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The Role of Intercultural Gap in Knowledge Transfer, Absorptive Capability, and MNE Performance: Comparative Insight from U.S. Subsidiary at the Maquiladora

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ABSTRACT
This study develops and tests a comprehensive framework aimed at explaining impact of cultural distance on knowledge transfer, absorptive capability, and multinational enterprise (MNE) performance. This article uses Hofstede’s (1984) cultural dimensions to define the relationship between cultural distance and MNE performance. I suggest propositions concerning the moderating role of cultural distance between absorptive capability and MNE performance. Specifically, I focus on U.S. subsidiary at the maquiladora to examine impact of cultural distance on knowledge transfer, absorptive capability, and MNE performance.

KEYWORDS: Culture, Knowledge transfer, Absorptive capability, Multinational enterprise (MNE), Performance, Maquiladora

INTRODUCTION
This article argues that offshore manufacturing creates borderless opportunities for multinational enterprises (MNEs) to grow and achieve profitability. “Maquiladora” refers to the companies strategically, located at the border of between U.S. and Mexico region spanning from the Pacific Ocean to the Gulf of Mexico (Jung & Hong, 2008). Foreign direct investment (FDI) is one of the most dynamic phenomena of globalization and offshore manufacturing is one of forms of FDI. MNEs seek to leverage their resources and opportunities creatively of foreign markets through both international and product diversification strategies (Chao et al., 2012). Management scholars have studied how companies at the maquiladora can better implement innovative management methods and we attempt to explain the impact of cultural distance between U.S. subsidiary and host country. MNEs have been conceptualized as global networks of knowledge acquisition, transfer and integration across countries (Gupta & Govindarajan, 2000; Qin et al., 2011). MNE’s abilities to access and transfer knowledge across borders have been increasingly recognized as the important source of competitive advantages (Qin et al., 2011). National culture is one of the important factors that influence cross-border knowledge transfer (Barkema, Shenkar, Vermeulen & Bell, 1997; Duan, Nie, & Coakes, 2010; Li & Scullion, 2006; Qin et al., 2008). Scholars have argued that the execution of cross-border knowledge transfer between companies or units located in different culture is more difficult and intricate than that between companies or units located in similar culture (Bhagat, Kedia, Harveston & Triandis, 2002; Bresman, Birkinshaw & Nobel, 1999; Qin et al., 2008). The importance of understanding the impact of cultural distance on knowledge transmission within MNEs is significant. Absorptive capacity is the significant determinant of organizational learning. Zahra and George (2002, p. 186) define it as “a set of organizational routines and processes by which firms acquire, assimilate, transform and exploit knowledge to produce a dynamic organizational capability.” Cohen & Levinthal (1990, p. 128) argue that “the ability to recognize the value of new external information, assimilate it and apply it to commercial ends”. In particular, this study chose Mexico
(e.g., maquiladora) as a location context for conducting research into the phenomenon of MNE’s knowledge transfer, absorptive capacity, and MNE performance. More specifically, we develop the theoretical model to explain the role of cultural distance in the relationship between knowledge transfer, absorptive capacity, and MNE performance.

