

Micro-Culture and Consumers' Adoption of Technology: A Need to Re-evaluate the Concept of National Culture

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EXECUTIVE SUMMARY

The impact of culture on, and cross-cultural differences in, buying behavior and purchase intentions are extensively researched in the marketing literature. The intuitive conclusion that the social influences to which one is exposed alters attitudes, beliefs and values and thus one's preferences for goods and services is borne out by that research. However, in almost all research on national culture an homogeneity of the nation is assumed through the use of single, mean values on a limited series of dimensions (Hofstede) or syndromes (Triandis). In this paper we argue that some societies are strongly multi-cultural (e.g. Malaysia) and that the assumption that all nationalities are mono-cultural is fundamentally flawed. This argument is founded on the suggestions by Steenkamp (*inter alia*) that there is a need within the cultural impact research to "account for within-country heterogeneity". This conceptual paper explores whether and how, in multicultural societies such as Malaysia and the United Kingdom, such intra-national heterogeneity affects technology adoption.

The hypothesis of micro- or intra-national cultural impact on consumer behavior is explored through development of a conceptual framework that integrates cultural variables into a consumer intentions model, that being based on a combination of the Theory of Planned Behavior (Ajzen) and the Technology Readiness construct (Parasuraman). While actual behavior might be a more robust outcome measure, a considerable body of research supports the mediating role of intention between behavioral antecedents and actual behavior, and so the selected outcome (dependent) variable in the espoused model is intention (in particular the intention to make internet purchases). Arguing from an analysis of the TPB and TR models, five antecedents of the intention to adopt a technology are identified – attitude towards the behavior, social (subjective) norms, perceived behavioral control, self-efficacy and technological innovativeness.

MODELING THE IMPACT OF MICRO-CULTURE ON BEHAVIOR

Although the number of cultural variables discussed is limited to four (due to space limitations) it is acknowledged that others exist and their impact could be similarly hypothesized. The strength of the argument for addressing intra-national culture is not lessened by restricting the number of cultural variables. The selected variables are collectivism, long term orientation, power distance and uncertainty avoidance. Since specific micro-cultural variables have yet to be formulated and given the Malaysian population is predominantly composed of Malays, Chinese, and Indians (groups for which cross cultural variables already exist) an argument for the initial use of these variables to measure intra-national cultural differences is expounded. If empirical research provides evidence of significant differences between these ethnic groups, the argument for more research to identify specific micro-cultural measures will have been made. Several hypotheses are gen-

erated about how the cultural variables moderate the links between the antecedents of and the intention to engage in a specific behavior.

In order to ground the conceptual discussion, consumers' technology adoption decisions in a multicultural society is selected as the context with specific reference to the influence of within-country (Malaysia) cultural variation on the adoption of web-based retail services.

DISCUSSION AND CONCLUSIONS

The paper concludes with a discussion of the implications of the hypotheses being not rejected. Most importantly it would result in a need to reassess currently accepted mono-cultural norms for nations that are demonstrably multi-cultural. There are further conceptual implications about the time needed for acculturation before a stable, mono-cultural norm can be assumed. Practically, there are implications for marketers wishing to enter multi-cultural markets since an assumption of mono-culturalism may lead to poorly constructed marketing strategies. If, in markets such as the USA and the UK, national marketers spend considerable effort identifying ethnically based segments, it appears illogical that, when looking internationally, such culturally based segments become subsumed into singular national cultures.

Keywords: Behavior theory, Cross-cultural research, Innovation and diffusion, Intentions, Intra-national culture, Internet, Micro-culture, Multi-ethnicity

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Micro-Culture and Consumers' Adoption of Technology: A Need to Re-evaluate the Concept of National Culture

National culture, and its impact on marketing practice, is a major theme in various strands of research in marketing (e.g. buying behavior, branding, segmentation, communications, and product adoption, *inter alia*). It has been explored in both international and intra-national marketing and in both business and consumer marketing. Intuition suggests, and research supports, the idea that differences in behaviors, attitudes, values and beliefs can be, in part, attributed to "culture". How and why culture became a determinant of consumer choice we leave to the evolutionary psychologists. In this conceptual paper we pose the question: "What is a nation?" How do we define a nation's boundaries and what measures might we use to identify "national" membership? If we are unable to determine what constitutes a nation, how can we claim to measure "national" culture? And hence how can we be confident about its impact on marketing strategy?

This paper explores whether, in multicultural societies such as Malaysia and the United Kingdom, we can sensibly talk about or measure "national" culture? The key question (as yet unexplored or unproven) of whether an average value on a single variable (or even multiple variables) across such populations really is a measure of such nations' cultures is addressed. Furthermore, a model for testing the impact of intra-cultural variations (the moderators) on the relationship between behavioral antecedents (the independent variables) and technology adoption behavior (the dependent variable) is proposed. Only if international marketers truly understand the cultural structure of their target markets will they be able to serve them adequately, and multicultural societies challenge the current understanding of national culture.

