Influence of culture on E-commerce and vice versa

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Abstract—Electronic commerce (e-commerce) is useful for both businesses and consumers by removing time, space and geographical location barriers. There are bigger choices, chipper prices and completely new products are obtainable in many product categories to consumers who may be actually far away from the traditional stores. Furthermore, the nature of Information technology applications and e-commerce, lead to more information sharing, facilitate transactions, and provide convenience of purchasing. As a result, this day, e-commerce is not only the way of business but also a competitive advantage. However, to achieve higher efficiency, either all international e-commerce society should share similar culture or there must be an adaptation with respect to each culture. In this regard, a lot still remains to be investigated as to how individual e-commerce national society differs and which organizational cultures are appropriate to e-commerce business. Hence, the objective of this paper is to move ahead our understanding on how e-commerce is being influenced by culture and the other way round. We propose that e-commerce leads to, professional/rational behavior, market culture and centralization. It opposes person support culture. We also hypothesize that, the effects of power distance and individualism on e-commerce, decrease with e-commerce experience.

Keywords: E-commerce; organizational culture; hofstede culture; trust.

I. INTRODUCTION

Electronic commerce (e-commerce) is useful for both businesses and consumers by removing time and space barriers. For consumers, e-commerce provides greater information richness in less time and ease of purchasing. For business organizations e-commerce also provides a number of benefits such as high accessibility, scalability, interoperability, interactivity, and greater information richness [1]. Societal and organizational cultures have been suggested as an important factor that influences successful adoption and implementation of information systems [2]. It appears that the nature of Information technology (IT) and e-commerce adoption requires changes in business processes which may necessitate changes in culture. Although, many prior studies have attempted to evaluate its successes and downfalls, the success of the e-commerce market is yet to be further evaluated on the issues surrounding the e-commerce perception with respect to different cultures in order to fully define [3]. This is because the e-commerce market is comprised of many different people and cultures, which have diverse viewpoints concerning trust. Studies on cross culture in e-commerce implementation are still catching the attention of many researchers [4]. Organizations are now realizing the importance of cross cultural relations in their operations across countries, taking these relations as one of the success factors for international business performed either through the traditional activities, or through the digital means of the latest technologies. These relations are also important when e-commerce activities are needed across widespread locations within or across countries [5]. It is apparent that every culture has developed with its own history, language, and religions creating identities that have been influenced by very different experiences. People in different cultures will see various aspects of e-commerce as being more or less useful when compared to traditional shopping. On the other hand the very nature of information technology (IT) based application and familiarity with e-commerce in themselves may facilitate cooperation and make e-commerce models more accessible to the acceptance of relational contracting approaches.

This paper theoretically scrutinizes the effects of hofstede cultures: Individualism (IDV) and power distance (PD), on e-commerce and vice versa. The study also extends to examine how e-commerce is related to the professional/rational behavior, and market culture. Based on the extant literature we forward four interesting propositions.
A. E-Business/E-Commerce

E-business and e-commerce are terms that are sometimes used interchangeably. But the terms are different, and that difference matters to today's companies. E-commerce is buying and selling using an electronic medium. It is accepting credit and payments over the net, doing banking transactions using the Internet, selling commodities or information using the World Wide Web and so on. E-Business in addition to encompassing e-commerce includes both front and back-office applications that form the engine for modern e-commerce. E-business is not just about e-commerce transactions; it's about re-defining old business models, with the help of technology to maximize customer value. E-Business is the overall strategy and e-commerce is an extremely important facet of e-business. In view of this e-commerce could be seen as the rear end of e-business and is a part of e-business [6, 7]. Turban et al. [8] defined e-commerce as the process of buying, selling, transferring, or exchanging products, services, and/or information via computer networks, including the internet. Some researchers see e-commerce in terms of internet applications, such as Intranet, extranet, website and email. Others view e-commerce as combination of business processes and Internet technologies such as interactions with customers and suppliers. The main components of e-commerce include: website, email, intranet, extranet, LAN and wireless area network (WAN). For purpose of this paper we consider e-commerce that is the business to customer part of e-business.

B. Trust

In the context of the hard headed, market driven business world the concept of trust may seem out of place; because the tendency is to demand a rational, calculated or calculable basis for all activities and decisions. However, ‘Trust’ does not readily appear to be computable in a commercial world. On the other hand, the emergence of e-commerce, which is believed to be more risky, has emphasized that there is an element of trust in all commercial relationships. Therefore trust cannot be singled out from the discussion of e-commerce. Prior researches on traditional commerce focused primarily on interpersonal trust such as a customer's trust in a salesperson. Accordingly, [9] defined trust as a global belief on the part of the buyer that the salesperson, product, and company will fulfill their obligations as understood by the buyer. In the e-commerce context [10, 11], have tended to define trust as a subjective belief, a subjective probability, the willingness of an individual to be vulnerable, reliance on parties other than oneself, or a person's expectation. Thus, trust is a set of expectations that lead to behavioral intentions that involve potential loss. Typically trust consists of three dimensions: intelligence (corresponding to ability), good character (honesty and integrity), and good will (benevolence). But in cases, such as “opportunistic betrayal”, trust is composed of benevolence and integrity alone. The most appropriate definition of trust, due to its applicability to virtual transaction based e-commerce, is “the expectation that the other parties will behave in accordance with commitments, negotiate honestly, and not take advantage, even when opportunity arises” [12].