**THEORETICAL BACKGROUND & PROPOSITIONS**

**Knowledge Transfer in Foreign Subsidiary**

Prior literature presents the meanings of knowledge in different contexts. Knowledge can be defined as a “dynamic human process of justifying personal beliefs as part of an aspiration for the truth” (Qin et al., 2008, p 10; Nonaka, 1994; Von Krogh & Grand, 2000). Knowledge in organization is developed through the synthesis of thinking and actions of individuals who interact with each other within and beyond the organizational boundaries (Qin et al., 2008; Nonaka, 1994; Nonaka & Takeuchi, 1996) Knowledge is the important resource, because its holder can achieve sustained competitive advantage by preventing external competitors from copying the knowledge easily (Qin et al., 2011). Barney (1991) exerts that knowledge is the ability to acquire, store, share and apply to the organization and it is one of critical capabilities for developing and sustaining competitive advantage. MNEs need to interact and exchange with local counterparts through engagement, because subsidiaries may contribute to the development of new knowledge and competence in MNEs (Persson, 2006). Buckley & Casson (1976) argue that MNEs exist because of their capabilities to transfer and exploit knowledge more effectively in intra-firm contexts than in domestic markets. Postrel (2002) addresses that knowledge is embedded in several contexts, including cognitive, behavioral, social and technological. Persson (2006) argues that MNE can reduce the dependence on the home-country technological specialization, and develop the variety of knowledge assets held in different areas of the firm. Foreign subsidiaries attempt to share their knowledge with other subsidiaries and these phenomena affect MNE’s performance significantly. Transferring knowledge across subsidiaries plays an important role in order to enhance the quality of its innovation processes, replicate capabilities across subsidiaries, and combine and recombine different but related knowledge assets (Subramanian & Venkatraman, 2001; Winter & Szulanski, 2002; Persson, 2006). Subsidiaries in foreign markets can reduce their dependence on headquarter (HQ) by acquiring and sourcing core resources from the local environment (Forsgren, 1990; Salansic & Pfeffer, 1978; Persson, 2006). Knowledge transfer is important function for subsidiaries in foreign markets. Knowledge transfer can affect organizational strength and capabilities. Knowledge transfer can be defined as “occurring when a subsidiary shares knowledge with another subsidiary, with the aim of replicating specific behavior that has been shown superior to the current practices of the recipient unit” (Persson, 2006, p. 550). Grant (1996) posits that tacit knowledge is primary source regarding sustainable competitive advantage in firms, because it is exclusive and relatively immobile. Ghoshal & Bartlett (1990) suggest that subsidiaries are primary sources of market knowledge about their own host countries and HQ’s new product success depends significantly on the intensity of the knowledge transferred between two parties. Kogut & Zander (1993) argue that subsidiaries not only have important knowledge regarding their host countries, but also provide the opportunity for HQs to coordinate with and acquire from them. Martin & Salomon (2003) posit that a more intensive knowledge transfer enables HQs to create a foundation that can increase the understanding of the similarities and differences across countries and it helps new products overcome global challenges. Increased knowledge transfer also provides the HQs more exposure to diverse knowledge related to different host markets, leading to creative outcomes (Lee et al., 2008).
Thus, this research proposes that there is a positive relationship between knowledge transfer and U.S. subsidiary’s performance at the maquiladora.

**Proposition 1:** Knowledge transfer is positively related to U.S. subsidiary’s performance at the maquiladora.

**Absorptive Capacity in Foreign Subsidiary**

Absorptive capacity refers to “the ability to recognize the value of new, external information, assimilate it and apply it to commercial ends” (Cohn & Levinthal, 1990, p. 128). Cohn & Levinthal (1990) assert that important aspects that make absorptive capacity distinctly organizational include the structure of communication between the external environment and the organization. Mowery & Oxley (1995) suggest that absorptive capacity is a broad array of skills, reflecting the need to deal with the tacit components of transferred technology, as well as the frequent need to modify a foreign-sourced technology for domestic application. Kim (1998) argues that absorptive capacity requires learning capability and develops problem-solving skills. He explains that learning capacity is the capacity to assimilate knowledge and it is for imitation (Kim, 1998). In addition, a problem-solving skill is to create new knowledge and it is for innovation (Kim, 1998). Zahra & George (2002) illustrate four important capabilities that compose a firm’s absorptive capabilities, including acquisition, assimilation, transformation, and exploitation. Acquisition refers to “a firm’s capability to identify and acquire externally generated knowledge that is critical to its operations” (Zahra & George, p. 189, 2002). Assimilation refers to “the firm’s routines and processes that allow it to analyze, process, interpret, and understand the information obtained from external sources” (Zahra & George, p. 189, 2002). Zahra & George (2002, p. 190) argue that transformation is “a firm’s capability to develop and refine the routines that facilitate combining existing knowledge and the newly acquired and assimilated knowledge.” Exploitation is “based on the routines that allow firms to refine, extend, and leverage existing competencies or to create new ones by incorporating acquired and transformed knowledge into its operation” (Zahra & George, 2002, p. 190). Arora & Gambardella (1994) propose two dimensions of absorptive capacity and they are the ability to evaluate information and the ability to utilize information. Cassiman & Veugelers (2000) also suggest two dimensions of absorptive capacity in Belgian manufacturing firm and they the ability to scan the market for technology and the ability to absorb the technology acquired. Barney (1991) suggests that when resources are valuable, rare, inimitable, and nonsubstitutable. Matusik & Hill (1998) argue that a firm’s capability to effectively create, manage, and exploit knowledge is an important resource. Zahra & George (2002) posits that absorptive capability can be a source of a firm’s competitive advantage. The abilities to access and absorb external knowledge are significantly enhanced by the quality of their absorptive capacity and it plays a key role regarding knowledge transfer in the firms. Furthermore, absorptive capacity is often proxied by the technology gap between the foreign and the domestic firms, R&D intensities of the local firms, or human capital embodied in local firms (Fu, 2008). Significant spillover from foreign direct investment (FDI) is affect by absorptive capacity. Absorptive capacity may contribute to the local innovation system by transferring managerial know-how to local firms through spillover effects (Fu, 2008). Hence, this paper proposes that there is a positive relationship between absorptive capacity and U.S. subsidiary’s performance at the maquiladora.
Proposition 2: Absorptive capacity is positively related to U.S. subsidiary’s performance at the maquiladora.