DEFINING 'NATIONAL' CULTURE

Culture has been defined as "... *the collective programming of the mind which distinguishes one category of people from those of another ...*" with "national cultural" variables being identified as *power distance, individualism/collectivism, masculinity/femininity and uncertainty avoidance* (Hofstede 1980). Ironically, this early research failed to identify a prominent oriental culture variable - *long term orientation* (Ng et al. 1982) – later confirmed, accepted and integrated into Hofstede's model (Hofstede and Bond 1988; Hofstede 1991).

This model has its challengers. Trompenaar (1993, 1997) suggests a seven factor model - *universalism/particularism, analytical/integrative, individualism/communitarianism, inner/outer directedness, sequential/synchronous time orientation, achievement/ascribed status, and equality/hierarchical structure*. Schwartz (1992, 1999) also identifies seven variables by building on three, common-to-all-societies issues of the tension between individual versus group interests, the creation and acceptance of power roles, and society's relationship with the natural and socially created worlds. Triandis defines culture as society's "*characteristic way of perceiving its social environment*" (Triandis 1972) and/or "*the categorizations, associations, norms, roles and values within a society*" (Triandis 1994). Initially, four "cultural syndromes" are admitted - *complexity, tightness, individualism and collectivism* – but in more recent work the number of possible "syndromes" is expanded to include *vertical/horizontal, active/passive, universal/particular, ascription/achievement of status, diffuse/specific, instrumental/expressive, and emotionally expressive/suppressive, inter alia* (Triandis 2002). Yet other research, while accepting numerous cultural variables, suggests that some variables are dominant, e.g. the Horizontal/Vertical vs Individual/Collective model (Triandis 1995).

Over half a century ago, it was suggested that the concept of culture (especially national culture) "*...defies a single, all purpose definition ...*" (Kroeber and Kluckhohn, 1952). It is worth noting that, despite identifying over 100 definitional variations, they could not resist adding their own, albeit in a commendable attempt to unify and standardise the definition. Luckily, there are some core commonalities within those definitions (Schwartz and Bilsky, 1987) without which a sensible discourse between researchers in the field would be impossible. Those

commonalities revolve around culture being a groups' collective and current expression (via its language, behavior, artefacts, etc.) of the multiple environmental and social influences on the groups' formation and development. From a cultural researcher's point of view the group may be defined by any unit of analysis that is of interest (e.g. family, teenagers, nation, organisation, etc.). However, we would argue that however a researcher elects to define the group of interest, such groups' cultural norms and values are only evident through the observation or study of the behavioral outputs of its members. We would also argue that, to have meaning, the groups being compared or studied must exhibit a commonality (i.e. something that can be compared) in how the cultural influences or measures are defined. Hence the assumption that multi-ethnic nations can be compared with mono-ethnic nations using average values on specific dimensions seems flawed.

Despite the definitional differences, current approaches to research in the field reveal two commonalities – a) their acceptance of the measurability of culture at a national level and b) their empiricist methodology. The first we discuss in this paper; the second while mentioned in the discussion, is left to a future work.

MEASURING 'NATIONAL' CULTURE

Most models assume that the cultural characteristics of a nation can be determined by median or mean values on a few dimensions and that there is a national homogeneity, an assumption that Steenkamp (2001) suggests and that McSweeney (2002) argues is in need of further investigation. If and only if we can define a nation by the present geographic boundary of a country, the dominant race within that boundary is unified and stable, the dominant influences have been relatively static over a prolonged period of time, and such a stable grouping imbues its constituent members with certain immutable (at least for a useful time span) and measurable characteristics, do we have a rationale for using a mean value. If this argument holds true, then large but displaced national groupings should retain many of their original cultural attitudes, beliefs and values until sufficient time has passed to permit acculturation (and that assumes that the integration is harmonious). The larger and more coherent the group displaced or the more sudden the displacement, the slower the acculturation is likely to be, and the less likely that a simple, geographically-defined mean will adequately reflect the national culture of a multi-ethnic society.

Furthermore, persistence of original cultural values should be true whether the groupings are displaced through an historical resetting of national boundaries via war or political agreement or through economic or asylum-seeking migration. In such cases, national boundaries become a temporally-dependent political convenience defined by historical events, not cultural boundaries. Numerous examples exist. The Kurdish nation split between Turkey, Iraq and Afghanistan; the formation and dissolution of Yugoslavia and of Czechoslovakia; the division and reunification of Germany; the independence from colonial rule of much of Africa; the re-emergence of Poland, Ukraine, Uzbekistan, Kazakhstan, etc., as independent nations; the "creation" of Malaysia, of Bangladesh, and so on. If culture is determined by social influences, the national culture of these (and most geographically redefined) areas should have measurably changed as boundaries and the encompassed populations change. So how then is a "nation" to be defined in cultural terms?

