Anne’s stores. The company began its international franchising in 1995 in Jakarta, Indonesia. Shortly after that, Auntie Anne’s opened in the Philippines, Malaysia, and Singapore. Later there would be 85 stores in Thailand, 30 stores in Korea, 25 stores in Malaysia and 8 stores in Japan the first year they opened. In spite of the successes of the company in these countries, the Auntie Anne’s stores in Taiwan and Hong Kong had not performed up to expectations.

Challenges for the Business

From the beginning of the franchise in Beijing in 2008, Lin and his partner faced many challenges. The first challenge they faced was the impounding of the company’s second shipment of pretzel mix. The inspectors claimed that they found dairy bacteria in a sample. Lin was surprised by this development because he knew that there were no dairy products in the mix. He was equally surprised when a few weeks later he was notified that the company’s second pretzel mix had passed inspection. Lin suggested, “I was really shocked by it because actually I had never sent in a second sample.” Upon later reflection, Lin considered that the holding up of his shipment was a part of the larger issue of the trade fight between the United States and China after the discovery of melamine being placed in the country’s top milk and infant formulas by some of China’s top manufacturers who were doing business with American companies.

Another challenge for Lin was that although he had a Taiwanese ID and could speak Chinese, he could not write in Chinese. Lin explained that when he struggled to converse with a Chinese bank teller, “She had to help me fill out the forms since I could not write well in Chinese. Her face turned sourer each time I asked for help.”

Food and the ingredients needed to make pretzels were not regulated in China as they were in the United States. One day Lin had to phone a supplier and say to him, “What did you sell me? Did you know that your crappy, poisonous products blinded half of my employees? We have over 20 people right now who cannot see!” Lin reported that the person he was speaking with seemed to be baffled that so much was being made over something that happened regularly in China. (The employees did eventually recover their sight.)

An additional problem was the fact that the taste buds of the Chinese had been trained in a decidedly different direction in terms of sweet, salty and bitter. Many other
franchises had discovered that they could not go into China with the exact same product that they had offered in the United States. After being in the country for a short while, Lin altered the size of their pretzel dogs and started offering special dips and pretzel bites that were similar to some local flavors. In terms of the consumption of food products, the Chinese were not accustomed to eating with their hands which immediately made the pretzel a product which presented difficulties in adopting. Lin and Sze decided to offer pretzel bits in a small container with the dip in the bottom and a spoon for eating. In terms of marketing efforts, Auntie Anne’s had always given free samples to customers to get them to try the product for the first time. However, this did not work well in China. The people who were delighted to test the samples were never the people who could actually afford to buy a pretzel.

On the other hand, the menu of KFC in China looked nothing like the menu they offered in the United States. Their menus were all in Chinese with no English subtitles. Their primary offering was not the normal bucket of chicken, but instead it was a soupy rice dish with shredded pork, pickles, and preserved eggs called “congee.” The company also offered chicken wraps, but duck wraps were the preferred type of wrap by Chinese customers. The most popular type of dessert was an egg tart. Some black squirmy gelatin called “black jelly” floated in their milk tea drinks. At the other extreme was Starbucks in China which was almost identical to their locations in the United States. They provided the exact same amenities at a counter such as milk, sugar and napkins. The muffins and sandwiches provided were the same as those offered in the United States.

Other experiences began to feel to Lin like a Chinese water torture. Lin exclaimed, “Drip. Incapacitating our entire staff during training. Drip. Employees threatening physical violence against other employees. Drip. Getting ordered by different government bureaus to make contradictory modifications to the stores. Drip. Getting constantly picked on by the Customs Bureau. Drip. Employees abusing local labor laws to take advantage of us. Drip. Hiding from your employees in fear of our personal safety. Drip, drip, drip…”

Lin acknowledged that many of the problems he and his partner experienced boiled down to the lack of sufficient funding to begin the business. Although the two men were very conservative in their calculations, they did not anticipate all of the issues that would require additional funding. Lin suggested, “The market is very dynamic, with the customers and regulations changing each year. It is hard to anticipate everything to come; the best protection is to have deep enough pockets to withstand the impact of changes that will inevitably come.”

Lessons Learned from Operating in China

Wen-Szu Lin learned many lessons from launching his business in China. Some of those lessons were the following:
1. **Operations were massively under-emphasized.** In this regard, he was often threatened by thugs who wanted to extort money from him. He was counseled to hire some people to go after the thugs, but he didn’t know where to go to hire these kinds of people.

2. **How to navigate a corrupt regulatory landscape.** His MBA studies that dealt with the U.S. Foreign Corrupt Practices Act did not give him the information he needed to operate in this environment. Lin found that certain markets are open about corruption, and the officials come right out and ask for payment for approvals.

3. **Market studies were useless without true intimate knowledge of consumer habits.** Before entering China, Lin had done extensive market research including customer surveys and projections. However, he found that he needed to live in the country to fully understand the consumption habits of locals and changing market dynamics.

4. **How to ethically deal with unethical people.** He found that his procurement manager took bribes and demanded kickbacks from most of their suppliers. In the United States, he would have fired the employee. However, he was the smartest employee he had, and Lin found that the other procurement managers also took bribes so it would not help to replace him.

5. **Discount what your “network” claim they can do for you.** He found that people may talk big about how connected they are, but usually that doesn’t mean they would help you if you needed it.

6. **Cash is king. Be wary of profits.** Lin suggested that in the United States he had experienced delayed payments and bad debts, but this was nothing to compare to the time it took to get a deposit back or receive a cash payment in his new country.

7. **Human Resources concepts taught us how to protect our employees and business, but not ourselves.** We learned to offer as little about our personal backgrounds as possible in case relationships soured with our employees.

8. **Looks matter.** Lin faced reverse discrimination in China. He suggested that locals had a different set of expectations for him versus non-Chinese foreigners. Although he could speak Chinese, he did not understand all of the nuances of the culture.

9. **Impact of the lifestyle of the entrepreneur.** When he would go to dinner with business associates and always get stuck with the bill was troubling to him because of his desire to watching his spending and grow the business.
10. **Entrepreneurs multitask, but learn to prioritize.** Because this was a startup business for Lin and his partner, they had to learn to fill many of the jobs of the company that they would have liked to give to additional employees.\textsuperscript{xii}

**To Stay or Not to Stay**

Wen-Szu Lin pondered the alternatives that he and his partner had with their Auntie Anne’s Pretzel franchise in China. They could develop a turnaround strategy to deal with the various challenges they had faced (including cultural problems) or they could simply call it a day and close the doors of their franchise. The time was Spring of 2011, and they knew they had to make a decision soon and follow that path as quickly as possible.
Exhibit 1

**GDP Adjusted for Purchasing Power (2004)**
*(GDP in billions of U.S. Dollars)*

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>GDP ADJUSTED FOR PURCHASING POWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>11,668</td>
</tr>
<tr>
<td>China</td>
<td>7,170</td>
</tr>
<tr>
<td>Japan</td>
<td>3,838</td>
</tr>
<tr>
<td>India</td>
<td>3,347</td>
</tr>
<tr>
<td>Germany</td>
<td>2,310</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>1,869</td>
</tr>
<tr>
<td>France</td>
<td>1,759</td>
</tr>
</tbody>
</table>

“Food for Thought: Why Auntie Anne’s Pretzels Failed in China,” Knowledge@Wharton, May 6, 2013.


Ibid.

*Doing Business in China: Four Must-Knows, University of Texas EMBA*. http://www.emba.uta.edu/2013/02/doing-business-in-china-four-must-knows/

Ibid.


Executive Summary

This real and undisguised case is based in Black Sheep Food (BSF) a social enterprise located in Ventura County (California). The case features the decision process followed by BSF’s founder, Cindy Liu regarding the optimal legal structure to optimize BSFC’s social impact. Cindy’s professional background ranged from senior marketing positions in corporate America to starting her own Asian food catering service. In 2015, she launched Black Sheep Food, a preserved food company that trains and employs young adults with disabilities. Cindy pursued this path because of her first daughter, Samantha, was born with Down syndrome in 2012. Cindy’s mission was to change cultural perceptions about individuals with disabilities in the workforce and to show that individuals with disabilities could make a positive contribution to any organization and earn a living wage. To accomplish this social mission, Cindy needed to decide between setting up a for-profit, a non-profit organization or an alternative hybrid structure. The case introduces the students to the social issue (people with disabilities & employment) and the concept of social enterprise in general and work integration social enterprise (WISE) in particular. Using primary data collected via in-depth interviews, this case study also explores the advantages and disadvantages of different legal structures, formulates key questions to be asked by social entrepreneurs under the principle that “forms follows function” and captures Cindy’s decision-making process. This case sheds light on a critical question relevant for social entrepreneurship' students, scholars and practitioners.
Executive Summary

As part of a Non-Government Organization’s program, 16 Monroe University business students spent a week in Panama teaching an indigenous people, the Kuna, concepts such as savings and budgeting. Upon returning to the states and although burdened by schoolwork and jobs, four students decided to do more. Increasing the villagers’ coffee yield, which was less than 33% of what it should have been, would generate the profits needed for necessities like medical care and education. The villagers required a greenhouse, quality seed and cultivation workshops to increase yield, but this required money!

Calling their initiative Coffee of the Kuna (CK), the group tackled the challenging task of crowdfunding. Utilizing a site called DoingGood* (DG), CK decided to raise $30,000 in 30 days by e-mailing all its contacts to request contributions. Unfortunately, crowdfunding usually requires teams to reach their goal or forgo all the money, and CK had only raised $8,763 by day 15, perhaps because DG’s site frequently froze up, making donations almost impossible.

In desperation, the team hosted its own donor site, carried around “swipers” to collect contributions, and accepted checks off site. CK also asked people who gave once to give again, established matching donations, and even personalized e-mails. Members organized or attended over a dozen events to solicit donations and generated extensive publicity, even being featured on a TV news show which reached over two million viewers. Additionally, they aggressively buttonholed any one passing by on campus. But with just 24 hours left, CK was $5,228 short of its $30,000 goal. Exhausted, the group wondered what to do.
Rahama Wright and Shea Yeleen

Lakshmi Balachandra and Donna Stoddard

Executive Summary

Rahama Wright and Shea Yeleen is the story of a young female social entrepreneur, Rahama Wright, who started a non-profit venture to train and empower women in West Africa to manufacture shea butter to earn higher wages, Shea Yeleen. The case describes the shea butter industry in Africa, the role of women in the industry, and Rahama’s background in non-profit and government as her rationale for starting a non-profit venture. The case outlines the different organizational forms that nascent entrepreneurs could start when creating a venture and ends with a decision point for students to decide if Rahama should continue running a non-profit or if she should convert to a for-profit social venture. The case offers students an opportunity to understand the differences between non-profits and for-profit ventures from organizational, strategic and personal perspectives.
Executive Summary

The Wine Enterprise (A), (B), (C) Michael Houlihan attempted to recover money on behalf of one of his clients, a small grape-grower in California who was owed a debt by a financially-troubled winery. Michael arrived at a meeting of owners and creditors only to discover that the winery had filed for Chapter 11 bankruptcy earlier that morning and any remaining assets were soon going to be tied up in the courts. Michael’s client had delivered his grapes to the winery based on trust and a handshake, and could ill-afford to take this loss. The meeting had resolved little because there was simply no money left for Michael’s client or the other creditors. Fearing he was going to leave the meeting empty-handed, Michael offered to cancel the debt in exchange for the wine in the vats and bottling services, an offer the owners and other creditors accepted. The challenge facing Michael and Bonnie was to determine how they were going to sell this wine for their client. This case would be appropriate for courses in entrepreneurship and management. In particular, the case would be valuable for developing skill in opportunity identification and evaluation. The case will develop skill in discovering and analyzing information to arrive at creative solutions to the challenge of selling this wine. The case describes the events that led to the founding of Barefoot Cellars, a company begun by Michael Houlihan and Bonnie Harvey with little in the way of financial resources but with considerable business skill, courage and determination.
Self-Awareness to Benefit Technology Forecasting in Small Businesses?

Submitted to:
United States Association of Small Business and Entrepreneurship
Conference 2017

Corinne Jenni, DBA
United States University, San Diego, CA

December 15th, 2016
Abstract

Small business executives are confronted with a vast amount of information and, despite its complexity and uncertainty, they must be able to process all that information and to properly perceive their environment and make good decisions. Such uncertain situations and environmental conditions require a different approach for the firm to be successful and require an executive to correctly assess the business environment and forecast potential threats.

The author argues that an executive with great self-awareness of how he perceives the world and filters information, is more likely to properly assess the company’s environment and forecast potential threats and environmental turbulence.
Self-Awareness to Benefit Technology Forecasting in Small Businesses?

Introduction

Executives are confronted with a vast amount of information and, despite its complexity and uncertainty, they must be able to process all that information (Arendt, Priem, & Ndofor, 2005; Finkelstein & Hambrick, 1990; Mintzberg, 1973). Particularly over the past decades with the introduction of new technologies and an increasingly complex and globalized market place, organizations must find new ways to adapt and take advantage of such turbulent environments.

A small business differentiates itself from the large corporations by its size, revenues, hierarchy, centralized decision making, and limited financial and human resources (D’Amboise & Muldowney, 1988; Priestly, 2011) and, as a consequence, is often more susceptible to changes in its environment. Such uncertain situations and environmental conditions require a different approach for the firm to be successful (Ansoff & Sullivan, 1993). Clear and precise strategic planning accessible to all employees is essential rather than foregoing it for the daily demands as many small businesses do (Ansoff & McDonnell, 1990; Box, 2011; Cordeiro, 2013; D’Amboise & Muldowney, 1988).

Assessing the environment, identifying gaps, and focusing on its goals and objectives enables an organization to develop its competitive advantage and participate in the global economy. D’Amboise and Muldowney (1988) pointed out the importance for the small business to “develop environment scanning techniques” (p. 236), which enables it to scan the environment and to potentially reduce uncertainty. However, not every person is alike and one executive may perceive a situation as comfortable whereas someone with a different predisposition might not (Duncan, 1972; P. R. Lawrence, 1993). How an executive decides which situation requires his attention depends on his interpretation of such a situation (Finkelstein & Hambrick, 1990); thus,
it is imperative that an executive and his team understand the organization’s environment, to ensure that the organization is in the optimal strategic position relative to its environment and to develop and implement the organization’s strategy (Ansoff & McDonnell, 1990).

Every person has his own model of the world through which he perceives what is going on around him and what he sees as right or wrong. The better you know yourself and how you view the world, the more likely you are able to see outside the box. The author of this paper claims that anyone involved in forecasting will be able to better see what lies ahead if he is aware of how he perceives the world and how he filters incoming information. Self-perception, as having a clear understanding about who you are and how you perceive your environment, allows a person to be more adaptable and flexible to perceive changes and make decisions accordingly. Consequently, the author expects self-awareness to be beneficial in technology forecasting as it allows the forecaster to see beyond personal perceptions, behavioral patterns, and filters enabling him to better decipher new information.

Technology Forecasting - What will tomorrow bring?

Forecasting, as the task to predict a future event or trend, is an essential aspect of strategic planning (Naylor, 1983). Making sense of the organization’s internal and external environment and the level of turbulence in which it operates, is the foundation of predicting the future. Nevertheless, having to rely on information extrapolated form the past, is no longer ensuring a successful future due to the highly turbulent and interrelated environment. Environmental turbulence as the uncertain factors influencing organizations within their surroundings has been well researched and documented (Child, 1972; Duncan, 1972; Emery & Trist, 1965; Paul R. Lawrence & Lorsch, 1967; Terreberry, 1968). Exactly such environmental
turbulence in which a business operates requires a new approach to forecasting and strategic planning (Ansoff & McDonnell, 1990).

Every organization, especially those in highly turbulent environments, must have a forecasting system in place. Having the ability and capability to forecast the trends in technologies and to perceive potential threads early can give an organization the time needed to adapt. However, since every person perceives their environment differently (Duncan, 1972), the author claims that anyone in charge of forecasting needs to have great self-awareness.

Small businesses often rely on the executive to survey the environment for potential threats and opportunities. No matter how the environment is scanned, the forecaster must be aware of the filters that will prevent him from making proper decisions. Knowing your model of the world, i.e. your internal map, will help you move towards where you want to go. Various researchers documented that knowing yourself is crucial (Harshman & Harshman, 2008; Kouzes & Posner, 2002; McCoy, 2008). Kouzes and Posner (2002) have recognized you can only lead someone else once you have struggled with your own competing beliefs and values. Having the awareness of how you see the world, what you value personally and professionally, and, especially important, what information you filter, are significant traits of a successful leader.

An executive or forecaster presented with new information will use his model of the world to first analyze and process such information before making any decisions. However, if that person has little self-awareness, he will not recognize what information he will pass along and what information he deletes and distorts beforehand. A person’s filters, which are based on a person’s values, beliefs, experiences and knowledge, only allow the information to percolate that matches the beliefs and prejudices of the forecaster. Knowing who you are enables the forecaster
to see beyond personal perceptions and filters to decipher the new information challenging the organization and therefore, likely to recognize threads/opportunities earlier.

In order to understand an organization, we must understand its top management and how they perceive the organization’s environment. Considering that a chief executive has the ability to influence an organization’s structure (Chandler, 1962), strategy (Ansoff & McDonnell, 1990; Hambrick & Mason, 1984; Tushman & Romanelli, 1985), and its destiny (Finkelstein & Hambrick, 1996) and as a consequence is responsible for the organization’s outcome, it is essential to take into account his or her personal characteristics and behaviors as these ultimately affect the organization (Finkelstein & Hambrick, 1996).

In today’s highly complex and globalized world, it is no longer feasible for a firm to ignore turbulence and uncertainty; instead, it must effectively adapt to and take advantage of in order to ensure its survival and the potential to be successful. Strategic flexibility as the “ability to adapt quickly to environmental changes” (p. 1050) is the key to managing uncertainty and a changing environment, thus continuously realigning the organization’s strategy (Nadkarni & Herrmann, 2010). As a small business owner who is also in charge of making strategic decisions, having great self-awareness may enable him to better evaluate the business environment, predict upcoming turbulence and, consequently, may be less likely to make irrational decisions.

The work of an executive, his or her values, purpose, goals and objectives, and strategic activities have proven to be of great importance to an organization, its strategy, and its performance (Barnard, 1938; Chandler, 1962; Cyert & March, 1965; Drucker, 2001; Finkelstein & Hambrick, 1990, 1996; Hambrick, 2007; Hambrick & Mason, 1984; March & Simon, 1958; Wasserman, Nohria, & Anand, 2010). It was Barnard (1938) who claimed it was the executive’s ability to make work significant that had an effect on an organization’s survival. Understanding
an organization and its performance requires taking a close look at its top executives (Cannella Jr, 2001; Hambrick, 2007), including their values, perceptions, and motives and not solely their demographic characteristics.

**Conclusion**

Organizations that find themselves in a turbulent environment where disruptive technologies are common need to have a forecasting system in place. Forecasting can be done by management or by a highly skilled forecasting team. Nevertheless, the environment must be scanned for potential threats or opportunities.

The author claims that the better the forecaster knows himself, the better he can analyze the environment and predict changes. Self-awareness enable the forecaster to see beyond his own model of the world, i.e. see outside the box, and thus decrease the filters that would otherwise prevent him from seeing what is real. Filters are ways someone distorts and deletes information that does not fit within their own model of the world and thus decisions are made based on limited or wrongly perceived information which can be disastrous for the organization.

Consequently, the better the technology forecaster’s self-awareness, the better he can perceive the environment and the more flexible the organization in making proper decisions.
References


doi:10.5465/AMR.1984.4277628


doi:10.1007/s10551-006-9318-8


Assessing Local Entrepreneurial Ecosystems in Mexico: The Case of San Luis Potosí

Authors:

Pedro Martinez-Estrada
Elona Goma

December 1, 2016
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>3</td>
</tr>
<tr>
<td>LITERATURE REVIEW: THEORETICAL CONCEPTS</td>
<td>6</td>
</tr>
<tr>
<td>EXISTING ASSESSMENT FRAMEWORKS</td>
<td>10</td>
</tr>
<tr>
<td>METHODOLOGY</td>
<td>15</td>
</tr>
<tr>
<td>SELECTION OF INDICATORS</td>
<td>16</td>
</tr>
<tr>
<td>INDICATORS ASSESSING ENTREPRENEURIAL ECOSYSTEM DETERMINANTS</td>
<td>17</td>
</tr>
<tr>
<td>REGULATORY ENVIRONMENT</td>
<td>18</td>
</tr>
<tr>
<td>SUPPORT INFRASTRUCTURE</td>
<td>23</td>
</tr>
<tr>
<td>ACCESS TO FINANCE</td>
<td>31</td>
</tr>
<tr>
<td>HUMAN CAPITAL</td>
<td>39</td>
</tr>
<tr>
<td>CULTURE</td>
<td>47</td>
</tr>
<tr>
<td>BIBLIOGRAPHIC REFERENCE</td>
<td>53</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>60</td>
</tr>
</tbody>
</table>
Introduction

In the last decade, entrepreneurship has been largely contributing to job creation, poverty alleviation and economic growth (Toma, Grigore, & Marinscu, 2014; Friar & Meyer, 2003). While big companies and financial institutions were hit by the crisis of 2008, the new and young enterprises remained unaffected. On the contrary, many of them increased the number of employees (FELD, 2012; 2013; Meyers, 2015). In this context, governments are seeing it as a good strategy to foster the economy and promote the growth.

In a time when communities can no longer compete based only on their low labor and production costs (Anderson, Chernock, & Mailloux, 2006), or depend solely on large capital injections from foreign corporations, entrepreneurship and innovation are perceived as the most effective drivers of the economic future of communities (Atkinson, 2014; CIPE, 2014); including communities, who struggle to provide new jobs (Anderson, Chernock, & Mailloux, 2006, 2006). The examples of Silicon Valley or other places show the great impact that a healthy entrepreneurial ecosystem can have for the economy.

Developing an entrepreneurial economy can help emerging economies in Mexico and Latin America in achieving important economic development and growth objectives. According to International Monetary Fund (IMF) estimates, around 70 percent of world growth over next few years will come from emerging markets, growing up to two or three times faster than developed countries like the U.S (IMF, 2016). As such, it can be good destination for investors, who expect high returns.

However, the thrift of new entrepreneurs cannot happen in a vacuum. It is necessary to have an enabling environment cultivated by interconnected actors such as investors, support services, business incubators, universities, public institutions, which facilitate the creation and success of new enterprises (FELD, 2012; Hwang W. & Horowitt, 2012; Isenberg, 2014; Mason & Brown, 2014).

Unfortunately, entrepreneurs in Latin America are encountering various obstacles, such as a load of regulatory framework, which prevents the creation and expansion of new businesses; undeveloped private capital markets, depending mainly on public funds or lack of entrepreneurial culture (OECD, 2013c).

In this context, to compete with other emerging and developed countries and achieve economic prosperity, Mexico needs to bring down these obstacles and establish a unique entrepreneurial
community using its diverse set of resources, the proximity to the world’s largest economy and benefiting from a growing trend of entrepreneurial activity. According to Global Entrepreneurship Monitor (Singer, Amorós, & Moska, 2014), the Total Early-Stage Entrepreneurial Activity (TEA) rose from 14.8% (2010) to 19% (2014) in just 5 years.

However, this trend of new businesses creation has been more oriented towards necessities than opportunities. As Autio (2007) found in a study carried out by GEM (Global Report on High-Growth Entrepreneurship), Mexico was among the countries with the lowest adult-population prevalence rates for established high growth entrepreneurs.

According to OECD (2010a), this low level in terms of high-expectation entrepreneurial activity (50 or more expected jobs in five years) is largely related to the environment in which entrepreneurship is emerging and developing. Therefore, the creation of new ventures, especially those of high impact, requires an ecosystem that encourage entrepreneurship and bring down barriers that inhibit its development.

A fundamental step to face these challenges and stimulate high-growth entrepreneurship is to primarily measure and analyze the environment, wherein entrepreneurship is being developed. For many academic researchers, policy makers, investors or even entrepreneurs, understanding how entrepreneurial ecosystems can be measured has become an important issue (Bell-Masterson & Strangler 2015; Gartner & Shane 1995; Meyers, 2015), because it provides a clear picture of the ecosystem's health and effectiveness.

However, considering the broader concept of entrepreneurship and entrepreneurial ecosystem, it is challenging to fully uncover the complete dynamics of a high-complex ecosystem. How can you measure the entrepreneurial ecosystem in your country or in your local community? What indicators should matter for better measuring it? If certain indicators are chosen, do they embody the local context, wherein the ecosystem is being built and developed?

Taking into consideration the strengths and weaknesses of entrepreneurial ecosystems in Mexico, this study aims at providing a set of indicators, which measure the determinants of entrepreneurial ecosystems at sub-national level, especially those enabling entrepreneurs of high impact firms to emerge and expand their businesses. In this case, this set of indicators will be applied to the largest business city of the economy of San Luis Potosi State - the city of San Luis Potosi.
According to the definition of Ahmad y Hoffman (2007), determinants are "a myriad of environmental and biological factors underlying along with the personal attributes of entrepreneurs that affect the results of the business process" (Ahmad y Hoffman, 2007, p. 7). Identifying and assessing these determinants can help other agents in the ecosystem in better understanding of the factors, which shape the decision to become an entrepreneur in the socio-economic and institutional environment, wherein they are embedded. They include all the factors that can be affected by policies and strategies, particularly the institutional context. An effective combination of the most relevant factors will enhance the likelihood of high-growth entrepreneurship and entrepreneurs in a given territory.

This study focuses on measuring the ecosystem at a sub-national level considering entrepreneurship as a local phenomenon (Malecki, 2007; Motoyama, Konczal, Bell-Masterson, & Morelix, 2014). Therefore, the ecosystem created to foster entrepreneurship should also be seen from a local perspective as it is built upon several place-specific assets and localized tacit knowledge the cities/states have. In this context, city or state as sub-national unit can serve as a more appropriate scale of analysis than the nation (Auerswald, 2015; Aspen Institute, 2013).

Unless you have this close view of ecosystem while measuring and analysing it, policymakers may find difficult to intervene and formulate the policies and strategies that best fit for this particular ecosystem. Entrepreneurship-related interventions and programs are being regarded as more effective when they are focused and designed for a city or regional level (Isenberg, 2011; Feld, 2012; Hwang W. & Horowitt, 2012). Hence, ‘thinking locally and acting locally’ is an important approach to be followed while aiming at building a robust entrepreneurial ecosystem (Motoyama, Konczal, Bell-Masterson, & Morelix, 2014).

This paper aims at shedding some light on this field by developing a model applied to San Luis Potosi City in Mexico, which can also be replicated and adapted to other sub regions in Mexico. In this regard, it can assist regions/cities in measuring the conditions of their entrepreneurial environment.

As the paper focuses on sub-national level as the geographical unit of analysis, it should help researchers in Mexico in measuring their current entrepreneurial ecosystem considering their local environment and its stakeholders. Identifying and applying indicators at this level will permit the comparison among local ecosystems in Mexico that will ultimately help policymakers in carrying out adequate actions to achieve prosperity in their entrepreneurial communities.
Finally, we hope that through this study, further research in this field will be encouraged. For instance, analysing the cause-effect relations between entrepreneurship and its possible drivers through econometric models (or other) is beyond the intention of the paper, but it is strongly recommended as a valuable topic to be explored.

The paper is organized as follows: In section one, a thorough review of the existing literature and current assessment frameworks and models is given. In section two, a detailed proposal framework of indicators for measuring the entrepreneurial ecosystem at sub-national level will be presented followed by the application of the model to San Luis Potosi City as a case study.

**Literature Review: Theoretical concepts**

Measuring entrepreneurial ecosystem has become an important research and public policy issue, which helps in designing sound supporting policies and interventions. Before making a review on the current studies conducted in this field, the groundwork must be laid and the concepts of entrepreneur, entrepreneurship as well as entrepreneurial ecosystem must be explained.

The concepts of entrepreneurship and entrepreneur have emerged as terms of growing interest among academics and policy-makers. Brad Feld articulates these concepts in other words as, ‘the word entrepreneurship is on everyone's lips and the idea of creating a start-up community in every city in the world is going mainstream’ (Feld, 2013, p.1).

There are diverse definitions of the notions of entrepreneur and entrepreneurship. J. A. Schumpeter is among the first and most important contributor in understanding the concept of entrepreneurship and entrepreneur. He connects entrepreneurship with innovation and growth, considering entrepreneurial activity as a key factor in the economic development (Toma, Grigore, & Marinescu, 2014). In his definition, Schumpeter lays emphasis on the role of innovation and the importance of entrepreneurs as innovators (‘agents of creative destruction’), who disrupt the competitive equilibrium of existing markets, products, processes, organizations by creating new ones and challenging established industry incumbents (Schumpeter, 2003).

Micro-business is considered mostly as a family business and is not probably engaged in innovative practices. Therefore, its contribution towards job creation and stimulating innovative incentives in the region/country is relatively small. On the other hand, in high growth ventures, the value creation and their substantial contribution towards new jobs creation is due to the innovative practices they
accomplish (Friar& Meyer, 2003). They may represent what Schumpeter defines in his definition of ‘entrepreneur’ as ‘agents of creative destruction’.

Given the significant role they play in reducing unemployment and fostering economic growth while representing only a small share of the number of firms, promotion of such high growth firms is acclaimed to be ‘a better shoot’ (Audretsch, 2012; Atkinson, 2014). Therefore, as Atkinson (2014) suggests, strategies based on “shoot anything that flies and claim anything that falls” should be banished and instead focus on those strategies that are more important to economic development. For instance, while high-growth firms in the US were about 2 percent of all firms in 2009, during the 2009-2012 period, they contributed 35 percent of all gross job gains of expanding firms or 4.2 million jobs in absolute terms (Clayton, Spletzer, Sadeghi, & Talan, 2013).

High impact ventures are defined in a variety of ways. The table below presents some of these definitions of high-impact enterprises and high-impact entrepreneurs as per the type of organizations and countries.

Table 1. Definitions of high-impact enterprises and high-impact entrepreneurs

<table>
<thead>
<tr>
<th>Year</th>
<th>Organization</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007/09</td>
<td>OECD</td>
<td>‘All enterprises with average annualized growth greater than twenty percent per annum, over a three-year period, and with ten or more employees.’ (OECD, 2007, p. 61).</td>
</tr>
<tr>
<td>2005</td>
<td>OECD</td>
<td>Companies that occupy a very small share of the total number of start-up firms but make significant contribution to job creation by scaling up very quickly. They enter in the market with innovative combinations of factors of production and new technologies by taking advantage of new information and communication technology (ICT).</td>
</tr>
<tr>
<td>2011</td>
<td>U.S. Small Business Administration</td>
<td>“High impact companies are defined as firms whose sales have at least doubled over a four-year period and which have an employment growth quantifier of two or more over the same period” (Tracy 2011, p.19)</td>
</tr>
<tr>
<td>2015</td>
<td>Ministry of Economy (México)</td>
<td>The National Institute of Entrepreneurship in Mexico (NADEM) refers to the official document issued by the Ministry of Economy on ‘Rules of Operation of National Fund for Entrepreneurship’ to define high-impact ventures and high-impact entrepreneurs as those that: 'Have high economic potential, based on new and/or improved solutions that are transformed into products, services and/or business models of high impact on their environment and that require tools to strengthen their operation, generate added value and maximize their growth’</td>
</tr>
</tbody>
</table>

Source: Authors’ elaboration
Regardless of the various terms used (high growth, high impact and others), the main point for the study is to differentiate entrepreneurs with high growth potential from other small firms and self-employed individuals with low growth potential. These types of enterprises represent productive entrepreneurship (Ács, Szerb, Autio, 2016; Stam et al, 2016), which are different from unproductive and destructive ones, generate new value not only for the business owner but also for the economy by making both entrepreneurs and society better off.

Therefore, high-growth firms are often considered as important representative of productive entrepreneurship (Stam et al, 2016). In particular, high growth firms in high technology sector have shown a considerable thrift (Audretsch, 2012) by bringing innovative solutions into the market and having a high impact on the economy and the society. As such, government should create and cultivate a friendly environment, wherein value-creating entrepreneurial like these can emerge and succeed (Atkinson, 2014).

Considering the importance of building the supportive environment, a broader concept is introduced, which will be the focus of this paper: entrepreneurial ecosystem. Contrary to other concepts such as clusters, industrial districts, innovation systems, in the entrepreneurial ecosystem approach, the focal point is the entrepreneur and not the enterprise. In addition, besides the entrepreneurial individual, this concept emphasizes the role of the entrepreneurship, in which entrepreneurs thrive (Stam, 2015).

As a term, the entrepreneurial ecosystem has been mentioned since 1993 by James Moore in an article published in Harvard Business Review (Moore, 1993), followed by other authors. In the table below, some of the definitions and contributions on the development of the concept are presented.

Table 2. Definitions of ‘Entrepreneurship Ecosystem’ concept

<table>
<thead>
<tr>
<th>Year</th>
<th>Authors</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>James Moore</td>
<td>‘…a company should be viewed not as a member of a single industry but as part of a business ecosystem that crosses a variety of industries’.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>‘Innovative businesses cannot evolve in a vacuum… They must attract resources of all sorts, drawing in capital, partners, suppliers, and customers to create cooperative networks…In such ecosystems, companies work cooperatively and competitively to support new...’</td>
</tr>
</tbody>
</table>
products, satisfy customer needs, and eventually incorporate the next round of innovations’.

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>Daniel Isenberg</td>
<td>‘A set of individual elements—such as leadership, culture, capital markets, and open minded customers—that combine in complex ways’. Six distinct domains of an entrepreneurial ecosystem: policy, finance, culture, support, human capital and markets.</td>
</tr>
<tr>
<td>2012</td>
<td>Hwang W. &amp; Horowitt</td>
<td>Analogy of the ecosystem in biology with that of an entrepreneurial ecosystem ‘…A Rainforest is a human ecosystem in which human creativity, business acumen, scientific discovery, investment capital, and other elements come together in a special recipe that nurtures budding ideas so that they can grow into flourishing and sustainable enterprises’.</td>
</tr>
<tr>
<td>2014</td>
<td>Mason &amp; Brown</td>
<td>‘A set of interconnected entrepreneurial actors (both potential and existing), entrepreneurial organizations (e.g. firms, venture capitalists, business angels, banks), institutions (universities, public sector agencies, financial bodies) and entrepreneurial processes (e.g. numbers of high growth firm… which formally and informally coalesce to connect, mediate and govern the performance within the local entrepreneurial environment’.</td>
</tr>
</tbody>
</table>

*Source: Authors’ elaboration.*

All these definitions have interconnectivity of the actors at the core of their ecosystem. Making an analogy with an ecosystem in biology, according to Gladwell (2008, p.19): ‘the tallest Oak in the forest is the tallest not just because it grew from the hardiest Acorn; it is the tallest also because no other trees blocked its sunlight, the soil around it was deep and rich, no rabbit chewed through its bark as a sapling, and no lumberjack cut it down before it matured’.

The actors comprising of this ecosystem can be different. Feld (2012b) categorized them in two important groups: Leader and Feeders. Entrepreneurs have to be the leaders of the startup
communities, while the feeders are everyone else, including government, universities, investors, mentors, service providers and so on. Even though their roles might be different, yet both are important for building an entrepreneurial community and no one can own it (Isenberg 2014; Hwang W. & Horowitt, 2012). ‘The problem comes when the feeders try to lead or when there is absence of leaders’ (Feld, 2012b).

Daniel Isenberg on Harvard Business Review (2014) highlighted the importance of balancing the benefits of all the actors in order for an entrepreneurship ecosystem to be developed and self-sustaining. As such, the primary objective of entrepreneurs, business angels and other investors is to generate wealth; for big companies, new products, new means of production and higher revenues can be the benefits; for knowledge institutions, a stronger reputation, and more donations repay their contribution on the ecosystem, and for the government, the main objectives include job creation and fiscal health (Isenberg, 2014).

Being able to paint this picture of the ecosystem requires a deep understanding of the agents that facilitate the development of entrepreneurial activity in a region, particularly high impact entrepreneurial activity.

Existing Assessment Frameworks

There exist no universally accepted standards or best framework for measuring entrepreneurial ecosystem. Many studies assessed entrepreneurship and entrepreneurial activity focusing on entrepreneurial outputs (e.g. creation/regitration of new self-employment or new firms within a given population) (Ács, Autio, & Szerb, 2013). For instance, total early-stage entrepreneurial activity (TEA) rate, as one of the most referred Global Entrepreneurship Monitor (GEM) indicators, measures the percentage of individuals aged 18-64, who are either a nascent entrepreneur or owner-manager of a new business (Singer, Amorós, & Moska, 2014).

Some approaches tried to track everything while others prioritized on some measure - more entrepreneurs and enterprise or more patents (Bell-Masterson & Strangler, 2015). Other studies focused on national scale (e.g. GEM), while others on lower levels or even on specific sectors by providing insights on the external environment, wherein the entrepreneurial activity is being developed (Aspen Institute, 2013).
For this study, some of these frameworks have been considered which try to analyse different aspects of entrepreneurship, considering the factors that shape entrepreneurial ecosystems and increase the likelihood of successful entrepreneurship. These proposals include contributes from *OECD-Eurostat Entrepreneurship Indicators Programme, Babson College, World Economic Forum, ASPEN, World Bank, GEDI index and GEM among others.*

In the appendix, a table with the determinants/pillars and their relevant indicators is provided. Some of the frameworks are similar in the determinants and their indicators, whereas some differ based on the approaches the researchers have followed to assess entrepreneurial ecosystems.

The **OECD** model combines the conceptual definitions of entrepreneurship with relevant and available empirical indicators. Considering the multifaceted and broad nature of entrepreneurship, instead of proposing a single index, OECD provides a model with various indicators so that better understanding of entrepreneurship and entrepreneurial ecosystem is provided.

The model is based on three elements: the determinants, impact and entrepreneurial performance. The first element of the model refers to the factors affecting the entrepreneurial performance, which can be affected by policy, whereas the entrepreneurial performance and the impacts represent the value created by entrepreneurs on broader and higher-level goals, such as economic growth, employment etc. In short, the model implies that the determinants can alter the amount and type of entrepreneurial activity, which subsequently affects the impact category (ex. economic growth).

Like the OECD model, **Babson College** proposes a holistic approach, which takes into consideration various elements interacting with one another in a complex way. Nevertheless, Babson College model is more conceptual and focuses on identifying and defining the key domains (e.g. policy, finance), rather than giving an extensive list of indicators for each of the determinants. This theoretical framework focuses on the development of the concepts of six elements that societies at national or local levels need to use to promote entrepreneurship.

i. **Policy**: Includes all government institutions supporting entrepreneurship, or regulatory agencies that implement incentives for removing bureaucratic obstacles.

ii. **Finance**: All financial services in charge of entrepreneurship financing

iii. **Support**: Physical infrastructure, non-governmental institutions such as accelerators, incubators and other support professions such as lawyers, accountants and investors

v. Culture: The rules and characteristics of a society, as well as individual aspects

vi. Market: Includes the need for an existing market to buy new products and disseminate through national and international contact network.

World Bank, on the other hand, through its well-known "Easy of Doing Business" report, focuses specifically on measuring the regulatory environment in order to provide quantitative data on the main regulatory constraints affecting small and medium sized businesses at national and recently at sub-national level. The necessary regulatory processes and regulations enhancing and constraining the creation and development of enterprises are categorized in ten areas: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency.

They consult a wide range of firms, organizations and public agencies in each country in order to gather objective data from local partners and experts. From this report, it has been found particularly relevant to the indicators associated to the regulatory context that mostly affect entrepreneurs when they start a business. In this regard, the four indicators, such as number of procedures, time, cost and minimum capital required to start a business, are being used.

World Economic Forum, in collaboration with Stanford University, Ernst & Young & Endeavor, conducted a project in 2013 questioning online nearly one thousand entrepreneurs around the world in order to understand how successful entrepreneurial businesses accelerate their access to new markets and become scalable (World Economic Forum, 2013).

An eight-pillar characterization of an ecosystem developed from prior research and interaction with entrepreneurs, investors, government officials was used as a framework to gather information from entrepreneurs. Two questions were asked to the same set of entrepreneurs: First, the differences perceived by entrepreneurs on entrepreneurial ecosystems around the globe in terms of the ready availability of the various pillars that make up an ecosystem and, second, the pillars of an entrepreneurial ecosystem that entrepreneurs view as most important to the growth/success of their companies.

In addition, ASPEN Network of Development Entrepreneurs (ANDE) developed a toolkit that makes an exhaustive review of public literature on entrepreneurial ecosystems identifying nine assessment
frameworks. The list of indicators provided in this work is organized following the OECD assessment approach. Thus, they categorize the indicators in three elements: determinants, entrepreneurial performance and impact. This set of indicators is expected to serve more as a guide so that new methodologies that assess entrepreneurial ecosystems can be developed and which can be adapted to suit the local and sectorial context.

Other frameworks such as Global Entrepreneurship Monitor (GEM) and Global Entrepreneurship Development Institute (GEDI) index also aim at assessing the state of the entrepreneurial framework conditions.

Through their designed and implemented qualitative tool, the GEM National Experts’ Survey (NES), they provide subjective opinions of countries’ experts on the state of these entrepreneurial framework conditions. It recognizes nine environmental contextual conditions that can specifically influence entrepreneurial activities: government policies and programs, financial support, education and training, R&D transfer, access to commercial & professional infrastructure, access to physical infrastructure, opening of the domestic market and social & cultural norms.

In this context, GEM aims at helping governments, businesses and academics to design policies, develop programs and provide useful assistance for entrepreneurs, who desire to develop their businesses in a more entrepreneurial environment. In addition, through this survey, GEM can identify and compare the differences of cause-effect that could be contextual (Cultural e.g.) depending on the country, since GEM is implemented in many countries.