The Role of Cultural Difference in MNE
Cultural distance is a frequently used construct in international business and it affects multiple areas of business. Cultural distance has been dealt in such areas as FDI, headquarter-subsidiary relation, and expatriate selection and adjustment (Shenkar, 2001). Shenkar (2001) asserts that cultural distance predicts choice of mode of entry into foreign markets. The cultural distance can be defined as “the degree to which cultural values in one country are different from those in another country” (Sousa & Bradley, 2006). Cultural distance also refers to “international marketer’s perceived sociocultural distance between the home and target country in terms of language, business practices, legal and political systems and marketing infrastructure” (Lee 2008; Holzmuller & Kasper, 1990; Johanson & Vahlne, 1977; Klein & Roth, 1990). Cho & Padmanabhan (2005, p. 309) propose that cultural distance is “the sum of factors creating, on the other hand, a need for knowledge, and on the other hand, barriers to knowledge flow and hence also for other flows between the home and the target countries”. Previous studies both cultural distance and psychic distance have been linked to important constructs, such as ‘the degree of adaptation of the international marketing strategy’, ‘the sequence of foreign investment’, ‘entry mode’, ‘control over export channels, and ’firm performance’ (Sousa & Bradley, 2006; Leonidou & Katsikeas, 1996; Benito & Gripsrud, 1992; Agarwal, 1994; Bello & Gilliland, 1997; Evans & Mavondo, 2002). Klein & Roth (1990) suggests that the perceived difference or gap between the home country and the host country is referred to as ‘psychic distance’ or ‘cultural distance’. On the other hand, Sousa & Bradley (2006) argue that conceptually cultural distance is different from psychic distance and that measurement methods for both concepts must necessarily be different. Tihanyi et al. (2005) posit that cultural distance between different countries affects MNE strategies and managerial decision-making process. Furthermore, Colakoglu & Caligiuri (2008) argue that cultural distance can be greater in a subsidiary where the culture distance between the home and the host country is greater. Gong (2003) posits that cultural distance can affect MNE performance in many aspects. Gong (2003) argues that greater cultural distance can lead to greater information asymmetry and decrease knowledge of the subsidiary’s environment, actions, and performance. Gong (2003, p. 729) illustrates that “… as cultural distance increases, complete and accurate information about subsidiary actions and performance becomes more difficult and expensive to obtain, and subsidiary activities thus become harder to interpret, making behavioral and outcome controls by the headquarters difficult”. Cultural distance plays an important role in MNE’s subsidiaries and this paper argues that similar or dissimilar cultural elements moderate the relationship between knowledge transfer, absorptive capacity, and its performance.