Even when the movement is more gradual via migrations there is a natural tendency in humans to gravitate towards cultural "attractors", towards like-minded peer and support groups (witness the ex-patriot syndrome) or to cheaper living areas (due to economic circumstances or the host's official direction). This produces pockets of measurably different cultures within the "national" boundaries. If substantial, their inclusion must affect the norm; if excluded (due to sampling, as in the IBM study of Hofstede, 1980) then how can the result be a "national" measure of culture. Only the sampled or dominant culture is actually measured.

Like most statistical averages such measures have little meaning without consideration of the variation within and the central tendency of the data. If international marketers assume that entire populations are defined by the Hofstede norms, they are likely to under-perform on entry into such markets. A mean is simply a single datum and of limited value without other indicators of distribution (e.g. standard deviation, range, minimum/maximum, skewness, kurtosis, etc.) and without considering whether the samples being compared are, actually, comparable.

The Prevalence And Growth Of Multiculturalism

Perhaps examples of the fallacy of using simple averages might illuminate the point. South Africa is 79% indigenous black African, 9% "colored" African, 9% white and 3% Asian and has 2 officially recognised, but a total of 11 spoken, languages. When Hofstede conducted his study of IBM, how representative of this population distribution (and perhaps more importantly, of the economic and/or educational distribution) was his sample. The USA has a multi-cultural population with approximately 18% black, 14% hispanic, 3% oriental, 1% native American and 64% white (but of multiple national origins). Does US national culture override the original cultures? The historical influence of French culture on New Orleans suggests otherwise, being noticeable (and used by the regions tourism marketers) 200 years after severing the ties. The efforts of US marketers in targeting the large and growing Hispanic market and the efforts of UK and European marketers in targeting the Islamic communities (e.g. with "halal mortgages") add weight to the argument that "national" culture is not geographically bounded. The fragmented structure of Malaysian society is even more striking being created less than 60 years ago and having a population structure that is 50% Malay, 25% Chinese, 11% indigenous, 7% Indian and 7% other ethnic origins. At the time of Hofstede's study, Malaysia was less than 30 years old as a nation. Is 30 years sufficient to define and determine a nationality?

A simple inspection of two Hofstede dimensions (e.g. power distance and individualism/collectivism) may emphasize the point. The PD and IC values for Malaysia, China and India are, respectively, 104, 80 (estimated) and 77, and 26, 20 and 48. However, at least 32% of the Malaysian population is derived from the latter two groups (Chinese and Indian), so to which group does the 104 and the 26 refer? The Malays? Or the collective group known as Malaysians? Perhaps the PD score is actually an intra-national inter-cultural measure (a measure of internal cultural difference or variation) with an exaggerated power distance value derived from an exaggerated cultural bias in IBM's individualist managerial hierarchy in a strongly collectivist society. Or does the high value represent the true collective "average" PD score for a Malaysian national culture. If so, why, if the Muslim-dominated "Arab World" (*sic*) has a PD of 80 which is attributed to the influence of Islam (Hofstede, 2001) does Malaysia record a PD of 104 when 60+ % of the population are Muslim and the remainder are also from cultures with PD's of around 80?

Clearly there are some issues in assuming that an average value can be interpreted as a measure of national "culture". The assumption seems flawed. Hence, agreeing with Karande et al. (2002), Steenkamp (1999, 2001) and Javernpaa and Tractinsky (1999) about the need for the national culture field to better understand "within country heterogeneity", it is our contention that the extent of and influence of the intra-national cultural variation should be explored. If such variation is demonstrated as having a substantial influence on behavior, the use of national average values should be questioned, pointing to a need for more robust measures of culture (i.e. that look at the cultural structure of the nation and not just the average value).

The Challenge To Current Concepts Of National Culture

One way to test whether this hypothesis has substance is to adopt currently posited, national cultural norms (in the absence of robust alternative measures) but to explore and test intra-national cultural divisions in a strongly multi-racial society. If within-nation variation is detectible using current cultural measures, then a simple average value for the nation is questionable. At the very least it should be a weighted average of the cultural make-up the society, but that in and of itself poses problems.