GEDI approach also recognizes the multidimensional nature of entrepreneurship combining various individual and institutional variables. The GEDI methodology considers country-level entrepreneurship as a systemic phenomenon that is driven by the interaction between entrepreneurs (as individuals) and system-level framework conditions in the country.

It aggregates the variables by first weighing 15 individual variables with a corresponding set of institutional variables. The resulting set of pillars is categorized into three entrepreneurship sub-indexes: entrepreneurial attitudes, abilities, and aspirations. These sub-indexes are then aggregated into one index, using the so-called bottleneck penalty method, which penalizes all the factors based on the lowest performing pillar.
In generating this national index, two types of data sources are used: the institutional data from internationally known and publicly available data sources, such as the Global Competitiveness Report, the Index of Economic Freedom, the World Bank, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) etc, and data on individuals from the Global Entrepreneurship Monitor’s (GEM) report.

Theoretical framework: North’s theory

Considering the particular focus that will be given to the assessment of some aspects of institutional context that shape entrepreneurial activity, North’s theory of institutional economics has been reviewed (North, 1990).

The external environment, particularly the institutional context (North C., 1990; Sautet, 2005; Álvarez & Urbano, 2011; Alvarez et al., 2011; Simón-Moya, Revuelto-Taboada, & Guerrero, 2014), has a dominant feature, which influences entrepreneurship (Álvarez, Urbano, Coduras & Ruiz-Navarro, 2011; North, 1990; Ács, Autio, & Szerb, 2013).

Institutions are the ‘rules of the game” that reduce uncertainty and govern, shape, and influence human interactions in a society. They affect the performance of the economy by affecting the costs of transaction and production (North, 1990). Moreover, the knowledge gained during the entrepreneurial activity depends also on the institutional background of a society (Sautet, 2005).

Depending on where and when the transactions are made, institutions differ. Consequently, the set of choices for individuals will differ as well (North, 1990; Simón-Moya, Revuelto-Taboada, & Guerrero, 2014). According to Douglass C. North, ‘economic (and political) models are specific to particular constellations of institutional constraints that vary radically both through time and cross-sectionally in different economies’ (North, 1990, p. 89).

In addition, North discussed, in terms of formal and informal institutions, the important influence that the external political, economic and societal context has on human behavior (North, 1990; 2003; Welter, 2002).

- Formal rules include political and judicial rules, economic rules, and contracts (North, 1990). They are ‘created, communicated, and enforced through channels widely accepted as official....state institutions, state-enforced rules’ (Helmke & Levitsky, 2004, p. 727).
Informal constraints include culture, values, traditions (North, 1990) that are usually unwritten and created, communicated, and enforced through unofficial sanctioned channels (Helmke & Levitsky, 2003; 2004; Hwang & Horowitz, 2012).

Informal institutions are as important as the formal ones and they can be substitutive when the formal institutions are weak and ineffective (North, 1990; Hwang & Horowitz, 2012), most likely found in developing countries (Helmke & Levitsky 2003; 2004).

In addition, enforcement as another dimension of institutions differs among developed and developing countries. In developed countries, the judicial system is more effective as there are well-specified bodies of law and agents, on which there is a high level of confidence. On the other hand, the enforcement imposed in non-developed countries is not effective due to uncertainty regarding the agents’ behavior and decisions (North, 1990).

Hence, entrepreneurs’ choices and decisions (even to engage in entrepreneurial activity or not) are determined on the institutional framework that minimizes the transaction costs and allows them to generate higher returns and achieve maximum utility (Kirzner, 1973).

When formal institutions (e.g. number of entry regulations) are costly and complex, entrepreneurs may choose to operate in the informal market negatively affecting those, which operate formally (Sautet, 2005; Raveloharimisy, 2011).

Furthermore, the existence of society beliefs and norms (which according to North (1990) defines the way individuals process and use information), which are not supportive to entrepreneurship, will negatively influence people’s propensity to carry out entrepreneurial activities.

**Methodology**

This model is developed as a synthesis framework built upon existing approaches proposed by various researchers and organizations and adapted to sub-national level. It aims at bringing together the most important aspects that determine the development of a local entrepreneurial ecosystem, particularly its institutional context.

Considering the multidimensionality of the entrepreneurial ecosystem concept, this model does not intend to propose a single measure to assess entrepreneurial ecosystem. Instead, various indicators are provided to help in studying different aspects of an entrepreneurial ecosystem.
Unlike other frameworks that focus on national scale such as the OECD or GEM, the determinants and the respective indicators that measure entrepreneurial ecosystems in this study are tailored to the local level contents, enabling comparison among different sub-national ecosystems. As previously highlighted, each entrepreneurial ecosystem is unique as it is built on local and regional assets. Therefore, sub-national level is considered as a more appropriate level of assessment than national or supranational levels.

For each of the five determinants chosen (regulatory environment, support infrastructure, access to finance, human capital and culture), a set of existing and new indicators is identified. Each indicator is preceded by a short description that explains what is measured and why it is important to measure it.

The proposed indicators combine objective and survey data, making possible to have both perspectives in assessing the local factors that influence entrepreneurial activity. Objective data is considered important as it provides an unbiased view of entrepreneurial ecosystem state. On the other hand, individual views and judgments are significant because they highlight the exploratory nature of entrepreneurial ecosystems as individuals envisage the potential and make decision based on their perceptions on the strengths of a region or city (Bosma & Stam, 2012).

**Selection of Indicators**

A three-step procedure was followed to identify the indicators.

**Firstly**, a list of exiting measures considered as potentially valuable for understanding the state of local entrepreneurial ecosystems was assembled (as presented in the red color in the table in annex). These indicators were analysed based on their applicability to the socio-economic and institutional context of Mexico. For instance, in identifying the indicators that assess the determinant associated to access to finance, the low level of development of venture capital and IPO market compared to other developed countries was considered.

Moreover, their adaptability to sub-national level was taken into consideration, given that most of the frameworks have a national level focus. Additionally, recognizing that for many of the existing measures there is no available data at sub-national level, the affordability to use primary sources to fill data scarcity was considered. Here, the objective is to have a set of indicators that can be measured with little additional burden or expense.
Secondly, the list of existing indicators was complemented with new indicators that were not found in the existing frameworks but are considered important in the local and regional context in Mexico. Supportive arguments from various studies are given for backing the chosen indicators, so that they can attain a broad acceptance.

Lastly, recognizing the importance of having a list of indicators that are not only measurable, but are also of value for measurement, local and national experts were also consulted.

In the last part of the study, the set of indicators is applied selecting, as the case study, the largest and most important city of the economy of the state of San Luis Potosi, the city of San Luis Potosi. This approach is not new, as the World Bank in its ‘Ease of Doing Business’ report applies the same logic while deciding on the scale for measuring business regulations for local firms in hundreds of countries. The World Bank project focuses on small and medium-size enterprises operating in the largest business city of an economy.

Indicators assessing entrepreneurial ecosystem determinants

Five determinants are identified that are more likely to influence the emergence and growth of high-impact enterprises. They need a stable and supportive regulatory environment, a well-functioning infrastructure and specialized advice and support, easy access to finance, well-educated and skilled people and lastly an entrepreneurial culture that contributes in nurturing an environment, which may hinder or foster entrepreneurship.

Contrary to other frameworks that include access to domestic or foreign costumer markets, it is left out in this paper. This pillar, as argued by Stam et al. (2016), is more likely to be associated to the relative position of the local ecosystem than to the internal conditions of the ecosystem that influence entrepreneurs.

Furthermore, considering today’s global economy, wherein technology is transforming physical markets into virtual ones, it has become easier for high impact enterprises to scale up and reach different markets in a short period. In this context, measuring regional or local market size would not have the same importance for high impact enterprises as it would have for other types of enterprises.

In addition, comparing formal institutional aspects related to access to market such as antitrust law, competitive law etc. is irrelevant considering that most laws that regulate the market in Mexico are
designed at federal level. This means that entrepreneurs in Mexico, regardless of their location, operate under the same market laws and regulations.

**Regulatory environment**

The regulatory environment is an important determinant as it ensures that equal opportunities and standards are applied for all, leading to an inclusive and sustainable development of the society. The legal and administrative framework within which individuals, firms, and governments interact determines the quality of the public institutions of a country (World Economic Forum, 2015).

Besides the important progress being made in Mexico, there are still obstacles remaining that entrepreneurs need to face when setting out an activity (OECD, 2013c). Moreover, the impact this determinant has on the entrepreneurial activity varies from one state to another, as different states in Mexico impose different regulatory burden on SMEs and new businesses (OECD, 2013c; World Bank, 2014).

**Definition**

Referring to the analyzed assessment frameworks, ‘Regulatory environment’ consists of:

<table>
<thead>
<tr>
<th>Framework</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD</td>
<td>All taxes, regulations and other public rules and institutions that enable or impede entrepreneurship (Ahmad &amp; Hoffman, 2007).</td>
</tr>
<tr>
<td>Babson College</td>
<td>All the regulatory bodies and other governmental institutions developing strategies and implementing incentives to support entrepreneurship (tax incentives, financial support etc.), and removing bureaucratic barriers that impede entrepreneurial activity.</td>
</tr>
<tr>
<td>World Economic Forum</td>
<td>The building components of a regulatory environment that effect entrepreneurs include among other: Starting a Business, Business-Friendly Legislation and Tax incentives.</td>
</tr>
<tr>
<td>World Bank ‘Easy of doing business’</td>
<td>Regulations and regulatory processes involved in setting up and operating a business. (Starting a business regulation, export-import regulation, constructing permit, getting credit and so on)</td>
</tr>
<tr>
<td>GEM:</td>
<td>The commercial and legal infrastructure consisting of property rights, commercial, accounting and other legal and assessment services and</td>
</tr>
</tbody>
</table>
In this study, ‘Regulatory Environment’ determinant covers most of the aspects described above, encompassing the main barriers to entrepreneurship. These barriers refer to the administrative and fiscal requirements that affect entrepreneurs while starting up and operating a business as well as the government’s role in dealing with these barriers. The proposed indicators presented in the table below aim at addressing these issues.

Indicators

Table 3. Proposed indicators on Regulatory environment

<table>
<thead>
<tr>
<th>Determinant: Regulatory environment</th>
<th>Category</th>
<th>Indicators</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Administrative</td>
<td>Starting a business</td>
<td>Number of procedures(^1), time, cost and paid-in minimum capital to start a limited liability company</td>
</tr>
<tr>
<td>requirements</td>
<td>requirements</td>
<td>Number of procedures on hiring a worker</td>
<td>All the necessary legal procedures that need to be complied to hire a new employee by means of part-time and fixed-term contracts (minimum wage; fixed contract etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of procedures on firing a worker</td>
<td>All the necessary legal procedures that need to be complied to fire an employee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost of firing a worker</td>
<td>Cost of a redundant worker, expressed as percentage of wages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of procedures to close a business</td>
<td>All the necessary legal procedures to close a business</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Perception on simplicity to comply with</td>
<td>It is burdensome is to comply with administrative requirements (permits, regulations, reporting) issued by the government in the state and city level. (1=Completely disagree…7=Completely agree)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>administrative requirements</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Fiscal requirements</td>
<td>Number of taxes per year per state</td>
<td>Number of taxes per year imposed by the state/city government for new and growing firms</td>
</tr>
</tbody>
</table>

\(^1\)A procedure is defined as any interaction of the business founders with external parties such as government agencies, lawyers, auditors, notaries etc. (World Bank).
1. Administrative requirements

Indicators related to *Starting a business* measure the costs that incurred by new firms while fulfilling the administrative requirements to start a business. The data that measure these indicators can be retrieved from the ‘Ease of Doing Business’ report of World Bank at subnational level.

Improving indicators related to staring a business tend to increase the number of new firms that enter the market, business satisfaction, financial resources and job opportunities (World Bank, 2013; Motta,
Oviedo & Santini, 2010). However, according to Center for International Private Enterprise (CIPE) report, the positive effects are relevant when simultaneous big reforms are carried out (CIPE, 2014).

The negative consequences of excessive requirements and high registration costs are often more significant in less developed countries because of more limited capacity and resources (UNCTAD, 2012). Bruhn (2008) analyzed particularly the case of Mexico and concluded that simplification of entry regulations is an effective policy for fostering entrepreneurial activity and increasing employment opportunities. According to his findings, simplifying business registration in some municipalities has increased the number of registered businesses by 5 percent and employment by 2.2 percent due to former wage earners’ new businesses (Bruhn, 2008).

Labor market regulation’s indicators in this study focus on the number of procedures on hiring and firing a new worker and the cost of firing a worker, which can include elements such as compulsory benefits for former workers or labor dispute resolution.

The closing procedures include the number of procedures entrepreneurs have to follow to close their business. Barriers that entrepreneurs have to deal with in order to exit from market may discourage them from entering the market to the same extent as entry barriers would (OECD, 2004). Besides making the exit from the market very costly, they can discourage new firms from entering the market (OECD, 2004) and “unsuccessful” entrepreneurs to try again.

2. Fiscal requirements taxes

Fiscal requirements refer to the levels of taxation imposed by state and city governments on the profits earned by new and growing firms, their labor tax contribution and other taxes. In this category, those indicators are also included, which measure entrepreneurs’ perception on the fiscal burden and stability.

Taxes can vary significantly across municipalities and states depending on the policy and strategy they follow to foster private sector and specifically entrepreneurial activity. Local data from state and city sources can explain their efforts towards making the tax code supportive to business (Council on Competitiveness, 2005).

According to OECD (2010b), heavy tax burden may discourage entrepreneurs to start a business or carry out activities to scale up their business, such as investments in physical capital and productivity
improvements. On the contrary, imposing a reasonable level of taxes and simplifying their implementation taking into account the heterogeneity of businesses in the economy can be important for the development of the private sector and the formalization of businesses.

A customized and encouraging fiscal policy is particularly relevant for new ventures (traditional or high-impact ones), which, as pointed out by International Tax Dialogue (2013), at first can contribute to job creation and growth but do not generate significant tax revenues for the state, as do the big firms.

3. Intellectual Property Rights regulations

Intellectual property rights (IPRs) are a sub-group of property rights concerning intangible assets and include property rights such as patents, trademarks, industrial design rights etc. They are of an utmost importance for entrepreneurs (Lederman, Messina, Pienknagura & Rigolini, 2014) as they bestow exclusive ownership over ideas, inhibiting others from copying them. Innovation is unlikely to take root if there is not adequate protection (Lederman, Messina, Pienknagura & Rigolini, 2014).

IPRs are particularly important for high-impact entrepreneurs. A 2008 study undertaken by the Department for Business Enterprise and Regulatory Reform (BERR) in the United Kingdom found that these firms have a greater propensity to hold intellectual property and intangible assets than other firms with lower growth and impact. By protecting their inventions, IPRs help them in entering into the market and competing with the existing firms.

In this study, there are two aspects that are taken into consideration: the cost of registering IPRs and the perception that entrepreneurs have regarding the protection of Intellectual Property Rights. The latter can help in understanding the trust the entrepreneurs have in the institutions that are responsible for protecting their existing or potential intangible assets. As mentioned by Robinson and Acemoglu (2012), when an entrepreneur expects its output to be expropriated, he will have little incentive to innovate.

4. Role of the government

The government’s role is significant not only in creating the right conditions for start-ups by providing business-friendly regulatory frameworks (OECD, 2013c), but also by offering direct assistance. Government may provide financial assistance in terms of fiscal incentives, especially for high impact
entrepreneurs, to start and scale up their ventures, and non-financial assistance to help them in dealing with administrative regulations and provide a clear overview of regulations and incentives they may encounter. This can minimize the time and money entrepreneurs spent on complying with government regulation, and they can focus on their basic activities (Audretsch, Thurik, Verheul & Verheul, 2002).

Considering the negative influence that excessive requirements have on entrepreneurs (Chong & Micco, 2002), initiatives to abolish unnecessary regulations can lead to more effective administrative and fiscal requirements. Simplified and low-cost regulation can stimulate formal entrepreneurship, which in turn help entrepreneurs to benefit from government support such as financing, information, training, etc. (Djankov, Lieberman, Mukherjee & Nenova, 2002).

Referring to World Bank (2005), in countries where business regulations are burdensome, business owners are more likely to escape regulatory regimes and set up their business in the informal sector. This is a phenomenon particularly seen in developing countries, which tend to have more complex and heavy regulations (World Bank, 2005) and higher level of corruption and uncertainties.

Finally, the perception of entrepreneurs on the support they receive by the government in dealing with fiscal and administrative requirements can provide feedback on the effectiveness of government’s role as one of the main agents that can encourage entrepreneurial activity in a region or city.

**Support infrastructure**

Along with financial assistance, entrepreneurs also need non-financial assistance, which consists of physical and non-physical infrastructure that supports entrepreneurial activity in a territory.

In order to build a supportive infrastructure, Mexico has designed several programs to stimulate the creation of new business, especially innovative ones. As such, the business incubation system has been developed as a central component of the supportive programs for entrepreneurs to motivate individuals to develop their business ideas and speed up local economic growth.

The rationale behind business incubation program lies on insufficient number of firms in Mexico (Potter et al, 2013). However, despite the increasing number of business incubators, only 21 of 500 incubators that were operating in 2011 were high-tech ones.
In addition, Business Acceleration Program aims at stimulating innovation and technological development among enterprises with high growth potential so that they can expand to other domestic and international markets, attract investment capital, and become part of international value chains.

**Definition**

Support infrastructure can take on different meanings. Depending on the scope that each assessment framework gives to entrepreneurship support infrastructure (as presented in the table below), it includes various components.

<table>
<thead>
<tr>
<th>Framework</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babson College</td>
<td>Includes all the institutions not belonging or related to government that play the role of entrepreneurship stimulators, such as hubs, accelerators, incubators, plus, for example, accounting and law firms required to provide support to the establishment of new companies.</td>
</tr>
<tr>
<td>World Economic Forum</td>
<td>The building components of a support environment enabling entrepreneurs to emerge and grow include: mentors and advisors; professional services; incubators and accelerators and lastly the network of entrepreneurial Peers.</td>
</tr>
<tr>
<td>GEM: National Experts’ Survey</td>
<td>Includes the physical Infrastructure that eases the access to physical resources, and facilitates communication and transportation for SMEs. In addition, it involves the availability and quality of government entrepreneurship programs at different administrative levels that assist SMEs.</td>
</tr>
</tbody>
</table>

This study attempts to cover the most significant aspects of local support infrastructure that helps expand the number and quality of business opportunities and can potentially lead to high impact entrepreneurship. Hence, it includes aspects related to basic infrastructure that is necessary for businesses to operate, and the specific physical and non-physical infrastructure that supports entrepreneurs. Regarding the latter, main focus is given to business incubators and accelerators, which, as mentioned above, have taken on an essential role in boosting entrepreneurship in Mexico and other Latin American countries (Kantis & Federico, 2012). Thus, more information on their activity and performance can contribute to the improvement of their performance in channeling innovative ideas and developing new businesses (Smith, 2013).
## Indicators

### Table 4. Proposed indicators on Support infrastructure

<table>
<thead>
<tr>
<th>Category</th>
<th>Indicators</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Availability of basic infrastructure</td>
<td>Availability of basic infrastructure (electricity, roads etc.)</td>
<td>Availability of basic infrastructure such as water, electricity, roads, etc.</td>
</tr>
<tr>
<td></td>
<td>Availability of Telecommunications/Internet access</td>
<td>Availability of basic infrastructure such as telecommunication, mobile and internet access.</td>
</tr>
<tr>
<td>2. Availability of entrepreneurship support infrastructure</td>
<td>Number of incubators and accelerators as per type</td>
<td>Availability of incubators and accelerators as tools to support commercialization of new innovative business ideas as per type of enterprises: High-impact, traditional etc</td>
</tr>
<tr>
<td></td>
<td>Number of certified business incubators and accelerators as per type in the city</td>
<td>Number of business incubators and accelerators certified by public institutions.</td>
</tr>
<tr>
<td></td>
<td>Number of technological parks</td>
<td>Availability of technological parks that promote technology intensive start-ups</td>
</tr>
<tr>
<td></td>
<td>Number of industrial parks</td>
<td>Availability of industrial parks in the state/city</td>
</tr>
<tr>
<td></td>
<td>Number of business support organizations as per type</td>
<td>Number of business that support organizations as per type: Legal; Accounting; Investments bankers; Technical experts, advisors</td>
</tr>
<tr>
<td>3. High-impact business incubators &amp; accelerators (quality &amp; performance)</td>
<td>Number of trainings as per type of trainings offered in high-impact incubators &amp; accelerators</td>
<td>Types of trainings given in high impact incubators and accelerators: Financing; Management; MKT &amp; commercialization; Intellectual-property management, etc.</td>
</tr>
<tr>
<td></td>
<td>Number of mentors</td>
<td>Number of mentors as per incubator and accelerator</td>
</tr>
<tr>
<td></td>
<td>Percentage of mentors with adequate background and/or experience</td>
<td>Percentage of mentors in the business incubators and accelerators with adequate background and experience in entrepreneurship</td>
</tr>
<tr>
<td></td>
<td>Number of IP developed &amp; the number of technologies commercialized into new products or services from the graduated entrepreneurs</td>
<td>Number of Intellectual Properties developed and the number of technologies commercialized into new products or services by clients and graduate firms</td>
</tr>
<tr>
<td>4. Perception on Business Incubators &amp; Accelerators</td>
<td>Percentage of graduates who are profitable or have received investment after program participation</td>
<td>Percentage of participants graduated from incubating and/or accelerating process that are profitable or have received investment after program participation</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Number of high impact entrepreneurs that have attended a high impact business incubator or/and business accelerator program</td>
<td>Number of high impact entrepreneurs that have attended a high impact business incubator or/and business accelerator program</td>
<td></td>
</tr>
<tr>
<td>Perception on the availability of business incubators</td>
<td>There is a sufficient number of business incubators in the city (1=Completely disagree… 7=Completely agree)</td>
<td></td>
</tr>
<tr>
<td>Perception on the availability of business accelerators</td>
<td>There is a sufficient number of business accelerators in the city (1=Completely disagree… 7=Completely agree)</td>
<td></td>
</tr>
<tr>
<td>Perception on the quality of business incubators</td>
<td>Business incubators provide effective and qualified support for entrepreneurs (1=Completely disagree… 7=Completely agree)</td>
<td></td>
</tr>
<tr>
<td>Perception on the quality of business accelerators</td>
<td>Business accelerators provide effective and qualified support for entrepreneurs (1=Completely disagree… 7=Completely agree)</td>
<td></td>
</tr>
<tr>
<td>5. Networking and collaboration</td>
<td>Number of entrepreneurs that work in partnership with other entrepreneurs</td>
<td>Number of entrepreneurs that operate or have operated in partnership with other entrepreneurs</td>
</tr>
<tr>
<td>Number of collaborative projects between academic institutions-entrepreneurs-public organizations in a year</td>
<td>Number of projects/collaborations between entrepreneurs, academic institutions, supportive organizations like incubators and public organizations for innovation purposes. (Triple helix approach)</td>
<td></td>
</tr>
<tr>
<td>Number of public/private organizations/centers facilitating networking</td>
<td>Number of private and/or public organizations and centers facilitating networking as per type of their functions.</td>
<td></td>
</tr>
<tr>
<td>Number of networking activities and events in a year</td>
<td>Number of networking events organized in the city/state in a year aiming at bringing together various stakeholders.</td>
<td></td>
</tr>
<tr>
<td>Percentage of entrepreneurs participating in networking events</td>
<td>Percentage of entrepreneurs participating in networking events organized in the city/state.</td>
<td></td>
</tr>
</tbody>
</table>
1. Basic infrastructure

*Availability of basic infrastructure* including roads and bridges, gas, water and electricity is essential for businesses to compete in local, national, and global economies. As particularly emphasized in the Global Competitiveness Report 2015, effective modes of transport enable entrepreneurs to get their products to market in a secure and timely manner (World Economic Forum, 2015).

In addition, reliable telecommunication infrastructure is also essential considering the technological development in the world. Access to mobile phone and internet has made easier to gain knowledge, have access to markets or even search for the capital they need.

2. Availability of entrepreneurship support infrastructure

Entrepreneurial ecosystem needs institutions, organizations, and other supportive business services that provide specialized services. This study focuses on five important means of providing supportive infrastructure for entrepreneurship: business incubators and accelerators, industrial and technological parks and business support organizations (legal, accounting etc.).

The availability and quality of business incubators and accelerators, technological and industrial parks, business services organizations show the opportunities that a certain area offers to entrepreneurs to emerge and grow. They allow nascent and high-impact entrepreneurs to use their physical assets (highly specialized buildings and equipment), and non-physical assets (professionals trainings and specialized services).

*Business incubators* provide hard and soft infrastructure through fixed tangible and intangible assets for a limited period, helping young businesses become faster contributing members of the economy (Smith, 2013). They offer rental and shared office space, reduce barriers and lower the cost of access to services and knowledge that are essential for start-ups to emerge (Lichtenstein, Lyons, & Kutzhanova, 2009).

Other types of support infrastructure that can incentivize entrepreneurship and can expand the number and quality of business opportunities include *technological and industrial parks*. They create favorable environment for the development of cutting-edge infrastructure, which encourages the creation of innovative start-ups.
3. Quality and performance of high-impact business incubators and accelerators

A good business incubator has proved to provide a great survival rate, and positively influence the perception on entrepreneurship (Aernoudt, 2004). The presence of business incubators in Mexico has lengthened the average life of newly created businesses, with 70 percent of these firms surviving an initial period of two years compared to a national average of around 50% (OECD, 2013d).

Casas and Ibarra (2013) emphasized the same impact. Referring to data retrieved by Instituto Tecnológico de Sonora, they found that only 20 to 40 percent of businesses that are not developed in incubators survive, while 85 percent of business projects that are incubated continue to operate.

However, despite the increasing number of newly created business, there is a significant gap in stimulating high impact start-ups (OECD, 2013c). As such, particular attention, in this study, is paid to that type of incubators that help in generating these high impact startups and those accelerators that help them scale up.

Firstly, having data regarding the type of trainings and knowledge provided during the incubation and acceleration process (ex. advice in intellectual-property management, dealing with investors, etc.) provides a clear vision of the distribution of support that is given to entrepreneurs, especially to young ones that usually lack the necessary knowledge to run a business.

Furthermore, information on the number of mentors and their professional background can shed some light on the quality of the information delivered to entrepreneurs. Many times, mentors lack business practice and knowledge to guide entrepreneurs and transmit them their experience. The more qualified the experts and mentors are, the higher are the chances that entrepreneurs will get adequate information to create high-impact projects and succeed.

The remaining indicators aim at tracking the progress of business incubators and accelerators. Evaluating their impact helps distinguish the most successful ones (OECD, 2013b; OECD, 2013c). Better quality business incubators and accelerators contribute to a higher competition, which in turn increases their effectiveness.

In addition, these indicators reflect somehow the effectiveness in the usage of public fund, as in some cases, business incubators and accelerators receive public funds by the number of incubated and
assisted companies and not by their quality. Therefore, they tend to be more focused on finding and accepting more businesses than developing successful and profitable ones.

*High-impact Business incubators:* In this study, two important aspects are taken into consideration: the number of intellectual properties developed and/or the number of technologies commercialized into new products or services and the number of entrepreneurs that were graduated from an incubator and have received investment after the program.

The former shows the success stories reached during incubation period and the impact it had on the participants (Smith, 2013) and simultaneously on the economy since new goods are introduced. The latter provides insight into the success entrepreneurs had in obtaining capital after concluding the incubation process.

Regarding the performance of *Business Accelerators*, in this paper, one indicator is proposed that measures the number of high impact startups that have obtained finance after being assisted through an accelerator. This indicator aims at tracking the success rate of accelerators in helping high-growth-potential firms to scale up by providing them finance, access to networks and technical support.

4. Perception on business incubators and accelerators

Data on the entrepreneurs’ satisfaction with the availability and quality of business incubators and accelerators help to get firsthand information regarding their usefulness in developing new and young businesses as perceived by entrepreneurs. This data helps business incubators and accelerators’ managers to ameliorate their practices and the policymakers to improve them in order to make their activities more effective and attractive to existing and potential entrepreneurs. This can be considered as among the most valuable information as in the end entrepreneurs are the ones benefiting from this support infrastructure and directly affected by their performance.

5. Networking and collaboration

The last category tends to provide more insights into the linkages that exist between various regional agents and the organizations that promote such linkages. Simply having more business incubators or technological parks does not create a self-sustaining ecosystem if there is no synergy among various local and regional actors.
Providing data on this ‘soft’ part of support infrastructure is worthwhile as it gives a more comprehensive understanding of the economic environment that exists in a region or city (Council on Competitiveness, 2007).

Having a density of groups of entrepreneurs and networks supports the creation of strong start-up regions and innovative communities (Tödtling & Trippl, 2004). These networks play a key role in the startup phase of a business as they can facilitate the market entry or access to finance, especially in countries with inefficient capital markets (Loossens, 2009).

As found by GEM and Endeavor (2011), high-impact entrepreneurs are more predisposed than others to collaborate with other entrepreneurs. However, in Latin America, they are among the least likely to partner with other entrepreneurs. In the light of these findings, the number of entrepreneurs that tend to collaborate with other entrepreneurs reflects the culture of collaboration that exists among entrepreneurs themselves. A strong collaboration between them can enhance the chances of high-impact businesses emergence.

In addition, a triple-helix approach shared between knowledge institutions, public institutions and private sector, known as triple helix structure, can contribute to more innovation-driven regions, as they help to concentrate more expertise and generate new knowledge (OECD, 2006a; World Economic Forum, 2015; Coto-Millán, Pesquera & Castro, 2011).

In Latin America, the lack of collaboration between universities and private sector remains a significant concern (OECD, 2013c). In this context, many actors and initiatives can stimulate collaboration and foster synergies among them. For instance, incubators and accelerators can ease up the access to finance for entrepreneurs by connecting them with possible investors. Identifying these actors and the level of collaboration among each other can provide a better picture on the intensity of collaboration among different stakeholders in the region.

Collaborative projects represent the finalization of the interactions process. Data on the number of projects can help comprehend the level of intensity of collaboration among different stakeholders in the city or state. The greater the number of these projects, the stronger is the level of engagement in collaboration perceived.
Access to finance

Access to finance is a significant factor in carrying out entrepreneurial activity (Blanchflower & Oswald, 1998; Gnyawali & Fogel, 1994; Evans & Leighton, 1989). However, entrepreneurs do not have the same access to financial resources due to the differences that exist on the level of development of their local or national financial markets. Having a developed local financial infrastructure increases the chances of new local ventures to succeed (Lederman, Messina, Pienknagura & Rigolini, 2014; Guiso, Sapienza & Zingales, 2004).

In developed and successful entrepreneurial ecosystem like Silicon Valley, finding and investing financing resources is easier because of a well-regulated financial market that attracts significant number of venture capital (VC) firms and business angels.

On the contrary, in other countries such as Mexico and other Latin American countries, entrepreneurs have more difficulty in receiving funds (Council on Competitiveness, 2007; OECD, 2013c). In these countries, capital market is still undeveloped and banks are less inclined to finance start-ups due to the high risk involved and the asymmetry of information.

Under these circumstances, entrepreneurs can rely mainly on personal savings and other informal channels to launch their business (e.g. family and friends or moneylenders) (Potter et al, 2013). This lack of external financial resources puts high barriers to entrepreneurship, especially the ones having high-growth, because it limits the potential of high impact enterprises to grow.

Definitions

<table>
<thead>
<tr>
<th>Framework</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD</td>
<td>The capital available and provided at all phases of business life, from early seed funds to the stock markets capital. (Ahmad &amp; Hoffman, 2007).</td>
</tr>
<tr>
<td>Babson College</td>
<td>All private institutions in charge of entrepreneurship funding, such as angel investors, venture capital funds and seed capital, among others.</td>
</tr>
<tr>
<td>World Economic Forum</td>
<td>Includes the most common and important sources for entrepreneurs to receive funding: such as friends and family, angel Investors and venture capitalist; Private Equity and Debt.</td>
</tr>
<tr>
<td>GEM: National</td>
<td>The availability of financial resources such as equity and debt (including grants and subsidies).</td>
</tr>
</tbody>
</table>
Experts’ Survey

GEDI index

The availability of risk finance, particularly equity that fulfills entrepreneurial aspirations in the conditions of limited personal financial resources.

The existence of various financing instruments influences new and small firms positively, which find more difficult to raise funds and finance the whole process alone (Guiso, Sapienza & Zingales, 2004), especially in developing countries (Council on Competitiveness, 2007).

Moreover, considering the difficulties of obtaining external funds, this study gives particular importance to the obstacles that impede entrepreneurs in developing countries like Mexico to have access to those funds.

Indicators

Table 5. Proposed indicators on Access to Finance

<table>
<thead>
<tr>
<th>Determinant: Access to finance</th>
<th>Category</th>
<th>Indicators</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Access to Debt (bank loans)</td>
<td>Number of collateral requirements</td>
<td>Number of collaterals required by banks to provide loans to new and growing firms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Percentage of entrepreneurs required to provide collateral on their bank loan applications and rejected</td>
<td>Percentage of entrepreneurs required to provide collateral on their bank loan applications and rejected</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of high impact entrepreneurs being funded by banks</td>
<td>Number of high impact entrepreneurs that are using bank loans (under guarantee schemes programs or not) to finance their projects</td>
</tr>
<tr>
<td></td>
<td>Ease of Access to Loans</td>
<td>It is easy to obtain a bank loan with only a good business plan and no collateral. (1=Completely disagree…7=Completely agree)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>It is expensive to obtain a bank loan (1=Completely disagree…7=Completely agree)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Existence of Venture Capital legal framework</td>
<td>Existence of Venture Capital legal framework in accordance with other best examples</td>
<td></td>
</tr>
<tr>
<td>2. Access to Venture capital (VC)</td>
<td>Number of public-private partnerships created to foster Venture Capital market</td>
<td>Number of public-private partnerships created to foster Venture Capital market</td>
<td></td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Amount provided as tax incentives for Venture Capitalists</td>
<td>The amount delivered as tax incentives for Venture Capitalist</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of high-impact entrepreneurs being funded by Venture Capitalist</td>
<td>Number of entrepreneurs with high impact projects in the city/state that have been funded by venture capitalist at least once.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percentage of entrepreneurs, who know how a Venture Capital market works</td>
<td>Percentage of entrepreneurs, who know how a venture capital market works</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ease of getting Venture Capital</td>
<td>It is easy to obtain Venture Capital with innovative but risky projects and with only a good business plan (1=Completely disagree…7=Completely agree)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Access to Business Angels’ funds</th>
<th>Number of business angels networks</th>
<th>Number of networks of high net worth individuals that are created and are operating in the city/state</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of entrepreneurs, who accept to have been funded by Business Angels</td>
<td>Number of entrepreneurs with high impact projects that have been funded by Business Angels at least once.</td>
</tr>
<tr>
<td></td>
<td>Ease of getting BAs capital</td>
<td>It is easy to obtain Business Angels’ funds with innovative but risky projects and with only a good business plan. (1=Completely disagree…7=Completely agree)</td>
</tr>
<tr>
<td></td>
<td>Amount provided as tax incentives for Business Angels</td>
<td>The amount delivered as tax incentives for Angel investors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Government financial support</th>
<th>Funding program for entrepreneurs (national)</th>
<th>The existence of funding programs that support entrepreneurs at various stages (Seed capital; Early stage; Growth; Expansion) designed and managed at federal level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Funding program for entrepreneurs (sub-national)</td>
<td>The existence of funding programs that support entrepreneurs at various stages (Seed capital; Early stage; Growth; Expansion) managed at sub-national level</td>
</tr>
<tr>
<td></td>
<td>The number of high impact projects in the city/state being financed by public funding programs versus similar cities/states</td>
<td>The number of high impact projects in the city/state being funded by public funding programs comparing to other cities/states</td>
</tr>
<tr>
<td>Number of high-impact entrepreneurs being funded by public funds</td>
<td>The number of high impact entrepreneurs that have received government financial support in the city/state (including public support under guarantee schemes)</td>
<td></td>
</tr>
<tr>
<td>Government procurement programs</td>
<td>The existence of government procurement programs that provide the opportunity to sell the entrepreneurs' projects on public tenders</td>
<td></td>
</tr>
<tr>
<td>Number of evaluations of financial support programs carried out in a year</td>
<td>Number of evaluations of financial support programs carried out in a year in the city/state.</td>
<td></td>
</tr>
</tbody>
</table>

1. Access to Debt (bank loans)

Indicators related to access to debt measure the ability of entrepreneurs to gain access to bank loans. Entrepreneurs, especially those in Latin America and other developing countries, find more difficult than other firms to be funded by the banks because of the high risk involved and often the lack of a track record.

In the United States, for instance, bank loans provide 15-30 percent of the initial finance of high-growth start-ups, well above the amount in Latin America, which stands at the level of 7 percent in Brazil and close to zero in Chile and Mexico (OECD, 2013c). These high-impact ventures, which perform innovative activities, are more vulnerable to this type of financing, especially at their early stage (OECD, 2010a).

This ‘finance gap’ can be attributed to various obstacles that exist in developing economies. First and importantly, *collateral requirements*, which is one of the main barriers that entrepreneurs face while demanding for bank loans. In general, their new businesses lack the necessary tangible assets that can be put as collateral and the regular payments required by the banks (OECD, 2013c; Gompers & Lerner, 2001). Therefore, in many cases, entrepreneurs decide to suspend or abandon their projects (OECD, 2010a).

On the other hand, the existing firms and corporates find easier to fulfill these requirements assuming the lower risk of failure involved (OECD, 1998; Audretsch, Thurik, Verheul & Wennekers, 2001; OECD, 2010a).
Measuring the percentage of entrepreneurs that have been rejected due to the bank collateral requirements can reflect this tightness of credit conditions and the propensity of banks to give funds to entrepreneurs based on the documents provided.

2. Access to Venture Capital (VC)

Venture capital is an important source of funding for entrepreneurial firms, especially for young, technology-based firms with high growth potential. While most of the banks are reluctant to lend money to early-stage and seed businesses, venture capital is seen as an important alternative to finance entrepreneurship (OECD, 2010a; Audretsch, Thurik, Verheul & Wennekers, 2001). As clearly described by the Canadian Ministry of Innovation, Science and Economic Development, *Venture capital (VC) is a specialized form of private equity, characterized mainly by high-risk investment in new or young companies, most often high-tech sectors, with the potential for high-growth. VC funds are usually structured in limited partnership format with the general partner professionally managing the fund and the limited partners investing in the funds. Limited partners represent a wide array of investors, such as institutional investors (pension funds, insurance companies, etc.), large corporations, governments, and high-net-worth individuals* (Ministry of Innovation, Science & Economic Development Canada, 2015).

This market is still undeveloped in Mexico and in other Latin American countries. Referring to OECD (2013c), which uses data from Latin American Private Equity and Venture Capital Association (LAVCA), the venture capital industry in the region reached USD 8 billion in 2010, with Brazil accounting for almost half of the venture capital industry followed by Colombia and Chile. As percentage of GDP, venture capital accounted for 0.27% of GDP in Brazil, 0.18% in Chile and only 0.02% in Argentina and Mexico. This insufficient level of investment, particularly on seed funding, reflects to some extent the low effectiveness of the VC market (OECD, 2013c).

Legal framework can be among the most important obstacles that can impede the development of this market. As stated by OECD (2013c) referring to Latin American Venture Capital Association (LAVCA), Economist Intelligence Unit and the Latin American Development Bank (CAF), the main barriers that Mexico faces include the legislation for setting up and operating venture-capital funds, followed by other elements of a broader focus, such as weaknesses in the judicial system or perception of corruption.
A lack of legal framework or not well-defined legal framework will orient investors towards big firms that require higher investments, but provide more attractive return at a smaller risk (Arruda, Nogueira, Cozzi & Costa, 2015). Hence, it is necessary to design adequate VC legislation that can encourage potential investors to invest in higher risk ventures.

In this context, government initiatives and private and public partnerships can give impulse to the development of this market. An example of public and private partnership is The Ontario Venture Capital Fund (OVCF) in Canada, created as a joint initiative between the Government of Ontario and institutional investors, structured as a fund of funds that support innovative, high-growth companies (Ministry of Innovation, Science & Economic Development Canada, 2015).

Tax incentives can be other way to support entrepreneurial activity. Government can encourage venture capitalist investments through tax incentives (OECD, 2013c), by providing, for example, tax deductions on the amount of VC investments, or on any income that investors receive from investments.

The following indicator related to the number of entrepreneurs being funded by VC, reflects the extent to which high-impact entrepreneurs are reaching venture capital market and the willingness of investors to invest in these businesses. Compared to United States, where start-ups receive 20 to 47 percent of their finance from venture-capital funds and angel investors, the amount invested in Latin America is much lower than Brazilian or Mexican startups receiving respectively 23 percent and 5 percent of their total funds from VC investors (OECD, 2013c).

Successful examples of entrepreneurs that have received venture capital in the region can serve as a model to be followed by other investors and entrepreneurs. Taking into account that the potential of this type of financing is still unexploited in Mexico, many entrepreneurs or investors do not have enough knowledge of how this market works. Thus, they are not aware of its benefits.

A collaborative study between Mexican Association of PE & VC funds (AMEXCAP), National Institute of Entrepreneurship in Mexico (INADEM), Ernest & Young (E&Y) and IPADE Business School found that only 41 percent of the surveyed entrepreneurs knew how a VC market works.

This lack of information, especially among entrepreneurs, can be an obstacle for using this source for financing their projects. As such, providing information on the percentage of entrepreneurs that know
how VC market works and how they perceive the access to these funds can show how easy is for them to reach this market.