Hofstede’s Dimensions of National Culture
Hofstede (1983) argues that nationality is important, because it is political, sociological, and psychological. Hofstede (1984) conducted survey and analyzed it data on work-related values obtained from IBM employees working in 40 different countries. Hofstede (1991) developed cultures of nations differing by four dimensions. The first dimension is power distance and this dimension is “the extent to which members of a society accept that power in institutions and organizations is distributed unequally” (Hofstede, 1985, p. 347). The second dimension is uncertainty avoidance. Uncertainty avoidance is “the degree to which the members of a society
feel uncomfortable with uncertainty and ambiguity, which leads them to support beliefs promising certainty and to maintain institutions protecting conformity” (Hofstede, 1985, p. 348). The third dimension is individualism and this cultural value stands for “a preference for a loosely knit social framework in society in which individuals are supposed to take care of themselves and their immediate family only; as opposed to collectivism, which stands for a tightly knit social framework in which individuals can expect their relatives, clan, or other in-group to look after them, in exchange for unquestioning loyalty” (Hofstede, 1987, p. 348). The fourth dimension is masculinity. Masculinity refers to “a preference for achievement, heroism, assertiveness, and material success; as opposed to femininity, which stands for a preference for relationship, modesty, caring for the weak, and the quality of life. In a masculine society even the women prefer assertiveness (at least in men); in a feminine society, even the men prefer modesty” (Hofstede, 1987, p. 348). His analysis proposes that countries that rank high on individualism rank relatively low on power distance dimension (Bang et al., 2004). On the other hand, countries with high uncertainty avoidance have controls and rules to reduce uncertainty because people tend to have a low tolerance for ambiguity and uncertainty (Bang et al., 2004). In addition, countries with high score on long-term orientation have a deep understanding and respect for their tradition and long-term commitment (Bang et al., 2004). Previously, scholars became critical of Hofstede’s study and especially, Schwartz (1994) raised several concerns and arguments. He argues that Hofstede’s survey was not designed in order to identify dimensions of national culture so that cultural dimensions are not exhaustive (Drogendijk & Slangen, 2006; Schwartz, 1994). He also posits that Hofstede came up with cultural dimensions from data obtained between 1967 and 1973 (Schwartz, 1994). Hence, there should be major changes in culture worldwide (Drogendijk & Slangen, 2006). This research adopts Hofstede’s cultural dimensions to find to explain impact of cultural distance on knowledge transfer, absorptive capability, and MNE performance.

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Cultural Context in U.S. Subsidiary at the Maquiladora

Mexican culture generally is regarded as collectivist in general and this society is likely to be strong in-group ties (Hofstede, 1984). In contrast, U.S. culture is very individualistic society, which means people tend to look after themselves and their family (Hofstede, 2001; Hofstede et al., 2010). In U.S. society, ties among individuals are relatively loose, personal freedom is respected, and individual decision is encouraged (Hofstede, 1980; Singh & Bartikowski, 2009). Based on these theorizations, I propose:

**Proposition 3:** Individualism (IDV) of U.S. culture negatively moderates the relationship between knowledge transfer and MNE performance in U.S. subsidiary at the maquiladora.

**Proposition 4:** Individualism (IDV) of U.S. culture negatively moderates the relationship between absorptive capacity and MNE performance in U.S. subsidiary at the maquiladora.

Mexican cultures’ power distance score is relatively high and it indicates that Mexico is heretical society. Mexican culture tends to value authoritarian attitudes, obedience, social hierarchies, and respect for the elderly or people with authority (Herbig & Yelkur, 1997; Singh & Bartikowski, 2009). On the other hand, the U.S. society is relatively low power distance and it indicates that
people in the U.S. society focus on equal rights in every aspects of its society and government (Hofstede, 2001; Hofstede et al., 2010). Based on these theorizations, I thus propose:

**Proposition 5:** Power distance (PDI) of U.S. culture negatively moderates the relationship between knowledge transfer and MNE performance in U.S. subsidiary at the maquiladora.

**Proposition 6:** Power distance (PDI) of U.S. culture negatively moderates the relationship between absorptive capacity and MNE performance in U.S. subsidiary at the maquiladora.

Mexican culture is considered as masculinity society. Masculinity score from Hofstede (1984) is relatively high and it shows that Mexican society is masculine. A high score in this dimension indicates that Mexican society is driven by competition, achievement, and success (Hofstede, 2001; Hofstede et al., 2010). Similarly, U.S. society’s masculinity dimension score is also relatively high. High score on this dimension explains that Americans tend to pursue their successes and achievement in their lives (Hofstede, 2001; Hofstede et al., 2010). Thus, I propose that:

**Proposition 7:** Masculinity (MAS) of U.S. culture positively moderates the relationship between knowledge transfer and MNE performance in the U.S. subsidiary at the maquiladora.