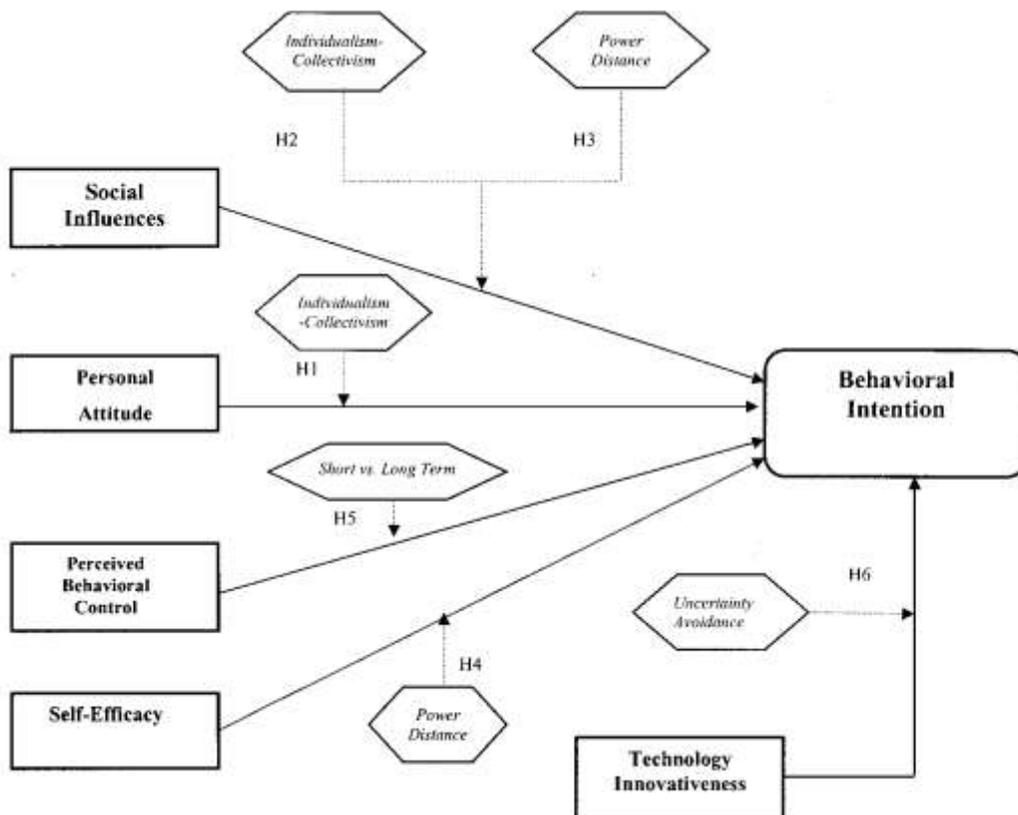
Malaysia is an ideal choice for investigating this hypothesis, being recently formed as a country (1957), being part mainland and part islands, having four substantial and distinctly different "national" groupings with one official language (but with, in reality, at least four linguistic threads - another variant overlooked by most national culture research), and having some of the most extreme values on the Hofstede scales (e.g. the PD value of 104 is the highest of any nation). However, to permit sensible discussion and illustration of the conceptual development, we also need an industrial context. Based on Hofstede's (2001), *inter alia*, conclusion that "*new technology may even increase differences between and within countries*" we look at consumer buying intentions related to technology adoption and explore a) whether there are differences amongst the various "national" groupings within a multi-

cultural state (Malaysia) and b) whether the various dimensions of those “national” cultures impact on those intra-national groupings’ adoption of technology. The specific industrial context selected for discussion is the adoption of the internet for online travel service transactions. With the possible exception of financial services (deemed unsuited for this research because of the overriding concern over the security issue in determining adoption, concern which may override cultural influences) the service on which the internet has had the greatest impact is the travel industry, with interest from both practitioners and academics.

MODELING THE IMPACT OF MICRO-CULTURE ON BEHAVIOR

To address the issue of cultures’ impact on buying behavior we first need to identify an appropriate behavioral model and to suggest which dimensions of culture might have the greatest impact on the relationships within that model. Within the confines of a paper, it is not possible to explore all behavioral relationships and all cultural dimensions and so some selectivity is desirable. Figure 1 presents the currently hypothesized behavioral relationships which are based on the theory of planned behavior model (Ajzen, 1991) and the technology readiness model (Parasuraman, 2000), and on the expected moderating effects of the cultural variables. The derivation of this conceptualization is now discussed.

FIGURE 1
Conceptual Model Of Micro-Cultural Influences On Behavioral Intentions



The Behavioral Model

Restriction of the model to the antecedents (inputs or independent variables) of behavioral intention (outcome or dependent variable) - with the latter defined as the cognitive representation of a person's readiness to perform a given behavior - is deliberate. Whilst actual behavior might be the better outcome measure, intention has been proven a robust precursor of actual behavior (Kalwani and Silk, 1982, Ajzen, 1991) and so intention is adequate for the purposes of conceptualisation. This is further supported by research into both the adoption of innovation (Midgeley and Downing, 1993) and the theory of reasoned action (Shepperd et al., 1998), each strand showing intention as being predictive of actual behavior. These works reinforce the work of Mittelstaedt et al. (1976) who purported that adoption of an innovation is a hierarchical process comprising both the precedent intention to adopt followed by the antecedent actual adoption.

The Model's Foundations ...