3. Access to Business Angels’ (BA) funds

Business Angels’ capital, also generally known as informal venture capital (Audretsch, Thurik, Verheul & Wennekers, 2006), is another important private source for funding entrepreneurial activity, especially in cases when VC market is not developed.

Business Angels are described as ‘individuals who invest their own funds in start-up companies with which they have no personal connection. They are often high-net-worth experienced entrepreneurs or businesspeople, well educated, and often actively provide advice to the management teams of companies they invest’ (Ministry of Innovation, Science & Economic Development of Canada, 2015).

These individuals, together with VC firms, are more likely to invest locally by becoming important capital source for local entrepreneurs (Council on Competitiveness, 2005). However, the amount business angels invest (particularly in the seed stage) is usually smaller than that of venture capitalists.

It is difficult to gauge business angels and their investments, especially when they are not organized in groups or when they do not report their investments through an angel group (Ministry of Innovation, Science & Economic Development of Canada, 2015). As such, in this study, only the measurement of the number of business angels’ networks but not individual business angels is proposed.

Lastly, considering the lack of attention of public policy in Mexico and in other Latin American countries towards this source of financing (OECD, 2013c), the study aims at providing some insights into the fiscal incentives that governments provide to increase angels’ investment.

These incentives can encourage angel investors to finance high-impact projects considering that public investment needed in this case is not as burdensome as with other sources of financing. For instance, Israel has designed fiscal incentive to help develop an angel-investor market by allowing tax deductions for three years on any income from investments, at a certain limit, in high-tech start-ups registered in Israel (OECD, 2013c).
4. Government financial support

Governments at different levels can play an important role in easing the access to finance. They can create funding programs, especially for early-stage businesses, which, as mentioned earlier, are unlikely to receive bank loans or other forms of debt financing due to the lack of sufficient tangible assets or negative expected returns in the beginning.

The institutional indicators of the existence of public programs from federal and state level provide data on the availability of public funds that finance entrepreneurs (excluding public guarantee schemes mentioned earlier). Examples coming from the US demonstrate that interventions through public policies can have positive impact on the innovation performance of a region.

Referring to Audretsch, Aldridge & Richardson (2016), which analyzed the US Policies and Programs in fostering entrepreneurship and innovative activity, US Small Business Innovation Research (SBIR) program created in the early '80s to provide early stage funding to entrepreneurs especially in knowledge-based and high-technology industries had a strong and positive impact on the innovative performance of the United States. This program has solved what is called the ‘valley of death’ or the financing constraints that usually new and young businesses face. More than 20 percent of all technology-based firms in US that have received SBIR funds would not have existed in the absence of an SBIR award.

Importantly, in cases when various public funds are provided, coordination among different government agencies is necessary so that duplications and wastage of resources can be avoided. OECD (2013a) report on ‘Innovation policy for knowledge-based start-ups in Mexico’, provided specific importance to the involvement of local institutions in delivering local support (financial or non-financial), since they are better placed than federal institutions in adapting the support programs to local characteristics.

Lastly, the existence of evaluations with well-defined criteria can provide insights into the effectiveness and efficiency of these programs in reaching the set objectives. Evaluation programs can machete access to public funds more transparent and effective and can help draw conclusions on the impact public funding had on improving entrepreneurs’ performance. Also, this indicator can somehow prove the existence of a strong or weak culture in evaluating public financing programs.
**Human capital**

While describing entrepreneurial ecosystems, many studies drew special attention to human capital as an essential asset that drives innovation in the community. In general, more qualified and experienced individuals can boost the potential for economic growth, as people are capable of generate new ideas and make productive contribution (UNESCO, 2015; OECD, 2013d; Council on Competitiveness, 2007).

According to Lederman, Messina, Pienknagura & Rigolini (2014), human capital gap is one of the main factors behind the lack of innovation in Latin America. In particular, there exists a scarcity in a number of people, who are likely to produce innovative entrepreneurs, such as engineers or scientists (Lederman, Messina, Pienknagura and Rigolini, 2014; IDM, 2010).

In a time when the demands of technology and global competition have increased, the need for educated entrepreneurs with the right business and entrepreneurial skills is vital. These entrepreneurs are able to manage more successfully fast-growing firms (OECD, 2013c) and better face the challenges during start-up process (Gnyawali & Fogel, 1994).

**Definition**

In the table below, some of the definitions regarding human capital and aspects related to it are presented.

<table>
<thead>
<tr>
<th>Framework</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babson College</td>
<td>Human Capital includes both the professionals with high entrepreneurship skills and education, and the mass work force.</td>
</tr>
<tr>
<td>OECD</td>
<td>Entrepreneurial capabilities include the human and social capital of the entrepreneurs (Ahmad &amp; Hoffman, 2007).</td>
</tr>
<tr>
<td>World Economic Forum</td>
<td>The availability of management and technical talent, immigrant workforce and entrepreneurial company experience outsourcing.</td>
</tr>
<tr>
<td>GEDI index</td>
<td>Educated, experienced, and healthy workforce, which is vitally important to enable ventures that are highly innovative to continue to grow.</td>
</tr>
</tbody>
</table>
Referring to these definitions, there can be various aspects of human capital that can be assessed. Council on Competitiveness (2007) suggested that available specialized or skilled workforce and the quality of educational institutions are the most important aspects that need to be considered while analyzing the innovation capacity of a region.

In the light of the existing studies and the characteristics of Mexican regions, the list of proposed indicators in this paper focuses particularly on the availability of specialized and skilled workforce, entrepreneurship education provided in higher education institutions and R&D institutions. These knowledge institutions are considered crucial in building the educational infrastructure that ensures a better process of knowledge delivery.

Indicators

Table 6. Proposed indicators on *Human Capital*

<table>
<thead>
<tr>
<th>Determinant: Human capital</th>
<th>Category</th>
<th>Indicators</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Available educated/skilled workforce</td>
<td>Available workforce with university education</td>
<td>Available workforce with university education as per type: management; technical; engineering etc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Available workforce with technical/vocational education</td>
<td>Available workforce with technical/vocational education</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Immigrant workforce with tertiary education</td>
<td>Immigrant workforce with tertiary education (university or professional education)</td>
<td></td>
</tr>
<tr>
<td>2. Availability of higher education institutions</td>
<td>Number of higher education institutions</td>
<td>Number of higher education institutions in the city/state</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Number of higher education institutions in STEM &amp; business profiles</td>
<td>Number of higher education institutions in STEM &amp; business profiles in the city/state</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percentage of enrollment in higher education institutions</td>
<td>Percentage of enrollment in higher education institutions over the high school graduates in the formal education system.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The share of international students in tertiary education</td>
<td>The share of international students over total enrollment in tertiary education.</td>
<td></td>
</tr>
<tr>
<td>3. Quality of entrepreneurship education in</td>
<td>Percentage of higher education institutions that have strategic plans specifically focusing on entrepreneurship</td>
<td>Percentage of universities that have strategic plans specifically focusing on entrepreneurship</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percentage of higher education institutions with entrepreneurship subjects integrated into the curriculum</td>
<td>Percentage of higher education institutions with entrepreneurship subjects integrated into the curriculum</td>
<td></td>
</tr>
<tr>
<td>Higher education institutions</td>
<td>Entrepreneurship subjects integrated into their curriculum</td>
<td>Percentage of professors that have previous experience in entrepreneurship and innovation</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percentage of higher education institutions with adequate learning infrastructure</td>
<td>Percentage of universities with adequate learning infrastructure such as business incubator, technology transfer office (TTO) etc.</td>
<td></td>
</tr>
</tbody>
</table>

4. Outputs of entrepreneurship education

<table>
<thead>
<tr>
<th></th>
<th>Number of patents</th>
<th>Number of patents that higher education institutions have developed in a year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of publications</td>
<td>Number of publications on entrepreneurship topics that higher education institutions have published in a year</td>
</tr>
<tr>
<td></td>
<td>Number of collaborative projects</td>
<td>Number of collaborative projects, with which higher education institutions have been engaged within one year</td>
</tr>
<tr>
<td></td>
<td>Annual number of graduates from higher education institutions</td>
<td>Number of graduates from higher education institutions during an academic year as per profile: business, engineering etc.</td>
</tr>
<tr>
<td></td>
<td>Number of businesses created by students or alumni</td>
<td>Number of businesses created by students or alumni (high impact or traditional ones).</td>
</tr>
<tr>
<td></td>
<td>Percentage of entrepreneurs (students or alumni students) that agree/disagree that their school education has helped in developing entrepreneurial skills and attitude.</td>
<td>Percentage of entrepreneurs who are following or have followed a postsecondary education that agree/disagree that their school education (voluntary or compulsory) has helped to develop entrepreneurial attitude to run a business. (1=Completely disagree…7=Completely agree)</td>
</tr>
</tbody>
</table>

5. Availability and quality of R&D institutions

<table>
<thead>
<tr>
<th></th>
<th>Number of R&amp;D institutions</th>
<th>Number of R &amp; D institutions that can be publicly and/or privately funded in the city/state</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public support provided to R&amp;D institutions as percentage of GDP</td>
<td>Public support provided to R&amp;D institutions as percentage of GDP per state</td>
</tr>
<tr>
<td></td>
<td>Number of patents developed by R&amp;D institutions</td>
<td>Number of patents developed by R&amp;D institutions in the city/state.</td>
</tr>
<tr>
<td></td>
<td>Patenting rate (patents/research in pesos)</td>
<td>Number of patents per amount invested in research activities (in pesos) by R&amp;D institutions in the city/state.</td>
</tr>
</tbody>
</table>
1. Available educated/skilled workforce

Many studies give special importance to the level of education of individuals, especially those who turn to be high-impact entrepreneurs (Ács, Szerb, Autio, 2016; Audretsch, 2012). BERR (2008) found that entrepreneurs that create and manage high growth firms tend to be well educated with higher educational attainment levels than the founders of lower growth firms. In addition, results of Ruiz and Dams (2012) revealed that the majority of high-impact women entrepreneurs in Argentina had attended at least college education.

As such, this study finds worth measuring the available workforce with postsecondary education (university or technical/vocational education) as they generally tend to have high level of expertise, which creates a great potential for generating high impact businesses.

On the contrary, the lack of qualified workforce makes the overall process difficult from knowledge creation to dissemination (IDM, 2010), which can consequently constrain the creation of innovative businesses.

In addition, in order to build a full educational profile of the local workforce, it is necessary to measure the percentage of foreign professional workforce. A high number of professional workforce from abroad helps in creating relevant approaches for building productive ecosystems, since they bring new knowledge and skills.

2. Availability of institutions of higher education

The education system in Mexico is organized into four levels including preschool, compulsory basic education (grades 1–9), upper secondary education (grades 10–12), and higher education (Potter et al, 2013). The Higher Education Institutions (HEI) system consists of universities, technological institutes, technological universities, polytechnic universities and other state educational institutions, such as pedagogical universities.

Recognizing the vital role that postsecondary education plays in teaching and developing entrepreneurial skills (Ács, Szerb & Autio, 2016), this paper concentrates only on the institutions that provide tertiary education as important agents that can deliver entrepreneurship education in the city/state. These institutions are considered an important component of knowledge infrastructure, supporting the growth of knowledge-based economy (Rutten, Boekema, & Kuijpers, 2003).
At this point, it is worth explaining which higher education institutions are measured. This study uses the classifications of International Standard Classification of Education (ISCED) to identify programs and institutions that belong to tertiary education. These standards classify tertiary education as tertiary-type 5 and 6, 7. Tertiary-type 6 and 7 education provides sufficient qualifications to continue advanced research programmes and professions with high skills requirements, and tertiary-type 5 that is normally shorter than type 6, focus on practical, technical and occupational skills for direct entry into the labour market.

In the context of educational system in Mexico, in the first category are included those institutions that provide Bachelor’s and Master’s degree programmes (ISCED 6 and 7 classification respectively). These programs require a completion of 12 years of schooling and the duration depends on field of education: 4 to 5 years (6 years in some cases, like medicine).

Bachelor’s degrees programmes (classified as ISCED 6) can be earned in universities, technological institutes, or teacher training schools.

In addition, in a time when in Mexico and other Latin American countries there is a lack of professionals in engineering and science (Lederman, Messina, Pienknagura & Rigolini, 2014; IDM, 2010) the presence of Science, Technology, Engineering and Math (STEM) and business profiles educational institutions is essential. They contribute on the creation of the ‘pool of skilled talent’ with relevant knowledge in generating innovative ventures. Different to broad-based educational institutions that offer a variety of degree programs in different areas of knowledge, they focus specifically on offering technology, engineering and business degree programs.

The last two indicators focus on the demand side of the education sector. The percentage of student enrollment in tertiary education, measured as the percentage of high school graduates that successfully enroll into tertiary formal education system, reflects the attractiveness of tertiary education and the potential educated workforce that will enter the labor market in the near future. The percentage of international students’ enrollment over total enrollment in tertiary education shows the total foreign ‘brains’ that educational institutions in a city/state are able to attract which contributes to knowledge and experience sharing.
3. Entrepreneurship education in higher education institutions

This part of the study focuses on measuring important aspects that influence the quality of entrepreneurship education that is provided in tertiary education. Considering the extensive use of entrepreneurship education concept, it is necessary to describe what it involves.

Referring to UNESCO & ILO (2006), entrepreneurship education includes ‘a collection of formalized teachings that informs, trains, and educates anyone interested in participating in socioeconomic development through a project to promote entrepreneurship awareness, business creation, or small business development”.

In addition, Valerio, Parton and Robb (2014), in a study carried out on behalf of the World Bank on ‘Entrepreneurship Education and Training Programs around the World’, described entrepreneurship education (and training) as ‘academic education [or formal training] interventions, which share the broad objective of providing individuals with the entrepreneurial mindsets and skills to support participation and performance in a range of entrepreneurial activities’ (p. 21).

Both definitions imply that entrepreneurial education consists of various programs that aim at providing students better knowledge on entrepreneurial business creation, management and growth, and providing more awareness about entrepreneurship.

Due to a high number of higher education institutions that can operate in a city/state, the process of data collection and analysis can be difficult. Therefore, it is necessary to narrow the focus. In the study, it is proposed to concentrate on those higher education institutions that have the greatest share of students’ enrollment. Institutions with the highest percentage of students’ enrollment tend to exert also the strongest influence in the development of qualified human capital.

Collecting information on the percentage of higher education institutions that have entrepreneurship incorporated within their strategies and those that integrate entrepreneurship subjects into their curriculum help to distinguish between higher educational institutions that:

- Follow a strategic approach, demonstrating long-term institutional commitment for the development of entrepreneurial education institutions or as expressed in the Graham (2014) report, ‘whether entrepreneurship and innovation is at the core of the university’s mission’.
Implement some formal mechanisms such as entrepreneurial activities or curriculum design to incentivize entrepreneurship within the university. For instance, including experience-based learning methods in subjects related to entrepreneurship can be a good mechanism to better engage students in the learning process. Being so personally involved can make students more interested in entrepreneurship, encouraging them to consider it as an alternative for future employment. This, in turn, can help attenuate youth unemployment rate (OECD, 2014).

Do not promote entrepreneurship at all.

The following indicators focus on the human and physical capital that these institutions possess, which can serve as key ‘guarantees’ of quality entrepreneurship education. The percentage of professors with academic and professional background in entrepreneurship and innovation ensures that quality entrepreneurship knowledge is delivered. Furthermore, the continuous professional development of professors to upgrade their skills improves the quality of knowledge they provide to the students (Ács, Szerb, Autio, 2016; UNESCO, EFT, &ILO, 2012).

Lastly, learning infrastructure includes all the facilities that are devoted for entrepreneurship education and formation of students, such as the existence of business incubator inside the institutions or the presence of Technology Transfer Offices. Technology Transfer Offices are particularly relevant as they allow the application of innovations for the development of new products (Ács, Szerb, Autio, 2016). Better and updated learning facilities are expected to lead to better results as they can motivate and empower students with better knowledge (UNESCO, EFT, &ILO, 2012).

The insufficient knowledge capacity of professors accompanied by lack of learning materials and infrastructure could seriously compromise the quality of education that the students get.

4. The outputs of higher education institutions

The output indicators refer to the metrics that measure the results of entrepreneurship education. These results can be reflected immediately (patents, publication) or later, such as the impact that entrepreneurship education delivered in these institutions has on entrepreneurs’ entrepreneurship skills (perceptions of entrepreneurs regarding their skills and knowledge to start a business) or on the economy (employability, new businesses, etc.).

As such, the assessment is made both on the quantitative aspects of the performance of higher education institutions that provide entrepreneurship education (such as the creation of new
businesses) and on the qualitative aspects (perceptions of entrepreneurs as students or alumni students).

Data on the number of patents developed by students, professors or both and the number of publications on topics related to entrepreneurship helps to judge the level of entrepreneurial and research activity in higher education institutions.

The number of collaborative projects, in which higher education institutions are engaged, shows the level of interaction between these institutions and other actors in the ecosystem (private or public sector). These collaborations help in addressing one of the main bottlenecks in Mexico and other Latin American countries: linking the researchers with business sector (OECD, 2013c), which bring mutual benefits to the private sector and academia.

Building these links helps the educational institutions to develop market-driven programs, assuring more and better responsiveness to the local community and business sector’s needs.

The following indicator, the graduation rate, measures the number of young qualified workforce that is entering the labour market each year. As mentioned in the OECD (2005) report, flows of university graduates is an important indicator as it measures the potential of a country for assimilating, developing and diffusing advanced knowledge and the level of labour market supply with highly skilled workers. Besides giving insights on the number of graduates, this indicator provides insights also on the characteristics of the new labor supply as per academic profile.

The impact that entrepreneurship education has on the economy can be observed at a large extend in the number of businesses, particularly businesses of high impact that are created by students and graduated students. The chances that entrepreneurs with higher education degrees start high-growth businesses are higher as they tend to be more capable, qualified and willing to manage these businesses (Ács, Szerb, & Autio, 2016).

Lastly, the perception of these entrepreneurial students (currently enrolled or graduated) on the role that tertiary education has played in developing the entrepreneurial skills that were necessary during the early stage or later stages of their businesses, reflects the impact that higher education institutions have on generating potential entrepreneurs with adequate entrepreneurial skills. This indicator is important because as emphasized by Graham (2014), education in entrepreneurship more than on the creation of new business, contributes on the strengthening of entrepreneurial skills and attitudes.
5. Availability and quality of R&D institutions

R&D institutions are another important actor, which through their research activities can generate new knowledge. Successful research activities they carry out are essential to the long-term economic growth of regions as they feed the pool of potential knowledge-based start-ups.

The number of patents and the number of patents compared to the amount invested in research activities serve as measures of productivity of these R&D institutions. They reflect the research investments that lead to new knowledge and then to the application of that knowledge.

Referring to OECD (2013a), Mexican research institutions, despite their good performance in terms of scientific performance, lack the capacity to create knowledge that can be commercialized and transformed into international patents. This low level of outputs can be largely attributed to country’s specialisation pattern, where natural resource-intensive sectors still account a large amount of total manufacturing value added (OECD, 2013c). The high dependence on natural resource-intensive sectors limits the opportunities for the development of innovation systems. Public financial support to institutions carrying out research activities can serve as a good incentive that can help Mexico reduce their dependence on low-knowledge-intensity sectors and promote an innovation culture in the region.

Culture

Culture constitutes an important framework condition of entrepreneurial ecosystem (Audretsch & Belitski, 2016; Stam, 2014; Andersson et al, 2012) making some societies more predisposed than others to carry out entrepreneurial activities. Cultural context is able to influence individuals’ motivations, values and beliefs (OECD, 2012; Valerio, Parton, Robb, 2014), and through them entrepreneurship (Audretsch, Thurik, Verheul & Wennekers, 2006).

Moreover, supportive culture can lead to successful leveraging of local assets, stronger networks and higher propensity to invest in local innovation assets (Council on Competitiveness, 2007).

North (1990) considered entrepreneurship culture not only a determinant but also a product of entrepreneurship activity over long time periods. It comes as a ‘gift from the past’ influencing current entrepreneurship activity (Andersson, 2013).
Regarding entrepreneurship culture in Mexico, there are still various challenges that need to be overcome, especially social mistrust, which inhibits building bridges between various stakeholders, such as entrepreneurs, universities and investors. However, it should be recognized that developing an entrepreneurial culture takes time and it requires simultaneous efforts by various stakeholders.

**Definition**

The regional entrepreneurship culture, as defined by Andersson (2013, p.8) based on Williamson (2000) study, consists of ‘spatially localized informal institutions that have to do with the general social acceptance and encouragement of entrepreneurs and their activities in a region’. Others define culture as following:

<table>
<thead>
<tr>
<th>Framework</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Babson College</td>
<td>Culture encompasses all social characteristics of a community and the subjective aspects in which individuals connect to each other, their approach and reproach and the reason for recognition.</td>
</tr>
<tr>
<td>OECD</td>
<td>Culture comprises of each individual’s assumptions, adaptations, perceptions and learning (Ahmad &amp; Hoffman, 2007).</td>
</tr>
<tr>
<td>World Economic Forum</td>
<td>Culture includes all aspects related to Tolerance of Risk and Failure, Preference for Self-Employment, Success Stories/Role Models, Research Culture Positive Image of Entrepreneurship and Celebration of Innovation.</td>
</tr>
<tr>
<td>GEM: National Experts’ Survey</td>
<td>Cultural and social norms involve the extent to which these norms encourage or allow actions leading to new business methods or activities that can potentially increase personal wealth and income.</td>
</tr>
<tr>
<td>GEDI</td>
<td>Cultural Support is a combined measure of how individuals in a country view entrepreneurs in terms of status and career choice and how corruption in that country affects this view. Entrepreneurial attitudes are societies’ attitudes toward entrepreneurship, which we define as a population’s general feelings about recognizing opportunities, knowing entrepreneurs personally, endowing entrepreneurs with high status, accepting the risks associated with business startups, and having the skills to launch a business successfully.</td>
</tr>
</tbody>
</table>
In operationalizing this broad concept, it is considered important the way entrepreneurs, as important actors of the ecosystem, perceive communities’ attitude towards entrepreneurship and their personal attitude and attributes. Similar approach is followed by GEM and Endeavor (2011), which described high-impact entrepreneurs based on their opinions on various aspects, including their motivations and individual attributes.

Referring to North’s theory, this study tends to focus on one of the main elements of North’s informal constrains: culture. As described by North (1990, p. 37), culture ‘provides a language-based conceptual framework for encoding and interpreting the information that the senses are presenting to the brain’. Thus, the way individuals (in our case entrepreneurs) process and use information can affect the way the entrepreneurial culture in the society is gauged. This perception can, in turn, constrain other individuals to carry out entrepreneurial activities, making the perceived risk of failure superior to the opportunity of success.

While people in a country can share similar cultural traits, here the focus is to distinguish different entrepreneurial traits that can vary among different sub-national units in Mexico, strengthening the argument that entrepreneurship is also culturally bound.

**Indicators**

**Table 7. Proposed indicators on Culture**

<table>
<thead>
<tr>
<th>Determinant: Culture</th>
<th>Categories</th>
<th>Indicators</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Entrepreneur social image</td>
<td>Percentage of entrepreneurs that accept to have been supported by their close circle in being an entrepreneur</td>
<td>My family and friends have supported me in becoming an entrepreneur (1=Completely disagree…7=Completely agree)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Percentage of entrepreneurs that have/have had members of the family engaged in self-employment</td>
<td>Percentage of entrepreneurs that have/have had members of the family engaged in self-employment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Perception on the influence that society norms and</td>
<td>Society norms and mindset exert a strong influence on the decision to become an entrepreneur (1=Completely disagree…7=Completely agree)</td>
</tr>
</tbody>
</table>
| 1. Mindset have on the decision to become an entrepreneur | Perception on the positive image towards entrepreneurs by the local community. | Entrepreneurs have a high level of status and respect in the city.  
(1=Completely disagree…7=Completely agree) |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of visible successes/role models in the city/state</td>
<td>Number of visible successes/role models recognized by entrepreneurs in the city/state</td>
<td></td>
</tr>
</tbody>
</table>
| Perception on the role of successful entrepreneurs (role models) | The presence of successful entrepreneurs in the city has made me interested in becoming an entrepreneur.  
(1=Completely disagree…7=Completely agree) |  |

2. Individual attributes

<table>
<thead>
<tr>
<th>Percentage of entrepreneurs that have a had previous experience in starting a new business</th>
<th>Percentage of entrepreneurs that have a had previous experience in starting a new business</th>
<th>Percentage of entrepreneurs that have a had previous experience in starting a new business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of entrepreneurs that have had an unsuccessful experience in running a business</td>
<td>Percentage of entrepreneurs that have had an unsuccessful experience in running a business</td>
<td>Percentage of entrepreneurs that have had an unsuccessful experience in running a business</td>
</tr>
</tbody>
</table>
| Percentage of entrepreneurs perceiving good opportunities to significantly grow their business in the coming months | There are plenty of good opportunities to grow the business in the coming months  
(1=Completely disagree…7=Completely agree) | There are plenty of good opportunities to grow the business in the coming months  
(1=Completely disagree…7=Completely agree) |

3. Motivation for entrepreneurial activity

| Percentage of entrepreneurs who chose to become entrepreneurs in the absence of a better choice | I became an entrepreneur because of not having other options for work  
(1=Completely disagree…7=Completely agree) | I became an entrepreneur because of not having other options for work  
(1=Completely disagree…7=Completely agree) |
| Percentage of entrepreneurs that became entrepreneurs to increase their incomes | I became an entrepreneur to increase my personal incomes.  
(1=Completely disagree…7=Completely agree) | I became an entrepreneur to increase my personal incomes.  
(1=Completely disagree…7=Completely agree) |
| Percentage of entrepreneurs that became entrepreneurs to be more independent | I became an entrepreneur to be more independent  
(1=Completely disagree…7=Completely agree) | I became an entrepreneur to be more independent  
(1=Completely disagree…7=Completely agree) |
| Percentage of entrepreneurs that started a business due to good perceived opportunities | I became an entrepreneur because I perceived a good opportunity  
(1=Completely disagree…7=Completely agree) | I became an entrepreneur because I perceived a good opportunity  
(1=Completely disagree…7=Completely agree) |
1. Entrepreneur social image

Entrepreneurial social image represents the status that entrepreneurs have in the community. The way entrepreneurs perceive the support from their family or friends from one side and from the community on the other, reflects the cultural environment in which entrepreneurs are operating and in which potential ones want to emerge.

When attitudes toward entrepreneurship are positive, it generates cultural support, financial support, and networking benefits for those who want to start a business (Ács, Szerb & Autio, 2016). In regions where entrepreneurship social acceptance is high and entrepreneurial activities are socially encouraged, the local multiplier effects of policy measures tend also to be bigger because people are more likely to recognize and materialize entrepreneurial opportunities (Andersson, 2013).

Entrepreneurial role models can in particular influence the social acceptability of entrepreneurship (Blanchflower & Oswald 1998; Arenius & Minniti, 2005; Mulder et al., 2014). Disseminating their success stories increases the exposure of people to entrepreneurship, increasing people’s propensity to be self-employed. As connoted by Audretsch Thurik, Verheul, and Wennekers (2006, p.70), ‘the more entrepreneurs, the higher the exposure of people to entrepreneurship, the higher the acceptance of entrepreneurship as an alternative to wage-employment and the higher the likelihood of other people becoming self-employed.’

Moreover, successful role models serve as forerunner of business opportunities that other entrepreneurs can follow (Baumol, 1993). In particular, when these entrepreneurs bring to the market disruptive innovations in the Schumpeterian sense, they can influence the number of high-impact businesses. By displacing the existing firms or creating new markets, they become an example for other entrepreneurs who may want to pursue the same path (Röhl, 2016).

In particular, significant influence exerts those role models that form one’s own personal and social environment (Röhl, 2016). As such, having family members engaged in self-employment, and especially family members who are successful entrepreneurs can be an important driver of entrepreneurialism for individuals.
In addition, these role models can assist in developing other individuals’ entrepreneurial skills. Their practical and professional support, encompassing the tacit knowledge acquired through their entrepreneurial experience (Bosma et al., 2012), can compensate the lack of experience of new-to-the market entrepreneurs. However, as Bosma et al (2012) states, the more experienced and educated entrepreneurs are, the lower is the influence of role models in them.

On the other hand, ‘negative role models’ can prevent people from choosing a similar career. In this study, the focus is only on role models that exert a positive influence on the propensity of people to become entrepreneurs, and which ultimately affect entrepreneurial activity.

2. Individual attributes

Being an entrepreneur, particularly a high-impact one, implies personal traits and appropriate knowledge and skills to start and operate. Hence, the following indicators draw attention on the entrepreneurs’ perceptions on their personal attributes related to their risk-taking attitude to run high-impact businesses and the opportunities they perceive to scale up their business.

As also discussed in the previous determinant, the entrepreneurs’ personal skills and knowledge are at an utmost importance in running high impact businesses. Previous experience (successful or unsuccessful one) can play an important role in developing these necessary skills and attitude to run a new business.

Lastly, personal judgment of entrepreneurs on the good opportunities in growing their businesses is related to the their ability to identify future opportunities and turn them into value for them and society, and also on the way they perceive the environment they are embedded in. As Ács, Szerb and Autio (2016) remark, countries need people who can recognize valuable business opportunities, and who perceive that they have the required skills to exploit these opportunities.

3. Motivation for entrepreneurial activity

Entrepreneurs can start a business motivated by various reasons. They can start a business to exploit a good opportunity, to increase their personal income or to fulfill personal aims and become independent. On the other hand, they can start a new business because of not having other options for work, representing the so-called necessity-driven entrepreneurs. These entrepreneurs become self-employed to generate income in order to fulfill their needs.
Bibliographic reference


Audretsch & Belitski (2016). Entrepreneurial Ecosystems in Cities – Establishing the Framework Conditions


Global Entrepreneurship Monitor (GEM) and Endeavor (2011). High-Impact Entrepreneurship Global Report


Graham R. (2014), Creating university-based entrepreneurial ecosystems evidence from emerging world leaders


Raveloharimisy, J. L. (2011). Becoming formal or informal entrepreneurs: How institutions matter (pp. 187).


Röhrl, K. (2016). Entrepreneurial culture and start-ups: Could a cultural shift in favour of entrepreneurship lead to more innovative start-ups? Cologne Institute for Economic Research

Ruiz, C., & C. Dams. (2012). “Una Mirada a las Emprendedoras de Alto Impacto en Argentina.” A2C Advisors and Multilateral Investment Fund (IDB) and Inter-American Development Bank


Tödtling F., Trippl M. (2004). One size fits all? Towards a differentiated policy approach with respect to regional innovation systems


World Bank (2005). Doing Business: Removing obstacles to grow


## Appendix

### Table 1: Summary of Existing Entrepreneurial Ecosystem Assessment Frameworks

<table>
<thead>
<tr>
<th>Organisation</th>
<th>Approach</th>
<th>Subcategory</th>
<th>Components/ Indicators</th>
<th>Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD</td>
<td>Determinants</td>
<td>1. Regulatory framework</td>
<td>a) Ease of doing business</td>
<td>National</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b) Barriers to entrepreneurship</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>c) Top statutory personal income tax rate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>d) Top statutory corporate income tax</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Access to finance</td>
<td>a) Ease of access to loans</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b) Business angels (networks)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>c) Venture capital investment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>d) Share of high-technology sectors in total venture capital</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Entrepreneurial capabilities</td>
<td>a) Population with tertiary education</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b) Self-employment by place of birth</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>c) International students in tertiary education</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>d) Population aged 18-64 with training in starting a business</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. R&amp;D and technology</td>
<td>a) Business R&amp;D intensity, by size class of firms</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b) Firms with new-to-market innovations, by size</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>c) Firms collaborating on innovation, by size</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>d) Turnover from e-commerce</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Culture</td>
<td>a) Preference for self-employment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b) Entrepreneurial perceptions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>c) Positive image of entrepreneurship and entrepreneur</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>d) Negative image of entrepreneurship and entrepreneurs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Market conditions</td>
<td>a) Competition law and policy indicator (main components)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>b) Import burden</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>c) Export burden</td>
<td></td>
</tr>
<tr>
<td>Entrepreneurial activity</td>
<td></td>
<td>Share of high-growth enterprises(employment)</td>
<td>Share of high-growth enterprises(employment)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Share of high-growth enterprises (turnover)</td>
<td>Share of high-growth enterprises (turnover)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact</td>
<td>Babson</td>
<td>1. Policy</td>
<td>1.1 Government</td>
<td>1.1</td>
</tr>
<tr>
<td>--------</td>
<td>--------</td>
<td>-----------</td>
<td>---------------</td>
<td>-----</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.2 Leadership</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Support</td>
<td>2.1 Non-government institutions</td>
<td>2.1</td>
<td>a) Entrepreneurship promotion in non-profits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.2 Support professions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.3 Infrastructure</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Finance</td>
<td>5.1 Financial capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Human capital</td>
<td>4.1 Educational institutions</td>
<td>4.1</td>
<td>a) General degrees (professional &amp; academic)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.2 Labor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. Culture</td>
<td>5.1 Success stories</td>
<td></td>
<td>a) Visible successes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.2 Societal norms</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1147
| World Economic Forum | 1. Government & Regulatory framework | a) Ease of Starting a Business  
   b) Tax Incentives  
   c) Business Friendly Legislation/Policies  
   e) Access to Basic Infrastructure (e.g. water, electricity)  
   f) Access to Telecommunications/Broadband  
   g) Access to Transport  
 | 2. Support systems/mentors | a) Mentors/Advisors  
   b) Professional Services Incubators/Accelerators  
   c) Network of Entrepreneurial Peers  
 | 3. Education/training | a) Available Workforce with Pre-University Education  
   b) Available Workforce with University Education Entrepreneur-Specific Training  
 | 4. Funding and Finance | a) Friends and Family  
   b) Angel Investors  
   c) Private Equity  
   d) Venture Capital  
   e) Access to Debt  
 | 5. Human capital/workforce | a) Management Talent  
   b) Technical Talent  
   c) Entrepreneurial Company Experience Outsourcing Availability  
   d) Immigrant Workforce  
 | 6. Major universities | a) Major Universities Promoting a Culture of Respect for Entrepreneurship  

| 6. Markets | 6.1 Networks | a) Entrepreneur’s network  
   b) Diaspora network  
   c) Multinational corporations  
 | 6.2 Early customers | a) Early adopter for proof-of-concept  
   b) Expertise in productizing  
   c) Reference customer  
   d) First reviews  
   e) Distribution channels  

- a) International reputation  
- b) Innovation, creativity, experimentation  
- c) Social status of entrepreneurs  
- d) Wealth creation  
- e) Ambition, drive hunger  

---

World Economic Forum
1. Government & Regulatory framework
2. Support systems/mentors
3. Education/training
4. Funding and Finance
5. Human capital/workforce
6. Major universities
6.1 Networks
6.2 Early customers

- a) Ease of Starting a Business
- b) Tax Incentives
- c) Business Friendly Legislation/Policies
- e) Access to Basic Infrastructure (e.g. water, electricity)
- f) Access to Telecommunications/Broadband
- g) Access to Transport

- a) Mentors/Advisors
- b) Professional Services Incubators/Accelerators
- c) Network of Entrepreneurial Peers

- a) Available Workforce with Pre-University Education
- b) Available Workforce with University Education Entrepreneur-Specific Training

- a) Friends and Family
- b) Angel Investors
- c) Private Equity
- d) Venture Capital
- e) Access to Debt

- a) Management Talent
- b) Technical Talent
- c) Entrepreneurial Company Experience Outsourcing Availability
- d) Immigrant Workforce

- a)Major Universities Promoting a Culture of Respect for Entrepreneurship
7. Cultural support

- Tolerance of Risk and Failure
- Preference for Self-Employment
- Success Stories/Role Models
- Research Culture
- Positive Image of Entrepreneurship
- Celebration of Innovation

8. Accessible markets (Domestic and foreign markets)

<table>
<thead>
<tr>
<th>Determinants</th>
<th>Policy</th>
</tr>
</thead>
</table>
| Domestic Market | a) Large Companies as Customers  
| | b) Small/Medium Companies as Customers  
| | c) Governments as Customers  |
| Foreign /Market | a) Large Companies as Customers  
| | b) Small/Medium Companies as Customers  
| | c) Governments as Customers  |

**AS PEN**

<table>
<thead>
<tr>
<th>Policy</th>
</tr>
</thead>
</table>
| a) Effective tax rates for region (vs. competitor regions)  
| b) Amount provided in tax incentive programs  
| c) Overall business satisfaction with business environment  
| d) Level of satisfaction with government services and programs  
| e) Cost to start a business  
| f) Time to start a business (number of days)  
| g) Time to start a business (number of steps)  
| h) Cost to close a business  
| i) Percentage of businesses that report paying a bribe  |

**Business Support Services**

- Level of satisfaction with the quality and availability of business support services - legal, accounting, incubation, etc.
  a) Size of membership and budget of industry & network associations  
  b) Number of networking activities and events  
  c) Number of incubators and accelerators in region  
  d) **Average success rate for incubators and accelerators** (percentage of graduates that are profitable or have received investment 5 years after program participation)

**Infrastructure**

- Availability of high speed internet access  
- Availability of mobile networks  
- Current level of business satisfaction with availability of connectivity services
<table>
<thead>
<tr>
<th>Finance</th>
<th>Banks</th>
<th>Venture Capital/Angel Investors/Private Equity</th>
<th>Public Stock Market</th>
<th>Philanthropic Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a)</td>
<td>Amount of (d) Amount of assets invested in regional businesses, and investment amounts)</td>
<td>h) Turnover in Stock Market</td>
<td>k) Number of foundations and other philanthropic organizations in region, and other donors in region</td>
</tr>
<tr>
<td></td>
<td>b)</td>
<td>Average Interest rate spread</td>
<td>i) Capitalization of Stock Market</td>
<td>l) Amount of donor grants in region (foundations)</td>
</tr>
<tr>
<td></td>
<td>c)</td>
<td>Collateral Requirements</td>
<td>j) Newly Listed Companies in Stock Market</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d)</td>
<td>Current level of business satisfaction with availability of utility services (electricity, water, gas, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e)</td>
<td>Current level of business satisfaction with availability of transport services</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>f)</td>
<td>Percent of businesses paying for security</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>g)</td>
<td>Average cost of security (% of annual sales)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>h)</td>
<td>Losses due to theft and vandalism (% of annual sales)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Human Capital

<p>| a)    | High school graduation rates |
| b)    | Job placement information |
| c)    | College graduation rates |
| d)    | Annual number of STEM graduates |
| e)    | Business community satisfaction with quality of education, employability of graduates, private sector-academic collaboration |
| f)    | Quality and availability of entrepreneurship education |
| g)    | Quality of business schools (independent ratings, accreditations) |</p>
<table>
<thead>
<tr>
<th>Research &amp; Development / Innovation</th>
<th>a) Number of patents and patenting rates (patents/research dollars) for research centers and laboratories in region</th>
<th>b) Spin-outs and major technology licensing deals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurial Culture</td>
<td>a) Entrepreneurial motivation in society</td>
<td>b) Proclivity for risk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) Cultural and social norms</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d) Media narratives of entrepreneurship</td>
</tr>
<tr>
<td>Markets</td>
<td>a) Sales to International Corporate Customers</td>
<td>b) Sales to Domestic Corporate Customers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) Target market size (international)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d) Target market size (domestic)</td>
</tr>
<tr>
<td>Entrepreneurial activity</td>
<td>1. Rate of high-growth enterprises bases on employment growth</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Rate of high-growth enterprises bases on turnover growth</td>
<td></td>
</tr>
<tr>
<td>Impact</td>
<td>World Bank ‘Ease of Doing Business’ report</td>
<td>National/Subnational</td>
</tr>
<tr>
<td>Business regulations</td>
<td>1. Business regulations a) Starting a Business</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Dealing with Construction Permits</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) Registering Property</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d) Paying Taxes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>e) Enforcing Contracts</td>
</tr>
<tr>
<td></td>
<td></td>
<td>f) Labor market regulation</td>
</tr>
<tr>
<td></td>
<td>2. Business regulations: Finance a) Getting Credit</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Resolving Insolvency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) Protecting Minority Investors</td>
</tr>
<tr>
<td></td>
<td>3. Business regulations: Infrastructure a) Getting Electricity (Procedures, time and cost)</td>
<td>b) Reliability of the electricity supply and the cost of electricity consumption</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Regulations (Market)</td>
<td>Trading Across Borders</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Time &amp; cost to export the product of comparative advantage &amp; import auto parts</td>
<td></td>
</tr>
</tbody>
</table>
A STUDY ON EFFECTS OF FUNDING TYPES ON FUNDED FIRM’S PERFORMANCE

Yunsoo Choi
Doctoral Researcher
College of Business Administration
Kookmin University
siso@kookmin.ac.kr

Dohyeon Kim
Professor
College of Business Administration
Kookmin University
drkim@kookmin.ac.kr

Abstract

Since most of entrepreneurial firms in early stage cannot finance their business by themselves, recruiting external investment is crucial to their survival. However, various difficulties would be brought up in financing from external investors because of high level of uncertainty and information asymmetry.

Accelerator, a new type of early stage investor, has recently been growing fast and attracted strong attention. It mainly supports nascent entrepreneurial firms. Its difference from traditional investors has been argued as strong post-investment value-adding activities.

This study first empirically investigates whether the investment behavior and the performance of accelerator are different from typical venture capitals. The results illustrates accelerators are different.
Executive Summary

Entrepreneurial firms, which can commercialize various ideas and create added value, are in the middle of great attention.

Since most of firms in early stage cannot finance its capital sufficiently all by themselves, investments from external investors are key factor for their survival. To help firms overcome financial shortage, there are various kinds of systems for entrepreneurial firms like venture capitals, angels and governmental supports. However, various difficulties would be brought up in financing from external investors because of high level of uncertainty and information asymmetry. Moreover, even if they had successful finance from the outsider, problems related to their stakeholders, such as interrupting in management and types of investments, may cause unexpected results to firms.