**Proposition 8:** Masculinity (MAS) of U.S. culture positively moderates the relationship between absorptive capacity and MNE performance in U.S. subsidiary at the maquiladora.

Mexican culture’s uncertainty avoidance score is relatively high and it indicates that its society is high avoidance of uncertainty. High avoidance uncertainty is more common among countries that experienced a rapid political change, such as new democracies (McCarty & Hattwick, 1992). In contrast, the U.S. tends to have a greater tolerance for uncertainty (Hofstede, 1984). Based on these theorizations, I suggest that:

**Proposition 9:** Uncertainty avoidance (UAI) of U.S. culture avoidance negatively moderates the relationship between knowledge transfer and MNE performance in U.S. subsidiary at the maquiladora.

**Proposition 10:** Uncertainty avoidance (UAI) of U.S. culture avoidance negatively moderates the relationship between absorptive capacity and MNE performance in U.S. subsidiary at the maquiladora.

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**METHODOLOGY**

**Focus Group Design**

This study attempts to use focus groups analysis to investigate the effect of intercultural differences on knowledge transfer, absorptive capability, and MNE performance. Focus group analysis is appropriate for this research design because this method delivers a great breath, depth and complexity of information, specifically when the topic under consideration is relatively uninvestigated (Morgan, 1996). This article adopts a qualitative research methodology, such as focus group, because this method has the unique characteristic. Focus group design can be
categorized into the standardized focus group and the emergent design (Morgan, 1996). The standardized focus group design entails using an identical set of questions across the focus groups (Singh et al., 2008). Focus group design is the most often used techniques in marketing research and it is one of the prevalent marketing technique for a qualitative research design approach (Churchill et al., 2008). Focus group design refers to an interview conducted among a small number of individuals simultaneously. Furthermore, this technique relies more on group discussion than on directed questions to generate data (Churchill et al., 2008). This study attempts to generate the focus group questions through literature on Mexican culture beliefs and values and Hofstede’s (1984) cultural dimensions. This article’s main subjects are U.S. expatriates and Mexican employees at the maquiladora.

DISCUSSION & CONCLUSION
The purpose of this article is to examine the effect of intercultural differences on knowledge transfer, absorptive capability, and MNE performance in the context of U.S. subsidiary at the maquiladora. This research adopts Hofstede (1984)’s cultural dimensions, including power distance, individualism, masculinity, uncertainty avoidance, and long-term orientation. Knowledge transfer is the important phenomena that can be occurred with subsidiariies in foreign market. Based on theorizations, I suggest propositions in terms of the relationship between intercultural differences and knowledge transfer, and MNE performance like below. First, individualism (IDV) of U.S. culture negatively moderates the relationship between knowledge transfer and MNE performance in the U.S. subsidiary at the maquiladora. Second, power distance (PDI) of the U.S. culture negatively moderates the relationship between knowledge transfer and MNE performance in U.S. subsidiary at the maquiladora. Third, masculinity (MAS) of the U.S. culture positively moderates the relationship between knowledge transfer and MNE performance in the U.S. subsidiary at the maquiladora. Finally, uncertainty avoidance (UAI) of the U.S. culture avoidance negatively moderates the relationship between knowledge transfer and MNE performance in the U.S. subsidiary at the maquiladora. This study also examines the role of intercultural difference between absorptive capability and MNE performance. This paper shows propositions regarding the effect of intercultural difference on absorptive capacity and MNE performance like below. First, individualism (IDV) of U.S. culture negatively moderates the relationship between absorptive capacity and MNE performance in the U.S. subsidiary at the maquiladora. Second, power distance (PDI) of U.S. culture negatively moderates the relationship between absorptive capacity and MNE performance in U.S. subsidiary at the maquiladora. Third, masculinity (MAS) of the U.S. culture positively moderates the relationship between absorptive capacity and MNE performance in the U.S. subsidiary at the maquiladora. Lastly, uncertainty avoidance (UAI) of the U.S. culture avoidance negatively moderates the relationship between absorptive capacity and MNE performance in U.S. subsidiary at the maquiladora. This research has the unique contribution in terms of geographic and demographic research background. Maquiladora is the mixture of cultures because it is located between U.S. and Mexico. This study chose this specific area to examine the effect of intercultural differences due to its geographical and demographical characteristics. In conclusion, I attempt to make both theoretical and empirical contributions to the intercultural distance literature by a better understanding of how two different cultures play different roles in U.S. subsidiaries at the maquiladora. Future research may test different cultural effects on other FDI effects, besides knowledge transfer. In addition, further research may also investigate the relationship between intercultural differences and other MNE related functions at the maquiladora.
APPENDIX