The Theory of Planned Behavior (TPB, Ajzen 1991) is an extension of the Theory of Reasoned Action (TRA, Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980;) made necessary by the original model's limitations in dealing with behaviors over which people have incomplete volitional control. Both concepts argue for the role of the individual's *attitude towards the behavior (atb)* and their perceived *subjective norms (sn)* as determinants of behavior. Attitude towards a particular behavior is an individual's positive or negative evaluation of that behavior based on salient beliefs about the outcomes of that behavior. The individual's subjective norms relate to their perception of whether significant referents (family, friends, peer groups, superiors, subordinates, etc.) approve or disapprove of the behavior¹. The TPB differs from the earlier TRA in two important aspects. First it proposes that *intention (int)* is an immediate and proximal cause of actual behavior (again supporting our use of intention as the dependent variable). Second, in capturing the non-volitional aspect of behavior, the TPB proposes the addition of a *perceived behavioral control (pbc)* variable - perceptions about possessing the requisite resources, opportunities and power to perform the behavior in question - and a subset of *pbc*, self-efficacy (*se*), one's belief in ones ability to perform certain tasks and behaviors. Ajzen (1991) demonstrated that the addition of *pbc* results in a meaningful improvement in the prediction of *intention*.

Technology Readiness (TR, Parasuraman, 2000) is defined as '*an overall state of mind resulting from a gestalt of mental enablers and inhibitors that collectively determine a person's disposition to use new technologies*'. Put more simply, it is the propensity to embrace and use new technologies. A multi-dimensional construct, it consists of:

- Optimism* - a positive attitude towards the technology and a belief that it offers people increased control, flexibility and efficiency in their lives;
- Innovativeness* - a tendency to be a technology pioneer and thought leader;
- Discomfort* - a perceived lack of control over technology and a feeling of being overwhelmed by it; and
- Insecurity* - a distrust of technology and a scepticism about its ability to work properly.

TR, it has been argued though not yet proven, is a good predictor of technology related behavior (Colby and Parasuraman, 2003) and a key determinant of the adoption of e-shopping behavior (Zeithaml et al., 2002).

Space precludes a full espousal of the argument, but close inspection of the definition and derivation of the TR dimensions reveals a considerable overlap with the TPB construct. Optimism and discomfort are strongly related to *se* and thus to aspects of *pbc* (see below). Insecurity overlaps with the *atb* element in that it refers to the favorable or unfavorable attitudes that influence a subject's view of technology and its benefits (or otherwise). Only the innovativeness element of the TR appears to have uniqueness. As such, it is proposed to integrate the overlapping elements of the TPB and TR but to include the technology innovativeness (*ti*) element in the model, leaving us with five antecedents of technology adoption intention. Thus:

¹ The role of the influence of what others might think increases the value of utilizing such a model when investigating cultural differences.

$$\text{int} = f(\text{atb}, \text{sn}, \text{pbc}, \text{se}, \text{ti})$$

... *And The Behavioral Antecedents*

Attitude Towards Behavior (*atb*) is defined as the individual's overall evaluation of the likely outcomes of behavior (Ajzen, 1991) and has been demonstrated to affect consumer decision-making regarding their adoption of technology. Favourable attitudes toward Internet technology are positively related to the adoption of online transactions and e-commerce (Javernpaa and Tractinsky, 1999; Pavlou, 2002; Keen et al., 2004). Trust in the internet store (Javernpaa and Tractinsky, 1999), a positive attitude towards the value of online relationships (Pavlou, 2002), and preference for particular retail formats (Keen et al., 2004) all impacted on consumers' willingness to engage in online shopping behavior.

Subjective (and/or Social) Norms (*sn*) also impact on behavioral intentions in a technology adoption context. Beliefs about what is acceptable to the peer group acts as a strong reference point for individuals, increasing compliance and the desire to be accepted as one of the group. The tighter the group is defined and stronger the group relationships the greater the influence of the group norms. Chiason and Lovato (2001) demonstrated the significance of subjective norms in information system's adoption intention and Morris and Venkatesh (2000) demonstrated that workers' adoption intentions and continued use of information technology within the workplace was strongly influenced by subjective norms, although age and length of usage did moderate the effects. The norms of the most immediate peer group or the "local circle of influence" (Taylor and Todd, 1995a) are posited as having the strongest influence. Thus, particularly in more tightly-knitted (collectivist) societies, family, friends and peer groups (in a consumer context) and work colleagues and the organizational culture (in a business context) would have a greater influence on behavior than society in general, but the immediate societal context (e.g. nationality) would have greater influence on ones behavior than more global social norms.

Perceived Behavioral Control (*pbc*) deals with a consumer's perception of whether a particular behavior is within their control which is affected by their beliefs regarding access to resources and opportunities (Ajzen, 1991) and to self-confidence (Triandis, 1979). The importance of the role of *pbc* in IT adoption intention has been demonstrated by Mathieson (1991) and Taylor and Todd (1995b) and in an e-commerce context by Pavlou (2002) and Choi and Geitsfield (2003).