Accelerator, a new type of early stage investor, has recently been growing fast and attracted strong attention. It’s main role is to give financial support to entrepreneurial firms in the early stage. it also supports firms by providing mentorship, education, and networking services. On the other hand, difference between existing investment behaviors and performance of the investment is still in controversy.

Therefore, this study compares investment behavior and performance between accelerator and venture capitals. Moreover, it empirically examines the characteristics of two investment types and provides whether there are any differences between the two. We used 25,558 investment data of accelerators and venture capital(VC) from Crunch Base Database; 6,831 for accelerator investment data and the rest for venture capital investment. By conducting multiple regression analysis, logistic regression analysis, survival analysis and other additional analyses, we found that the performance relates to investment behavior.
Introduction

After the industrial revolution started from the United Kingdom in the 18th century, nations and firms grew dramatically due to the “mass-production” which is based on efficiency. However, this growth recently confronted the limits and creative ideas and their convergence for creating added-value is growing attention. Entrepreneurial firms, which can commercialize various of new ideas, is performing a main role in enhancing national competitiveness (Bygrave & Zacharakis, 2014).

However, most entrepreneurial firms are having difficulties with shortage in internal funds and external financing and therefore it significantly affects entrepreneurial firms’ survivability (Shrader & Simon, 1997). Since investments on entrepreneurial firms are typically high-risky and high-return investments, investors and institutional investors are prone to be prudent when selecting a target firm (Fried & Hisrich, 1994; Tyebjee & Bruno, 1984). This suggests that entrepreneurial firms may have lots of difficulties in external financing when they don’t have enough working capitals.

For that reason, there are investments (venture capitals and angels) and various governmental supports, sufficient investment and support for the firms in the early stage are still insufficient.

While this shortage, accelerators are getting more attention as a brand-new investment type for entrepreneurial firms.

Unlikely to prior investments, accelerators not only support financially, also provide mentorship, education, and networking services in order to support firm’s growth. However, exclusiveness from the previous investment behaviors and performance of the accelerator program is still on controversy. Specifically, as functions of venture capitals are expanding (Mayer et al., 2005; Samir, 2014; Tykvova, 2004), It remains controversial
whether accelerators have different investment behavior and performance compared to others.

Absence in empirical study causes many different opinions on accelerator. This is because early studies were only focused on several accelerators and it made studies to be stagnant.

However, this study performs as an empirical analysis on accelerator by using cumulated data and show whether difference actually exists by comparing its characteristics and performances with venture capital, which is one of the most active types. Even though there are several constraints in the used data, this study is the first empirical study and provides supporting ideas to the question whether the accelerator is effective and efficient investment form for virtuous circulation in venture ecosystem. Moreover, it also suggests future research ideas and lessons learned from the research results.

Theory and Hypotheses

1) Prior Studies Related to Accelerator

System that provides mentorship, education, networking services to entrepreneurial firms in the early stage has emerged since mid 2000s, starting from Silicon Valley and accelerator caught attention when Y-Combinator was established in 2005. Accelerator is a unique investment type from existing investments such as venture capitals, angels and incubators that provide not only financial supports but also various types of supports that is no-financial(Cohen & Hochberg, 2014).

Accelerator provides contextual support such as mentorship, education, consulting and human network services for entrepreneurial firms in their beginings to achieve the rapid growth in a short time of period(Barrehag et al., 2012; Levinsohn, 2014; Miller & Bound, 2016).
Recently, accelerator program is growing fast in the United States and Europe (Kim & Yum, 2014; Miller & Bound, 2011). Korea government also show a will to promote the program by announcing ‘Global accelerator promoting plan’ in last year March (MSIP & SMBA, 2014).

However, whether accelerator is a new type of investor or not is still controversial among researchers and in the market.

Cohen (2013) stated that an accelerator is a different type of investment institution, which provides more contextual support rather than financial investment, compared to angel and incubator. Moreover, its target firms are mostly entrepreneurial firms in the early development stages, which are risky firms and existing investments does not have much interest in it (Hallen et al., 2014). Additionally, it prefers to invest when venture capital investors think that it is out of the money (Miller & Bound, 2011). Therefore, Birdsall et al. (2013) provided that accelerators increase the survival probability of entrepreneurial firms and they have higher and faster returns on investment compared to venture capitals. There are more researchs providing that because there are differences in the perspectives on market between accelerators and other investors or institutional investors, accelerators have an important role in constructing effective venture ecosystems. On the other hands, there are researches suggesting that additional verification is necessary regarding issues of accelerators.

However, it is hard to take empirical tests on the effectiveness of accelerators, as there are limitations concerning the measurement of investment performance of them because of their short history (Kang, 2014).
2) Prior Studies on Early Stage Financing Entities

According to Kenney(2000), Mun(2010), venture capitals invest on entrepreneurial firms, which mostly have high potential and technology, however, suffering from financing, in the early stages and generate profit by selling shares or executing business openings.

Investing in private companies, supporting entrepreneurial firms with knowledge accumulated from various investment experiences and attracting external financing were typical types of venture capitals in United States of America in the mid-1980s. However, various types of venture capitals have been created after reflecting changes in market and characteristics of markets in different countries. Moreover, its role has been expanded since then. Reflecting these trends, numerous researches have conducted regarding the issues of investment behaviors of venture capitals.

According to Gupta & Sapienza(1992), venture capitals, which are highly experienced and professional in specific industry, tend to invest in entrepreneurial firms in the early stages.

Ko & Lee(2016), Mayer et al.(2005), Tykvova(2004) also provided that investment timing and strategies are different depending on the source of venture capital. Moreover, Norton & Tenenbaum(1993) asserted that venture capitals prone to concentrate their investment on a firm in the early stages in specific industry, instead of investing in variety of firms in different development stages or in different industries, to diversify its high risk of investment.

On the other hand, young venture capital prefers to invest in relatively matured firm(Gompers, 1996). This is because young venture capitals want to go public or listed as soon as possible by gaining reputation in the market by investing in such firms. Thus, young venture capitals might prefer to invest in relatively matured firms, which already met requirements to go public. Moreover, young venture capitals prefer to invest in matured
firms, which their implicit risk is smaller than early-stage firms, since they have not enough knowledge and experiences in their business.

Like this way, many researches are providing different views of preferences on investment timing of venture capital. In traditional perspective, however, venture capitals mostly invest later than accelerators.

Recently, a new type of venture capital has emerged, which is called ‘Micro-MC’. According to Samir(2014), micro-VC bridges gap between existing angel and venture capitals. Unlike venture capitals, micro-VC proceeds investments in a small scale and increase its contextual support to target firms, just like accelerator, in order to avoid high-risk from investment. Emergence of micro-VC has tendency to make the boundary of venture capital ambiguous.

3) Prior Studies on Investment Behavior

Gupta & Sapienza(1992) claims that size of investment institution affects investment behavior. Moreover, big-sized venture capitals are easy to select their target companies and they have tendency to invest in various kinds of entrepreneurial firms in diverse industry and locations, since they can support the firm to make profit after investments.

Moreover, according to Norton & Tenenbaum(1993), if venture capital has sufficient experience in specific sector and be able to take the risk, or even reduce the risk, of entrepreneurial firms in the early development stages, it prefers to invest in high gain investments and proceeds repetitive investments during their investment periods.

Gompers(1995) suggested the searching cost of firms, which is generated by the information asymmetry, because of the phased investments. Venture capital, of course, trying
to reduce this risk by analyzing investment phase and its amount of investment and use this information to decide investment timing and the amount of investment.

4) Prior Studies on Performance of Funded Firm

In case of accelerator and venture capital, they provide additional activities to generate values to target firms. They enhance stakeholder relationships by providing existing human network and provide supports to reinforce their management professionalism (Cohen, 2013; Hallen et al., 2014; Hellmann & Puri, 2002; Lindsey, 2008). This kind of support from investors complement target firms’ ability and increase business performance by follow-up investment attraction (MacMillan et al., 1989; Megginson & Weiss, 1991; Sapienza, 1992).

Meanwhile, Investment performance of venture capital has been thoroughly analyzed in the prior literature by applying various variables such as number of patents, IPO and information related to M&A (Bertoni et al., 2013; Engel, 2004; Manigart et al., 2002; Park & Steensma, 2012; Rosenbusch et al., 2013). On the other hand, there is no empirical research related to performance of the accelerators because its related database is lacked (CrunchBaseDB introduced information of accelerator in 2005). Therefore, performance of accelerator is still controversial. Moreover, there is a limitation to apply recent performance measurement to measure accelerators’ investment performance because of its uniqueness form of investment compared to old ones.

For example, prior studies measure the performance of accelerator with scale of investment, scale of creation of employment, current operating status, scale of return on investment (Mejia & Gopal, 2015). However, performance measurements used in the prior studies is volatile to industry effect on a firm’s performance (Tyebjee & Bruno(1984), as cited in Shepherd(1999) p.621).
To survive is a sufficient condition for entrepreneurial firms to have competitiveness and to grow dramatically because of its uncertain conditions (Lim et al., 2008). Also in perspective of firm dynamics, firms survivability is a result of firm’s composite activity performed in the firm (Lee, 1998). Therefore, this study does not consider general investment performance as an investment performance, rather, post investment, which is the result of investment and follow-up supporting activities, and survivability.

5) Hypotheses and Research Methodology

Based on prior studies mentioned above, this study examines whether real accelerator and venture capital are different. Basically, we expect that accelerators invest earlier than venture capitals and operate more systematical supporting programs. Moreover, its delicate activities, such as follow-up support, may affect target firms’ performance. To test this expectations, we construct hypotheses as follows;

\textit{H1. There are differences in investment behaviors between accelerators and venture capitals.}

\textit{H2. There are differences in funded firms’ performances depending on investment behavior.}

\textit{H3. There are differences in funded firms’ performances between accelerators and venture capitals.}

\textit{H4. Funded firm’s performance depending on investment behavior are affected by investment type.}
1) Data and Sample Characteristics

This study analyzes characteristics of accelerator and venture capital based on CrunchBase DB\(^1\). CrunchBase DB provides profile of investment firms, funded firms and investment related information.

There is a problem of credibility of the database since it provides updates to a certain firm’s information as a type of Wikipedia. However, this database already been used in

\(^1\) CrunchBase DB is a database that is providing information related to startups and 100 NASDAQ companies managed by TechCrunch, it mainly provides the information of the firms and other information related to people, investors, investment news and other events of the firms(http://data.crunchbase.com).
various studies related (Arora & Nandkumar, 2012), and the verification of the database has been frequently progressed in the past (Alexy et al., 2012; Block & Sandner, 2009).

This study classified the information of accelerator and venture capital investment by merging the Seed-DB, which only post the information of the accelerator, and CrunchBase DB, which provides the information of venture capitals. Accelerator is defined from the Seed-DB based on following standards and the standard is developed version of the Miller & Bound (2011) definition.

The followings are required to be a “seed accelerator”

- Open application process; anyone with an idea can apply

- Accelerator invests in companies, typically in exchange for equity, at pre-seed or seed stage

- Cohorts or ‘classes’ of start-ups; not an on-demand resource

- Programme? of support for the cohorts, including events and company mentoring

- Focus on teams, not individual mentoring

These definition of accelerator is used frequently in prior studies (Barrehag et al., 2012; Birdsall et al., 2013; Cohen, 2013; Cohen & Hochberg, 2014; Hallen et al., 2014; Levinsohn, 2014), specifically, in Seed-DB, it excludes from the data if Seed-DB pays for the program or

2 CrunchBase DB does not compr the information of accelerator.
if requirements are restricted to academic students. Therefore, this study defines the accelerator same as Seed-DB and venture capital as a data which is marked as a “Venture Capital” in the CrunchBase DB. If an investor which is marked as an accelerator in Seed-DB, but marked as Venture capital in CrunchBase DB, we clarify its type according to Seed-DB.

Pearce(2014) provides 17 industry sectors which venture capitals favor of and this study also follows Pearce(2014) industry classification rule to classify CrunchBase DB industry.

As for the nation classification, we re-arrange CrunchBase DB by lower countries and countries which has a big frequency difference in top 6 countries(United States of America, Canada, Germany, United Kingdom, Israel and China).

According to prior studies which provide that difference in investment strategy and behavior after 2008 financial crisis regarding the entrepreneurial firms investment and its performance(Lee, 2010; Park, 2013), we collected data from January 2009 through August 2015 from CrunchBase DB.

Total investment data collected is 25,558, including 6831 accelerator investments and 18,727 venture capital investments.

2) Research Methodologies

The purpose of this study is to analyze the empirical effect on investment from outsiders to entrepreneurial firms in early stage.

We conducted our analyses as followings; first, we conduct t-test to examine whether there are differences in main indicators between accelerators and venture capitals. Second, we examined the difference in post funding amount(we measured only the first post funding amount) depending on these investment behaviors by conducting multiple regression.
analysis. Moreover, we conducted survival analysis to test whether there are differences in target firms’ survivability depending on their investors: accelerator and venture capital, and for other test on performance, we conducted logistic regression analysis. The reason we conducted survival analysis was that survival analysis can analyze data that has a gap between the period because of inevitable condition, such as, for example, if a firm refused to participate in survey or in case of mergers and acquisitions. Because of this benefit, it is useful to research concerning early entrepreneurial firms. Lastly, we examined the effect of investment type on performance depending on its behavior as a control variable.

**Results**

According to 6,831 accelerator investment records, venture capital got financed by accelerators, average 535,74 days after a firm founded. Also, average age of accelerator was 1,320.55 days.

Entrepreneurial firms, which are invested by accelerators, invested average 403.73 days after the day of their foundation, and got invested average 357,993.20 dollars.

Accelerators investments are executed, average 301.92 days after its previous investment and average amount was 579,577.33 dollars. Number of investment of accelerators was 3.27 on average, moreover, after their investment they invested with 2.43 investors and institutional investors (Refer <Table 1>).

Total 18,727 investment records of venture capital show that entrepreneurial firms got financed by venture capital, average 1,415.19 days after its establishment and average age of venture capital was 5,103.26 days. Moreover, the first investment of venture capitals to entrepreneurial firms had started average 829 days after firms’ foundations and got
3,995,589.45 dollars investment on average. Venture capitals proceeded their investment 520.42 days after the previous investment and invested 12,019,291.36 dollars on average. Number of investment of venture capitals were average 6.56 and invested with 4.15 investors or institutional investors (Refer <Table 2>).

<Table 1> Descriptive Statistics: Investment of Accelerators

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Max</th>
<th>Min</th>
<th>Std</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm age(day)</td>
<td>535.74</td>
<td>15,793.00</td>
<td>.00</td>
<td>643.60</td>
</tr>
<tr>
<td>Age of investment firm(day)</td>
<td>1,320.55</td>
<td>3,914.00</td>
<td>.00</td>
<td>893.19</td>
</tr>
<tr>
<td>Days between foundation and the first investment</td>
<td>403.73</td>
<td>15,793.00</td>
<td>.00</td>
<td>605.85</td>
</tr>
<tr>
<td>Days between present investment and previous investment</td>
<td>301.92</td>
<td>4,074.00</td>
<td>1.00</td>
<td>277.17</td>
</tr>
<tr>
<td>Mean funding amount of funded firm(usd)</td>
<td>357,993.20</td>
<td>79,000,000.00</td>
<td>17.00</td>
<td>1,752,765.65</td>
</tr>
<tr>
<td>Mean funding amount of investor(usd)</td>
<td>579,577.33</td>
<td>3,043,281.25</td>
<td>1,424.20</td>
<td>596,939.89</td>
</tr>
<tr>
<td>Prior funding amount of funded firm(usd)</td>
<td>955,816.68</td>
<td>86,000,000.00</td>
<td>3,000.00</td>
<td>3,855,945.61</td>
</tr>
<tr>
<td>Present funding amount of funded firm(usd)</td>
<td>830,912.26</td>
<td>80,000,000.00</td>
<td>68.00</td>
<td>3,141,501.82</td>
</tr>
<tr>
<td>Number of investor(past)</td>
<td>3.27</td>
<td>40.00</td>
<td>1.00</td>
<td>4.16</td>
</tr>
<tr>
<td>Number of investor(present)</td>
<td>2.43</td>
<td>40.00</td>
<td>1.00</td>
<td>3.19</td>
</tr>
</tbody>
</table>

<Table 2> Descriptive Statistics: Investment of Venture capital

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Max</th>
<th>Min</th>
<th>Std</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm age(day)</td>
<td>1,415.19</td>
<td>33,815.00</td>
<td>.00</td>
<td>1,508.62</td>
</tr>
<tr>
<td>Age of investment firm(day)</td>
<td>5,103.26</td>
<td>38,650.00</td>
<td>.00</td>
<td>5,024.38</td>
</tr>
<tr>
<td>Days between foundation and the first investment</td>
<td>829.00</td>
<td>33,815.00</td>
<td>.00</td>
<td>1,344.09</td>
</tr>
<tr>
<td>Days between present investment and previous investment</td>
<td>520.42</td>
<td>5,404.00</td>
<td>1.00</td>
<td>442.50</td>
</tr>
</tbody>
</table>
Result of t-test to examine whether there is a difference in investment behavior depending on investment type shows that there is a statistically significant difference in all investment behavior related variables. Therefore, the result strongly supports hypothesis 1 (Refer <Table 3>). Generally, accelerators invest in relatively faster timing and younger firms compared to venture capitals as we expected.

<Table 3> Independent sample t-test result in investment behavior depending on investment type

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std</th>
<th>F</th>
<th>p</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm age(day)</td>
<td>Accelerator</td>
<td>535.74</td>
<td>643.60</td>
<td>1,514.125</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Venture Capital</td>
<td>1,415.19</td>
<td>1,508.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days between foundation and the first investment</td>
<td>Accelerator</td>
<td>403.73</td>
<td>605.85</td>
<td>646.859</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Venture Capital</td>
<td>829.00</td>
<td>1,344.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days between present investment and previous investment</td>
<td>Accelerator</td>
<td>301.92</td>
<td>277.17</td>
<td>252.490</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Venture Capital</td>
<td>520.42</td>
<td>442.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean funding amount of funded firm(usd)</td>
<td>Accelerator</td>
<td>357,993.20</td>
<td>1,752,765.65</td>
<td>532.637</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Venture Capital</td>
<td>3,995,589.45</td>
<td>12,339,007.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior funding amount of funded firm(usd)</td>
<td>Accelerator</td>
<td>955,816.68</td>
<td>3,855,045.61</td>
<td>94.398</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Venture Capital</td>
<td>21,740,136.92</td>
<td>96,513,335.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present funding amount of funded firm(usd)</td>
<td>Accelerator</td>
<td>830,912.26</td>
<td>3,141,901.82</td>
<td>488.963</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Venture Capital</td>
<td>14,419,641.17</td>
<td>47,569,964.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of investor(past)</td>
<td>Accelerator</td>
<td>3.27</td>
<td>4.16</td>
<td>422.040</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Venture Capital</td>
<td>6.56</td>
<td>6.52</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
We conducted multi-regression analysis to test whether there is a post funding amount depending on investment behavior. As a result, we found that all variables which proxy for investment behavior affects post funding amount of a target firm (Refer <Table 4>). Therefore, it strongly supports hypothesis 2.

*<Table 4> Results of multi-regression analysis in post funding amount depending on investment behavior*

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>β</th>
<th>t(p)</th>
<th>F(p)</th>
<th>Adj-R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.321</td>
<td></td>
<td></td>
<td></td>
<td>.861</td>
</tr>
<tr>
<td>Firm age(day)</td>
<td>-0.06</td>
<td>-0.019</td>
<td>-3.694***(.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days between foundation and the first investment</td>
<td>-.061</td>
<td>-.036</td>
<td>-9.806***(.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Days between present investment and previous investment</td>
<td>-.016</td>
<td>-.007</td>
<td>-2.598***(.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean funding amount of funded firm(usd)</td>
<td>1.437</td>
<td>1.177</td>
<td>198.119***(.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior funding amount of funded firm(usd)</td>
<td>-.190</td>
<td>-.221</td>
<td>-38.107***(.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present funding amount of funded firm(usd)</td>
<td>-.200</td>
<td>-.197</td>
<td>-31.099***(.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of investor(past)</td>
<td>.050</td>
<td>.156</td>
<td>47.622***(.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of investor(present)</td>
<td>.103</td>
<td>.157</td>
<td>57.265***(.000)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*<0.1 **<0.05 ***<0.01

We executed logistic regression analysis to test whether there is a difference in post funding amount depending on investment type. As a result, We found out that no significant difference between the two (Refer <Table 5>). Besides, when we examined the survivability of target firms by executing survival analysis, performance of firms which got invested by
venture capital was higher (Refer [Figure 2]). Therefore, the result barely supports hypothesis 3.

<Table 5> Results of logistic regression analysis in post funding amount depending on investment behavior

<table>
<thead>
<tr>
<th>Variables</th>
<th>Factor</th>
<th>B</th>
<th>Wald</th>
<th>p</th>
<th>Exp(B)</th>
<th>x²(p)</th>
<th>Hosmer &amp; Lemeshow x²(p)</th>
<th>Nagelkerke R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investor Type</td>
<td>(Constant)</td>
<td>-2.507</td>
<td>753.299</td>
<td>.000</td>
<td>.000***</td>
<td>6776.110***</td>
<td>(000)</td>
<td>.747</td>
</tr>
<tr>
<td>Post Funding Amount</td>
<td>.000</td>
<td>11.706</td>
<td>.622</td>
<td>.001***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*<0.1 **<0.05 ***<0.01

[Figure 2] Survival Function at Mean of Covariates
The result of testing the fourth hypothesis cannot provide proper evidence to reject the hypothesis. However, we are modifying our research methodologies for in-depth analysis.

**Discussion and Conclusion**

In this study, we used CrunchBase DB to examine the investment behavior of accelerator and venture capital to test whether these two institutions are different. According to independent sample t-test result, we could find the difference between the two investment type. Specifically, even though accelerator has relatively smaller amount in investment amount compared to venture capital, it has tendency to invest firms in earlier development stages and invest faster than venture capitals. Moreover, we could find that better performance is expected when investing in younger firms in early-development stage.

These results are not explaining the difference in performance between accelerator and venture capital, rather, examining the behavior of general high risk and high return investment. Moreover, as we could find out that accelerators’ performance is lower than that of venture capital, their results of systematic supporting activities were not that great compared to that of venture capital.

1) **Implications**

Existing researches on accelerator were mostly limited to few institutions or are only the pilot studies, this study, however, examines whether accelerator and venture capital is different investment type and whether there are differences in investment performance by using CrunchBase DB.
The result of independent sample t-test shows that there are several differences in evaluating and selecting target companies between accelerator and venture capital.

First, compared to accelerator, venture capital is investing in firms which are in much earlier stage of business development. This means that accelerator is performing a new role as a new investment type which invests earlier than venture capital, which are necessary to industry and researchers for virtuous cycle of venture ecosystem.

Second, we could know that accelerator is taking higher risk compared to venture capital by investing when a firm got small amount of investment and investors. When a target firm got invested by accelerator, a firm can be recognized as a good company since they got invested in a short time of period, however, as venture capitals’ investment was not preceded, accelerator has confidence in their unique contextual support.

Thirdly, average amount of accelerator is smaller than venture capital, however, they are investing at faster pace compared to venture capital.

However, according to the comparison between two investment type, accelerator and venture capital, venture capitals’ investment performance was higher than that of accelerator, thus, it leads to the question of accelerator’s ability to support firms to grow. Nevertheless, this research provides the evidence of new investor, accelerator, whose financing activities exists when a firms is struggling in the Death Valley. Moreover, according to the result of accelerator’s lack of performance, we could feel the necessity of re-examination on accelerator’s investment strategy, such as investment timing, follow-up support methods etc).
2) Limitations

This study adduced the answer toward the controversy related to accelerator by using limited secondary data. Even though there are still several limitations exist such as omitted data of CrunchBase DB and confused classification standard within accelerator and venture capital.

This study minimized these limitations by analyzing big data. Moreover, this study test for prior studies opinions and shed light on the characteristics of accelerator. Rather, since the data has been processed by researchers intention, reduction in the data related to industry, entrepreneurial firms and countries of institutional investors can be one of limitations in this research.

There are several more limitations in this research, firstly, there were difficulties in analyzing and understanding the Crunchbase DB, as there were so many missing values in the database. Moreover, since the database is “the Wiki-Way” to collect the data, transcription errors are inevitable. However, as this database has been tested by previous researches(Alexy et al., 2012; Block & Sandner, 2009), the reliability, except the missing values, is already been clarified. However, a limitation in recognizing environments and its behavior is still remaining since only simple hypothesis is available because of its restrictions as a second database.

For following studies, further analysis on behaviors and performances should be made, other than investment type. Moreover, in-depth research concerning the way of accelerator follow-up support, such as mentoring, education, consulting, human network, reduces risks implicated in entrepreneurial firms and its process should be made in the future.
References


1173


Techno-entrepreneur from Emerging Economies:
A case of DJI in Global Competition and Innovation

XU HONGJIA
Central University of Finance and Economics, China

Dec. 6, 2016
Summary

Techno-entrepreneurs from emerging economies are becoming the main engine of innovation for the bottom-of-the-pyramid (BoP) (Prahalad, 2004). We apply the case of study on DJI to explore how techno-entrepreneurs change the landscape of global competition and innovation.

1. Global competition in consumer drone industry

GoPro is an American company providing HD video equipment for extreme sports. Its product HERO camera has won the hearts of outdoor extreme sports players. In recent years, GoPro have been under the pressure of disruptive innovation from a Chinese company named DJI, the dominant firm of drone market. In order to draw back extreme sports players, GoPro recently launched Karma drone to seize the commercial drones market. But just a few days after Karma launch event, DJI released MavicPro. MavicPro realized the integration of innovation in all aspects of fly control, special flight function, product design, battery life, etc... Mavic outgunned Karma by nearly all aspects.

<table>
<thead>
<tr>
<th>Common features</th>
<th>GoPro Karma</th>
<th>DJI Mavic Pro</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>35.3oz</td>
<td>25.9oz</td>
</tr>
<tr>
<td>Max speed</td>
<td>35 MPH</td>
<td>40 MPH</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Innovative features</th>
<th>Do not have obstacle avoidance system</th>
<th>Automatically circumvent trees, buildings and moving objects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Intelligent Flight Modes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ActiveTrack, Gesture and TapFly</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remote control</th>
<th>Necessity</th>
<th>Sold separately; Phone control is available</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Camera</th>
<th>A whole set of shooting solutions from the sky to the ground.</th>
<th>Supports 4K ultra HD video; DJI Goggles, seeing the world like a bird</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max flight time</td>
<td>20min</td>
<td>27min</td>
</tr>
<tr>
<td>Price</td>
<td>$799(without camera) $1200(with Hero5 camera)</td>
<td>$1000(with camera)</td>
</tr>
</tbody>
</table>

Although GoPro has a large amount of fans around the world, MavicPro is fantastic. After DJI launched its new product, GoPro faced a drop of 6.3% in stock price. This is not the first time DJI make competitors feel a headache. From Phantom to Phantom 4, each new product release of DJI has attracted the eyes of the drones’ enthusiasts.

DJI claims the global market share of 70% or more. DJI Phantom, as the first commercial drone in history, was one of The 50 Most Influential Gadgets of All Time listed by Times, which included landmark products like IPhone, Sony Walkman and so on. The current valuation of DJI is more than $8 billion. The property of DJI founder Frank Wang, known as Jobs in drones industry, is worth $3.6 billion. However Frank Wang is not a conventional CEO as others. He rarely participates in public activities, and even was absent the release conference of “Phantom3” for the reason that “Phantom3” is not perfect as he expected. Perhaps, it is the “obnoxious perfectionism” that makes Wang got such achievement.
2. Born-Global Entrepreneur

When Wang was senior, he developed a helicopter control system, which had also become a turning point in his life. In 2006, with a prototype flight control system developed in his dormitory, Wang started his business in Shenzhen.

Initially, DJI could only have a monthly sales of about 20 flight control systems. Wang didn’t know how large the market size would be and struggled for living. Then, Lu Di, as an angel investor, who is now in charge of the financial work of DJI, invested $90 thousand to DJI in the end of 2006, making DJI go through the hardest time. And Xie Jia, in charge of marketing work now, joined DJI in 2010. The establishment of core team had been accomplished.

After the exchange of ideas with drone enthusiasts all over the world and repeated failure and success in R&D, the cost of flight control system had been decreased from $2000 in 2006 to $400 in 2011. Also in 2011, Wang met with Quinn in Muncie. And Quinn joined DJI and established North America Branch.

3. Opening A New Chapter

In the end of 2012, when DJI Phantom was developed successfully, DJI seemed had got all elements of success. It was in the “Hardware Silicon Valley” Shenzhen, and had a broad market, “the great salesman” Quinn, and the innovative products “Phantom”. As the pioneer of commercial drones industry, the revenue of DJI had increased to $130 million in 2013, 80 times than three years before, although there were hardly any sales efforts. DJI entered a stage of rapid development.

However, not everything went smoothly. In 2013, DJI rejected GoPro’s proposal about trademark, and terminated the cooperation. So GoPro began to develop its own drones and became a strong competitor. And Quinn left DJI, joining rival company 3D Robotics with a number of colleagues. Despite of many obstacles, DJI continued its rapid growth. By 2015, the sales volume had exceeded $1 billion.

With the rapid growth of drone market, a slew of vendors came into the market. But with the accumulation of technologies for years, DJI became the dominant firm in this market.

4. Pursuit of excellence

As mentioned before, what Wang did most was ongoing research and development. Technological entrepreneurship is different with other entrepreneurships. It is rely on the establishment of the technical systems rather than entrepreneurial behavior. When a technological entrepreneurs own technologies which cannot be imitated and replaced, these technologies will be seen as a good opportunity to capitalize on for their uniqueness. In addition, the first-mover advantage leads to the advanced technologies of DJI exceeding competitors for 2-3 years. In 2015, there were more than 500 employees in DJI R&D department.

Besides, as a “born global” company, or in other word, because most drone enthusiasts were located in Europe and America previously, DJI had to focus on Europe and America markets. And these two markets are still the most important market for DJI. In 2015, DJI exported about 500 thousand drones.

2015 is widely called as “first year of drones”. In 2015, there were 74 cases of financing in
the world, totaling $454 million. However, DJI showed its power to guard its status. In 2016, the biggest rival 3D Robotics announced the termination of commercial drone business, and the number of financing in drone industry is also far less than previous year. Moreover, DJI is constantly expanding their business scope, such as launch of the plant protection UAV MG-1.

According to the ASD Reports report, the market size of UAV industry will exceed $20 billion in 2022. Such a large market potential will breed fierce competition. And consumer will only worship the most advanced products, which means DJI cannot slow down its paces. The developments of support industries like battery industry will also constraint the innovation. Furthermore, considering the drone crash near White House and other frequent accidents reports will lead more supervisory policies which will have negative impacts on the consumption of drones.

But as Wang said “we are not used to make a second-rate product.” DJI will continue to compete with the international rivals and “pursuit of excellence” all the time.

5. Main findings: Why is DJI successful?

As a trailblazer, it seems that the key reason for DJI’s success is to entering a new blue ocean market. However, the elements of success are far more than that.

At the beginning of entrepreneurship, Wang adopted global mindset to develop the company, especially in the process of market development. The main clients of DJI were China domestic companies initially. However, due to the small size of domestic market, DJI developed overseas market as the core in the early stage. In particularly, the establishment of the North American branch made products more directly to the target market. The global mindset which concentrates on the global market rather than a region, leads to the sensitivity of market opportunities and full use of advantages of trailblazer to strengthen its presence.

Shenzhen is known as the “Hardware Silicon Valley”. The supporting industries like semiconductor industry and battery industry there continues to thrive. On account of the location in Shenzhen, DJI can access to the required accessories directly, so the expense of prototype is much lower than foreign rivals, which make DJI have a better performance in R&D. Besides, government policy supports have played a significant role.

Although R&D is an important advantage to dominate the market, Wang’s entrepreneurial traits also play a tremendous role. Wang attach importance to independence of company, so DJI didn’t get a lot of financing, which inclined DJI not to be in thrall to others. And breaking up with GoPro showed the courage to compete. The entrepreneurial traits lead to the passion of no fear and its advance under pressure.

Based on the case of DJI, we believe that the research on the trailblazers from emerging economies and their innovations will be promised and extended the entrepreneurship literature.

References

The Economist (2016), China’s Tech Trailblazers,


Abstract

Social entrepreneurship has emerged as an exciting topic for researchers and practitioners. The desire for a better understanding of how to leverage entrepreneurial activities to create solutions to social problems has led to an increased attention into this stream of research. In order to provide a solid foundation upon which to build future research in this burgeoning field, this paper proposes a systematized overview of the primary areas of social entrepreneurship research and scholarship that have emerged over the past 20 years. In this paper, relevant social entrepreneurship literature will be categorized into the themes of definitions, measures of effectiveness, impact investing, nonprofit focus, and for-profit focus. While these areas may have overlapping characteristics in the literature they are proposed as appropriate descriptions of the current foundational topics in social entrepreneurship research and study.
Introduction

Early writings on social entrepreneurship can be found in articles related to understanding the flow of capital. Lucas (1990) sought to understand economic development initiatives and why it seemed that capital did not flow as readily into poorer countries as the economic indicators showed it should. Later in the decade Offer (1997) discussed the idea of non-market exchanges, such as gifts or donations, as being a key component of a free-market economic system, which is supposed to be based on individuals seeking to maximize their own return on investment, regardless of the impact that it had on others in the economy. Offer looked at the dynamics of regard, and how it impacted the way in which individuals continued to engage in non-market exchanges (1997). This “economy of regard”, as Offer (1997) describes it, provides the basis for some of the language that would move forward the idea of a model of business that was focused, at least partially, on the intentional positive impact of a market exchange on society. Mello (1997) looked at the social impact of Foreign Direct Investment (FDI) on a developing country, and how the impact of FDI reaches out beyond the initial return on investment, to actually help to grow the domestic production of the underdeveloped nation, a dynamic also studied by Gregorio & Borensztein (1998). However, one of the key contributions to the study and understanding of social entrepreneurship is the article by Gregory Dees (1998) in which he seeks to establish the field of Social Entrepreneurship as separate from traditional entrepreneurship and worthy of theoretical and practical study. As the research into this area has emerged there has been an attempt by scholars and practitioners to establish the parameters and theoretical foundations of the research in order to establish it as a long-term area of inquiry. This study seeks to add to that foundation by discussing some of the current and emerging areas of inquiry.
Methodology

For this systematized overview of the social entrepreneurship research a grouping of the literature is proposed in order to assist in the categorization of the current research for both researcher and practitioners. The articles for this paper were selected based on a couple of factors. The first factor is that the articles were selected from the suggested reading lists of some of the leaders in the field (Skoll Center for Social Entrepreneurship, Ashoka) as well as the journals that have been developed to more specifically add to the social entrepreneurship literature, such as the Journal of Social Entrepreneurship. Additionally, multiple searches were performed in the well-known databases (Proquest, EBSCO) to view the articles most relevant to the term social entrepreneurship. Articles that mentioned social entrepreneurship, with no specific constraints on the date were appraised. After reviewing the material, a number of themes emerged that have formed the areas of inquiry proposed in this paper. The material was sorted into one or more of the following categories: definitions, measures of effectiveness, impact investing, nonprofit focus, and for-profit focus. Many of the sources were able to be categorized into more than one broader topic, and those articles have been marked them as such. The proposed table is an attempt to categorize the articles by topic, cross-tabulated with publication year in two-year increments. This will allow an individual who is new to the subject to be able to see some of the earlier works in a specific areas of social entrepreneurship research as well as where some of the current research is focused.

Categories

Definition and the Search for Meaning.

The study of social entrepreneurship as an academic discipline arose out of the observance of certain types of organizations that had a social focus (Dees, 2001). However, in
order to allow the theoretical and academic study of the phenomenon to flourish there needed to be a consistently and broadly understood definition of these organizations, in order to provide the scope and limitations for inquiry. The logical place to begin is by building on the established study of entrepreneurship, but adding in the qualifier of social impact in order to narrow the scope (Martin & Osberg, 2007). However, this has not proven to be an easy term to address, as there are varying understandings of what does and does not constitute a social impact or benefit (Arena, Azzone, & Bengo 2015; McLoughlin, Kaminski, & Sodagar, 2009). One could argue, as Milton Friedman (1970) did so well, that any freely exchanged product or services between individuals is inherently beneficial to society, as those that engage in the exchange are necessarily providing value to the other, as long as the exchange is voluntary on the part of both parties. However, there are some social enterprises where there is no exchange made between the parties, and it is therefore more difficult to determine the value for the parties involved in the interaction, a point that will be further addressed later in the paper.

The study of social enterprises has some overlap with the scope of social entrepreneurship research. However, the social enterprise may not necessarily be providing an innovative solution to a specific social problem, placing it outside of entrepreneurship research. It nonetheless may have a strong impact on society and should therefore be studied on those merits.

Nicholls (2006) provides three areas that serve as the foundational pillars of social entrepreneurship; an innovative aspect, a social aspect, and a market-oriented aspect. These areas provide concentric circles of study for social entrepreneurship, and help to delineate between those organizations that are social enterprises and those that are social entrepreneurs, with social enterprises not providing the innovative aspect to the definition.
**Measuring Effectiveness.**

The ability for a traditional entrepreneurial enterprise to measure effectiveness is fairly straightforward (Wilburn & Wilburn, 2014). If the company is providing sufficient value to the consumers, then those individuals will continue to purchase the product or service for the price set by the company. If the value is not sufficient for the consumer, then they will look to exchange with another provider. However, with many organizations engaged in social entrepreneurship there is little agreement on a universally accepted method to value social performance (Ebrahim & Rangan, 2010). For example, Toms shoe company provides one pair of shoes to a needy child for every pair purchased by a consumer. What is the value of the shoes to those to whom the shoes are given? Since there was no exchange it is tough to determine the true value of those items to the recipient and to the society in which that recipient lives. This blended value proposition provides the need for a continuing research into the integration of social and financial returns on the part of the companies and the investors (Emerson, 2003).

**Impact Investing.**

There are aspects of social entrepreneurship that are not directly tied to an exchange with the ultimate beneficiary. Impact investing is a way for individuals to invest in companies that are actively pursuing social changes or benefits. As is evident with the rise of socially motivated for-profit companies, impact investing is a way for an investor to be a part of socially motivated businesses with an eye on both profits and social causes (Seelos & Mair, 2007; Thornley, Wood, Grace, & Sullivant, 2011). Impact investing is a growing area of the investment industry, and there are funds or firms that are devoted specifically to social priorities. There are a few specific investment vehicles that are available to investors who wish to make this an intentional part of their portfolio. However, this type of investing is not considered mainstream and a standard part
of an investor portfolio, and this may be due to a lack of demand on the part of the investors, or it may be a function of a lack of understanding of how these types of opportunities work by the investment firms (World Economic Forum, 2013).

**Non-Profit Focus.**

The functionality of a nonprofit or not-for-profit enterprise is unique in the social entrepreneurship literature, as this type of organization is established with certain tax and board-management distinctives (Zhu, Wang, & Bart, 2014). The nonprofit distinction is a function of a tax status, and this characteristic has ramifications throughout the company, from board governance to organizational strategy and behavior. There is a discussion related to the unique way in which non-profits can contribute to an economy that is more focused on social enterprises (Child, 2015). Some of the literature related to nonprofit organizations is in the area of understanding how innovation can lead to new products or services that can in turn be used by the nonprofit to generate revenue, thereby reducing the need for reliance on donations or charitable giving, endeavors that have shown mixed results (Foster & Bradach, 2005).

**For-Profit Focus.**

The social impact of a for-profit company is a driver for much of the social entrepreneurship literature. There are for-profit companies that have arisen with a social focus being part of the core mission and model of the business, such as Toms shoes and Warby Parker (Social Impact Investment TaskForce, 2014). This phenomenon is interesting as the company is established with the intentional design of reducing profits for the purpose of social impact. Along with the nonprofit companies that seek a market-oriented model of exchange, the for-profit companies that have a social impact at the core of their business model form a continuum of social enterprises from which social entrepreneurship develops.
References


World Economic Forum. (2013). From the margins to the mainstream assessment of the impact investment sector and opportunities to engage mainstream investors, (September), 40.

USASBE 2017 Final Submission

The Paradox of Resource Availability and the Perception of Resource Adequacy:
The Roles of Psychological Capital, Perceived Stress, and Age in the Innovation Process

Shari L.S. Worthington, Worcester Polytechnic Institute

Abstract

The world of technology development is a complex and dynamic environment that proceeds at a relentless pace. To increase the likelihood of success, we need a better understanding of the level of resources required for new product development. Yet the research is contradictory: some development projects succeed with an overabundance of resources (slack) while others succeed with constraints. Here we discuss the relationship between resource availability and perceptions of resource adequacy with a focus on the lead innovator-entrepreneur. A conceptual model is proposed that links entrepreneurial judgment to resource perceptions. Psychological capital (PsyCap) is proposed as a moderator of entrepreneurial perceptions, with perceived stress and age as mediating variables. Also proposed is a framework whereby the resource perception and PsyCap of the innovator-entrepreneur can be used to determine the likely degree of innovation in new product development.
Introduction

Innovation is more than an invention; it's something that creates new opportunities for growth and development (Forbes, 2009). From electricity to the combustion engine to the x-ray machine, innovation propels economic growth and improves and prolongs the lives of many. It is almost impossible to find an industry that is not engaged in or affected by innovation and the associated relentless pace of change. For example, in less than two decades, the 21st century has seen the introduction of smartphones, artificial hearts, electronic books, electric vehicles, and 3D printing.