Table 1. Dimensions of Absorptive Capacity: A Reconceptualization of Components and Corresponding Roles

<table>
<thead>
<tr>
<th>Dimensions/Capabilities</th>
<th>Components</th>
<th>Roles and Importance</th>
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</thead>
<tbody>
<tr>
<td>Acquisition</td>
<td>• Prior investment</td>
<td>• Scope of search</td>
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<tr>
<td></td>
<td>• Prior knowledge</td>
<td>• Perceptual schema</td>
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<tr>
<td></td>
<td>• Intensity</td>
<td>• New connections</td>
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<tr>
<td></td>
<td>• Speed</td>
<td>• Speed of learning</td>
</tr>
<tr>
<td></td>
<td>• Direction</td>
<td>• Quality of learning</td>
</tr>
<tr>
<td>Assimilation</td>
<td>• Understanding</td>
<td>• Interpretation</td>
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<td></td>
<td></td>
<td>• Comprehension</td>
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<tr>
<td></td>
<td></td>
<td>• Learning</td>
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<tr>
<td>Transformation</td>
<td>• Internalization</td>
<td>• Synergy</td>
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<tr>
<td></td>
<td>• Conversion</td>
<td>• Recodification</td>
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<td></td>
<td></td>
<td>• Bisociation</td>
</tr>
<tr>
<td>Exploitation</td>
<td>• Use</td>
<td>• Core competencies</td>
</tr>
<tr>
<td></td>
<td>• Implementation</td>
<td>• Harvesting resources</td>
</tr>
</tbody>
</table>

*(Source: Zahra & George, 2002; Cohen & Leventhal, 1990; Dodgson, 1993; Fichman & Kemerer, 1999).

Table 2. Hofstede’s Cultural Dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Definitions</th>
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<tbody>
<tr>
<td>PDI</td>
<td>The degree to which the less powerful members of a society accept and expect that power is distributed unequally.</td>
</tr>
<tr>
<td>IDV</td>
<td>The degree to which individuals are integrated into group.</td>
</tr>
<tr>
<td>MAS</td>
<td>Represents a preference in society for achievement, heroism, assertiveness and material reward for success.</td>
</tr>
<tr>
<td>UAI</td>
<td>The degree to which the members of a society feel uncomfortable with uncertainty and ambiguity.</td>
</tr>
<tr>
<td>LTO</td>
<td>Deals with a society’s tolerance for uncertainty and ambiguity.</td>
</tr>
</tbody>
</table>

*(Source: Hofstede, 2001; Hofstede et al., 2010).

Note. PDI= Power distance index, IDV= Individualism, MAS= Masculinity, UAI= Uncertainty avoidance index, LTO= Long term orientation.
Figure 1. USA’s Cultural Dimension Score

(Source: Hofstede, 2001; Hofstede et al., 2010).

Note. PDI = Power distance index, IDV = Individualism, MAS = Masculinity, UAI = Uncertainty avoidance index, LTO = Long term orientation.

Figure 2. Mexico’s Cultural Dimension Score

(Source: Hofstede, 2001; Hofstede et al., 2010).

Note. PDI = Power distance index, IDV = Individualism, MAS = Masculinity, UAI = Uncertainty avoidance index, LTO = Long term orientation.
Figure 3. Comparison of USA and Mexican Culture

(Source: Hofstede, 2001; Hofstede et al., 2010).
Note. PDI= Power distance index, IDV= Individualism, MAS= Masculinity, UAI= Uncertainty avoidance index, LTO= Long term orientation.

Figure 4. Research Model

Note. PDI= Power distance index, IDV= Individualism, MAS= Masculinity, UAI= Uncertainty avoidance index.
References