Self-efficacy (*se*): is identified in some research as being one dimension of the *pbc* construct. Self-efficacy is defined as what individuals believe they can do with the skills they possess. It directly affects decisions about what behaviors to undertake, the amount of effort to expend, the level of persistence when faced with obstacles, and the belief in the level of mastery over the execution of particular behaviors (Bandura, 1982, 1997). Several scholars have found a direct relationship between self-efficacy and the adoption of technology (Igbaia and Ivori, 1995; Venkatesh and Davis, 1996) and engagement in online transaction behavior (Hill, Smith and Mann, 1987; Venkatesh and Davis, 1996; Tabak and Barr, 1999; Eastin and La Rose, 2000). Hence, in our model we propose separate measurement of the self efficacy (*se*) construct.

Technological Innovativeness (*ti*) is defined by Parasuraman (2000) as the tendency to be a technology pioneer or to have a propensity towards being in the vanguard of new technology adoption. Diffusion is one of the most researched concepts in consumer behavior (Robertson, 1971; Midgeley and Downing, 1978, 1993; Hirschman, 1980a; Rogers, 1995, Steenkamp et al., 1999) but studies have shown that it is domain specific (Citrin et al., 2000; Goldsmith and Bridges, 2000; Goldsmith and Hofacker, 1991; and Hirschman, 1980b). Hence being an adopter of an innovation in one category does not necessarily mean that that individual is an adopter of innovations in other categories. Hence, exploration of internet technology adoption intentions requires inclusion of a measure of technological innovativeness within the model. Clearly, when generalizing the model to non-technologic adoption, any coefficient of *ti* is likely to be non-significant or zero (i.e. not present)..

The Cultural Moderators

Cultural influences are very important in consumers' decision making since they affect attitudes, norms and other cognitive processes (Henry, 1976; Tse et al., 1988; McCort and Malhotra, 1993; Malhotra and McCort, 2001). Testing the hypotheses of major cultural differences *within* a given nation requires selection of some of the many cultural dimensions identified within the literature. Given the range of dimensions (at least 7), use of all possible dimensions is not only cumbersome, but viewed as unnecessary since, initially, we are seeking an indicative, as opposed to a prescriptive, result (with initial testing likely to be via some exploratory research). Furthermore, it is likely that cultural variables will affect most if not all of the possible behavioral relationships, but again experimental limitation dictates expediency and selection of but a few in this discussion. If the effect of some cultural dimensions on relationships is proved to vary significantly within a national context, then all dimensions will require re- investigation in a future, more complete study. We have absolutely no doubt that such a model could hypothesise the inclusion of any or all cultural dimensions or syndromes identified in prior cultural research. However, here (due to space and experimental expediency) we propose and justify the use of just four dimensions – *individualism/collectivism (ic)*, *long term orientation (lto)*, *power distance (pd)*, and *uncertainty avoidance (ua)*.

The first (*ic*) has been identified as a necessary but not necessarily sufficient dimension in almost all measures of national culture (Triandis 1995; Trompenaar and Turner 1997, Hofstede, 1980, inter alia). The second (*lto*) (Ng et al., 1983; Hofstede and Bond 1988) has particular relevance given the presence of oriental cultures within the geographic context of the study. The third (*pd*) and fourth (*ua*), while based on the much criticized Hofstede model, are demonstrably the most frequently tested and verified of the range of cultural dimensions (Sondergaard, 1994; Javernpaa and Tractinsky, 1999; Pavlou and Chai, 2002; Choi and Geitsfield, 2002, Raja Abdul Malek, 2004). Furthermore, we would argue that these dimensions have echoes in other researchers' dimensions. For example, the power distance construct (defined as the degree of perceived inequality existing within a society and the members' willingness to accept a hierarchical structure that involves superior/subordinate relationships) has clear echoes in Triandis' Horizontal/Vertical or in Trompenaar's Equity/Hierarchy dimensions. Since Hofstede's model is still viewed as "the most influential culture theory" (Nakata and Sivakumar, 2000) and is widely accepted and used by marketing researchers to locate and compare country level differences (Dawar, Parker and Price, 1994; Lynn, Zinkham and Harris, 1993; Roth, 1995) and using what other sciences accept as the norm when adopting nomenclature (the law of precedence), the Hofstede term "Power Distance" is adopted here. A similar argument can be made for Uncertainty Avoidance. Finally, utilization of the Hofstede dimensions *within* a national context does have some precedents: in organizational behavior research (Clugston et al., 2000) and in consumption pattern studies (Wallendorf and Reilly, 1983). So, while acknowledging the criticisms of Hofstede's research, since our research suggests that it is the Hofstede-style averaged values that need re-evaluating, some inclusion of Hofstede's dimensions is seen as a pre-requisite. The hypothesized relationships shown in Figure 1 are now discussed.