The Industrial Research Institute (IRI, 2015), a professional association of senior technology managers, ranked balancing long- and short-term R&D goals and building / maintaining an innovation culture among the top challenges facing technology leaders. Organizations need to innovate as a way to keep pace, to create a competitive advantage, and to build an organization that is nimble (Schawbel, 2012). This raises a key question: how can we help businesses increase the likelihood of successful innovation? To that end,

- What is an adequate level of funding and material resources for innovative new product development (NPD)?
- Why do some NPD projects succeed with an overabundance of resources (slack) and others succeed with constraints?
- Which factors influence the lead innovator-entrepreneur's perceptions of resource adequacy?

Many have argued that innovation requires slack, an excess of resources, for experimenting with new ideas and strategies (Cyert & March, 1963, Hambrick & Snow, 1977, Bicen & Johnson,
2015). Other research has shown that slack can lead to avoidance of risks and complacency. New firms have been shown to perform better when resource demands exceeded resource availability and allocations were made using the smallest amount of resources that would work to their advantage (George, 2005). The challenge is to reconcile these conflicting findings.

This paper discusses the research surrounding the relationship between resource availability and perceptions of resource adequacy in innovation projects with a focus on the individual decision-maker, the lead innovator-entrepreneur. A conceptual model is proposed that links entrepreneurial judgment to resource perceptions. Psychological capital (PsyCap) is proposed as a moderator of entrepreneurial perceptions, with perceived stress and age as mediating variables. Additionally, a framework is proposed in which resource perception and PsyCap are offered as a guide to the degree of innovation output.

On a practical level, this paper suggests that entrepreneurial cognition plays an important role in the development of innovative products. PsyCap is a psychological state involving behaviors, thoughts, and actions (Luthans, Youssef, & Avolio, 2007). Because it is produced primarily by external events, it can be learned and developed, and may be essential to establish and maintain in new ventures.

**The Paradox of Resource Adequacy: Slack vs Constraints**

Since Schumpeter (1934) first defined innovation as a new product, process, supply of materials, business model, or merger/divestment, researchers have maintained that innovation requires slack, an excess of resources for experimenting with new ideas and strategies. Schumpeter
argued that innovation is the stronghold of larger firms, as they are the only ones that can muster the resources required. Many scholars have supported this position. They have posited and demonstrated that because innovation is obscure, it requires an excess amount of resources (slack) to encourage experimentation with new ideas. Without slack, the lack of resources hinders innovation (Bicen et. al, 2015). Studies have shown that slack relaxes internal controls and creates funds that can be redirected toward projects with uncertain outcomes, fostering an environment for innovation (Bromiley, 1991; Damanpour, 1987; Greve, 2003).

Yet continued research on the question of resource adequacy has produced contradictory findings. Numerous studies have shown that slack can lead to risk aversion and complacency. This reduces exploration of new ideas and increases motivation to rely on known strengths. George (2005) showed that many new firms performed better when resource demands exceeded resource availability and allocations were made using the smallest amount of resources that would work to the firm's advantage. Constrained material resources and, therefore, lower levels of resource adequacy can enable rather than inhibit innovation (Gibbert and Scranton, 2009; Hoegl, Gibbert, & Mazursky, 2008).

Yet what level of constraint works to the firm's advantage? Complex projects and dynamic environments, a common occurrence in technology innovation, tend to increase founder overconfidence (Hayward, Shepherd, & Griffin, 2006). These overconfident founders then tend to deprive their ventures of resources and increase the likelihood that the ventures will fail.

Creative teams, such as new product development groups, face a paradox. Constraints introduce
tension into the creative (R&D) process by limiting the set of possible process or product pathways available to the teams. Creative teams don’t like to feel limited or have their freedom taken away, but those limitations can serve as useful boundaries to encourage and frame the creative process (Rosso, 2014).

How can we reconcile these conflicting findings?

Nohria and Gulati (1996) proposed an inverse U-shaped relationship between slack and innovation based on the need for experimentation in the innovation process. Slack encourages experimentation but diminishes discipline over the course of innovative projects. This produces a curvilinear relationship. Too little slack discourages experimentation that has an uncertain possibility of success. On the other hand, too much slack encourages complacency and a lack of discipline that make it possible for more bad projects to be pursued vs. good.

Then who defines when material resources are adequate?

Weiss, Hoegl, and Gibbert (2014) argue that, "due to socio-cognitive influences, the adequacy of an innovation project's material resources, given the project's tasks, seems to be in the eye of the beholder." Their research shows that workload and team potency are socio-cognitive drivers of innovation project teams’ perceptions of material resource adequacy.

The perception of the genuineness of a constraint (perceived authenticity) also influences perception of resource adequacy (Rosso, 2014). Real constraints can be a motivating factor, such
as deadlines. But artificially imposed constraints from an outside party (manager or resource provider), can serve as a demotivating factor when the team discovers the constraints were not authentic.

**Entrepreneurial Decision-Making and Self-Efficacy**

But how are determinations of adequacy made at the individual level, in the eyes of the lead innovator-entrepreneur?

Consider entrepreneurial resources. Discussions about startup capital tend to focus on financial capital, human capital, and social capital. Time is also now a critical resource, given the rapid pace of innovation in today's globally competitive business environment. But entrepreneurial cognition, the knowledge structures people use to make judgments and decisions about opportunity evaluation and venture creation, is often considered a secondary factor (Mitchell, Busenitz, Lant, McDougall, Morse, and Smith, 2002).

The lead innovator-entrepreneur's intention to launch a new venture is influenced by financial and non-financial motivators. These non-financial motivators include: perceptions of the self, such as identity, abilities, and desires; perceptions of the environment (e.g. hostile, beneficent); and decision-making tools, such as heuristics (Shepherd, Williams, & Patzelt, 2015).

Affect (emotion and mood) also has a significant impact on entrepreneurial judgment and decision-making. It exerts its effects on cognition and behavior in situations involving high uncertainty and unpredictability, exactly the conditions often faced by entrepreneurs (Baron,
Affect is linked to entrepreneurial idea perceptions through its influence on the cognitive processes of attention, memory, and creativity (Hayton & Cholakova, 2011).

Performance can also be affected by beliefs about self-efficacy and its influence on cognitive, affective, or motivational processes (Bandura, 1989). Self-efficacy, an individual's confidence to execute a specific course of action, influences perceptions about attaining goals (Bandura, 1986, 1997).

"Those who have a high sense of efficacy visualize success scenarios that provide positive guides for performance and they cognitively rehearse good solutions to potential problems. Those who judge themselves as ineffectual are more inclined to visualize failure scenarios and to dwell on how things will go wrong." (Bandura, 1989, p. 729)

Researchers have since extended Bandura's work into the world of entrepreneurship (Boyd & Vozikis, 1994, Englehart 1995, Krueger & Brazeal, 1994). Chen, Greene, and Crick (1998) defined the construct of entrepreneurial self-efficacy (ESE) as the strength of a person's belief that they can successfully perform the roles and tasks of entrepreneurship, including marketing, innovation, management, risk-taking, and financial control.

A strong sense of self-efficacy helps entrepreneurs to perceive opportunities when others might not; to feel competent to deal with uncertainties, risks, and hardships; and to anticipate different outcomes (Chen et. al., 1998). High self-efficacy founders have been shown to be better at facing challenging circumstances, such as rapid change, unpredictable environments, work overload,
and personal responsibility for others (Baron, Franklin, & Hmieleski, 2013). A strong sense of self-efficacy also makes it more likely that a person will approach difficult situations and perceive them as opportunities vs threats. (Bandura, 1994, Kasouf, Morrish, & Miles, 2015).

**Perception of Resources**

According to Dolmans, Burg, Reymen, and Romme (2014), the entrepreneur's perception of resource position is highly subjective and varies. A particular course of action is chosen based on how the entrepreneur makes sense of the situation at hand. The entrepreneur's subjective perceptions of resources drive decision-making; results are heterogeneous as most entrepreneurs lack accurate data when working in the uncertain environment of new venture development (Kirzner, 1997).

Lachmann (1976, 1986) suggests that imagined actions about what is possible with a set of resources also play a role in perceptions of potential resource availability. Dissimilar imaging by entrepreneurs creates heterogeneity in perceived resource positions. Dolmans, et.al. (2014) showed that an entrepreneur's imagination influences the subjective evaluation of available resources and can result in different decisions. "The imagined action scenarios vary partly according to how entrepreneurs make use of the resources they have at hand, such that a similar resource base (e.g. equal amounts of available funds) can have different implications for different entrepreneurs" (Dolmans, et.al., 2014, p. 516).

**Model Development: Psychological Capital as Competitive Advantage**

Luthans and Youssef (2004) make a strong argument that traditional resources (strategies for
accumulating short-term financial resources, physical resources, and organizational processes) may no longer qualify as ideal sources for evaluating a firm's sustainable competitive advantage. Human capital, social capital, and, now, psychological capital (PsyCap) are more difficult to copy and imitate and, therefore, better viewed as capital investments for competitive advantage.

PsyCap is an outgrowth of positive psychology, the study of the conditions and processes that contribute to the well-being, hope and optimism, and happiness of individuals and groups, and the optimal functioning of institutions (Seligman & Csikszentmihalyi, 2000). Drawing from the positive psychology movement, positive organizational behavior (POB) is "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement" (Luthans, 2002, p. 59).

Recognition of PsyCap as a key cognitive resource helps us understand how individuals respond to stressors in the fast-paced, ever changing environment of the entrepreneur (Jensen, 2012). To better guide innovation projects, we need to determine how entrepreneurs use mental models to simplify and connect previously unconnected information. This information can be used to identify and create new products and assemble the resources needed for new ventures.

PsyCap is an individual's psychological state of development linked to positive outcomes. It is composed of four positive psychological resources: self-efficacy, hope, optimism, and resilience (Luthans, et.al., 2007). According to Newman, Ucbasaran, Zhu, and Hirst (2014), individuals with high self-efficacy tend to have a stronger belief in their ability to control
outcomes and are better able to address challenges. Individuals with high optimism tend to create positive expectations that motivate pursuit of goals, even in the presence of difficulties. Those with high levels of hope have more goal-directed energy and are more likely to build pathways to accomplish those goals. Individuals high in resilience are better at adapting in the face of challenging circumstances and environments.

According to Luthans, Avolio, Avey, and Norman (2007), PsyCap is a higher-order construct that represents the common processes that connect the four constructs of self-efficacy, hope, optimism, and resilience. The higher-order nature makes it distinctive from the individual elements while providing a common link that ties them together. PsyCap's "state-like" nature means it is relatively malleable and open to development. This differentiates it from "trait-like" constructs like the Big Five personality dimensions (extraversion, emotional stability, agreeableness, conscientiousness, and openness to experience), which are relatively stable and difficult to change.

PsyCap is also differentiated from other types of people-based capital. Human capital is an individual's knowledge, skills, and abilities, while social capital is the resources linked to an individual's network of people relationships. In other words, PsyCap is about who you are and are who you are becoming, human capital is about what you know, and social capital is about who you know.

All three — PsyCap, human capital, and social capital — are states produced primarily by external events. Therefore, they can be increased by experience and/or investment in education.
and training. This provides opportunities to enhance the likelihood of new venture success beyond variations of material resources (Newman et. al, 2014, Luthans et. al, 2006).

Individuals high in PsyCap are theorized to have more resources to draw on to pursue goals (Hobfoll, 2002) and, as a result, can perform better than those with low PsyCap (Luthans et al, 2007). PsyCap has been found to influence creative performance, problem solving, and innovation at the individual-level (Sweetman et.al., 2011, Luthans Vogelgesang, Lester, 2006).

PsyCap has been directly linked to a variety of individual perceptions: perceptions of career success (Ngo, Foley, Ji & Loi, 2013), employee perceptions of external prestige (Mathe & Scott-Halsell, 2012), perception of safety climate in air traffic controllers (Bergheim et.al., 2013), employee perceptions of job stress (Avey, Luthans, & Jensen, 2009), and employee job satisfaction and perceptions of organizational support (Fu, Sun, Wang, Y., Yang, & Wang, L., 2013).

Hypothesis 1: Entrepreneurial perception of resource adequacy is positively moderated by psychological capital, such that perceptions are more positive (optimistic) for entrepreneurs with higher PsyCap. See Figure 1.
Figure 1. Perception of resource adequacy in complex and dynamic environments is affected by entrepreneurial cognition. Perception is moderated by psychological capital, and mediated by perceived stress and age.

**Mediating Effects of Perceived Stress On Resource Adequacy**

Long hours, demanding bosses, and lack of job security have led to widespread stress in the 21st century. In the United States alone, stress in work environments is estimated to cost up to $190B annually for related healthcare (Blanding, 2015).
In intensely competitive environments, employees are under pressure to innovate and improve; this can lead to job stress, which can produce psychological and physiological problems (Revicki & May, 1985). Stress can have deleterious effects on speed, accuracy, and reasoning in individuals (Motowidlo, Packard, & Manning, 1986). According to Cohen (1980), stressors create information overload because people are required to pay special attention to certain factors, whether environmental or psychological. This can then produce cognitive fatigue and reduced energy for task performance.

Situations are not, in and of themselves, stressful, but may be, depending on how a person perceives the stressor and what meaning they attach to it (Parasurman, 1984). Stressful event intensity is not affected by external work conditions but is also a matter of perception; people who perceive an event as intensely stressful in some work situations are likely to perceive it as equally stressful in other situations (Motowidlo, et. al., 1986). Stress event intensity is believed to reflect individual characteristics that dispose people to react more strongly to a broad range of stressors.

While creating and running new ventures, entrepreneurs are exposed to a variety of conditions that generate high levels of stress, including fast pace and unpredictability. Research has shown that this can have mixed results. A study by Cardon and Patel (2013) found that self-employed people experienced more stress than employees. The stress played a dual role, motivating entrepreneurs to perform to increase their income but harming their physical health. In other studies, entrepreneurs in stressful environments reported lower levels of perceived stress; this derived, in part, from higher levels of PsyCap (Baron, Franklin, & Hmielski, 2013; Luthans,
Perceived stress may be reduced by the cognitive heuristics employed by entrepreneurs. Research on decision-making has found that individuals cope with cognitive capacity limitations by employing cognitive heuristics, short cuts; but these can lead to cognitive biases (Simon, Houghton, & Aquino, 1999). Entrepreneurs may be especially prone to these biases because they tend to simplify their information processing without realizing and, thereby, reduce the stress and ambiguity associated with startup decisions (Busenitz & Barney, 1997, Duhaime & Schwenk, 1985). This can lead to errors in perceptions and judgments. Cognitive biases can also result in some individuals underestimating the demands of entrepreneurship and continuing on to launch a new venture even though they lack the psychological resources to effectively cope in this environment (Baron, et. al., 2013). This may help explain why some entrepreneurs achieve their goals and others do not.

Hypothesis 2: Entrepreneurial perception of resource adequacy is negatively mediated by perceived stress, such that resource perceptions are more negative (pessimistic) for entrepreneurs who perceive higher stress. See Figure 1.

Mediating Effects of Age On Resource Adequacy

When making decisions, nascent entrepreneurs rely significantly on subjective and often biased perceptions rather than on objective expectations of success (Arenius & Minniti, 2005). As people age and accumulate life experiences, they develop a better understanding of their own knowledge, skills, strengths, and weaknesses. They better understand the pressures inherent in
specific career opportunities and recognize how much stress they are able or willing to tolerate (Kuhn, 2000).

A number of research studies have found a negative correlation between age or experience and occupational stress (Indik, Seashore, and Slesinger, 1964). This may be due to the fact that older adults prioritize positive information over negative, pay greater attention to positive over negative social cues, and exhibit a positivity bias in decision-making (Walter & Scheibe, 2013).

Older individuals are less susceptible than younger people when it comes to such decision-making biases as negativity and the fallacy of sunk costs. Older people are less likely to weigh negative information more heavily than positive information when they make decisions (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). They are also more willing to walk away from sunk costs than younger people (Bruine de Bruin, Parker, & Fischhoff, 2007).

Entrepreneurs' understanding of their own capacity to resist stress tends to increase with age (Kuhn, 2000). In addition, the stress-reducing effects of psychological capital are stronger for older vs younger entrepreneurs (Baron, Franklin, & Hmieleski, 2013).

_Hypothesis 3: Entrepreneurial perception of resource adequacy is positively mediated by age, such that the relationship is stronger for older entrepreneurs than younger ones. In other words, older entrepreneurs are more likely to objectively evaluate resource sufficiency. See Figure 1._
Intensity of New Product Innovation

Ward (1994) proposed that when individuals face a problem, they tend to implement the first reasonable solution that comes to mind. Getting off this path of least resistance requires additional cognitive effort and produces a higher level of outcome uncertainty. Only when standard approaches don't work, such as due to an insufficiency of material resources, do people seek novel / innovative solutions. This requires a higher level of risk taking and the ability to challenge convention, increasing the likelihood of innovative approaches. (Amabile, 1988).

Innovation is a complex, uncertain, and often disorderly process that can be difficult to measure (Kline & Rosenberg, 1986). Generally, people don’t have the ability or the inclination to handle complexity (Tversky & Kahneman, 1974). Instead, they create heuristics to avoid information overload and reduce processing needs. As complexity grows, errors and rationalizations are more common (March, 1981). The complexity needed to recognize and transform an innovative idea into reality can be so overwhelming that people lose sight of the bigger innovation goal. (Van de Ven, 1986).

According to March (1991), the skills, processes, and mindsets needed to explore existing technology (incremental innovation) are markedly different from those needed to explore new technology (radical innovation). The ability to engage in the complex-decision making required for the exploratory, high uncertainty activities of radical innovation are considered rare in individuals (Amabile, 1996). Managing the complexity of the innovation process and coordinating with organizational routines requires tremendous effort (O'Connor & Rice, 2013). Such an environment calls for an understanding of people, processes, and technology. It also
calls for skill and judgment to orchestrate multiple individual contributions, minimize the impact of failures, and maximize learning in order to reduce uncertainty (Van de Ven, 1986).

Not everyone is cut out for radical innovation. Such an environment requires an ability to observe the world differently, to unlearn obsolete mental models, to embrace a risk-taking climate, and to cycle through divergent and convergent thinking in a continuous cycle of feed-forward and feedback loops (Assink, 2006). Martiarena (2013) found significant differences in the decision-making of intrapreneurs (individuals involved in the formation of a new business within an existing organization) and entrepreneurs (individuals involved in the formation of a new business independent of an existing organization). Even in the face of higher levels of human and physical resources, intrapreneurs were more risk averse, less able to recognize business opportunities, and had lower confidence in their entrepreneurial skills. Engaged intrapreneurs, those that expected an ownership stake in the business, were more likely to possess entrepreneurial attributes.

This leads us to question what leads to such differences in entrepreneurs and the possible role of PsyCap. Individuals high in PsyCap have more resources to draw on to pursue goals (Hobfoll, 2002) and can perform better than those with low PsyCap (Luthans et al, 2007). This is especially important in the fast-paced, uncertain world of entrepreneurship. PsyCap also influences creative performance, problem solving, and innovation (Sweetman et al 2011, Luthans Vogelgesang, Lester, 2006), all of which are necessary skills for successfully negotiating radical new product development.
Lettl, Herstatt, and Gemuenden (2006) found that innovative users have high motivation to seek new solutions and possess a diverse set of competencies. They tend to be high achievers that are attracted to environments where they can "call the shots" and be individually responsible for outcomes (Stringer, 2000), generally the purview of radical innovation.

It is proposed that an individual's perceptions of resource intensity (severely constrained, moderately constrained, sufficient, or overabundance) and PsyCap (high or low) can interact to influence the novelty of new product innovation. According to the framework in Figure 2:

- In a resource constrained environment, radical innovation is the domain of the high PsyCap individual,
- In the face of sufficient resources, incremental innovation can be achieved by individuals with either high or low PsyCap, and
- In an environment of overabundance of resources, the high PsyCap individual is capable of incremental innovation, but the low PsyCap individual is reduced to minimal, if any, innovative contribution.
Figure 2. Perceived intensity of resource adequacy and PsyCap influence the novelty of innovation. More radical innovations result from those high in PsyCap working in constrained environments.

On a practical level, this paper suggests that entrepreneurial cognition plays an important role in the development of innovative products. PsyCap is a psychological state involving behaviors, thoughts, and actions. Because it is produced primarily by external events, it can be learned and developed, and may be essential to establish and maintain in new ventures.

##
References


Amabile, T. M. (1996). *Creativity in context: Update to" the social psychology of creativity."* Westview press.


Breaking the Entrepreneurial Glass Ceiling: 
An Examination of Gender Differences in the Early-Stage Accelerator Environment

Heather-Jean MacNeil, Babson College
Mary G. Schoonmaker, Western New England University

Introduction

Entrepreneurship is a gendered phenomenon (Bourne and Bourne & Calas, 2012; Brush de Brun & Welter, 2009), and the masculine culture of entrepreneurship is broadly accepted by scholars in the entrepreneurship field (Ahl, 2006). This stereotype is being fostered through higher education and entrepreneurial ecosystems. The majority of male protagonists showcased in business school cases and curricula are men (Ahl, 2007), and women generally lack high-growth women entrepreneurial role models (Hurley, 1991). There is currently limited research on the impact of gender on venture acceleration.

Accelerators contribute to the accelerated learning of entrepreneurs through intensive mentorship, engagement in a peer community, and the acquisition of funding (Cohen, 2013). Yet, there is little to no research on how effective these accelerator programs are at serving the needs of both male and female entrepreneurs. Through a self-efficacy theory framework (Bandura, 1977), this paper investigates the research question: Are there differences in how seed accelerators serve the needs of male and female entrepreneurs? This study expounds on previous investigation into the role of observational learning in building self-efficacy (Gist & Mitchell, 1992) through the examination of how program stakeholders, including peers, mentors and experts, and program administrators, impact the experience of program participants.

Literature Review

Cohen and Hochberg (2014) define the seed accelerator as a “fixed-term, cohort-based program, including mentorship and educational components” (p.4). Commercial accelerators,
such as Y Combinator and Tech Stars are independent and privately-owned. Nonprofits and higher educational institutions have also adopted the acceleration model as a way to boost student entrepreneurship and co-curricular offerings. Since accelerators focus on early-stage ventures, many of their graduates are still young in the business growth cycle (Radojevich-Kelley & Hoffman, 2012; Cohen & Hochberg, 2014; Fehder & Hochberg, 2015). The emerging literature discusses accelerators as funders, drivers of local economies, and educators (Christensen 2009; Cohen; 2013; Isabella, 2013; Miller & Bound, 2011).

Accelerators universally share the goal to connect startups with seed funding opportunities in order to drive early success. Frimodig and Torkkeli (2013) described accelerators as venture-to-capital (V2C) actors that bridge the competence and equity gap of startups. Rasila (2004) initially defined V2C actors as business angels and incubators that develop startups into “investable” firms. Similarly, Kim and Wagman (2014) coined accelerators as “a hybrid form of entrepreneurial nurturing and equity financing” (p. 2) and point to the ways that accelerators screen and prepare early stage firms for investors. Hoffman and Radojevich (2012) found that accelerator mentor programs increase the overall success rates of startups by providing entrepreneurs with social capital and increased access to angel investors and venture capitalists. Fehder (2015) suggested that admission into accelerators enables participants from resource-rich ecosystems to better harvest them. In addition to seed capital, emerging literature describes the role of accelerators as entrepreneurial educators. Entrepreneurs experience accelerated learning due to what Cohen (2013) coined as “mentor-overload,” or time compressed interactions with advisors and accelerator directors that transfer their expertise to entrepreneurs. She also shows that “cohort peers” accelerate organizational learning through the process of both rivalry and peer mentorship.
Preliminary literature focuses on gender differences in the accelerator impact or why women are underrepresented in the accelerator landscape. Marlow and McAdam (2015) and McAdam and Marlow (2009) suggested that women experience a lack of fit with the typical male accelerator candidate. In addition to a lack of identification with the dominant “Zuckerberg” norms, women may face the fear of being the only, and thus the token, female among the cohort. Muntean and Ozkaznac-Pan (2015) propose that gender differences in social networks and social capital drive the gender gap in technology-focused accelerators. Their early findings show that women founders do not know about accelerator opportunities, are not invited to consider these opportunities, and lack the ties necessary to be informed. Collectively, these early studies point to the ways that the male-dominated accelerator environment excludes women’s participation.

**Theory and Propositions**

This paper further investigates the impact of accelerator programming on women’s self-efficacy. Used interchangeably with self-confidence, self-efficacy refers to one’s belief in ability to successfully perform a specific task (Bandura, 1997; Gist & Mitchell, 1992; Wilson, Kickul & Marlino, 2007). Bandura (1997; 1994; 1989; 1977) theorizes that self-efficacy is an influential mediator of agency, behavior, and activities, impacting an individual's belief in their abilities. Bandura’s framework identifies four key factors that influence an individual’s belief in their abilities including: mastery experiences, vicarious learning through role models, social persuasion, and the absence of stress. Extant literature shows that self-efficacy influences entrepreneurial intentions and the venture creation process (Chen, Greene, & Crick, 1998; Markham, Balkin & Barron, 2002; Wilson, Kickul, Marlino, 2007). Markham, Balkin, & Baron (2002) demonstrated that technological entrepreneurs have significantly higher self-efficacy than
technological non-entrepreneurs. Wilson, Kickul, and Marlino (2007) found gender differences in the entrepreneurial self-efficacy of middle and high school students, showing that both middle and high school males have significantly higher self-efficacy than females. This extant literature provides evidence that self-efficacy plays a critical role in the venture creation process, but does not address the venture acceleration process. Bandura’s self-efficacy theory offers a framework for better understanding the gender differences in the process of venture acceleration. Three main propositions are posited, in order to understand any, if at all, differences in genders enrolled in university-based and non-profit accelerator programs.

**P1** There is no difference in the type of program assistance utilized by female- and male-led accelerator participants.

**P2** There is no difference in the type of community-engagement utilized by female- and male-led accelerator participants.

**P3:** There is no difference in mentoring and advising support utilized by female- and male-led accelerator participants.

**Data and Methodology**

Study 1: We selected two university-based accelerator programs located in the greater-Boston area. These locations were selected based on judgement criteria - university-based, student participants, fixed duration of program, and similar program support. Both of these programs focused on training and provided community support in the form of mentors and advisors. A sampling group represented by male and female entrepreneurs was interviewed using a Likert-based survey for 12 programmatic areas, such as networking, mentors, financial education, and leadership training. This was followed by semi-structured interview questions, which focused on most helpful aspects of the program, sources of support, and areas of
engagement and interaction. In total, we interviewed 10-12 entrepreneurs per university location, resulting in 22 informants in total. The gender mix of female to male was 50/50. A cross-section of industries was represented, although females tended to lead more physical products and services new ventures.

Study 2: This study was similar to Study 1. We focused on an exclusively all-female cohort group, which was managed by a university located in the Northeast. The emphasis of the program was on training and scaling a business model. The total number of participants in the cohort group were 16 and 7 participated in the Likert-based survey and semi-structured interviews.

Study 3: We did a census survey of a non-profit accelerator located in the Northeast that placed emphasis on female enrollment. This program on training with entrepreneurial experts. Mentors/advisors were not assigned to the companies. A Likert-based survey, similar to the prior studies, was administered along with semi-structured questions. The gender mix of this community was 40% female-led firms and 60% male-led firms. The total number of company participants in the study was 24 program members.

**Results and Discussion**

The qualitative comments helped add to our understanding of the Likert-based survey results, but also demonstrated the different styles of social learning and self-efficacy in each gender. All three propositions demonstrated differences in participants based on gender. We will discuss each Proposition and the summary findings next.

**Proposition 1 – Program Assistance**

We evaluated, using quasi-statistics, scores for each of the program areas that scored 4 or higher. The results from the Likert-scale based survey demonstrated that both programs and both
genders valued networking among the community, practicing pitching, working with mentors and advisors, and accessing extended networks afford to them through the program. Upon exiting the programs, the females expressed that these goals were achieved through the experiential learning environment and ability to make mistakes through trial and error. Additionally, as mentioned above, the female-led ventures were more physical product and service oriented. The females leading these ventures expressed the need for the accelerator to provide programs for those types of companies. Thus, the alternative to Proposition 1 demonstrated differences in terms of industry environment and types of programs needed to support a non-service, meaning product, venture.

Proposition 2 – Community-Engagement

Once enrolled, phrases used to describe their abilities varied by gender. Males tended to be more confident about their personal abilities going into and exiting the program. Females indicated that the accelerator program was an environment to help them build credibility and validate their entrepreneurial capabilities. In the all-female cohort group, participants indicated similar community-bonding experiences as mixed cohort groups. However, these participants also indicated that the environment was safer among all females, where sharing of ups and downs was more open.

Females disclosed that they did not want to be forced into a female working group. While female participants interacted with both males and females, they did selectively seek out all-female conversations. The conditions for these conversations were more ad hoc, but the efforts were conscious. In the all-female cohort, the conditions lead to a strong sense of “sisterhood”. The participants in studies 2 and 3 found it inspirational to be around other female
entrepreneurs. Thus, the alternative to Proposition 2 does demonstrate differences among males and females in community-engagement.

**Proposition 3 – Mentor/Advisor Support**

Female participants expressed that they were supported by males and female role models. However, they stated that observing a female role model was inspirational. This was evident in all three studies. Females did point out that there were less female advisors than male advisors. This male advisor to female participant dyad generally did work, although there were a few instances of the preference for a female advisor. In studies 1 and 3, a few females mentioned they felt dismissed by male mentors and advisors, negatively impacting their accelerator experience. Thus, the alternative to Proposition 3 does demonstrate differences among males and females in terms of role models and to some degree, advising.

**Implications, Limitations, Extensions**

The implications from this preliminary study are that university-based accelerators are experiencing an influx of more female-led ventures and are an important vehicle for them to build credibility during the venture creation process. However, early results show that the lack of female role models negatively impacts the female accelerator experience. Alternatively, the presence of female peers and role models increases the entrepreneurial motivation of female participants in the venture acceleration process. In order to ensure these ventures are able to continue to develop, additional efforts are needed to meet the needs of woman founders. Also, the physical products and services offerings develop their new ventures differently than an information technology new venture. Appropriate programmatic-elements should be tailored to ensure these styles of new companies are nurtured.
There are limitations and future extensions of this preliminary research studies in order to advance our propositions to testable hypotheses. Additional data points, defined as more university-based and non-profit accelerators and their participants, will enhance the analysis and findings of this research thread. As we develop our current paper, we plan to continue to focus on university-based accelerators and similar early-stage startup programs. However, the central theories of this study, self-efficacy can be extended to commercial-based accelerators in order to provide information about gender difference in more advance-stage startups.

References


Women in Entrepreneurship History: The Journey and Intergenerational Reflection

Dr. Morgan R. Clevenger, Assistant Professor of Entrepreneurship,

Dr. Anne Heineman Batory, Professor of Marketing,

and students Emelie Meinhart, Michelle Lehman, & Samantha Reinhardt
Abstract

Women have been more engaged in the past 60 years in business management, entrepreneurship, and leadership. This paper reviews relevant literature to understand the journey and intergenerational acceptability of women in entrepreneurship. The purpose will be to launch a state-wide women in entrepreneurship research project in Pennsylvania in 2017. At present, there are more than 43,000 women-registered businesses in the state.

Summary Description: Women in Entrepreneurship

Women in business and entrepreneurship have continued to be an area of interest in the U.S. and internationally (Brush, Greene, Balachandra, & Davis, 2014; Catalyst, 2011; Cole, 1997; Kvinnors, Foretangande, Starker, & Sverige, 2008; U.S. Department of Labor, 2016). This mixed method, multiple case study will explore generational behaviors of women in entrepreneurship in Pennsylvania to compare and contrast motivation for starting an entrepreneurial venture and/or self-employment, utilization of various types of financial and non-financial support, how women network to promote entrepreneurial ventures, reflection and coping (e.g., stress, work-life balance, perception of sexism or discrimination), and how women define success. A generational perspective will allow cross unit analysis of women considering the social acceptance and economic factors leading to entrepreneurship. Additionally, a contrast of female behaviors such as leadership and self-reflection will be considered. This study will promote knowledge to foster best practices for women’s engagement in entrepreneurship.

Purpose

Women constitute 51% of the U.S. Population, and current trends show continued growth of women owning small businesses (Pride, Hughes, & Kapoor, 2014; SBA, 2012). However, women continue to have differing perceptions and access to resources to function in similar
entrepreneurial roles historically studied from a male perspective in areas such as behavior, networking, leadership, and propensity toward self-employment (Eagly, Johannesen-Schmidt, & van Engen, 2003; Ryan, Haslam, Hersby, & Bongiorno, 2011; Ryan Haslam, Hersby, Kulick, & Atkins, 2008). The purpose of this study is to explore how women approach participation in entrepreneurial ventures, how they define and measure success, and determining expectations and capacities for future implications.

**Literature Review**

A literature review was conducted in fall 2016 to learn about key issues relate to women in entrepreneurship to guide the development of research instruments and strategy for the research. The following sub-sections highlight the most prevalent areas of interest for exploration and development of more understanding, which includes leadership styles, dealing with resources and finances, mentoring, family firms, and generational expectations and stereotypes.

**Leadership Styles**

Current literature has shown significant differences in the leadership styles of men and women. Men have been stereotyped to have positive leadership styles that are quick, action oriented, and analytical (Baker, 2014). In contrast, women have been stereotyped to have negative and passive leadership styles. In 2012, 7,280 business leaders completed a survey that compared sixteen characteristics that top leaders embody. The characteristics include: “takes initiative, practices self-development, displays high integrity and honesty, drives for results, develops others, inspired and motivates others, builds relationships, collaboration and teamwork, establishes stretch goals, champions change, connects the group to the outside world, innovates, technical or professional expertise, and develops a strategic perspective” (Baker, 2014; Folkman
& Zenger, 2012). Women are stereotyped as nurturing leaders. They are thought to lead people through developing others, building relationships, exhibiting integrity and engaging in self-development (Folkman & Zenger, 2012). The data did not score women higher than men on the stereotyped leadership. The study concluded that at every level, women were rated by their bosses, peers, and associates to be better overall leaders than the male participants and contradictory to stereotypes, women scored the highest in leadership characteristics such as “taking initiatives and driving for results” (Folkman & Zenger, 2012). Although it can be proven through data that women are capable of leading, only 16.9 percent of Fortune 500 board seats are occupied by women (Warner, 2014).

Füsun (2010), investigated the difference in leadership styles between 124 Turkish women and 152 Turkish men. The study concluded that women managers had more power to transfer to their experiences and leadership practices than men managers (Füsun, 2010). In addition, both genders used team-oriented and participative leadership styles. Women were more rated more elaborate and accurate in their leadership styles (Füsun, 2010). Women also are more receptive to positions of leadership in stressful situations (Füsun, 2010). A study in 2012, examined a sample of 157 Spanish managers to study sex differences in leadership. The results displayed that male leaders’ had lower scores than women in individualized consideration, positive contingent reward and emotional intelligence (Gartzia & Marloes, 2012). From a global perspective, women cross-culturally possess leadership styles that are equal or better than their male counterparts.

**Dealing with Resources & Finances**

It is being analyzed how women entrepreneurs seek resources in North America and Europe to support their businesses and how to promote growth in small businesses owned by
women (Braidford & Stone, 2014). The study found that entrepreneurial and community resources should not assume that all women have similar support needs and that their support needs are different from their male counterparts (Braidford & Stone, 2014). An empirical study of 2,119 high technology and non-high technology firms from the Kauffman foundation survey, focused on how minorities access financials to start and grow their businesses (Bwaji, Yang & Hang, 2015). Minority entrepreneurs are less likely to access funds from financial institutions than non-minority entrepreneurs (Bwaji, Yang & Hang, 2015). Education also impacts entrepreneurial funding. According to Carter et al. (2003), women entrepreneurs with graduate education have easier access to larger amounts of outside funding.

Mentoring: Knowing Strengths and Accepting Weaknesses

We all have or develop these particular skills that we continue to learn about throughout our lifespan. One of the problems, however, is we spend so much time trying to focus in on what we're not good at instead of mastering our abilities (Tom Rath, 2007). As an entrepreneur, it’s important to know the strengths and weaknesses you have. Especially, if you’re looking to create a business out of a service or inventive product. A study was conducted to show the positive sides of mentorship. According to Robin and Timothy, “Women entrepreneurs own 9.1 million businesses making them the fastest growing segment of entrepreneurs” (2014). In addition, not only are they growing but they are also successful and that in some part is due to the help from their mentor.

This idea of mentoring came across from a source called Facing Down Doubters and Empowering Others. Ingrid Vanderveldt spoke and told her story to Sarah J. Robbins, who in the end wrote an article about her on Entrepreneur.com. What stuck out was this idea that she wanted to open a business in online-data mining and data-analysis company. She had the idea,
she had the drive, she had business skills, however, she lacked bits of knowledge about this technology. What was inspiring was she didn’t give up on the idea. She accepted that she lacked certain expertise and she went to ask for help. She pushed to get help from the mentor who helped Michael create Dell, which was McCombs Dean George Kozmetsky and in the end, with some hardships, her business turned out to be successful. Now, of course she didn’t stop there, she went on to do other things, but because she had the spirit of accepting help, and being mentored, it led her eventually to a career that helped and motivated other entrepreneurs. (2013)

This is only one example. There are several more that shows the success of these mentors. Companies like “American Express, General Electric, Goldman Sachs, Johnson & Johnson, Lehman Brothers, and Time Warner have dedicated resources to building women’s networks for helping their female employees build their skills, contacts, and confidence” (Robin and Timothy, 2014). Mentoring isn’t new and it’s still a work in process but according to Sandberg, “the benefits of mentoring assimilate success and business growth for women entrepreneurs” (2013). That being said, in the future, this can be something that entrepreneurs can rely on.

**Entrepreneurial Women and Family Firms**

Family firms are a solid platform for developing women leaders and entrepreneurs, and have been known to be a vital source of creating the next generation of entrepreneurs (Barrett, 2014). Mary Barrett and Ken Moores conducted a study based off of women, family business, and entrepreneurship. To avoid considering stereotypical conceptions of women’s contribution, which have dogged women entrepreneurship research (Ahl 2004; Bruni, Gherardi and Poggio 2004), Barrett and Moores analyzed these women’s experiences using three gender-neutral analytical models. The first was Moores and Barrett’s (2002) four phases of learning family
businesses. Phase 1, ‘learn business’ involves leaving the family firm to gain business experience and personal discipline elsewhere. Phase 2, ‘learn our business’, means returning to the family firm and learning its special qualities as a family firm. Phase 3, ‘learning how to lead our business’, is when leaders acquire a strategic view of the firm’s future and how to achieve it while maintain its family qualities, and the 4th, ‘leaders plan for and manage succession’, where they learn to leave the family firm. Barrett and Moores second analytical tool was Lave and Wenger’s (1991) concept of a community of practice (CoP), which focused on the learning tools of belongingness, which takes 3 forms, which are engagement, imaginations, and alignment. The third analytical tool was Curminbaba’s (2002), typology of women’s roles in non-CEO positions in family businesses. Curimbaba discerned three roles for family business heiresses: ‘Invisibles’, ‘Professionals’, and ‘Anchors’. The ‘invisible’ family business woman is usually a middle child who has older brothers, and the daughters are no seen as necessary to include in the successor managerial staff (Barrett & Moores, 2009; Curminbaba, 2002). ‘Anchors’ come from families with predominantly family offspring, with few men, and with great visibility inside the family business they become vital for the family business continuing. ‘Professionals’ work in mature family companies with complex ownership structures, where a reasonable amount of men work, but not an overwhelming majority (Barrett & Moores, 2009; Curminbaba, 2002). The results of Barrett’s and Moores (2009) analyses produced ten important lessons for family firms: (1) Give promising women early external learning opportunities and a clear route back to the family firm; (2) Be wary of ‘touchy-feely’ stereotypes of women’s management style; (3) Women’s unconventional experience requires creating legitimacy for their leadership; (4) Choose mentors who are ‘in’ but not ‘of’ the family firm; (5) Visibility and invisibility are potential leadership strategies for women; (6) Invisibility must be a tactical choice; (7) Women and men manage
succession in similar ways; (8) Women use the full range of learning strategies to develop the family firm; (9) Women need a home base, a reminder about where they have been, and support for their multiple identities; and (10) Anchors and Professionals, but not Invisibles, may become entrepreneurs.

**Generational Perspectives**

Text

**Proposed Research**

This mixed method, multiple case study will investigate behaviors of women entrepreneurs in Pennsylvania through a mixed mode survey and subsequent interviews (Creswell, 2007/2008; Dillman, Smyth, & Christian, 2014; Fink, 2009; Lee, 2008; Merriam, 2009; Wilson, 2014). A key emphasis will be generational reflection of behaviors, expectations, motivations, and performance (Lancaster & Stillman, 2003; Shaw, 2013; Zemke, Raines, & Filipczak, 2013). The lens of generations will contribute to understanding women’s roles and behaviors in entrepreneurship and business and how to foster engagement in the future. This research will add to the literature focused on successful entrepreneurial activity and economic development. A randomized data set of 10,000 registered women entrepreneurs (from an available 43,000 registered women owned data set) will be purchased and utilized across the state of Pennsylvania. The robustness of the data should provide a wide range of participants based on age, industry, geography, and experience. The survey will contain self-reflection questions, demographics, and open-ended questions relating to entrepreneurship and resources. Individuals may volunteer for a follow-up interview.

Instrumentation and IRB approval will occur in late Spring 2017 with a full launch of research in Fall 2017.
Implications

Potential replication of the study will include women in other states or replicated to minorities in PA and other states.