The Hypothesized Influences Of Cultural Dimensions On Technology Adoption

The model presented here explores just some of the cultural moderator (*m*) effects on just some of the behavioral antecedent (*a*) – consequence (*c*) paths. It is not suggested that these exhaust the moderator-path effects (*a^m-c*) that might be considered, but again it is argued that clarity is best served by limiting the number of interactions discussed.

Collectivist societies are known to have strong relationships with the "in-group" (Hofstede and Bond, 1988) and a focus on maintaining harmony by going along with the group's wishes and promoting long-term relationships to ensure group's well-being (Bond and Smith, 1996). In general, once a group within a collectivist society establishes a positive attitude toward an object (e.g. a particular on-line service provider) they will tend to internalize it within their group and members of that group would be more likely to engage in behavior that illustrates their acceptance of the group norm (e.g. utilizing that service provider). Individualistic cultures do not feel such a natural tendency towards the maintenance of group harmony. Taylor et al. (2000) note that, in collectivist cultures, privacy is less important among in-group members (than in individualist cultures) since they are more likely to share personal thoughts and feelings and trust one another. Some research is beginning to emerge that supports the relevance of the *IC* cultural dimension on consumers' attitudes towards internet transactions (Choi and Geitsfield,

2003; Pavlou and Chai, 2002). Hence, in a collectivist society, members' attitudes will be more uniform than in an individualist society so it is hypothesized that.

H1: The relationship between *atb* and *int* is positive (positive attitude leads to positive intentions) and is stronger in low *ic* (i.e. collectivist) cultures

The level of collectivism also affects subjective norms and compliance (Radford et al., 1991) with research showing differences in the effect of social pressure on consumer decision making (Hui and Triandis, 1986; and Steenkamp et al., 1999). Members of collectivist societies are more concerned about the opinions of society as a whole and of their peer groups. Only if the society/peers approve of a behavior or its likely outcomes will individuals engage in that behavior (i.e. approved of behavior increases the likelihood of members engaging in that behavior) and so it is hypothesized that:

H2: The relationship between *sn* and *int* is positive (positive social norms leads to positive intentions) and is stronger in low *ic* (i.e. collectivist) cultures.

Power distance reflects the extent to which people accept hierarchies, unequal power distribution, status differences, and subordinate/superior relationships (Hofstede, 1991) and thus has an impact on subjective or social norms. Choi and Geitsfield (2003) argue that individuals who perceive themselves as being less powerful take greater account of significant referents and social influences when making e-commerce transaction decisions (e.g. if A is B's perceived superior and A exhibits trust in a system, then B has a higher propensity to trust the system). Hence it is hypothesized that:

H3: The relationship between *sn* and *int* is positive (positive social norms leads to positive intentions) and is stronger in high *pd* cultures.

Power distance also affects self-efficacy (*se*). Hofstede (2001) noted that cultures with a low PD index also tend to be independent and have a greater need for (adoption of) technology, an observation supported by Hill et al. (1987) in whose work self-efficacy is significantly related to the decision to use a particular technology. Further support can be found in Tabak and Barr (1999, p.252) who argue that "...consumers with high self-efficacy are more active, attempt to proactively manage situations, and are more likely to initiate innovative decisions, as opposed to those with low self-efficacy who avoid difficult tasks and are passive...". This suggests that innovation adoption related decisions of low self-efficacy subordinates would be more influenced by higher authorities' attitudes and opinions and thus it is hypothesized that:

H4: The relationship between *se* and *int* is positive (high self-efficacy leads to positive intentions) and will be stronger in high *pd* cultures.

Long term orientation (*lto*) is argued as affecting individuals' perceived behavioral control. The argument that cultures with high *lto* scores would have higher perceptions of control over their online transaction behavior was not supported by Pavlou and Chai's (2002) study, which concluded that, in e-commerce transactions, goal-oriented use of technology overrode the cultural factor, confirming Crisp et al's (1997) findings of a strong utilitarian influence on online transaction behavior. Online consumers, it seems, are short-term goal oriented. They demand control, low effort and high efficiency from online interactions (Koufaris, 2002) and are much more likely to react to incentives such as coupons and discounts (Huff and Alden, 1999). This suggests that the relationship between perceived behavioral control and the intention to engage in online transactions is moderated by the *lto* dimension and thus it is hypothesized that:

H5: The relationship between *pbcb* and *int* is positive (higher perceived control leads to more positive intentions) and is stronger low *lto* cultures.