Dissemination of Knowledge Gained

Results of data will provide several opportunities: (1) Information for involved communities will be shared to improve entrepreneurial infrastructure in Pennsylvania; and (2) Information will provide replication of success of current women entrepreneur businesses and intel for future women-owned start-up businesses.
References


Environment as a Determinant of Entrepreneurial Type: Necessity or Opportunity?
Yasmin Mattox and Ebony Miller-Wesley

Introduction
The purpose of this study is to better understand how individuals develop into specific types of entrepreneurs, e.g. those who gravitate towards entrepreneurship because of a need to satisfy basic needs for subsistence and shelter (necessity entrepreneurs), or for self-actualization, e.g. creation of a legacy via bringing a product or service to market (opportunity entrepreneurs). An underlying assumption of our hypothesis is that a confluence of environmental factors drives the development of one’s entrepreneurial phenotype.

Research Questions
The underlying assumption of the study’s hypothesis is that entrepreneurial phenotype is significantly impacted by environmental factors. However, it must be emphasized that environmental factors specifically refer to a collection of sequential variables, including composition of various interpersonal networks, educational attainment (level), and cognition (how one thinks and learns). Consequently, the research questions posed in this study are tiered, and include the following queries: What is the relationship between environment and entrepreneurial type? What is the relationship between educational attainment and entrepreneurial type? What is the relationship between cognition and entrepreneurial type?

Motivation for Study
The underlying motivation of this inquiry is to collect, analyze, and interpret data from which to better inform entrepreneurial centers’ programming, training, and advisory efforts so that entrepreneurs can ultimately 1) develop into opportunity entrepreneurs post-market entry, or 2) develop into opportunity entrepreneurs pre-market entry. The Rochester Institute of Technology’s, Center for Urban Entrepreneurship’s (CUE’s), primary client base consists of entrepreneurs who have entered specific markets out of necessity. Over the course of the last
year, CUE staff has observed that those clients who developed into entrepreneurs out of necessity were not as sustainable as their counterparts who entered the market out of opportunity. Of the opportunity entrepreneurs CUE staff assisted, the majority tended to be more forward thinking, possessed a succession plan, thus having demonstrated long-term considerations and planning, and continuously assessed market trends.

**Literature Review**

Opportunity entrepreneurs tend to be individuals for whom, compared to non-entrepreneurs and necessity entrepreneurs, risk-taking is tolerable, often to a high degree, providing the impetus for venturing into starting a business, especially into ventures that can potentially yield significant financial gains and scalable businesses with the greater likelihood for explosive growth (Turkina and Thai, 2015). A key trait of opportunity entrepreneurs is that they are typically motivated by an innovation that can potentially have a profound impact on the marketplace and lead to significant human progress, e.g. the Internet (Turkina and Thai, 2015).

Those from college-educated, or beyond, backgrounds tend to come from families and communities that have organically developed social support networks that give rise to the economic and professional capital often linked to a high tolerance for risk-taking (Block et al., 2015). Those within such networks, tend to be more risk tolerant presumably because there is a safety net in which financial and non-financial support, is provided by the community, therefore allowing greater risks to be taken, leading to long-term considerations and strategies rather than those that focus on short-term concerns, e.g. immediate, basic needs. In short, at least at first glance, the cost-benefit analysis that occurs before and after market entry among entrepreneurs can at least be partly understood in terms of Maslow’s Hierarchy of Needs (Maslow, 1943).

In contrast to opportunity entrepreneurs, necessity entrepreneurs tend to be individuals who are typically risk averse, sometimes to an extreme degree (Block, Sandner, and Spiegel,
They are typically motivated by utilitarian ideas that are grounded in bringing a product or service to market with the main objective of producing income from which to subsist (Block et al., 2015). For a number of reasons, it appears that opportunity and necessity entrepreneurs have contrasting mindsets, not as a matter of nature, but rather, perhaps, as a matter of nurture, of environment.

Individuals from less educated backgrounds, especially those for whom subsistence is the primary motivator for starting a business, as well as those who lack participation, whether active or passive, in social support networks, appear to operate in silos. Consequently, they typically do not benefit from the social support networks to which their (opportunity) entrepreneurial counterparts are accustomed, thereby arguably leading to a decreased risk-taking tolerance, and often a hyper-intolerability to the high level of risk-taking associated with high impact innovation and the ability to produce products and services that can yield significant financial gains. The literature suggests that, historically, the majority of necessity entrepreneurs have been those from less beneficial environments (Burt, 2000); of lower socioeconomic status, who are also typically of minority ethno-racial descent, insulated from the educational opportunities and consequent cognitive adaptive traits borne from both education and socially positive support networks (Sahban, Ramalu, and Syahputra, 2016), thereby leading them to develop as necessity entrepreneurs at higher rates than their counterparts (Block et al., 2015).

**Research Design and Methods**

The study design is non-experimental. We use questionnaires to collect data that can then be analyzed to determine the existence of relationships between the variables and subsequently, the direction and magnitude of relationships that may be found in order to better understand the predictive connection between environment and entrepreneurial phenotype. We hypothesize that there is a significant positive relationship between environment and
entrepreneurial phenotype, specifically opportunity phenotype by which those who come from cohesive and well supported networks are far more likely to become entrepreneurs who start viable enterprises than those who come from less cohesive and supported networks who are more likely to become necessity entrepreneurs. The study’s independent variables are environment, education, and cognition, and the dependent variable is entrepreneurial phenotype (necessity or entrepreneur).

Recruited participants include individuals who receive entrepreneurial services from Rochester Institute of Technology, at its on campus business incubators and accelerators, which serve faculty, staff, and students, as well as individuals who receive entrepreneurial services at its off-campus business incubator, the Center for Urban Entrepreneurship, which primarily serves Rochester community members who are typically not affiliated with the institute. Participants will be randomly selected by first stratifying them into two groups – those who receive entrepreneurial services on campus and those who receive entrepreneurial services CUE. Ability to begin the study will follow approval from Rochester Institute of Technology’s Institutional Review Board. Recruitment will be done via email, with a description of the premise and nature of the study – online survey and then an interview. Informed consent forms will be provided and obtained before survey administration, and the study’s authors will ensure that while demographic data will be collected, no participant identifying data will be collected so as to ensure anonymity from which to gather the most forthright questionnaire responses.

The survey will be administered in web and paper formats to increase response rates, particularly among those participants who, due to socioeconomic factors, may be significantly less likely to have readily available Internet and email access from which to take the web-based questionnaire. Data collected from both web and paper administered formats will be coded and
entered into SPSS to run multivariate statistical tests such as multiple regression and path analysis for the four variables (three independent; one dependent).

**Contributions and Future Avenues of Research**

We seek to contribute to the literature by identifying the types of positive environmental factors that are most closely associated with the development of opportunity entrepreneurs in order to create programming, at CUE, and collaboratively with local partner organizations, to replicate the most nurturing environments from which to cultivate opportunity entrepreneurs before they enter the market or to redirect them to an opportunity phenotype after they have already participated in the market as a necessity entrepreneur. We envision our study being replicable for other entrepreneurial centers in the United States, especially those located in urban and impoverished areas. Future avenues of research include conducting mixed method studies from which to further describe and explore the cognitive processes, including decision-making, and behavior of necessity and opportunity entrepreneurs in order to ultimately acquire data looking at both macro and micro variables believed to influence entrepreneurial phenotype.

Although CUE undertakes research that is motivated by a need to inform programming efforts and service offerings both at CUE and potentially at other urban entrepreneurial centers, thus making policy journal publication submissions likely, CUE also seeks to produce research that would be deemed meritorious for interdisciplinary journals that deal with economics, entrepreneurship, psychology, and neuroscience. Examples of journals to which CUE research would likely be submitted include the following: Journal of Behavioral and Experimental Economics, American Journal of Entrepreneurship, and International Journal of Management Reviews.
References


Cross-disciplinary Competition: Entrepreneurship and Engineering Lessons Learned

Colleen Robb, California State University
David Alexander, California State University

Abstract

A team was formed from students across campus including majors from business entrepreneurship, management, marketing, and electrical, civil, mechanical, and mechatronic engineering to compete in the U.S. Department of Energy Collegiate Wind Competition 2016. Requirements of the competition are to deliver a market-driven technology application, create an innovative business plan, and develop a deployment strategy. Two faculty advisers, a mechanical engineering assistant professor from the college of engineering and an entrepreneurship assistant professor from the college of business designed and delivered content to help student members effectively collaborate and innovate across their disciplines and form a cohesive and high functioning team. In addition to being members of the cross-disciplinary team, half the students were concurrently enrolled in a business management course with an emphasis in social entrepreneurship and market analysis while another half were enrolled in a senior capstone engineering course. Activities in the form of workshops were delivered to the team during weekly meetings to develop and enhance skills in team development, communications, project management, business development, brainstorming, and ideation. In addition, engineering students collaborated with business students during the business management course to provide technical expertise during market research and analysis and students presented to one another on topics related to their particular disciplines. This paper describes the workshops that were
delivered, student reflections and feedback, and lessons learned throughout the experience based on faculty observations and student performance.

Introduction

Many engineering programs today include opportunities to work in multi-disciplinary teams.\textsuperscript{1,2,3,4} This has largely been driven by industry’s needs and requirements to become more multi-disciplinary and remain competitive in the workforce. This is also seen in the accreditation requirements of ABET where student outcomes are implicitly and/or explicitly collaborative in nature, e.g. general criterion 3: student outcomes (e) “an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability,” (d) “an ability to function on multidisciplinary teams,” and (g) “an ability to communicate effectively.”\textsuperscript{5}

Providing opportunities for students to work in cross-disciplinary teams is a desired academic engineering program attribute.

Because this project was primarily student-led and multi-disciplinary, various student-centered approaches were investigated as models to apply or adapt. Schaffer, et al.\textsuperscript{6} investigated improvements in self-efficacy after students worked on cross-disciplinary service learning team projects. Students self-reported their confidence level on a number of individual and team behaviors and abilities. Average team size was 3.5 individuals from predominately engineering disciplines, however about 30\% of the over three-hundred person class roster were from non-engineering majors. Results showed overall an improvement in self-efficacy based on a pre- and post-questionnaires however there was considerable variation within individual responses and
30% of respondents self-identified no change or a negative change in self-efficacy after engaging with the cross-disciplinary team. It is suggested that because of the cross-disciplinary nature of the project, students came into the group with limited experience with both cross-disciplinary teams as well as service learning design projects, which lead to unrealistic expectations of the type and amount of work required to effectively engage and deliver on the project. Avoiding unrealistic expectations and overconfidence was considered in the workshop design.

Fruchter and Emery\textsuperscript{7} view cross-disciplinary teams as an opportunity to enhance learning by developing the individual through better understand of one’s own discipline while also developing a deeper understanding of the disciplines of others. The interactions required to effectively work on a cross-disciplinary team forces individuals to describe, explain, defend, and understand their own areas of expertise in ways that surpass traditional learning environments. From questionnaires and surveys based on a four tiered model of increasing awareness from being aware of only one’s own “island of knowledge” to understanding another’s knowledge or subject, they find that enhanced cognitive development can be improved through cross-disciplinary project teams even when interactions occur remotely. Opportunities were created for students to engage in activities that required discussing and sharing one’s discipline specific knowledge with others.

In a four year study of a general education course composed of students from across campus Machemer and Crawford\textsuperscript{8} found that the over-riding factor influencing students’ perceived value of the three teaching techniques, lecture, cooperative, and active-learning, was how relevant the technique was in supporting exam performance. Additionally, active and lecture-based teaching
techniques were perceived by students to be almost equal in value, whereas cooperative learning was rated less valuable. Some of this difference is likely attributed to the fact that the four year study focused on a large, traditionally lecture-based course where some expectations and desires were to remain anonymous and discrete whereas cooperative learning techniques require individuals to work together, assume roles, and report out on the process as well as the particular content area. The cooperative learning structure does not allow for anonymity of the student participant. Because of the possibility that students view cooperative learning as a less valuable learning activity, the workshops were designed to coincide with CWC deliverables in order to create urgency and value for the workshop’s content.

There are many engineering programs that focus on multi-disciplinary engineering projects and many that include industry sponsors\textsuperscript{9}. These academic programs provide students with valuable project based-learning experiences with opportunities to interface with industry in a safe environment focused on learning and development. However, most of these programs are fundamentally engineering projects requiring solely engineering solutions. Additionally, while a solution may not exist, \textit{a priori}, project sponsors generally provide adequate constraints and feedback to help guide the engineering student toward a viable solution. The CWC has no such sponsor and the problem definition is entirely student defined.

The Department of Energy Collegiate Wind Competition 2016 (CWC) brings together many different disciplines to compete on a national level. Teams are responsible for identifying a market need and conceiving of a device that solves the need and uses energy derived from wind as its sole source of power. Additionally, the competition requires teams to identify issues
involved in deploying the unique application within its target area. Students are to design and build a prototype wind machine, develop a complete business plan that supports the application, and strategize how the wind turbine is to be deployed. These deliverables are judged during a three-day competition where the technical team’s prototype is tested in an on-sight wind tunnel, the business team presents the business plan to a panel of industry representatives, and the deployment pitch is presented in front of a national audience of experts. These three challenges are highly cross-disciplinary in nature as well as very open ended. Not only do students need to conceive of a product, it must be based on market research and as a result there are no predetermined technical requirements or specifications. There is no predefined problem that needs a solution. Students develop their own criteria for what makes a viable product, market, and customer. These challenges require students to be entrepreneurs and work collaboratively and openly in an environment that demands careful, consistent, and precise communication between students with diverse backgrounds and experiences.

Team Organization

The core team was formed from students enrolled in either social entrepreneurship or engineering capstone. The guiding tenants of social entrepreneurship are to “(1) aim either exclusively or in some prominent way to create social value of some kind, and pursue that goal through some combination of (2) recognizing and exploiting opportunities to create this value, (3) employing innovation, (4) tolerating risk and (5) declining to accept limitations in available resources.” In this course, students explore what distinguishes social innovations and how to apply business start-up knowledge, skills, and abilities in order to accomplish them.
The mechanical and mechatronic engineering capstone course is two semesters-long. Students learn many aspects of project and product development, project management, budgeting, designing and defining engineering specifications, testing, and customer/client relations. A team of five engineering students were assigned to the CWC plus two other engineering students volunteered.

The senior capstone course outcomes aligned well with the CWC schedule. In the first term, students work with a customer to identify the engineering specifications and design validation test procedures. Throughout the semester capstone teams give three formal project presentations to peers, clients, and faculty. Presentations include a project design proposal, preliminary design review, and final design review. The final design presentation includes a completed budget, bill of material, CAD models, wiring schematics, and custom fabrication needs, among other requirements. The second term focuses primarily on fabrication, testing, and design validation with the required hardware deliverable showcased during the end of the term.

Workshops

A just-in-time approach was adopted for delivering content to students in the form of workshops focused on the immediate needs of the team. This model was selected to more closely represent the dynamic environment of a new business technology startup and to avoid creating an environment where assignments were given and deadlines were established and driven by the instructor. Workshops focused on the following areas: developing core team values, writing a team contract, understanding behaviors to improve team performance, self-assessing behaviors, market analysis and product development, and sharing expertise. Workshops were presented
throughout the fall 2015 semester during weekly team meetings. They were designed to include a brief explanation of a concept or theory, lasting between ten and twenty-minutes, followed by an activity in which students worked collaboratively. The collaborations were generally designed to get students to interact with one another as well as to provide them with skills and products that would be used as the framework for future deliverables and/or internal processes.

Core Team Values

One of the first learning opportunities was an activity designed around creating core team values. The students were briefed on the importance of creating core values as a team and how the overall values of the team result in the collective understanding of one’s mission and a sense of belonging, which leads to a stronger commitment to the team. Individuals were then given a list of over fifty words that represented values such as ambition, kindness, integrity, etc. Students were then asked to pick five words from the list and/or supplement the list with their own words and rank the words in order of personal importance. All words were then combined into one list and ranked based on how many times the word was selected by an individual. All the words were reviewed and discussed. Some words were combined into one if the team felt that one word could adequately represent multiple words. This continued until the team had a list of five words that best represented the core values of the team. The goal of the activity was to encourage the collaborative, rather than individual, thinking that was found as a key finding in Fruchter and Emery’s study.

Team Contract
Once the team had a list of core values, they created a team contract. The team was provided with a template adapted from Trevisan, et al\textsuperscript{2}. Elements of the team contract included roles and responsibilities, team relationships, team meetings, individual expectations, documentation and communication protocol, and conflict resolution. The contract was completed and circulated among all members and once approved, it was signed and became the governing document for the team.

Supportive Behaviors and Self-Assessment

Presentations on teamwork and how to contribute to a high achieving team were adapted from the instructors’ experiences as well as Pellerin\textsuperscript{11} and Trevisan, et al\textsuperscript{2}. Key elements include describing and understanding the motivations for why individuals work on teams and what the underlying needs of the individual are in working on a team and how to nurture and support those needs to maintain a positive, constructive, and successful team environment. These characteristics were presented and discussed with the students and used as a self-assessment tool to evaluate each individual’s contribution to the team and to identify areas that need to be addressed or supported for process improvement.

Market Analysis and Product Development

The market analysis workshop focused on case studies of products that were conceived of by well-known companies, taken through production and distributed to the customer and failed. In
all cases, the failure was a lack of adequate market research and specifically not appropriately capturing the voice of the customer and/or misunderstanding the situation or way in which the product is used.

The new product development workshop focused on identifying the essential information necessary to assess a potential product idea. A concept disclosure template was provided that is commonly used in industry to evaluate product ideas. The template is a relatively simple document that includes placeholders for the following items related to the concept: picture/image, problem definition, how product solves the problem, description of the customer, description of the market, competition, competitive advantage, intellectual property or unique technology, and how the product is to make money. This is used routinely to make decisions at the executive/management level in a typical company. It was suggested that the students utilize the concept disclosure template to track all concepts being considered.

Sharing Expertise

It was clear at the onset that engineering and business students knew very little of the others area of expertise. As a result, several presentations were prepared by the students and for the students. Engineering students prepared and presented to the non-engineering students. Engineering students often do not realize what they know and often do not recognize that other people may not know or understand the concepts and terminology that they do. Engineering students prepared and presented a summary of the basics of energy, power, wind power and efficiency
and reviewed key performance and design considerations for developing wind driven power system to the entire team.

Likewise, non-engineering students presented the fundamental of elements of a business plan, market research, and customer perspective. Groups of three to five business and engineering students presented to the rest of the team. Time was devoted to answering questions and addressing issues or concerns of any and all students.

Engineering students participated in several events held during the market research class. As teams of business students were conducting market research, reaching out to potential customers, and investigating market leads and contacts, engineering students came to the marketing class as technical experts and collaborated on the technical aspects of the market driven concepts. Approximately, two one-hour sessions were dedicated to having one engineering student per market research team collaborate, discuss, and identify technical issues that related to the market opportunities.

Assessment

The goals of the assessment were to provide information on how students self-identify with working in teams and to understand their level of experience. Additionally, it was hoped that by assessing pre- and post-semester, the effectiveness of the workshops could be determined. Two questionnaires were given to the students, one at the beginning of the semester and one at the end. Both questionnaires included Likert-scale questions, yes/no responses, and space for
comments. The pre-semester questionnaire focused mainly on teamwork experiences and attitudes and included the following questions.

1. Have you worked on an academic team?
2. Do you like working on a team?
3. If assigned to a team project, how would you feel?
4. Have you ever been trained to work on a team?
5. Is it necessary to work on a team?
6. Are you well prepared to work on a team?

The second questionnaire was administered at the end of the semester and included the following questions plus several open ended summative questions. The questions with Likert scale responses follow.

1. Have you worked on a team with students from a different college?
2. Considering the CWC experience, do you like working on a cross-disciplinary team?
3. If assigned to a team project, how would you feel?
4. Do you think you were well prepared at the beginning of the semester to work on a team?
5. Do you think you are now better prepared to work on a team?
6. Compared to projects with students in your major, what did you think of working with students from a different college?
The summative questions queried students for what they liked, what needs improving, and what recommendations they had for the stated improvement. These were used as a formative assessment of team progress and overall team efficacy.

Results

A total of ten responses were collected from the pre-semester questionnaire and seven for the post-semester. Frequencies of responses to each Likert scale option or frequency of yes/no responses are provided in Table 1.

Table 1. Pre-Semester Questionnaire Results

<table>
<thead>
<tr>
<th>Question</th>
<th>Likert Scale/Response and Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes 10  No 0</td>
</tr>
<tr>
<td>2</td>
<td>Dread it 0  Not Really 1  Neutral 5  Like to 3  Love to 1</td>
</tr>
<tr>
<td>3</td>
<td>Dread it 1  Not Really 0  Neutral 3  Like to 0  Excited 6</td>
</tr>
<tr>
<td>4</td>
<td>Yes 7  No 3</td>
</tr>
<tr>
<td>5</td>
<td>Yes 10  No 0</td>
</tr>
<tr>
<td>6</td>
<td>Not at all 0  Not Really 0  Neither 0  Probably 3  Absolutely 7</td>
</tr>
</tbody>
</table>

Post-questionnaire frequency of responses are shown in Table 2.

Table 2. Post-semester Questionnaire Results

<table>
<thead>
<tr>
<th>Question</th>
<th>Likert Scale/Response and Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes 1  No 6</td>
</tr>
</tbody>
</table>
A self-assessment was collected midway through the semester. Eight behaviors were assessed in which students were asked to respond to whether they exhibited the behaviors fully, usually, seldom, or never and provide a justification or reason for their rating. The eight behaviors included showing appreciation, addressing shared interests, including others, keeping all agreements, being optimistic, being outcome committed, avoiding blaming others, and understanding ones role and level of accountability (adapted from Pellerin\textsuperscript{7}). Though the self-assessments were limited, highlights of these provided poignant insight into student experiences. Students recognized when they did not meet the behavioral standard and gave examples or details of their performance. For example, one student wrote, “I have been upset with our progress…, yet have done little to resolve the issue.” Another student said, “I try to focus on the outcome but sometimes I get bogged down in the details.” In addition to assessing ones behaviors, the questionnaire also asked students to describe which attributes of the team support good team work and what one thing the team could do to improve its performance. A summary of the answers are included in Table 3.

Table 3 Answers to two questions from the student self-assessment.
“willingness to ask questions and be persistent until an answer is found.”
“tech team should approach business team more often asking if they need help”

“weekly meetings and open collaboration”
“less reliance on professors. I believe we have enough momentum that students can collaborate more independently and produce quality results.”
“It doesn’t feel as a student led team anymore.”

“weekly meetings”
“review the team contract”

Discussion

The team socialized well and seemed to enjoy one another’s company. Meetings started on time, though often lasted longer than scheduled, were well attended, respectful and the students were engaged. Some support was given early in the semester on how to run an effective meeting, creating and managing agendas, and managing action items. These skills were taught to the student leads and emphasized throughout the semester.

During the workshops, students seemed to participate with enthusiasm and interest. During the team values workshop, students actively discussed various values and definitions and collaboratively developed their list of guiding principles. Likewise during the workshop on self-assessments and behavioral characteristics that add value to team collaborations, the students were engaged and interested. The business professor led a discussion on the importance of appropriate and adequate market research and asking the customer for input. This was a particularly rousing workshop in which the students participated and were highly engaged. The workshops seemed to provide adequate information for students to engage in collaborative activities such as market research, developing a team contract, and ideation. However, much of the follow up necessary for evaluating concepts and assessing ideas fell flat. The students did not seem to continue or build upon any momentum that was created from week to week.
It took at least two months for the team to take ownership over the project and commit to taking on and completing assignments. The team missed all internal deadlines, meetings lasted longer than planned and often without resolution on current issues, and there was a lot of confusion with roles and responsibilities. As noted in the self-assessment (See Table 3), some students wanted more autonomy however when given full control of the project, they missed most internal deadlines and deliverables and had difficulty defining goals and direction on a week-to-week basis. This seemed to indicate a disconnect between what the students understood of themselves and how they contributed to the team.

This is consistent with the limited results of the pre- and post-semester questionnaire. Six out of ten students from the pre-questionnaire and five out of seven students in the post-questionnaire answered that they would be excited about the opportunity to work on a team. This equates to about 65% of all students excited about working in a team environment, which seems consistent with a team of volunteers. However, 70% of students in the pre-questionnaire, i.e. at the start of the project, believed they were absolutely well prepared to work on a team, which dropped to only 28% at the end of the semester. Additionally, of the students that indicated that they were excited to work on a team in the pre-questionnaire, 100% felt that they were absolutely well prepared for teamwork. Whereas in the post-questionnaire, four out of seven respondents (57%) indicated that they thought it was hard or really hard to work on a team with students from a different college. These results seem to indicate that serval students started the project with high expectations of themselves and were perhaps overconfident about working in a multi-disciplinary team.
After careful consideration and reflection on the past semester, the issues and struggles that the students had do not seem to be based on a difficulty of working together or bringing together students from diverse backgrounds. The main challenge came from the nature of the competition and specifically the fact that the students had to conceive of an innovation or application that did not exist, decide whether the idea had merit and design both a market analysis and business plan and prototype to justify the concept. Students were asked to be entrepreneurs.

When ideas were proposed to the team, students struggled to find viable solutions and seemed clearly frustrated and discouraged, to the point that during a couple meetings, students lost enthusiasm and confidence for wind power and mentioned how much easier the competition would be if they could design with solar power. The students were working hard to find a viable solution using wind power but the natural constraints of wind, including site specific wind resources, intermittent availability, land and wildlife issues, and overall system cost, limited options and narrowed students’ view of the possibilities, adding frustration and at times degrading attitudes toward the project.

In some regard, these issues are faced by individuals and companies on a regular basis and exposure to the reality of starting a business and its inherent challenges is a valuable learning experience. Characteristics of successful entrepreneurs including resourcefulness, creativity, and willingness to accept ambiguity or tolerate risk are the same characteristics that the students were being asked to develop in order to succeed as a team of the CWC. Some of these characteristics are necessary for success in college, however the ambiguity and creativity, if not
managed well, can easily lead to disgruntled and disappointed behaviors and attitudes.

Unfortunately, students were not well prepared to manage these complex issues.

Another area that seemed to be particularly challenging was the fact that little was known of the process of new product development. Neither group focused well on what was unknown about an issue and attempt to resolve the unknown issues in order to gain clarity. Instead, they would focus on one discrete data point or set and use that to drive discussions and decisions rather than look for the flaws or fault in the data and try to overcome these with more information. As a result, decisions were made based on only partial information. Students struggled to find something concrete on which to make a decision where the act of making a decision was more important than the quality of the data on which the decision was based. This speaks to how uncomfortable the students seemed to be with ambiguity and the unknown.

Lessons Learned

Based on the past semester’s performance and quality of the deliverables there are four main areas to focus on for improving the overall performance of and experience for the students, these are (1) describe in-depth the new product development life-cycle from the perspective of production as well as business and provide examples of successful and unsuccessful product launches with performance metrics, (2) provide consistent and continual support to student leads on how to manage teams, (3) have guest lectures share their experiences of being an entrepreneur, (4) and focus on the overall team as the entity that drives decisions and deadlines as opposed to the supporting courses in which the students were enrolled.
One of the biggest challenges for the students was not knowing the overall process of starting a business from conceiving the idea through commercialization, launch and product roll-out. Because of their lack of understanding of the process they waited for others to inform them of what to do and when, rather than taking the initiative based on a clear understanding of the process. They were reluctant to start the pursuit of an idea. It seemed that the risk of failure prevented them from starting. The reality of a small business startup is that most ideas are not good ideas, but it’s the pursuit of ideas, even bad ones, that ultimately leads to an idea worth pursuing. Knowing that the process of new product development is fraught with failures might help students overcome their reluctance to start and tendency to look to others to make progress before they are willing to invest time and effort. Additionally, knowing the timing and process for new product development could help students understand that even though they might come from different backgrounds and have different expertise, no one individual is likely to know the “correct” idea to pursue.

Additional support will be provided to help inform and guide student leads and individual team members. Agendas and timelines will be reviewed weekly with appropriate meeting goals identified and support provided for how to reallocate resources should the need to adjust workload be needed. Additionally, student leads will be coached on how to divide tasks into small action items that can be more easily tracked and managed.

While the social entrepreneurship class had many guest lectures and opportunities to interface with business leaders and entrepreneurs in the local and regional community, these events were
focused on understanding various market segments and were not intended to provide an overview of the business startup or product development process. Bringing in guest lectures that have entrepreneurial experience and that can describe the process of starting a business or developing a new product line would help the students better understand the overall process as well as help them to identify key elements and priorities related to market research and analysis during the concept development phase.

A major organizational change that will be implemented in the future will be to allow the CWC to form for and by students at the beginning to enable true student governance and leadership. The CWC proposal was awarded in the spring semester and since both faculty members that submitted the proposal were new to the University, they appointed several students based on recommendations from others and not based on firsthand knowledge. While these students were extremely helpful in getting the CWC off the ground, because they were selected by faculty they looked to the faculty for direction and decisions as opposed to taking the initiative themselves to make decisions. Additionally, when the CWC grew, it grew because of students being assigned to the project from either the social entrepreneurship or engineering capstone course, and again, the motivation of the assigned students was primarily based on their course responsibilities and not their or the team’s organization and direction. In the future, CWC membership will be solicited across campus with the overall direction and decisions made by students for students with the faculty advisors providing support and guidance rather than driving the overall direction and decision making.
Finally, a change was made at the start of the spring semester. Each student committed to a contract in which they agreed to work at least 10 hours per week and volunteer for one or more administrative positions in exchange for the opportunity to travel to New Orleans, LA for the competition. The contract was created to make more explicit the expectations of being a member of the team. The hour requirement includes time spent on assignments for both business and engineering courses related to the CWC. Students that were not able to commit to ten hours per week are still able to participate, however they will not necessarily go to New Orleans.

While there were many lessons learned and the conclusions are thus far based on faculty observations, insight, and limited student feedback, the overall experience for both faculty and student has been successful, enjoyable, and challenging. The Chico State CWC team submitted its final competition report to the Department of Energy which includes a comprehensive report of the business and deployment strategies and technical design solution. The team also traveled together to New Orleans for the oral presentation rounds. The team won in the Deployment Strategy category.

References


ABSTRACT

By framing entrepreneurship courses in the context of team projects between business and engineering domains, students can gain meaningful experience whether they choose to pursue an entrepreneurial path or decide to pursue being an employee after graduation. However, the traditional classroom environment is not particularly conducive to realistic interdepartmental interactions typically found in most corporations or startup teams. In this paper, we describe a model for collaboration between students in entrepreneurship and computer science programs to cultivate development of real software products. We outline our partnership and illustrate how sister courses covering Lean startup and Agile software development methodologies complement each other to foster realistic, interdisciplinary Tech Startup teams. We also provide a framework for handling intellectual property issues that may arise due to such a collaboration.

INTRODUCTION

Entrepreneurship education programs have grown rapidly over the past twenty years. In the late 1980’s and early 1990’s macro-oriented growth models allotted a new and critical role to entrepreneurship and innovations (Aghion and Howitt, 1992). Entrepreneurship has since then increasingly been seen as indispensable to economic development (Braunerhjelm, 2014). In response to this, traditional business education programs disseminated information and taught analytical skills. However, because the vital skills for entrepreneurs are less about information processing and analysis and more about creativity and action (Gibb, 1996) this approach left a gap in the building of the competencies needed to be a successful entrepreneur. Given the
growing trend of building curriculum around learning by doing or entrepreneurship in practice, projects that involve the actual building of products would seem to be a natural extension of entrepreneurship academia. The growth in technology startups, in particular, also makes this extension a practical and attractive strategy as well. A recent study found that there are approximately 15 to 20 companies founded each year in the United States that get to over $100M in revenue (Kedrosky, 2013). These companies are largely requiring extensive experience in “software engineering and software development fundamentals” (ACM, 2013).

Unfortunately, the technological ability of most entrepreneurship students are somewhat limited due to the major normally falling under colleges of business. It follows then that a major challenge faced by entrepreneurship students, assuming a software driven venture, is finding technical talent to join the entrepreneurship project. In the authors’ experience over a 15-year period teaching entrepreneurship, a lack of technical partners is in fact a primary reason why a substantial number of otherwise promising projects cannot attract early customers and gain traction in the venture. Emulating the software development environment of industry can be daunting in an entrepreneurship-focused academic setting. Our approach to the entrepreneurship course under discussion is to engage students in an immersive experiential exercise where they use contemporary entrepreneurial techniques to validate a proposed business model.

While entrepreneurship students do tend to be more speculative and market driven, their technology-focused, engineering counterparts tend to be more practical and incremental (Berglund and Wennberg, 2006). This model benefits both the entrepreneurship and the engineering student journey in skill building as they are required to work together. Engineering students are required to think beyond technology and consider the market driven response to the
technology. Entrepreneurship students are then required to not just consider the market needs, but the actual limitations or benefits of existing technology.

BACKGROUND

Entrepreneurship Pedagogy

The academic and practical fields of entrepreneurship have been at odds for decades (Neck and Greene, 2011). Entrepreneurship, as an academic discipline, is naturally cross-disciplinary due to the vast subject matter taught in most classes (strategy, law, finance, marketing, technology, etc.). Therefore, the intersection of a practical project such as working with a team of software engineers with the academic student experience is a natural fit.

Entrepreneurship could be described as a process of creating new opportunities, managing uncertainty, and garnering resources. As such, aligning entrepreneurship student work with student work outside of their discipline allows entrepreneurship students to develop competencies in that process. As depicted in Figure 1 below, in order for a student to move from a novice entrepreneurial mindset to an expert entrepreneurial mindset, critical developmental experiences are required (Krueger, 2007).

Figure 1 (adapted from Krueger, 2007)
In order for entrepreneurship students to change how they process information, connect proverbial dots, and organize their thinking, they need to experience the process of entrepreneurship similarly to how software engineering students must experience the process of software development. While it is not always possible for students to start businesses during their education, cross-disciplinary programs such as the one presented in this paper are a worthwhile substitution. Additionally, handling issues such as intellectual property in advance is an example of students being tasked with a developmental experience.

In addition to shifting knowledge content and structure, experiences such as working with a development team in a realm outside of the entrepreneurship students’ subject area represent the environment some entrepreneurs experience when launching their own company. Many entrepreneurs are unfamiliar with how to run certain aspects of a business and due to limited resources, approach it by a learn by doing or trial by error approach.

We expect to see a shift in the students’ mindsets due to this cross-disciplinary project as well as the strengthening of their entrepreneurship competencies. Morris, et al. (2013) identified thirteen entrepreneurship competencies developed by students involved in an entrepreneurship education program. The development or strengthening of these competencies provide us with evidence that the students’ entrepreneurial mindset is shifting away from novice to expert.

**Agile Software Development**

A common approach to software engineering courses is to engage students in semester-long, team projects where they can experience stages of the software development lifecycle. On the other hand, when student developers work on projects they define themselves, they lack external stakeholders who have a stake in the project’s success and quality. As a result, the
software they produce often is considered a “throw away” project, never to be used nor
maintained beyond the end of the academic term. Some even argue that working on such “toy”
projects can be harmful (Martin, 2006) to computing education because of their unrealistic
development environment and lack of external pressures (Nurkkala and Brandle, 2011).

Consequently, we propose a Tech Startup model to focus entrepreneurship and software
engineering projects on creating products for real customers. In this paper, we describe a
collaboration between Entrepreneurship and Computer Science programs at California State
University, Chico that pairs entrepreneurship students with software engineering teams with the
shared goal to design and develop software as new, viable business products. We describe how
sister-courses in Lean Entrepreneurship and Software Engineering provide unique opportunities
for experiential learning for all students involved.

Since the early 2000s, agile software development has become the predominant
framework practiced in the software industry. Agile’s principles stress that software should be
delivered to customers frequently and incrementally while embracing changes requested by the
customer. Likewise, the principles also emphasize that “Business people and developers must
work together daily throughout the project” and “The most efficient and effective method of
conveying information to and within a development team is face-to-face conversation” (Beck, et.
al, 2001, p.1). These practices and principles foster natural collaboration between agile
developers and businesspeople adhering to similar, lean guidelines.

Originating from the fields of manufacturing and supply chain management, the ‘lean
startup’ term “brings together the principles of customer development, agile methodologies and
lean practices” (Trimí and Berbegal-Mariabent, 2002, p.450). In particular, lean practices seek to
reduce waste by mitigating risk through short and frequent tests and corrections. Therefore, in
an entrepreneurship academic environment, students are expected to develop concepts, gather feedback, and revisit their concepts several times throughout the semester. The practice of working through various iterations of a technology product with software engineering students makes the iterative process more realistic and further builds the students’ entrepreneurial competencies.

In addition, common lean practices have been adapted for agile development. For example, the Kanban originated with Toyota’s “Just in time” manufacturing but is applied in agile by maintaining a board of cards that describe development tasks—categorized in bins of “To do” (or “Backlog”), “Doing,” and “Done”—to continuously visualize the team’s workflow and monitor progress (Matharu, et. al, 2015). Cards are typically designed to describe customers’ needs and can be written collaboratively in discussion by developers, business stakeholders, and even the customers themselves.

Software engineering is commonly taught in collegiate computing curricula as an upper-division course (ACM, 2013). However, critiques of most academic software engineering projects stem from a lack of customer involvement (Nurkkala and Brandle, 2011). The absence of customers’ external pressures neglects software engineering students of concrete direction from stakeholders, consequently distancing academic software engineering from more realistic agile practices. To the contrary, by partnering software engineering teams with entrepreneurship students, interdisciplinary teams should share vested interest in creating a viable product as a technology startup business.

**METHODOLOGY**
In our *Tech Startup* model, entrepreneurship students collaborate with an upper-division software engineering course. Both courses includes a mix of lecture and laboratory meetings over the fifteen weeks of the semester. Both courses focus on incremental development and feedback loops in order to delivery minimally viable products (MVPs) that satisfy the client (entrepreneurship students) based on their feedback. It is important to note that the entrepreneurship students must justify their feedback based on market research.

At the end of the semester, the interdisciplinary teams are required to present at a “Software Showcase” event that is open to the public and advertised on campus. The showcase gathers all of the teams in a large meeting room where they demonstrate their products and explain their innovation and functionality to a broad audience of students, faculty/staff, and local business people.

**Ideation and Team Formation**

In weeks preceding the academic semester, we reached out to some entrepreneurship students who had developed business ideas for web or mobile applications. We asked students who were interested in collaborating with software development teams to prepare a short pitch to entice software engineering students. Likewise, we contacted students who were enrolled in the Web Entrepreneurship course with the opportunity to do the same. In an online survey, all students interested in pitching their idea provided a description of their idea, their contact information, and agreed that “I accept that if a team chooses to work on my project, I am responsible for giving feedback and guiding the team every week for at least the next 15 weeks. I will devote 2+ hours/week to supporting the development team.”

Likewise, software engineering students were given the opportunity to suggest their own ideas to entrepreneurship students. A policy was explained to students that a project required
both: (1) enough interested software engineering students to form a development team of at least four students; and (2) one or more entrepreneurship students to serve as a client who focuses on the business needs.

Students with ideas to pitch visited each other's respective classes and were given the opportunity to discuss their ideas with potential collaborators. The entrepreneurship instructor provided a list of projects that had interested entrepreneurship students. However, the software engineering course includes more students (about 60 per semester) and so software engineering students completed a survey that included ranking their top three choices from the approved projects. Consequently, the software engineering instructor reviewed the surveys and manually assigned students to teams according to their preferences while accounting for team size and availability.

**Intellectual Property and Equity Ownership Policy for Cross Disciplinary Teams**

Due to the potential for creating real and valuable Intellectual Property (IP), IP protection and co-ownership of student businesses is an issue every entrepreneurship program needs to be addressed (Luppino, 2009; pg. 414). Adding the element of dealing with intellectual property and equity ownership added a level of realism that students took seriously. Several of the groups engaged in vigorous and ongoing discussion, requiring mediation and support, in order to make progress in developing an intra-team policy.

Herrington (2010, p. 22) notes: “The dilemma of students working in a team in the class remains largely open.” According to the Uniform Partnership Act §101 (1994) a partnership is “an association of two or more persons to carry on as co-owners a business for profit.” For students on a team, this means that they may have co-ownership claims on any and all
intellectual property developed as a result of a class unless they have an alternative option to pursue for the class.

While Luppino concludes that “it seems unlikely a court would find all of the necessary elements of partnership in a typical course project,” there is a stronger claim of co-ownership in a course structured as a business planning class (Luppino, 2009; pg. 415). Litton, Patterson & Little (2014) further note, “the average undergraduate business student has no appreciation for the realities of the business organizations they may have formed.”

**The Dynamic Equity Split Approach**

A popular approach, referred to as Dynamic Equity Split Approach and based on the ideas outlined by Mike Moyers in his book Slicing Pie, provides a flexible arrangement. Different types of contributions are defined and categorized, and valuations are assigned. Contributions in the category of work like accounting and marketing are typically given hourly dollar valuations, which students can figure out fairly easily, along with multiplier values based on whether payment is made or not. Contributions in the form of cash, property, or other tangible goods are given agreed upon values. For example, the group may decide that early cash contributions are actually worth four times the amount of the original contribution to account for risk. These valuations can be negotiated and agreed upon ahead of time. Then, as the team moves ahead, it tracks the investments for various contributions. In this approach, each individual is earning future equity. Additionally, the team decides how to handle the adding and subtracting of team members with respect to equity.

**Drawbacks**

While this approach allows great flexibility in who can be on a team and how roles may be structured, it also must be well defined in order to ensure that the proper intellectual property
and co-ownership policies are applied to the team. This goes beyond just knowing whether or not the team was pre-formed or if the team will accept other people as employees rather than co-founders.

Finally, dynamic equity splits are difficult to master and tedious to track, and because these are students tend to have relatively little work experience or business knowledge – it is challenging for them to establish what constitutes good value to a startup. Education and mentoring cannot completely mitigate the biases and naivety they may bring to the discussions, possibly resulting in unbalanced weighting of contributions. As Entrepreneurship and Computer Science students stare at each other across the table, neither is sure how to value the contributions of the other. As might be expected, each expressed that they could foresee their contribution being essential and possibly primarily important to the outcome. And of course everyone is correct. After all one cannot get far without both sides making substantial contributions.

Despite the challenges, dynamic equity splits encourage students to discuss with their teams how they wish to handle co-ownership through the use of quantitative measures so that equity is not an “either you’re in or you’re out” approach. This enables teams to move ahead with flexibility and it addresses shortcomings of a formal equity split, and associated challenges that may arise.

**DISCUSSION**

Several forces are converging which create interesting and compelling opportunities for innovation in entrepreneurship pedagogy. The first is that there is a sweeping focus on doing rather than planning. Experiential exercises are expected as a central vehicle for the course. The customer development process is now considered a potent replacement for the feasibility plan.
and many parts of the business plan. As previously discussed, experiential exercises have been shown to be key in the acquisition of entrepreneurial skills and this *Tech Startup* team project allows for an ample amount of actual product development.

The second is a demand for more technologically enabled intrapreneurs, product developers, and new startups. This team project ultimately results in the better understanding of computer software and technology as it serves as the academic and practical domain for effectively discovering customers and carrying out the customer development process. From the computer science student perspective, it provides them with a previously unavailable experience of testing their iterations against actual market demands and client expectations.

Finally, the opportunity to team up with computer science and engineering students provides a significant opportunity. For the teams seeking to drive a software related product to market, it provides a key piece of the puzzle enabling the student to actually see the potential finish line. Being able to build a real product increases the richness of the customer development process, which increases the probability of success as well.

**REFERENCES**


Understanding the Entrepreneurship Ecosystem in Higher Education:

A Mindmap Approach

By: Jason Gordon, Brett Young, and Phillip Hartley of Georgia Gwinnett College

Extant Models of Entrepreneurial Behavior

Prior entrepreneurship research has positioned various individual characteristics as contributors to entrepreneurial activity. These contributing factors include personality traits, skills, knowledge, work experience, and motivations, (De Martino and Barbato, 2003; Wright et al., 2004; Rosa and Dawson, 2006; Fritsch and Krabel, 2012; Caliendo and Kritikos, 2012). These aspects could be identified and fostered by educational institutions (Dhliwayo, 2008).

The connection between personality traits and entrepreneurial activity is heavily disputed, however, given the lack of conclusiveness in the research (Rauch and Frese, 2007; Zhao et al., 2010). There is no “average entrepreneur” (Gartner, 1985; 1988). As a result, research has shifted towards the identification of knowledge, skills, and experience characteristics, all within the aegis of entrepreneurial competence (Sarasvathy, 2001; Markowska, 2011). Knowledge is defined as understanding acquired through education and experience; skills are experientially-acquired procedural knowledge; and ability is the aptitude to use knowledge and skills. (Sarasvathy, 2001).

The concept of prior knowledge is closely related to that of prior experience, as higher levels of prior knowledge refers to entrepreneurs’ familiarity with, or having information about, the market, industry, technology, and customer demand (Baron, 2006; Hisrich, Langan-Fox, and Grant, 2007; Tang, Kacmar, and Busenitz, 2012).

Competence research seeks to understand the ability to effectively interact with the environment (Mitchelmore and Rowley, 2010). In addition to knowledge and technical skills, competence requires the development of appropriate attitudes and motives, social skills, and
Entrepreneurial attitude research focuses on the self-perception or beliefs about one’s knowledge or skills or self-efficacy. Self-efficacy pertains to an individual’s conscious beliefs in their own abilities and skills necessary to perform a particular task (Bandura 1986). Interestingly, individuals are drawn to tasks that they believe they perform well and consciously avoid tasks that they seem to perform poorly (Forbes, 2005). As such, self-efficacy relates closely to or is an identified determinant of entrepreneurial intentions, such as starting a new venture (Shapero and Sokol, 1982; Koh, 1996; Krueger and Brazeal, 1994; Luthje and Franke, 2003; Pittaway et al., 2009). In the same vein as self-efficacy theory, the Effectuation Theory seeks to identify cognitive processes, such as self-belief, that affect entrepreneurial intentions.

Another thread of entrepreneurship research examines an individual’s intention to undertake entrepreneurial behavior and her ability to identify entrepreneurial opportunities (Sarasvathy, 2001). The concept of entrepreneurship opportunity includes alertness, recognition, creation, and exploitation (Shane and Venkataraman, 2000; Short, Shane 2003, Ketchen, Shook, and Ireland, 2010). In this view, entrepreneurship is the identification and exploitation of business opportunities within the individual–opportunity nexus (Shane and Venkataraman, 2000).

![Figure 1: Map of Prior Entrepreneurship Research](image)

**Entrepreneurship Education Ecosystem: A Proposed Model**

education into inputs, processes, and outcomes. Inputs include the instructor and the information sources. Process referred to the teaching methods and other learning support resources. Outputs focus on achieving academic standards, employment rates, and perceptions of learning. Solomon (2007) expands on the elements considered inputs and processes by mapping the courses, teaching methods, course content, and technological support offered students as part of the learning process. Similarly, Varblane and Mets (2010) focuses on mapping courses, curricula, teaching methods, and formal programs (such as centers). Salamzadeh et al. (2011) also considers both assurance of student learning and the effect upon key stakeholders. Drawing from this prior research, we propose a simplified depiction of entrepreneurship education inputs and outputs. Inputs are categorized as education, coaching and mentoring, resources, and motivation. Outputs are categorized as competency, self-efficacy belief, intention, and business activity. The purpose of this model is to categorize the primary factors that seem to result in a cause and effect relationship between activity and result in the context of education and educational outcome.

**Inputs and Outputs of Entrepreneurship Education**

Our survey of entrepreneurship education literature reveals the most common elements of entrepreneurship education within the institution of higher education as: courses or curricula-based programs; incubator or accelerator functions to promote venture development; centers for entrepreneurship research; inter-curricular content and skill-based development; and commercialization and ownership transfer of research output or new creations.

The impact or effectiveness of entrepreneurship education, particularly course instruction, within academic institutions has been examined by many (Dickson, Solomon, and Weaver, 2008; Gartner and Vesper, 1994; Henry, Hill, and Leitch, 2005; Weaver, Dickson, and Solomon, 2006; O’Connor 2013; Aronsson, 2004; Weaver et al., 2006; Martin, McNally, and Kay, 2013).
Researchers often differ, however, on selecting the appropriate measure of entrepreneurship outputs. One obvious output is an identified entrepreneurial behavior: launching a new business venture (Gibb, 2002; Bird, Schjoedt, and Baum, 2012; Pittaway and Cope, 2007). However, some believe that this behavioral outcome alone may not be the appropriate outcome of entrepreneurship education (Fayolle, 2006). Others argue that entrepreneurship outputs should mirror objectives of teaching “about” entrepreneurship or “for” entrepreneurship by measuring learning and performance orientation of the students (Elliott and Dweck, 1988 in Markowska, 2011). As such, outputs can be further divided based upon theory, competencies, and attitudes (Gedeon 2014). Theory-based outputs would address the level of understanding about entrepreneurship theory, process, and importance. Similar to this approach is a focus on a student’s orientation. Learning orientation focuses on obtaining more competencies and skills, which correlates with a tendency to search for new challenges (Wood and Bandura, 1989). Performance orientation focuses on attaining performance goals, which correlates with avoiding less certain or risky undertakings (Wood and Bandura, 1989).

**Linking Entrepreneurship Inputs to Outputs**

Scholars have attempted to demonstrate the relationship between influences, intentions, and behavior in the business context. For example, various studies have used the theory of planned behavior (Ajzen, 1991) to explain intentions to become an entrepreneur (Krueger et al., 2000; Liñan and Chen, 2009) and entrepreneurial behavior (Kautonen et al., 2013), as well as the effects of entrepreneurship education (Athayde, 2009; Ferreira, Raposo, Rodrigues, Dinis, and do Paço, 2012; Liñan et al., 2011; Mwasalwiba, 2010; Peterman and Kennedy, 2003). Schlaegel and Koenig (2011) evaluate the theory of planned behavior linked attitudes, subjective norms, and perceived behavioral control to entrepreneurial intentions (Schlaegel and Koenig, 2011). Thus, the theory
provides a valid framework for studying the relationship between entrepreneurship education and entrepreneurial behavior. A closely related theory is social learning theory (Bandura, 1986) provides an alternative explanation for how education affects intentions.

**Implications and Conclusion**

Our proposed frameworks provide a holistic representation of scholarship in the field of entrepreneurship education. These models lay the groundwork for qualitative and quantitative analysis of the prevalence and relationship among these elements within the education institution. Our future research will investigate the presence of these factors within existing entrepreneurship-focused universities. We expect to use multiple methods for assessing these factors. This may include a summative quantitative assessment of each factor by researchers, educators, and clinical staff supporting entrepreneurship in the educational institution. Furthermore, there may be value in determining the correlation between the existence of individual entrepreneurial inputs (see Figure 2). Finally, there may be value in understanding the correlation between entrepreneurial outputs (See Figure 3) and the various inputs identified as existing in the institution.

![Figure 2: Entrepreneurship Inputs](image1)

![Figure 3: Entrepreneurship Outputs](image2)

**References available upon request.**
Integrating Entrepreneurship and Supply Chain Perspectives of Innovation: The Influence of Network Capability

YIMING ZHUANG
YOUNGEUN LEE
Iowa State University

Introduction

The topic regarding the intersection between supply chain management (SCM) and entrepreneurship has been received increasing attentions from the scholars (Arend & Wisner, 2005; Giunipero, Denslow, & Eltantawy, 2005). However, the studies of SCM using entrepreneurial perspectives are still lacking (Li, Liu, & Liu, 2011). For instance, Kickul Griffiths, Jayaram, & Wagner (2011) have called for the cross-disciplinary studies between sustainable SCM and entrepreneurship. In this paper, we aim to fill in this gap by conducting a study that considers core concepts from those two fields – entrepreneurial orientation (EO) and sustainable supply chain practices (SSCPs).

EO describes “a firm’s decision making practices, managerial philosophies, and strategic behavior that are entrepreneurial” (Anderson, Covin, & Slevin, 2009, p. 220), with entrepreneurial referring to risk-taking, innovative and proactive behavior (Miller, 1983; Lumpkin & Dess, 1996). Previous studies suggest that, in certain conditions, firms showing high levels of an EO will achieve superior performance compared to their competitors (e.g., Zahra, 1991). In this study, we hypothesize that firms can utilize EO to achieve higher supply chain-related sustainability and performance.

SSCPs refer to intra- and inter- organizational activities which improve a firm’s sustainable level across the supply chains. The adoption of SSCP has been seen as an indicator...

Yiming Zhuang is a doctoral student in Supply Chain Management at Iowa State University.
Younggeun Lee is a doctoral student in Entrepreneurship at Iowa State University.
of a firm’s sustainable supply chain management performance, which in turn improves firm performance (Montabon, Sroufe, & Narasimhan, 2007). Thus, we argue that achieving SSCP would eventually lead to increased firm performance.

Network capability enables a firm to connect its own resources to those of other firms by building relationships. The approach that focuses on the properties of network capabilities in SCM can be extended by also exploring the effects of entrepreneurship in supply chain (Walter, Auer, & Ritter, 2006). The high level of a firm’s network capability reflects its strong internal and external integration ability (Chen, Daugherty, & Landry, 2009). This ability would promote a firm’s EO to adopt SSCP. Therefore, we propose that network capability would foster the EO–SSCPs relationship.

Accordingly, we consider three research questions: First, does a firm’s EO lead to more effective SSCPs?; Second, how does network capability moderate the EO-SSCPs relationship?; and third, how do firms’ SSCPs affect its overall performance? To answer these questions, we build upon theories of organizational learning (Levitt & March, 1988; March, 1991) and the resource-based view (Barney, 1991; Wernerfelt, 1984). Moreover, we assess the effects of these variables using a sample of Fortune 1000.

![Figure 1. Research Model](image)
Hypotheses

H1: A firm’s EO is positively related to S SCPs.

H2: A firm’s S SCPs are positively related to firm performance.

H3: S SCPs mediate the effect of EO on performance.

H4: A firm’s network capability positively moderates the effect of EO on S SCPs.

Methodology

Sample

Our study is based on the *Fortune* 1000 company list. The list is an annual ranking of the top 1000 US companies established by *Fortune* magazine. The ranking is based on revenues of each year which includes both public and private companies. For data accessibility, we restricted our sample to public firms.

Measurement and Data Collection

Independent variables. We adopt previous method of Miller and Breton-Miller (2011). Most EO studies have used survey methods to conduct researches. However, in this study, we imply archival data to measure the constructs. Therefore, we overcome the shortcoming of subjectivity of past EO studies and add objectivity to the measurement (Miller, 2011). EO is assessed using representing three respective dimensions: innovativeness, risking taking, and proactiveness (e.g., Covin & Slevin, 1989, 1991; Miller, 1983).
Dependent variables. SSCP s are measured using three dimensions – economic, environmental, and social (Pagell & Wu, 2009). Based on the extant literature (Montabon et al., 2007), we use archival data to measure each dimension respectively. Network capability is measured as the number and diversity of the firm’s suppliers and customers. We assess firm performance using return on assets (ROA), return on equity (ROE), and sales growth.

Control variables. We control for firm age, firm size, and industry.

Contributions

We believe our study makes contributions to the literature in five ways:

As a major theoretical contribution, we conduct cross-disciplinary research integrating entrepreneurship and SCM. There is an increasing interest in the interface of those fields, but so far few research studies have assessed this important topic. Therefore, we introduce entrepreneurial concepts to extend SCM research.

We advance entrepreneurship research on the EO–performance relationship by integrating SSCP s as a mediating variable. To our knowledge, this paper will be the first study to link EO and SSCP s. Recent papers on entrepreneurship emphasized on filling the gap of EO–performance. We contribute to the field by adding SSCP s as one of the possible mediators. Moreover, limited studies have focused on the relationship between EO and environmental SCM. We extend the literature by including social SCM and economic SCM.

We improve SSCP s literature by confirming the previous studies that sustainable practices could lead to a firm’s competitive advantages. Even though sustainable practices–performance relationship is a controversial issue, we prove and strengthen the literature that this relationship is positively related.
Literature on the resource-based view of the firm recognizes the importance of building unique capabilities to drive innovations (Teece, Pisano, & Shuen, 1997). Especially, dynamic capabilities are important and complex concepts that occupy a central place in the entrepreneurship and competitive strategy literatures (Zahra, Sapienza, & Davidsson, 2006). In this study, we also contribute to capability literature by implementing network capability as a moderating variable. Contemplating network capability as one of dynamic capabilities, we further improve entrepreneurship, strategic management, and SCM-related concepts to understand organizational performance and competitive success.

Recent SCM research has emphasized the importance of simultaneously considering strategic and operational issues when coping with supply chain issues (Hult, Ketchen, & Slater, 2004). However, few empirical studies of this subject have been undertaken. By jointly considering the operational issue (fostering SSCPs) and the strategic issue (increasing network capability), this study has the potential to enrich the literature in this stream (Li et al., 2011).

Reference


We review literature on gender and negotiation, labor market economics, women’s entrepreneurship and legal contributions to the concept of second generation gender bias. The concept should be further developed through combining contributions from all these disciplines to make the concept useful. We base our argument on evidence from research that gender still matters in successfully negotiating term sheets.

**Why The Wage Gap and Second Generation Gender Bias Matters in Entrepreneurship**

Women-owned businesses comprise around 38% of U.S. businesses in 2016, translating into 11.3 million companies. Despite this growth, women receive a very small proportion of total external equity investment dollars compared to their male counterparts (Brush et al., 2014; Robb & Coleman, 2009). Data from the Kauffman Foundation reveals women receive only 3% of equity financing (Krause, 2016). Women also appear to start their companies with half as much capital as male counterparts and they are less likely to access external networks in their search for funding. Growth companies require capital resources obtained under reasonable terms. Given the low rates of female participation in obtaining equity funding, our research attempts to better understand the experiences of those women entrepreneurs who successfully raise equity funding. Specifically, what strategies do these women find to be effective, what major challenges do they experience and what strategies they identify as problematic or advantageous.

Our findings suggest that the position that women occupy in the labor market determines the type of company that they start once they exit corporate life. There has been a steady growth of science and technology based companies owned by women. However, we also find that women still are disadvantaged when negotiating equity investments. In our sample of entrepreneurs, the majority did not report any experience of discrimination or negative treatment when negotiating for external equity capital (Swartz, Amatucci & Coleman, 2016 a). Yet, outcomes from our predictive statistics suggest that negotiating teams which included a male as a member of the team emerged as more successful in securing external equity investments while simultaneously enabling the entrepreneur to retain more equity than those without a male on the team (Swartz, Amatucci & Coleman, 2016 b). These results caused us to seek answers in the literature on labor market
Ethné Swartz
Silberman College of Business, Fairleigh Dickinson University

We review literature on gender and negotiation, labor market economics, women’s entrepreneurship and legal contributions to the concept of second generation gender bias. The concept should be further developed through combining contributions from all these disciplines to make the concept useful. We base our argument on evidence from research that gender still matters in successfully negotiating term sheets.

Why The Wage Gap and Second Generation Gender Bias Matters in Entrepreneurship

Women-owned businesses comprise around 38% of U.S. businesses in 2016, translating into 11.3 million companies. Despite this growth, women receive a very small proportion of total external equity investment dollars compared to their male counterparts (Brush et al., 2014; Robb & Coleman, 2009). Data from the Kauffman Foundation reveals women receive only 3% of equity financing (Krause, 2016). Women also appear to start their companies with half as much capital as male counterparts and they are less likely to access external networks in their search for funding. Growth companies require capital resources obtained under reasonable terms. Given the low rates of female participation in obtaining equity funding, our research attempts to better understand the experiences of those women entrepreneurs who successfully raise equity funding. Specifically, what strategies do these women find to be effective, what major challenges do they experience and what strategies they identify as problematic or advantageous.

Our findings suggest that the position that women occupy in the labor market determines the type of company that they start once they exit corporate life. There has been a steady growth of science and technology based companies owned by women. However, we also find that women still are disadvantaged when negotiating equity investments. In our sample of entrepreneurs, the majority did not report any experience of discrimination or negative treatment when negotiating for external equity capital (Swartz, Amatucci & Coleman, 2016 a). Yet, outcomes from our predictive statistics suggest that negotiating teams which included a male as a member of the team emerged as more successful in securing external equity investments while simultaneously enabling the entrepreneur to retain more equity than those without a male on the team (Swartz, Amatucci & Coleman, 2016 b). These results caused us to seek answers in the literature on labor market
economics and second generation bias. These results were unlikely to be due to gaps in achievement as recent research suggests no underperformance by women-owned companies (Zolin and Watson, 2013; Gundry, Ben-Yoseph and Posig (2002).

What is Second Generation Gender Bias?

Second generation gender bias has been applied in the organizational development field (Ibarra, Ely and Kolb, 2013) but emerged in the field of law (Sturm, 2001 and Krieger, 2004), specifically in U.S. civil rights legislation to curtail explicit discrimination (Sturm, 2001). It has spilled over to the gender and organization development literature (Ibarra, Ely & Kolb, 2013).

Sturm (2001) defines first generation bias in the following way: Overt exclusion of women and minorities, segregated job opportunities, conscious stereotyping, dominance in a workplace by an individual who excludes women and minorities, and the adoption of job requirements that helped solidify segregation of occupations (Sturm, 2001). These practices were legal until the passing of the Equal Pay Act of 1963 and the 1964 Civil Rights Act which, under Title VII, prohibited employers from discriminating against employees because of sex, race, color, national origin and religion (Krieger, 2004).

Today, subtle discriminatory attitudes can co-exist with explicitly stated egalitarian ones – we largely do not have “smoking guns” (Sturm, 2001). Second generation bias, whether with respect to race or gender, lacks the crassness of the measures described earlier. Instead, biases are manifest in subtle ways, inhering in organizational cultures, beliefs and practices. The nomenclature of a “second generation” does not imply a sequential evolution of bias. Rather, explicit forms co-exist with tacit forms of bias in a dynamic manner in organizations.

Krieger (2004), writing specifically about the “maternal wall” faced by female employees remarks on the intransigence to change of the legal field (Sturm, 2001). Civil rights legislation has not solved all issues of bias. Many legal outcomes allow courts and judges to function as “intuitive psychologists” using inaccurate and outdated assumptions about intergroup relations to interpret discriminatory acts. “Unlike actual research psychologists, the courts …. often use definitions of discrimination that are inadequate to address many modern forms of gender bias.” (Krieger, 2004, p. 836).

Gender, Labor Markets and Negotiation
Research on gender and negotiation is well established in organizational behavior, psychology and conflict management (Stulmacher & Walter, 1999; Babcock & Laschever, 2003; Riley & McGinn, 2002). Babcock and Laschever (2003) suggested that women seemed more likely to settle for less optimal negotiation outcomes; that negotiation was a man’s game with women less likely to push for higher salaries. Data from the Kauffman Foundation reveals that only 16% of women negotiate their own salaries (Krause, 2016). A recent finding from a survey of participants in the Goldman Sachs 10,000 Small Business Program shows that women entrepreneurs paid themselves 20% less than male peers (Mandelbaum, 2014).

Salary is an important issue; NBER data shows that the educational achievements that women made during the 1970s and 1980s helped to erase some of this inequality (Blau & Khan, 2016) but that the oft-cited statistic of the median earnings for women being 77 cents compared to that for men is largely correct. Women’s 2014 median earnings had increased to 79 cents (Blau & Khan, 2016). The Women’s Bureau at the U.S. Department of Labor shows earnings for women as a percentage of earnings for white, non-Hispanic men. Median earnings in 2014, when broken out into different ethnic groups, varies from a high of 83.5% for Asian-Americans to 75.4% for White non-Hispanic women, to 60.5% for African-American women and a low of 54.6% for Hispanic women. This data is for the period 1987 – 2014 and show that compensation for Hispanic women has not improved since the 1960s. Median earnings for Hispanic women in 2014 ($39,428) represented a marginal decrease from 2013 ($39,798) and Hispanic women today have a median earnings ratio lower than the median for all women in 1968 (Women’s Bureau United States Department of Labor, 2016).

Blau and Khan (2016), argue that for the 1980 – 2010 period, gender differences in occupation and industry continued to be more important than other human capital variables in explaining the gender wage gap. They also acknowledge psychological and other non-cognitive skills contribute a small or “moderate” portion of the pay gap. These are differences that Krieger explores in her work on how situational and contextual factors influence behavior on the part of women as well as on the part of managers and judges who officiate during discrimination litigation.

Blau and Khan (2016) emphasize industry and occupation as variables determining compensation. Goldin and Katz (2016) argue that, while it is true that in certain occupations women earn less than men when considering median wages, the question is whether this is an outcome of discrimination or other factors? They find no evidence of outright discrimination,
suggesting that the best that can be done is to research specific occupations to uncover how wage discrimination mechanisms have worked. They suggest that as women move into the labor market and “up the ladder” into positions following entry-level roles, they have children and require greater work flexibility or “temporal flexibility”. Temporal flexibility carries a care tax (Slaughter, 2015) which might be partly responsible for the split in career direction and professional career choices, including becoming a business owner. So, even if women fulfill their dream of becoming a professional in a highly prestigious and well-compensated field (law or science), family care responsibilities necessitate working less; it is difficult to satisfy the disproportionate physical continuous presence demanded of senior professionals. Jacobsen, Khamis & Yuksel (2015) agree that time allocation in labor markets, in addition to human capital, structural changes and social change, combine to help explain the differential labor outcomes. For the period 1964 to 2013, they estimate that men worked an average of 200 hours per year more than women: “Quite simply the gap exists because hours of work in many occupations are worth more when given at particular moments and when the hours are more continuous” (Goldin, 2014, p. 1116).

Goldin & Katz (2011) show that the smallest wage differentials occur in fields such as science occupations, technology and healthcare fields, while the biggest differentials occur in professions such as corporate roles, particularly finance. These are roles where the human capital associated with one individual is not easily substituted. In contrast, an occupation such as pharmacy, for instance, shows little evidence of a gender wage gap in the U.S. Pharmacy has attracted many women and provides flexibility as the profession has evolved in tandem with technological and healthcare delivery changes. In essence then, these economists advocate for labor market changes that allow more temporal flexibility in jobs and changes in how certain occupations are remunerated (Goldin, 2014).

Labor market segregation impacts the lifetime earnings and career paths for women, including their entrepreneurial choices and the outcomes they achieve when negotiating growth capital. The emerging picture is still very complex. Goldin (2014) notes a “residual” portion of the gender wage gap remains. The “explained” portion of the gender wage gap has been “closed” because of closing education gaps, achievements by women in certain sectors and removal of legal and other explicit barriers to women entering and advancing in certain occupations. The “residual portion” of the gender wage gap is the persistent gap that remains when considering national data for women’s earnings. It is influenced by multiple factors, including subtle forms of
discrimination in some fields, women’s own unwillingness to negotiate and differential standards for the promotion of women. Consistent with Ibarra, Ely and Kolb (2013), we regard these factors as constituent elements of second generation gender bias. In pondering how this very specific bias originates, there are human capital factors specific to the woman entrepreneur, including competencies and psychological capital, that contribute to phenomena such as a lack of confidence, lack of willingness to negotiate and a greater willingness to settle for less than optimal outcomes. External to the entrepreneur there are also factors that create the conditions for bias. Specific to wage discrimination, Goldin (2013) advances a “pollution” theory which frames an overall theory of wage discrimination. There is asymmetric information regarding the value of an individual woman in a new occupation previously dominated by males (Goldin, 2013, p.2). Goldin’s model predicts a “female” median in which all occupations requiring productivity characteristics above that median will be segregated by sex and below will be integrated.

Discriminatory acts can be sparked by circumstances. Krieger (2004) argues that social psychology shows that explicit, egalitarian attitudes result when people engage in deliberative thought. When behavioral responses are spontaneous and people lack the opportunity or motivation to deliberate over a decision, implicit attitudes and unconscious bias tend to play a more dominant role. Dual attitudes co-exist and empirical social psychology shows that unconscious biases are important factors that shape decisions – in negotiation, organizations and even the courts (Krieger, 2004).

Implications for Entrepreneurship

Research findings on gender suggest a more nuanced picture influenced by contextual and psychological factors (Bowles & Kray, 2013; Brooks & Schweitzer, 2011; Chen & Chen, 2012; Eriksson & Sandberg, 2012; Bowles & Flynn 2010; Kolb & McGinn, 2009; Kolb & Williams, 2003). Such factors now have to be unpacked to flesh out the dynamic interactions that take place during entrepreneurial negotiation situations to understand why having a male lead as part of a negotiation team is still a factor during negotiations. Psychology has provided extremely useful field and laboratory studies with outcomes that have been incorporated into research in management (Krieger, 2004). It is time for us to do similar work in entrepreneurship.

References


The Me Nobody Knows

Michelle I. Spain

(January 2017)
ABSTRACT

The key factors affecting the cultural and spiritual ethos of inner city African American and Sub-Saharan African women entrepreneurs; the push and pull of their spirituality and communalism; and strategies which were successfully adopted by nascent or established women entrepreneurs (or which could logically be adopted by them) to enhance the growth potential of their business within their ecosystems will be explored in the proposed paper. African American inner city and Sub-Saharan African women entrepreneurs were asked to take a self-administered open-ended questionnaire and participate in follow-up discussions. The important determinants of success of women entrepreneurs, such as family supports, social ties, and internal spirituality will be analyzed and linked to self-actualization determinants.

Keywords: African Americans, Sub-Saharan Africans, women entrepreneurs’, inner city culture, spirituality, storytelling, knowledge development

INTRODUCTION

The profound transformation inner city African American and Sub-Saharan African societies have undergone requires interconnected transformations by African American inner city and Sub-Saharan African women entrepreneurs’ cultural and spiritual ethos. This is where the author begins. From the vantage point of African American and Sub-Saharan African women, we see the highest rate of female entrepreneurship across the world, at 27% in 2015 per CNN. We also see that this is a time when economic development proposals designated for women are being made. The proposals encourage women to engage in self-help and self-actualization through entrepreneurship. Individuals and organizations are focused on entrepreneurship in inner cities in America and Sub-Saharan Africa. They claim to have solutions for the problems women face in developing countries and inner cities in America as nascent or established entrepreneurs. They provide information and direct service to women for problems and concerns they must address. They make recommendations for changes and solutions to problems. We realize it is not the first-time change and the role of women have occupied the world's attention. The problems with change are “society”; the rhetoric of politicians, clerics, the community and family; and the resulting push and pull on women entrepreneurs as existing and potential major contributors to the economic development strategies in inner city African American communities and Sub-Saharan Africa, while maintaining their roles as wives, mothers and the primary sustainers of the oral history, cultural symbols and traditions as defined by the role their gender plays in their society. The major characteristics and concerns of the inner city African American and Sub-Saharan African communities is the preparation of the next generation. These communities seek to pass on what they know, have observed and learned through experience, and reflection to ensure the substantiality of their culture and the next generation. How do we explore the concept of the complex ecosystem for women entrepreneurs, the descendants of African American slaves in inner city African America and in Sub-Saharan Africa women? We start with the recognition that we need to understand the impact of culture, tradition and gender, and how this is used by women in the various situations and dilemmas they confront as women and entrepreneurs. For example, we can argue that some of the issues inner city African American entrepreneurs and especially Sub-Saharan African women entrepreneurs, face involve doing business within the framework of a given “culture”. If the entrepreneur is a woman, her framework for doing business is expanded, as is her role as a “woman” in her culture and geographic region. The personal problems she will encounter would not arise in a society in which each girl at birth is not assigned a place where she lives and dies as preordained by powers both political and spiritual in her culture and country. In such a society, change would be unnecessary. It would be unnecessary for world organizations, local programs and individuals to intervene on behalf of women who
have a dream of equality for all in their home, family, workplace, business enterprise development and
ownership, culture and religion, and country. The author begins by exploring the underpinnings of the hubris
the women reviewed in the proposed paper take upon themselves as entrepreneurs. The author does not claim to
be an expert who can end society’s rules for gender designation, cultural and ethnic racism. However, some
answers can be provided through the wisdom expressed by women entrepreneurs. The pilot study began with an
exploration of inner city African American and Sub-Saharan African women entrepreneurs’ capacity for
actively learning how to construct individual entrepreneurial and social knowledge for themselves. The initial
exploration indicated these women adapt prior ideas and experiences, frequently change what they believe,
assess and disregard various forms of information as unimportant, and become active learners and the creators
of their own unique, individual “need to know”. These women are the constructors of information, subjective
representatives of their experiences and objective reality. They develop knowledge through observation, real
world experiences and reflecting on those individual experiences. These women actively create knowledge that
leads to their success as women and entrepreneurs. They actively reflect on their interactions and observations
concerning real world experiences. These women are information constructors. Their process for actively
learning is described as constructivism, a paradigm John Dewey, Jean Piaget, Lev Vygotsy and Jerome
Bruner, Albert Bandura posit is the foundation to learning.

During the exploration phase of the study the author applied constructivism theories to identify the
characteristics of learning, behavioral traits, communalism found in nascent and successful women
entrepreneurs.

John Dewey, Jean Piaget and Jerome Bruner’s theories are the foundation for understanding the development of
individual knowledge through observation, experience and reflection on experiences described as
constructivism. Lev Vygostky and Albert Bandura’s theories argue that social interaction precedes
development and people learn from one another through observation imitation and modeling. Jean Piaget’s
cognition theories argue knowledge is not a replication of reality; rather, it is the individual’s ability to capture
reality through observations, experiences and reflections from their individual experiences and their ability to
generate knowledge unique to their individual experiences. Jerome Bruner’s theories define learning as an
active process. Each of these theories provide the foundation for constructivism.

Constructivism theories can be applied to storytelling, an interactive communication process that is kick-started
by cultural traditions and transformations. Storytelling a form of socio-cultural interactive communication in
inner city African American and Sub-Saharan African communities extends into all facets of the individual’s
personal and work life. Storytelling is often forced. This process is also frequently embraced by the individual
and their communities and found within every aspect of the individual’s life. Storytelling provides an interactive
process for the elders to share stories about their history and cultural traditions, such as culturally specific forms
of spirituality. Storytelling ability is innate and develops in the person through communalism and a tradition of
sharing individual reflection about what one experiences. Storytelling is generally done by elders and has
occurred for centuries in both cultural groups. The two groups of women use storytelling as a source actively
learn and constructing information for develop individual knowledge about their cultural heritage, risk-takers,
self-rewards, and self-actualization and spirituality. The stories told are triangulated by the women in support
of their creation of knowledge, frequently specific to their individual needs as women ad entrepreneurs.

The title “The Me Nobody Knows” suggests an answer. What about the individual development of knowledge
that interconnect between spirituality and communalism, culture, gender, and hubris generated by the “me
nobody knows” which can be adopted by others that is unique to urban inner city African American and Sub-
Saharan women entrepreneurs? The women entrepreneurs in this paper explore their journey between home,
their business venture, the community, clerics and their profound transformation because of the creation of individual knowledge.

The women’s system of beliefs and the theories interconnect to storytelling, spirituality and the development of knowledge by nascent and successful entrepreneurs can be applied to the women interviewed for this paper. These women can best be described as engaging in Africana Womanism, a term developed in 1987 by Clenora Hudson-Weems as an ideology she applied to Africans and African Americans. The term Africana defines their ethnicity and African ancestry. In this paper, it is applied to the country the women live in and/or their ethnicity because of their ancestors being unwilling immigrants in America, the descendants of slaves. The term Womanism is a lexicon in the African American Community. Women elders in the community use the term to describe the descendants of slaves grounded in the African culture as female children electing to act like grown women. These girls had dreams and goals that rushed them from childhood to adulthood. The term Africana defines the ethnicity of the woman. The term, according to Clenora-Hudson Weems, also embraces Sojourner Truth’s impromptu “And Ain’t I A Woman” speech made famous in Akron, Ohio, at a women ’s rights meeting in May 1851, challenging the forces in her life of descent from slaves that differed from the white woman.

Utilizing the acquired data and research, a qualitative inquiry pilot, “purposive samples”, was implemented. A survey of African American and Sub-Saharan African women entrepreneurs and a follow-up informal discussion provided the author with a primary exploration of the complex issues associated with African American and Sub-Saharan women entrepreneurs. This research process created an opportunity for the author to hear these women’s voices and learn about the stories told by women elders are a source for new knowledge regarding risk-taking, self-rewards, and self-actualization that can be applied by women in their culture with entrepreneurial dreams. The women in this paper are overcoming their fears and pushing away the stumbling blocks frequently found on the African American and African woman’s entrepreneurial pathways; thus, they defend their right to self-actualize as African and African American women. These women cleared the pathways to their entrepreneurial success and economic sustainability through their hard work and their spirituality that is grounded in their culture, and thus, they move closer to their goals as entrepreneurs. These women become what Gretchen E. Ziegenhals, Director of Divinity Programs at Duke University defines as womanist, one “who speaks out, speaks up, speaks against or in defiance of something important- a woman who loves herself, her culture, and who is committed to survival.” She is also by definition and by common usage a woman of color, a woman who inevitably has viewed life and society from the underside. She is not assisted like the white woman or society in general when she fails as an entrepreneur or woman.

The African American and African women interviewed for this paper have discovered the interconnection between their spirituality and their entrepreneurial instincts and drives as women bound by their culture and their Africana Womanism. These women speak out, speak up, speak against themselves, speak about their culture and they are committed to survival. These instincts and drives are also interconnected and frequently found in successful entrepreneurs. Deborah Levine, Huffington, Post stated on her twitter.” Spirituality may be linked to an individual’s faith tradition, but there is a spiritual element that translates across the boundaries of specific religions. The two groups of women entrepreneurs live where this spirituality and business overlap.” Spirituality, storytelling and culture become the axis for the “me nobody knows”, nascent and successful inner city entrepreneur.
The pilot research was a qualitative exploratory inquiry, “purposive sampling”, to gain an understanding of the phenomenon of spirituality and success as African American and Sub-Sahara women entrepreneurs.

The analysis for this purposive study was based on the following areas: (1) spirituality and storytelling by women elders, (2) gender, and (3) success as a woman entrepreneur submitting to and accepting spirituality. The author will explore consistent cross-cultural spirituality and the woman entrepreneurs’ success phenomenon and oral traditions/storytelling in African American and Sub-Saharan African cultures.

The research questions are: 1. Do you submit to and accept spirituality as important to your ability to succeed as an entrepreneur? 2. How were you taught to embrace your spirituality if you want to succeed? 3. How and when do you embrace your spirituality? 4. Do you believe it is important to embrace spirituality to overcome obstacles? 5. What experiences as an entrepreneur demonstrate the importance of spirituality?

The follow-up discussions included open-ended discussions, during which the women shared various topics presented by the women elders such as risk taking and their reflections on the storytelling experiences, the importance of accepting cultural traditions of spirituality. Their submission to and acceptance of an unseen power that they believe can be linked to their success was evident during the discussions. Only very limited research has been conducted, however, to test empirically constructed theories, to determine the impact of storytelling and spirituality on the development of knowledge concerning spirituality and to measure the importance of the cumulative effects over time on inner city African American and Sub-Saharan African women entrepreneurs. We may learn spirituality has a cumulative effect and provides a better view of the framework for constructivism theories. Also, it may have a cumulative effect on nascent and successful entrepreneurs, and it may therefore provide a better view of a dynamic process that functions throughout the stages of entrepreneurship, individual spirituality and lifestyle, as well as across generations. For example, storytelling concerning involving individual spirituality may result in the development of individual knowledge driven by the storytelling and observations, experiences and the impact of the stories concerning spirituality involving expectations of an unseen power removing stumbling blocks when they take a risk with their business. This episodic view of spirituality is likely adequate. Three theories applying to this phenomenon are: (1) theory of constructivism, which posits that such behavior as an entrepreneur is the result of reflections about an experience that can affect certain social and entrepreneurial outcomes, such as failure or success, and thereby facilitate a deeper belief in communalism, elder storytelling, spirituality and their success or failure as an entrepreneur; (2) expectancy theory, which reflects not only the current status of the individual and the business but also prior living circumstances from conception onward; and (3) feedback models through storytelling and the day-to-day operation of the entrepreneurial venture. In such a model, for example, people who anticipate higher future returns, possibly because of their individual spirituality, might invest more in their individual spirituality. In turn, those who invest might do so at lower amounts that could perpetuate a lower level of knowledge development, limiting opportunities and sustainability. Only very limited research has been conducted, however, to test empirically the various theories of measuring the importance of cumulative effects over time and across domains and how it might result in a better understanding of how to teach entrepreneurship and provide small business counseling and assistance to women entrepreneurs.

Data on knowledge development, storytelling, spirituality and entrepreneurship variables linked to their success or failure is needed for identification of initial and subsequent storytelling, spirituality and successful entrepreneurship. Additionally, a major longitudinal survey, such as a longitudinal survey of inner city African American and Sub-Saharan women entrepreneurs be generated. Furthermore, consideration should be given to incorporating into these surveys additional variables that might enhance the utility of the data for studying the
long-term effects and development of entrepreneurial programs, services and successful entrepreneurs. Consideration should also be given to including questions in new longitudinal surveys that would help researchers identify the experiences of inner city African American and Sub-Saharan African entrepreneurs and their success or likelihood of success within a given timeframe.

Conclusion: Measurement of the development of individual knowledge because of storytelling, spirituality and entrepreneurship may be insufficient to identify their overall impact on the creation of an individual’s knowledge. Further research is needed to model and analyze longitudinal and other data and to study how knowledge development may accumulate across storytelling, spirituality and entrepreneurship and over time in ways that perpetuate successful entrepreneurs.

NEXT STEPS: The challenges of entrepreneurs, the constructors of information, subjective representatives of their experiences and objective reality in various social and economic domains and its effects on outcomes will be measuring their success of women entrepreneurs.

References


Rural Family-Owned Business Sustainability in Times of Economic Change: Strategic and Entrepreneurial Responses to the 2007 to 2009 Recession

Linda Niehm, Yoon Lee, Virginia Zuiker, Linda Manikowske, Diane Masuo and Eonyou Shin

Overview

Family businesses are major contributors to the economy and employment in the U.S. In rural areas of the U.S., family-owned businesses are especially vital to local economies. Rural areas are characterized by small populations and geographic isolation. Rural family-owned businesses not only provide household income, but also employ workers in the community, which ultimately creates wealth in rural counties (Rupasingha & Goetz, 2013). Family business success and sustainability are inherently related. For a business to become sustainable, both family and business contributions of human, social, and financial capital are needed. Winter, Danes, Koh, Fredericks, and Paul (2004) found that business sustainability and survival are influenced by family decisions, life events and owner resiliency.