Individuals displaying a high level of technology innovativeness (*ti*) have stronger intrinsic motivation to use new technologies and enjoy the stimulation of trying new technologies compared with less innovative individuals (Dabholkar and Bagozzi, 2002). Trying new technologies is arguably associated with great risks and uncertainties but innovators are not only able to cope with, but actually seek, higher level of risks and uncertainties (Argawal and Prasad, 1998). According to Hofstede (2001), when cultures are high in uncertainty avoidance (*ua*), consumers prefer established patterns and will adopt risk avoidance and reduction strategies. Conversely, in low *ua* cultures, "what is different is curious" and worth exploring (Hofstede, 1991, p.119). Steenkamp et al's (1999) observation that consumer innovativeness is higher in countries with low uncertainty avoidance supports this view and so the relationship between technology innovativeness and intention to transact online should be moderated by uncertainty avoidance, leading to the hypothesis that:

H6: The relationship between *ti* and *int* is positive (higher innovativeness leads to higher intentions) and is stronger in low *ua* cultures.

Having identified the buying behavior variables and the cultural moderators and developed the conceptual model, the remainder of this paper discusses issues relating to the translation of this model into a research instrument, the possible implications of this model in marketing, and the impact of the model on internet retail transaction adoption within a multi-ethnic society.

DISCUSSION AND CONCLUSIONS

As mentioned earlier, the second commonality within national culture research is the methodological approach. Almost all extant research shuns the interpretive, ethnographic, anthropological approaches, preferring to study culture as a multi-dimensional, cognitive psychological phenomenon that can be measured via assessment of values and attitudes using the empiricist approaches that dominate psychological research. Many of these works include models that have been tested, by their originators and subsequently by many researchers in a variety of contexts, via statistical analysis that explores the hypothesized relationships and each has been "proven" as useful (at least within the published research). However, it is the methodology, particularly that of Hofstede, that is the focus of McSweeney's (2002) criticism. McSweeney highlights problems with a) the assumption that IBM's office locations are representative samples of the nations in which they are located, b) the assumption of national homogeneity and of a common national culture (discussed above), and c) the assumption that culture is, *in toto*, the sum of organizational, occupational and national influences. However, unlike Triandis, Trompenaars, etc., (who offer alternate models, albeit falling into some of the traps espoused by McSweeney) McSweeney (2002) fails to offer a viable alternative in terms of models or methods; the criticisms, whilst well argued, do not produce a viable substitute. In the absence of viable alternates, the field-dominant empiricist approach is proposed as the most useful approach to the exploration of intra-national cultural influences on purchase intention and behavior.

The various elements and measures suggested are relatively easily adapted from relevant prior studies. The scale for measuring *adoption intention* is addressed by Ajzen and Fishbein (1980), Karahanna et al. (1999), Davis and Venkatesh (2000), and Venkatesh et al. (2003). *Attitude* scales are sourced in Ajzen and Fishbein (1980), Taylor and Todd (1995b), and Ajzen (2002). Items for measuring *subjective or social norms* are adaptable from Ajzen (1985; 2002), Karahanna et al. (1999) and Venkatesh et al. (2003). A *perceived behavioral control* measure is developed by Venkatesh et al. (2003) and Taylor and Todd (1995b). The *self-efficacy* measures are discussed in Compeau and Higgins (1995a), Venkatesh et al. (2003) and Taylor and Todd (1995b). The *technology innovativeness* construct is covered by multi-item scales in Hofacker and Goldsmith (1991) and Parasuraman (2000). Finally, the items required to measure *individualism-collectivism*, *power distance*, *uncertainty avoidance* and *long term orientation* are well developed in the constructs as discussed by Hofstede (2001), Hofstede and Bond (1988) and Bond and Smith (1996) and other cultural researchers..

From a theoretical perspective, a significant contribution is made by extending the behavioral intention model with regards to consumer choice behavior. Findings on intra-national cultural influences should challenge Hofstede's (2001) and others' claims that national culture is homogenous in nature and that a single mean value is an adequate measure. The idea of a "pure" national culture may exist but it is argued that not all "nations" (defined as the current geographic and political boundaries) can be so treated and that global fragmentation creating multiple cultural segments, driven by pre-existing tribalities, may have serious implications for marketers seeking to enter new, multi-ethnic societies. National marketers spend considerable sums identifying sizeable "segments", one characteristic of which is ethnicity. It appears illogical that when looking internationally such ethnicities become subsumed into a singular "national culture".

It is further expected that consumers' preference for multiple choices in purchasing format could also be derived from the said findings. There is a question of whether technology usage might override cultural differences, that all humans interact with technology in the same or similar ways and so the way in which technology diffuses is not influenced by cultural norms. If this is the case, its identification could save unnecessary diversion of resources into marketing strategy development. If, however (and as Hofstede suggests), cultural influence plays a mediating role in consumers' buying intentions, present businesses would need to review, and adapt existing marketing plans and strategies to fit the offline and/or online mode of business, and/or complement it with "click and mortar" retail based business approach. Effective competitive strategies are crucial in the targeting of potential consumers while retaining existing ones in any business. If intra-national cultural variation influences technology adoption intentions and behavior (i.e. diffusion of technological innovation), measuring and using measures that assume mono-culturalism become problematic for both academics evaluating cultural variation and for practitioners attempting to understand or enter their overseas target markets.

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