Purpose and Research Questions

Family-owned businesses provide important economic contributions to rural communities in the U.S., yet research regarding factors that promote entrepreneurship in these areas is limited. More importantly, research concerning effects of the 2007 to 2009 recession on rural family businesses is practically non-existent. The purpose of this study was to examine strategic and entrepreneurial responses to the 2007 to 2009 recession among rural family-owned businesses. The specific research questions were: 1) What are the demographic characteristics of small rural family-owned businesses who survived the recession of 2007 to 2009? (RQ1); 2) If a small rural family-owned business closed since 2007, what was the reason for the closure? (RQ2); 3) How did the recession of 2007 to 2009 influence financial performance for small rural family-owned firms? (RQ3); 4) How did the use of entrepreneurial business strategies and practices by small
rural family-owned firms influence the ability to cope with challenges posed by the recession? (RQ4); 5) Was there a difference in business revenue for small rural family-owned businesses who utilized entrepreneurial on-line/digital strategies versus those who did not use such practices? (RQ5); and 6) What entrepreneurial online/digital strategies were most utilized by small rural family-owned businesses? (RQ6)

**Theoretical Framework**

Two theoretical frameworks were employed in this study. First, the Sustainable Family Business (SFB) Theory (Winter & Morris, 1998) acknowledges that family businesses consist of two systems—the family and the business. The family and the business operate within the context of a community, and both systems are vulnerable to disruptions that occur within and outside of the family and the business systems. The SFB Theory was used in this study to examine how the family and business re-allocate resources when a disruption occurs, such as a recession. Second, Morris’ (1998, 2010) Framework of Entrepreneurial Capabilities also provides a means for understanding how rural family businesses responded to a disruption such as the 2007 to 2009 economic recession. Using Morris’ framework, entrepreneurial responses and practices that led to success and sustainability for rural family-owned businesses were identified.

**Methods**

This study employed data from a fourth wave of the National Family Business Study (NFBS) which includes panel data from 1997, 2000, 2007, and 2016. Due to attrition, the fourth wave, 2016 NFBS, was projected to be small. Therefore, a mixed-method design was used to examine change over time on variables including gross business income, size of business, business strategies, and forms of business innovation. Additional insight about entrepreneurial
decisions, processes, and practices used by family-owned businesses was captured in the fourth wave. Open-ended questions were also included to examine business and owner characteristics associated with business closure during and after the recession. For the main sample, a total of 71 businesses had complete data and were categorized as surviving rural family-owned businesses. To learn about businesses that had closed or sold by 2015, additional interviews of 50 owners/managers were conducted. This process resulted in complete data from 41 closed businesses. To answer the main research questions, cross-tab analyses were performed.

Results

The findings provide a profile of the 71 surviving rural family-owned businesses (RQ1), and the reasons for closure of the 41 closed businesses (RQ2). Of the 71 businesses that sustained the recession, a majority of owners (73%) were between 50-69 years old, male (65%), and over half (55%) earned a B.A. degree. The majority of these businesses had three or fewer employees (52%), and were predominantly sole proprietorships (38%). Of the 41 closed businesses, primary reasons for closure were: retirement, health issues, and financial difficulties such as not earning a profit.

This study examined the influence of the recession on the financial performance of rural family-owned businesses (RQ3). According to the results of cross-tab analysis, there was significant association [chi-square = 13.071, df = 4, p < .05] between perceived difficulties with the recession and cash flow problems for the family business. If a business had performance difficulties during the recession, it was more likely to also have cash-flow problems in 2015. However, for other variables such as profit in 2015, perceived business success, and changes in annual revenue since 2010, no significant differences were found between the two groups, those with perceived performance difficulties, and those with no perceived performance difficulties.
This study also examined whether businesses with performance difficulties and those with no difficulties were significantly different in business strategies and entrepreneurial practices used during the 2007 to 2009 recession, compared to strategies/practices used from 2010 to 2015 (RQ4). Two significant associations were found between: (1) performance difficulties during the recession and strategies/practices used from 2007 to 2009, and (2) performance difficulties during the recession and strategies/practices used from 2010 to 2015. Most of the businesses with performance difficulties during the recession were likely to change at least one business practice during 2007 to 2009, and businesses with no difficulties were not likely to change any practice. About half of the businesses with some difficulties during the recession had made no entrepreneurial strategy/practice changes since 2010. For those businesses that did make changes during 2007 to 2009, the most frequent strategy/practice modifications were: new/changed products or services, improved efficiency, decreased wages or hours, reduction in staff and change in space/location. Specific changes made after the recession (reported in 2015) included: new/changed products or services, staff changes, improved efficiency, increased online presence, space/location changes, and changes in wages or hours.

The results of cross-tab analyses also indicated a significant difference [chi-square = 15.918, df = 8, p < .05] in business revenue between entrepreneurs who used online/digital strategies and those who did not (RQ5). Higher business revenue was associated only with the adoption of the following strategies: dedicated staff that managed websites/social media sites, focus on a single or limited set of online options and having a contract for or outsourcing some online functions to another company. The most frequently used strategies were: A website (n=18), social media (n=12), selling products online (n=7), and tracking online customer and market information (n=7) (RQ6).
Conclusions and Implications

Family businesses are vital to the economic livelihood of rural communities. This study extends the understanding of how rural family-owned businesses respond to economic change from the perspective of both the business and the family. The data for this study came from the fourth wave of the National Family Business Study (NFBS). The NFBS is a panel study spanning 18 years, with focus initially on family business households and later on the owner/managers of surviving and closed businesses. The findings of this study are particularly important to rural communities that depend on the success and sustainability of family businesses for access to goods and services, for employment, and as drivers of the local economy. Identifying the types of entrepreneurial strategies and practices that enabled family-owned businesses to succeed and sustain the 2007 to 2009 recession provides important implications for business owners/managers, business consultants, and policy makers.

References


Note: This research was supported by a grant from the North Central Regional Center for Rural Development (NCRCRD) titled, “Family Business Contributions to Sustainable and Entrepreneurial Rural Communities over Time”. 
Social Entrepreneurship: A Healing Approach to a More Sustainable Society

By Mark Pomerantz

Abstract

Though not well understood social entrepreneurship is an important concept because it is a mobilizing process for very diverse groups of people who want to improve society. Social enterprises which are central to the process of social entrepreneurship need ethical leaders who act consistently with their right minded values whether they are traditional, modern, post-modern, or evolutionary. Social entrepreneurs are ethical leaders who recognize the importance of multiple bottom lines that incorporate the wellbeing of clients, customers, employees, the greater community, and the environment as well as income generation. Social entrepreneurship pedagogy is reflective of personal and institutional values, and worldview, yet has similar curricular elements regardless of those values and worldview.

Definition

Social entrepreneurship is a term that is often defined but not that often understood or agreed upon. “Social entrepreneurship (focused on entrepreneurs) and social enterprise (focused on organizations) have their roots in the non-profit sector where the creation of social value—benefit to the public or society as a whole—is the underlying objective of NGOs” (Peterson, 2015, p. 6). From personal experience and after surveying the literature the author takes a broad macro-level view of social entrepreneurship. The author defines social entrepreneurship as a process (Mair & Marti, 2006), with the precondition of social value creation, to reach a more balanced or sustainable societal paradigm (Belz & Binder, 2015; Ivanescu, Gheorghe, & Sztruten, 2013; Kuhns, 2004),
consisting of a tripod of sub-processes: social enterprise (see below), appropriate or intermediate technology (Polak, 2008; Schumacher, 1989), and forms of transformational leadership such as transcendental leadership (Sanders, Hopkins, and Geroy, 2003) or evolutionary leadership (Elgin, 2000; McIntosh, 2012).

This definition gives equal prominence to the qualities of the leader and the entrepreneur. Just as an ethical social enterprise has *multiple bottom lines*, a social entrepreneur must have multiple attributes beyond those of a business entrepreneur. The social entrepreneur may be adept at business opportunity recognition, innovation, and risk taking (Lyons, 2013), but that may not be enough to successfully manage a multiple bottom line organization (Ivanescu, et al., 2013). They must also understand leadership forms, poverty issues, disability issues, and organizational psychology as much as they understand how to make money. They must understand the importance of appropriate technology, and staff the social enterprise with people with such expertise. The leader must have *emotional and empathic intelligence* to balance the competing demands of the multiple bottom lines. The leader is challenged to use his emotional and empathic intelligence (Boyatzis, Goleman, & Rhee, 2000; Pinos, Twigg, Parayitam, & Olson, 2006; Matthews, Zeidner, & Roberts, 2002) in many situations. It may be to determine the best utilization of physically or mentally challenged workers by assessing their capacities against the competing demands of profit and mission (see below). It may be to find ways of filling institutional voids in areas of poverty and adversity by locating and utilizing informal local networks (Mair & Marti, 2009). So, for example, it may be just as important to locate groups to maintain new water wells in Africa as it is to drill them in the first place. The leader must also understand and develop the capacities of his staff.
through training and, by example, exhibit those needed qualities (Heinecke, Kloibhofer, & Krzeminska, 2014).

The importance of the technologist to the social enterprise, whether designer, engineer, et al is recognized in the difficulty of developing products and services that fulfill a social good and aren’t necessarily driven by particularly lucrative or broad market demand (Papanek, 2005). Products for groups of disabled people that would increase their mobility or ability to perform work, such as assistive technology (ATIA, 2016) are an example of this. Since much of social entrepreneurship is also developmental entrepreneurship, i.e., small startups operating in areas of poverty, adversity, and/or weak infrastructure (Pentland, Quadir, Barahona, & Bonsen, 2003), the technologist is especially challenged to develop technical specifications that don’t exceed local educational or resource capacities. Examples in the developing world would be “low power refrigeration, solar stoves, water filtration, composting toilets and relatively simple to build and maintain water pumps” (Pentland, et al., 2003, p.10).

This definition builds upon prior schools of thought on social entrepreneurship which characterize it as a process based on social enterprises: i.e., commercial activity of NGO’s to support their mission; or a process based on social innovation: i.e., the implementation of disruptive solutions to social problems, the so-called Schumpeterian model which may involve businesses or sales (Dees & Anderson, 2006).
Social enterprises developed by social entrepreneurs may be non-profit, for-profit, or hybrid legal entities (see below). Some prefer the use of the alternative nomenclature for-benefit organizations (Sabeti, 2011). They are enterprises with a dual mission of generating earned income and helping the community or some subgroup of the community. “They use the methods and disciplines of business and the power of the marketplace to advance their social, environmental and human justice agendas” (Social Enterprise Alliance, 2015, Why, para. 6). Social enterprises gain financial capital through a variety of ways including bank or private loans, government or foundation grants, program related investments from foundations, and private social impact investments. Impact investing has been defined as “actively placing capital in enterprises that generate social or environmental goods, services, or ancillary benefits (such as creating jobs), with expected financial returns ranging from the highly concessionary to above market” (Brest & Born, 2013).

Appropriate technology refers to technological choices and applications that are small scale, labor intensive, energy efficient, environmentally sound and locally controlled, and was originally known as intermediate technology (Schumacher, 1989; Polak, 2008).

Transcendental leadership has been defined as “dimensions of spirituality (consciousness, moral character, and faith) that incorporate the efficient managerial aspects of transactional theory and the positive charismatic aspects of transformational theory to enhance leader effectiveness” (Sanders, et al., 2003, p. 21).

Evolutionary leadership refers to the ability to take the most evolved values of previous chronological world views, traditionalist, modernist, post-modern, and make
them work together in a new positive synthesis (McIntosh, 2012). *Evolutionary leaders* focus on leading society to the next great transition beyond the industrial age, making an evolutionary leap (Elgin, 2000). Ubiquity University offers a course in transformational leadership which incorporates sections on *evolutionary leadership* and *sustainability leadership* (Ubiquity, 2015).

![Figure 1. Social entrepreneurship model. Note. SV = Social Ventures (Social Enterprises), AT = Appropriate Technology, TR = Transformational Leadership](image)

**Ethical Basis of Social Entrepreneurship: A Multiple Bottom Line Process**

A social enterprise may not necessarily be an example of ethical entrepreneurship in that the organization may not be led by ethical leaders. Sources say founding social entrepreneurs are driven by altruistic values (Dees & Anderson, 2006) but subsequent social enterprise managers may not necessarily share those values. Social entrepreneurship can be defined as *ethical entrepreneurship* when the social enterprise incorporates *multiple bottom lines* and decision making based on *consideration of ethical dilemmas*. 
Kidder (1995), states that if a situation is not a clear cut case of right vs. wrong then there are four ethical dilemma paradigms, truth vs. loyalty, short term vs. long term, justice vs. mercy, self vs. community. The famous motto, “People, Planet, Profit”, (Elkington, 1997) includes the triple bottom line of making money, serving a constituency, and doing no harm to the planet. But ethical leaders who display empathy are aware of a need for additional bottom lines that clarify the organization’s responsibility to its own employees, and its responsibility to the local and greater communities of which it is a part.

Social enterprises because of the difficulty of fulfilling multiple bottom lines (Ivanescu, et al., 2013) need leaders skilled both in ethical behavior and business practices who have the wisdom and adeptness to balance those bottom lines. A survey carried out among 150 senior employees of social enterprises supported by the Schwab Foundation for Social Entrepreneurship found that social entrepreneurs in that organizational network were similar in their leadership style. According to key team members, the great majority of the CEO’s of these social enterprises scored very high in ethical leadership, transformational leadership and empowering leadership (Heinecke et al., 2014, p.4). The respondents also stated that if there was a leadership quality lacking it was primarily relating to the ability to employ transactional leadership linking performance to rewards and positive or negative feedback (Heinecke et al., 2014, p.4). Those who took the survey reported the least desirable form to be autocratic leadership and it was least reported in the survey. Autocratic leaders were described as dominant leaders who don’t share power or decision-making and are indifferent to the values or opinions of others (Heinecke, et al., 2014, p.5).
However, aggressive leadership is not the only pitfall to be avoided in social enterprise management. An equal hazard is a lack of transactional leadership with its important feedback and helpful direction. This reinforces the need for the transcendental leader who can be both directive and empowering as the situation merits (Sanders, Hopkins, & Geroy, 2003).

The author’s own experience of working for a social enterprise, training and employing disabled workers, gave him an opportunity to confront some of these leadership issues and ethical dilemmas. The organization had taken government loans to create and run a commercial laundry on its campus serving mainly federal government institutions under the Javits-Wagner-O’Day Act (see below). It soon became evident that the developmentally disabled clients were not capable of operating the machinery in an efficient way that was profitable. The CEO determined that this wasn’t a right vs. wrong situation but a right vs. right situation. The truth was the laundry could not make money unless the company brought in more machinery and more adept workers to run it. This in part overrode the loyalty component that the organizational mission was to primarily serve those developmentally disabled workers. The short term advantages of employing more severely disabled workers were overridden by the long term prospect of the operation creating too big a loss to be continued. The justice vs. mercy issue was dealt with by finding other though lesser paying jobs for the more disabled workers. The self vs. community issue was seen as the necessity to create as much profit for the organization as possible to enable its continued work to help all the clients and workers in its community. The decision was seen within the organization as a case of difficult but ethical decision making.
Another example of this organization’s multiple bottom line thinking was the serious consideration of entering the field of environmentally friendly dry cleaning, using harmless liquid carbon dioxide instead of highly toxic perchloroethylene as part of its laundry business. Since the market for CO₂ dry cleaning was in its beginning stages and government had not banned perchloroethylene as had been anticipated, this opportunity was not followed up. In this case the desire to serve the community was constrained by fears that the investment wasn’t justified by the market and that it would injure the overall health of the organization.

Convergence between NGO’s, Government, and Business

Today, the boundaries between the non-profit, government and business sectors have become diffused and semi-permeable as ideas, values, roles, relationships and capital flow more freely across these sectors. Some describe this phenomenon as “sector convergence.” (Peterson, 2015, p. 6).

The public, private and nonprofit sectors have increasingly similar goals. Social responsibility is incorporated into the business sector. Business-like models guide public and non-profit organizations. In the business community a nascent socioeconomic paradigm is developing, based on sustainable and equitable economic growth and transformative forms of leadership, which is converging with social entrepreneurship. This new paradigm is called by many names. Ethical capitalism is stated as capitalism that is not exploitative or adversarial, but collaborative, consensual, and more equitably shared (Lim, 2004, para. 2). Collaborative capitalism is characterized as wealth creation
that encourages sustainability and upgrades global quality of life (Schilling, 2007, p. 7) creating financial returns alongside measurable social and environmental benefits (Clark, Emerson, & Thornley, 2014).  *Regenerative capitalism* refers to a holistic, sustainable approach to economic development (Fullerton, 2015).  It references such concepts as a switch from cradle to grave to *cradle to cradle* resource processing where the end of life of a product is recycling rather than disposal (McDonough & Braungart, 2002).  A related concept is *intelligent growth* also known as *upcycling* or *creative reuse* whereby the used up product is transformed into one of better quality or value than before (Froelich, 2016; Fullerton, 2015).

This new paradigm is beginning to compete with the old paradigm of laissez faire capitalism.  It is driven by current tangible adversity trends (Elgin, 2000) such as global warming, the energy crisis and the struggling global economy; as well as more intangible trends such as a perception that there is an unfulfilled need for greater social justice and less economic inequity.  The breakdown of the global capital markets in 2008 further reinforced the thesis that unfettered and unregulated financial manipulation is disastrous to a healthy society (Korten, 2009).

U.S. governmental agencies have lagged behind the NGO and business sector in directly advancing the social entrepreneurship field, though they have provided some support. Some sources theorize that social enterprise development has actually been stimulated by government failures (Kuhns, 2004) and decreasing government support of the NGO sector as a whole. Some limited, mostly indirect, government support for social enterprise is found on the local, state, and federal levels in the United States (Kerlin, 2006).  The U.S. Federal Government has a long-time program called the Javits-Wagner
O’Dea act that enables preferential treatment in government contracting for social enterprises creating employment opportunities for the disabled known as community rehabilitation programs. (AbilityOne, 2016; The Arc, 2016). The U.S. federal government provides an example with legislation that creates demand for social enterprise products through set-aside funds that purchase goods produced by 36,000 employees in sheltered workshops. Over half of all U.S. state governments operate comparable set-aside programs (Kerlin, 2006). There is also a more recently created Social Innovation Fund, part of the Corporation for National and Community Service (CNCS), which has disbursed upwards of $800 million to entrepreneurial organizations creating social benefits. (CNCS, 2016). (Note: this program has not received a funding appropriation for FY’2017).

As noted previously, a number of states have instituted programs for preferential contracting for disability social enterprises, though most of these laws are fairly toothless. Reflecting the sector convergence in social entrepreneurship is the development of hybrid legal entities focusing on both financial and social return. A growing number of states have passed legislation for some version of benefit corporation or social benefit corporation which enables a corporation to be chartered with a double bottom line and a dual mission to make profits and serve the community (Benefit Corporation, 2016). Organizations similar to the benefit corporation are the flexible purpose corporation, (Peterson, 2015) and the low profit limited liability corporation otherwise known as the L3C (Peterson, 2015).
Social Entrepreneurship in Academia

The popularity of the concept of social entrepreneurship is reflected in the establishment of titled social entrepreneurship courses in many colleges and universities. A survey of US university and college faculty members with research and/or teaching interests in social entrepreneurship reported that 90% of the 96 respondents stated that student interest in participating in social entrepreneurship curriculum was very high (22%), high (36%), or moderate (32%). Eighty percent of the 96 respondents strongly (47%) or moderately (33%) agreed that students can be taught to become social entrepreneurs (Pomerantz, 2015).

“Social entrepreneurship has become the hot item at scores of universities around the world” (Rifkin, 2014, p. 265). Educators also see social entrepreneurship as an important adjunct to experiential learning of other cultures. “The current generation of college students has a strong affinity with social entrepreneurship, so it is an approach that resonates with their passions and helps insure better student participation and more engaged experiential learning during their studies abroad” (Morris, Kuratko, & Cornwall, 2013, p. 182). Not only do students want to be social entrepreneurs, but others wish to be peripherally involved in corporate social responsibility, investing in social ventures, and other areas related to social benefit. (S. Bacq, personal communication, April 23, 2014)

In addition, similarly titled and/or themed courses have also been developing which in their emphasis on sustainability and creating social value can be seen as coming under the umbrella of social entrepreneurship, e.g., social innovation, socially responsible business, applied sustainability, sustainable business, sustainable management, sustainable entrepreneurship, etc. (Kury, 2012).
Social Entrepreneurship Curriculum and its Value Bases

The author believes social entrepreneurship reflects the societal and political values of its practitioners and that the popularity of social entrepreneurship studies comes out of the recognition that the present societal paradigm is not working well for the poor. The author believes also that social entrepreneurship pedagogy reflects the values and ethics of the educational institutions and teachers where and by whom it is taught.

Different observers who have different values and worldviews may have differing opinions as to the reasons for this societal breakdown but they acknowledge the breakdown. Traditionalists may believe that the poor themselves are the problem and that poverty is more of a result of lack of individual responsibility (Mead, 1996). Modernists may believe poverty is due to a lack of economic investment (Yapa, 1996) or a function of inefficient government or NGO operations (Mead, 1996). Post modernists may ascribe poverty to the machinations of socially constructed scarcity deriving from corporatist economic development (Yapa, 1996). There seems to be a shared belief, however, that practicing and studying social entrepreneurship is a useful method for helping to deal with it. Whatever the worldview, social entrepreneurship seems to be a bridge between them and their shared helping values.

While the values of the institution and pedagogues may be different the course titles and content are often very similar. For example consulting the university websites shows that Liberty University offers coursework in social entrepreneurship in its Center for Entrepreneurship just as Ubiquity University does in its Social Entrepreneurship Acceleration Program. Liberty is a traditional worldview bricks and mortar school
requiring students and faculty to attest to their Christian religious beliefs. Ubiquity is a primarily online school with an evolutionary worldview whose website states that it “fuses education with social innovation.” Its motto is “a whole new kind of education for a whole new kind of world” (Ubiquity, 2016).

Singularity University which particularly focuses on the societal impact of technological change is a benefit corporation. They have a partnership with Yunus Social Business, founded by Muhammad Yunus, “to concentrate on the use of accelerating technologies and social entrepreneurship for global development in some of the most vulnerable areas of the world” (Singularity, 2016). In the modernist mainstream, Harvard has courses called “Managing Social Enterprise” and “Introduction to Social Entrepreneurship” (Rifkin, 2014, p.265).

**Conclusion**

The author contributes to the pedagogy of social entrepreneurship by adding a new definition that is useful in the analysis of the seeming convergence of business, NGO, and government towards support of social entrepreneurship as a tool in creating a more sustainable society. This theory of social entrepreneurship recognizes the developmental nature of many social enterprises; a need for transformational and transcendental models of leadership, which include empathic and emotional intelligence as well as entrepreneurial ability; and a need for appropriate technology for different localities, groups and organizational cultures struggling with poverty and/or adversity. The paper theorizes that social entrepreneurship as well as social entrepreneurship pedagogy is values based and includes practitioners and educators who hold a variety of
differing world views. The author also emphasizes the importance of multiple bottom lines and Kidder’s ethical dilemma paradigms in both analyzing the ethics of a social enterprise and developing new ethical operational steps in social enterprise management. The author believes that social entrepreneurship through its convergence of actors (business, government, NGO’s) and values (traditionalist, modern, post-modern) has already opened the potential of a healing dialogue between communities that may not feel comfortable with one other but are united in wanting to do the right thing.
References


Flexible or traditional work arrangements? Implications for SMEs in emerging economies: The case of Mexico

Saida Perez, Yamel Ungson, Laura Lopez and Terri Lituchy

Executive Summary

The positive outcomes of flexible work arrangements (FWA) are often studied in the large companies (Cervantes, 2005; ILO, 2011; Lee, McCann & Messenger, 2007), but there is little done in the small and medium size enterprises (SMEs) and its implications for the entrepreneurs. Problems, such as job dissatisfaction and turnover intentions also occur in SMEs. Given the beneficial effects and the global trends on FWA, one may ask if entrepreneurs from small and medium size firms in Mexicali, Mexico are implementing FWA policies to increase employees’ job satisfaction and reduce turnover rates. Therefore, it is hypothesized that: H1: FWA positively affect job satisfaction. H2: FWA negatively affect turnover intentions. For the method, a convenience sample of local SMEs in Mexicali were asked to participate. Thirteen firms agreed to participate in the survey and 103 responses were obtained so far. The researchers developed a questionnaire on FWA in Spanish. Findings show that 19% of the individuals are working under FWA. For H1, 35% out of the 19% said they totally agree with the statement “I love to go to work”, while 30% agree and 35% were neutral. In addition, for H2, 65% of them haven’t had any turnover intentions in the last year of their current employment. This study contributes to the literature in that there is no previous research on flexible work arrangements, job satisfaction and turnover in Mexico. Results may be applicable to SMEs in different sectors. The results also have implications for entrepreneurship education as well as the Mexican economy. SMEs contribute to the GDP, they are a significant employer, and they have high turnover rates.
An empirical study of entrepreneurship in private and public sector organizations: Some evidence from Ghana

Dr Bernard Obeng, GIMP Business School, Achimota-Accra, Ghana

Abstract

In recent times, research into the practice of entrepreneurship in large organisations has been on the ascendency due to the recognition of the contribution of entrepreneurship to organisational performance (Albano, 2013). However, the context of a preponderance of such studies has focused on not only developed western economies (see Kuratko et. al., 2005; Ireland et al., 2006; Hornsby et. al., 2009; Kuratko et. al., 2014), but also on large private sector organisations. We address this gap by focusing on the practice of entrepreneurship in a developing economy, Ghana, by type of organization (i.e. private and public sector organisations), and by size of organization (i.e. small, medium, large). We seek to gain a better understanding of the perception of managers regarding the presence or otherwise of factors that encourage entrepreneurial behaviour in these two types of organizations. More specifically, the perception of a little over 280 managers, was measured along five major dimensions critical to creating an entrepreneurial environment including top management support, work discretion, time availability, and organisational boundaries (Kuratko et al., 1990; Hornsby et al., 2002). This study uses Corporate Entrepreneurship Assessment Instrument (CEAI) to measure middle level managers’ perception of the existence of an entrepreneurial climate in organisations from an emerging economy perspective. The five major dimensions critical to creating an entrepreneurial environment / climate as established in the CE literature are as follows: Top management support, work discretion, time availability, and organisational boundaries (Kuratko et al., 1990; Hornsby et al., 2002). Using descriptive and multivariate analysis of variance we posed the following questions to 284 managers from different levels of organisations participation in an executive management training programme at the Ghana Institute of Management and Public Administration from January, 2014 to June 2014: 1. What is the perception of managers in private and public sector organisations with respect to the existence of entrepreneurial climate in their organisations? 2. Does the perception of level of managers operating in the public sector differ from those in the private sector? 3. Does the educational level of the managers influence perception? 4. Does the gender of the managers influence perception?

The findings and their implications for theory and practice are discussed in greater detail in the full paper.

*This paper is work in progress. Extensive literature review has been done. Quantitative data have already been collected from 284 managers operating in different levels of organisations and the data analysis is in progress but I am still battling with myself the direction of the
paper in terms of theory development and this is where I think USASBE conference will afford me the opportunity to have discussions with eminent researchers in the field of entrepreneurship. This will help me to structure and improve the rigour of the paper. Thank you.
The Role of Humor in Startup Success: The Mediating Role of Team Performance

Shalini Gopalkrishnan

Executive Summary

Entrepreneurial ventures are beset with high rates of failure in converting a new idea into a viable business. This could be due to several reasons and existing literature has addressed some issues to improve success rates. Coping with constant change is a challenge for all humans, and more so in this context. In this paper, we seek to understand the role of humor as a catalyst to sustain viable ventures. Prior research shows us that humor plays a critical role in team performance which in turn is a crucial ingredient in the initial stages of a startup. A strong team can overcome the initial hiccups of a startup and increase the chances of it remaining alive. This study proposes recording several meetings in a startup as a benchmark, then doing an intervention of a “humor training session,” and measuring its effects. The study will be conducted using a number of randomly chosen teams at several startups and the results will be compared. We theorize that there will be an increase in team performance due to stress reduction, which will lead to an increase in likelihood of survival of the startup.
Executive Summary

This paper highlights results from a mixed-method research project in PA and TX and shares preliminary research results, which discusses important factors in entrepreneurial communities including such as local leadership, politics, culture, and the entrepreneurial environment.
Bounded trust or mistrust - Depicting Brazilian Immigrant Entrepreneurship Practices in the US

Eduardo Cruz, Roberto Pessoa de Queiroz Falcão and Cesar Ramos Barreto

Executive Summary

Immigration-related issues are daily news around the world. In America the issue has featured in electoral debates for the White House dispute. Moreover, in Europe the focus of immigration issues lie on massive arrivals of Syrian refugees and Sub-Saharan Africans who emigrate in precarious conditions. This urges local governments to take action in order to address that question. When it comes to migratory movements, regardless of migrants’ economic status, local assimilation or cultural clashes are present phenomena. After years of debate on cultural assimilation, researchers essay to draw a connection between behavioral characteristics of certain ethnic groups with their business and labor relations. According to Portes & Sensebrenner (1993), the social mechanism related to social capital (Bourdieu, 1986), which unites people from the same ethnicity, whether in their harsh conditions or in the enclave or ghettos, is labeled bounded solidarity. According to the authors, members of a particular group who find themselves affected by common events in a particular time and place, create a protection mechanism called bounded trust. Several sociology authors found that in Chinese, Dominican, or Mexican communities. Ethnic groups invest in social relationships and share resources between themselves, either taking advantage of ethnic enclaves or competing among themselves. The research question here in this paper lies on whether certain nationalities are more inclined to helping than others are, or else, whether same entrepreneurial ethnic groups behave differently according to environmental factors. This paper derives from an extensive research about Brazilian communities in Florida that present a different behavior regarding bounded solidarity if compared to other ethnicities. Although, in this exploratory study, the authors present evidences that Brazilian entrepreneurs might behave differently according to different social and environmental configurations of the entrepreneurial environment.
Effect of an intervention on fear of failure in entrepreneurship

Yemisi Awotoye

Executive Summary

Fear of failure has been identified as a deterrent to entrepreneurial activities. Borrowing from a study in dentistry which found that dental phobia and anxiety were reduced through a videotaped intervention, this paper examines the role of a videotaped intervention on students’ fear of failure in entrepreneurship. It is hypothesized that the intervention will result in reduced fear of failure in entrepreneurship by increasing entrepreneurial self-efficacy, and result in higher indications of entrepreneurial intentions.
Applying a hybrid stochastic modelling approach to analyze cross sector collaboration performances

Ales Jug

Executive Summary

Cross sector collaboration (CSC) is regarded as an effective way of solving entrepreneurial problems and promising economic growth. Researchers (Murphy, Perrot, and Rivera-Santos 2012; Perrini, Vurro, and Costanzo 2010) have identified antecedents that lead various stakeholders to CSC and contingencies that hinder CSC performance, sustainability and partnership development (Babiak and Thibault 2007; Rondinelli and London 2003; Waddock 1988). Although CSC appear to be a good platform of solving entrepreneurial problems, it is unclear how performs over the lifetime. This paper contributes to under-researched area by investigating the dynamics of cross sector collaboration using a stochastic modelling approach. It based on the implication of Markov chains model and Bayesian network models for analyzing the cross sector collaboration performances.
Evaluation of entrepreneurial skills of students enrolled in technology education institutions

Fariha Gull

Executive Summary

Many institutes are offering courses on entrepreneurship around the globe, owing to the acceptance of importance of entrepreneurship education. Laying foundation of introducing these courses is that that entrepreneur can be trained through education. It is widely accepted that skills required by entrepreneurs can be taught through teaching learning process. The current study aims to evaluate entrepreneurial skills of students enrolled in technology education institutes after studying business courses. Secondary aim of the study is to find effect of demographic factors like previous or current experience of running business and family background on skill level of students. In total 1867 students took part in the study, the sample was selected through multistage sampling. Instrument used to collect data was composed of three parts; demographic sheet, businesses plan template and situational judgment test. The descriptive statistics and t-test was used to analyze data, the results indicate that students have low level of entrepreneurial skills. The results also present that students with family background of business and having current or previous experience of running a business have better entrepreneurial skills than others, who do not have such experience or family background. On the basis of results it can be suggested that there is need to revise curriculum of technology education institutions in terms of business courses in order to develop entrepreneurial skills among students.
Women Entrepreneurs: Analyses of challenges and successes in Mexico

Diana E. Woolfolk R. and Terri R. Lituchy

Executive Summary

Entrepreneurship is viewed as a key element in economic development and fundamental to the successful transition of the economies (Fogel & Zapalska, 2001). The cultural context and history of free enterprise affect the nature and extent of entrepreneurial motivations for both men and women (Fogel & Zapalska, 2001). Many North American women often decide to create their own business as a consequence of discriminatory treatment in work organizations (Buttner, 1997; Capowski, 1992).

Some women achieve success in spite of the barriers they face (Aycan, 2004). Why do women start their own company? What opportunities and obstacles do they face? The objective of this research is to compare the experiences of men and women of small companies in the wine industry, agribusiness and consulting services in Baja California.

Women are starting their own business in historical numbers, but the reasons for why they start are different from those of men (Lituchy & Reavley, 2004; Reavley & Lituchy, 2008). There is little research in Mexico about the challenges women face when starting a business, as well as during start-up.

Therefore, we examine: Why do women start their own companies? What kind of opportunities and challenges do they face? The purpose of this research is to study the experiences of women small business owners in the wine industry, agribusiness and consulting in Baja California, Mexico. We will then compare their experiences to men entrepreneurs.

There is no doubt that some women achieve high levels of professional success in different occupations and industries, but this is not the case for most women (Punnett et al., 2007). In addition to the above, there is little research in Mexico regarding the challenges women face when starting or running a business. The purpose of this research is to identify and analyze what encourage women to become entrepreneurs.
Executive Summary

This developmental paper uses a case study analysis and grounded theory approach to examine the founding, growth and future development of GRID Finance. GRID Finance is a funding source for SMEs and start-up companies in Ireland that seeks to tap the 80 million Irish (and people of Irish decent) that live in the Diaspora but long for a connection to their homeland. Ireland is a nation characterized throughout history by a series of significant social and economic impacts that have been met with mass exodus “off the rock”, leaving the burden for retrenchment, development and reinvestment to the smallest portion of its population left behind. One of the globe’s hardest-hit economies by the financial crisis in the early 2000’s, Ireland is still struggling to recoup its losses and rebuild its economy through entrepreneurship. GRID Finance is a model for this reinvestment and redevelopment and a success story that fills both a social and economic need.

The research intends to examine the model utilized by GRID Finance, the actions of its founders, and its growth strategies to determine whether or not it is unique to Ireland, or generalizable to other micro-economies both in the U.S. and on the global stage. Alternatively, the paper could be developed as a teaching case study of social entrepreneurship.
The Relationship of Local Leaders and Business Institutions with Entrepreneurs

Britton Heim

Executive Summary

This study focuses on the effects of local leader’s and business mentoring/aid institutions’ presence and interaction within a community on local entrepreneurs. Our hypotheses are: (1) Local Leader and Business Institution presence and interaction will have a significant, positive relationship with each dependent variable individually (2) Urban areas will have a higher presence of and interaction with local leaders and business institutions than suburban, small town, and rural areas. (3) Local leaders and Business Institutions that are present and interactive in the community create a stronger entrepreneurial community. A sample of 375 entrepreneurs from North Eastern Pennsylvania were used in this study.
Entrepreneurs as Risk Minimizers

Nawaf Alabduljader and George Solomon

Executive Summary

We examine the relationship between achievement motivation and entrepreneurial entry decision. We hypothesize that hybrid motivation—individuals motivated by hope for success and fear of failure simultaneously— influences the decision to pursue hybrid entrepreneurship—the process of starting a business while retaining a day job in an existing organization. Integrating insights from regulatory focus theory with achievement motivation theory, we also hypothesize that individuals who display both promotion and prevention focus more likely to respond to both motivational tendencies and engage in hybrid entrepreneurship.
Overconfident Entrepreneurs: A Study of Kauffman Firm Survey

Hyungkee Baek and Florence Neymotin

Executive Summary

Studies of entrepreneurial overconfidence differ from the studies of corporate managers at least in three ways. First, entrepreneurs are owner-managers and do not experience the conflicts associated with the classical principal-agent relationship (Jensen and Meckling, 1976). Second, the level of optimism and overconfidence are different between entrepreneurs and managers, especially CEOs (Koudstaal, Sloof and van Praag, 2015). Third, governance mechanisms such as board of directors, external audit, large and institutional shareholder activism, managerial labor market and market for corporate control are rare in small business ventures. We examine the behaviors of overconfident entrepreneurs (OCEs) in the areas of investment in human capital, innovation, credit, financing, business performance and failure, for a sample of 11,962 firm-year observations from the Kauffman Firm Survey, which is composed of US enterprises that started in 2004. We identified OCEs, who believed to have comparative advantage over industry peers while their ventures’ average ROA during the first 4 years was lower than the industry median. In subsequent years, those OCEs invest more in human capital (in total payroll and average pay) and innovation (R&D), and produce more patents and new products/processes than non-OC counterparts. OCEs, however, are hesitant to seek external funding (i.e., didn’t apply for loan in fear of rejection) although their credit risk is not different from non-OC owners. Hence, OC owners resort to the close networks of their family and friends for funding. By definition, OCEs started with lower ROA, but change in ROA is (insignificantly) better than non-OC entrepreneurs. Also, OCE’s venture hazard rate is no worse than that of non-OC entrepreneurs. Since OC entrepreneurs add value to the economy through investment in human capital and innovation, policy makers should better support their ventures by lessening their resource constraints through proactive funding opportunities.
Executive Summary

This study examines the role of entrepreneurial firm innovativeness in light of the entrepreneurs’ need for closure (NfC), a motivation-based construct that captures the propensity toward searching for answers in entrepreneurs’ decision making mindset. A positive relationship is hypothesized between entrepreneurial firm innovativeness and preference for order and decisiveness and a negative relationship between firm innovativeness and discomfort with ambiguity and closed mindedness. Data from a study of 393 small business owners support the central hypothesis, suggesting NfC may enable individuals to take advantage of the opportunities that uncertain situations may create by leveraging their respective existing knowledge structures.
Innovation to Launch (I2L)

H. “Ky” Holland, Rachael Miller and Cassandra Maurer

Abstract
The Innovation to Launch (I2L) model of new venture creation offers an approach to integrating the use of lean entrepreneurship with traditional business planning tools for entrepreneurship for students and new ventures that can be applied broadly to startups and within existing organizations. The model offers a three-phase approach to educational curriculum design and community engagement opportunities for students. For new ventures within existing organizations or a startup, the model offers an approach for assessing the structure of a business accelerator or other support programs and services that will reduce the risk of new venture failure by focusing effort on the use of appropriate new venture development tools and strategies. The experience and research behind this model suggests a need for additional research in the “new venture strategy” and the final “launch” phases, which could provide new clarity to the current gaps to new venture creation approaches.
The Effects of Organizational Learning, Entrepreneurial Team Creativity, and Entrepreneurial Leadership on New Venture Success

Siang Tseng and Chien-Chi Tseng

Executive Summary

According to Timmons’ (1999) model of the entrepreneurial process, an entrepreneurial team with an entrepreneurial leader and quality processes is a necessary component for improving potential ventures. Therefore, in the entrepreneurial learning context, the importance of entrepreneurial teams stems from both their prevalence and their impact (Francis and Sandberg, 2000). In addition, entrepreneurial leadership can help entrepreneurial teams enhance an organization’s strategic posture and, in turn, organizational performance (Tarabishy et al., 2005). To fulfill this objective, entrepreneurial team creativity and entrepreneurial leadership need to be well developed and integrated to effectively influence new venture success. Organizational learning has emerged as an important area of inquiry in relation to entrepreneurial team creativity and entrepreneurial leadership, as well as new venture success. Consequently, there are close connections between the processes of organizational learning and those of creativity (Lumpkin and Lichtenstein, 2005), leadership, and new venture success (Tarabishy et al., 2005). This study found that any of the three domains can serve as a starting point for explaining entrepreneurship generation. The literature supports the framework circle shown in Figure 1. This model explains the effects of different domains on the development of new venture success and performance. Consequently, new ventures which takes the initiative to learn and accumulate the organizational learning knowledge and experience have more opportunity to become successful. Moreover, enterprises can become more effectiveness when new venture success is combined into the circle of team creativity-leadership-organizational learning.
Understanding social bricolage in disaster response

Edmilson Lima and Reed Nelson

Executive Summary

The paper describes the dynamics of social entrepreneurship in response to a natural disaster in a Brazilian neighborhood. Through a mixture of participant observation, interviews, and analysis of secondary documents, we attempt to document unique and theoretically significant aspects of social entrepreneurship in the face of a sudden cataclysmic event. Our research setting enabled us to observe social bricolage in an atypical context and provoked us to extend thinking on bricolage and effectuation in social entrepreneurship settings. Among our theoretical contributions are the notions of extended effectuation and the use of brokerage as a persuasion strategy in social bricolage.
Peering Behind the Curtain: Exploring the Underlying Logic between Elements of Pioneering Venture Capitalists’ Mental Models of Investment Grade Entrepreneurial Opportunities

Marcus Crews

UNDERLYING LOGIC OF VC MENTAL MODELS OF INVESTABLE OPPORTUNITIES

ABSTRACT

Venture capitalists (VCs) are presumed to be experts when it comes to identifying high growth potential entrepreneurial opportunities (Shepherd & Zacharakis, 1999; Shepherd & Zacharakis, 2002; Zacharakis & Shepherd, 2001). Securing investment from private equity financiers to further the pursuit of an entrepreneurial venture is often regarded as a signaling mechanism indicating the quality and growth prospects of the enterprise (Brealey, Leland, & Pyle, 1977; Hsu, 2007; Kirsch, Goldfarb, & Gera, 2009). Over the thirty plus years of examining the evaluative criteria of private equity financiers, surprisingly little variation in the cues used to screen prospective investments has been observed (Tyebjee & Bruno, 1984; Hall & Hofer, 1993; Fried & Hisrich, 1994; Parhankangas, 2007), suggesting the evaluation process has become highly institutionalized. The present study uses a grounded theory building (GTB) approach to examining the logic governing the relationships between venture capitalists’ investment screening criteria. Oral history interviews of pioneering venture capitalists based in northern California are analyzed and the logics used in evaluating the relationship of the venture firm to portfolio company as well as the relationship of the portfolio company to the market are put forth.
ADDENDUM

Erratum: Pages 791-796, 970, and 971 are intentionally omitted.