C. E-Commerce and Trust

Many scholars have argued that trust is a prerequisite for successful commerce; because consumers are hesitant to make purchases unless they trust the seller. Trust may be even more critical in e-commerce because, an Internet purchase is based on the consumer’s confidence in processes that are not transparent online, in contrast to that of traditional brick-and-mortar businesses where trust is based on personal relationships and face to face interactions between the consumer and the merchant.

Thatcher et al. [13] explored online trust’s multidimensional nature within the context of online stores. They developed a framework for classifying trust dimensions and to investigate their influences on behaviors in new and familiar business to consumer (B2C) e-commerce environments. Specifically, they classified trust dimensions into two levels: general trust (beliefs toward the general e-commerce environment and infrastructure) and specific trust (beliefs regarding a specific e-commerce shopping experience). Specific trust is further delineated into trust in the merchant and trust in the technology artifact, i.e., the website. The results show that general trust mechanisms are important to consumers in a new e-commerce environment. In contrast, when shopping in a familiar e-commerce store, consumers pay more attention to the current Web experience, diminishing the salience of general trust. The study has provided some insights into the influences of trust dimensions on purchase decisions in new and familiar e-commerce environments.

1) Trust in Technology

Mayer et al.’s [14] trust definition associates trust with the trustee’s volitional actions, which are important to the trustor. However, in contemporary society, many actions that were previously performed by human actors are now mediated, or enabled by, information technologies. Consequently, the role of IT artifacts in trust formation has become more salient [15], particularly in Business to customer (B2C) e-commerce environments, where purchase transactions are almost completely lacking in any human contact [16]. In such environment, online merchants use IT artifacts-websites, enabled by IT infrastructure and incorporating institutional mechanisms to replace salespersons and complete transactions across time and space. Although IT artifacts lack moral capability or volitional control, they serve as agents of, and perform actions on behalf
of, human actors. As a result, consumers tend to ascribe actions or behaviors to them, blurring concepts of salespersons or of an actual merchant with the enabling IT artifacts [17]. Therefore, having trust on technology is one of the important factors for consumers to participate on e-commerce (online purchase). For this reason, e-commerce businesses have to work cooperatively to avoid malpractices through their commercial exchanges which may devastate the overall business image by inducing mistrust on consumers.

2) **Familiarity and Trust**

A survey results by [18] shows that both trust and familiarity influence e-commerce. As per the results, both trust in an Internet vendor and familiarity with the vendor and its procedures influence two distinct aspects of e-commerce intentions: inquiry and purchase. Familiarity is an understanding, often based on previous interactions, experiences, and learning of what, why, where and when others do, what they do. Familiarity and trust are distinctly different. Familiarity deals with an understanding of the current actions of other people or of objects, while trust deals with beliefs about the future actions of other people (though these beliefs may be, and often are, based on familiarity). Familiarity in this context is a specific activity, based cognizance, based on previous experience or learning of how to use the particular interface. Results of a study by [19] confirmed that Internet consumers' trust and perceived risk have strong impacts on their purchasing decisions.

**Social Presence**

Trust, in general, is built through constructive interactions with other people [20]. Since human interaction with the trusted party, whether face to face or by any other means, is a precondition of trust, the perception of a high degree of social presence, implying direct or indirect human contact, in the relationship, should arguably contribute to the building of trust. Trust in an e-commerce Website may be built through imbuing the medium of communication with a high social presence: the perception that there is personal, sociable, and sensitive human contact in the medium. High social presence is typically found in face to face communication whereas low social presence is often found in e-mail, and paper-based mail which are features of e-commerce. This does not mean, however, that social presence cannot be embedded in a Website. It is possible to convey a sense of personal, sociable and sensitive human contact, through photos, specified mails etc.

4) **Social Trust**

Social trust is believed to be important because it reduces the “transaction costs” involved in interacting with others. According to many, social trust plays a key role in whether countries are able to take advantage of the new economic potential that e-commerce provides. Two camps of thoughts about social trust: One camp sees the extent to which people trust generalized others as a characteristic of culture that can be changed only very slowly over hundreds of years. But a second, increasingly vocal camp sees social trust as endogenous, and thus subject to change.

The effect of social trust to economic growth is fairly straightforward: high levels of social trust facilitate exchanges among those who do not know one another personally. Thus, trust obviates the necessity of contractual obligations. With the advent of the internet economy, social trust has become a source of great consternation for those concerned with economic expansion. Trust is needed most when risks are perceived to be high such as e-commerce where most accounts perceived as highly risky. As with early catalog shoppers, consumers are driven to try this new experience for a variety of reasons: Lower prices, convenience, and curiosity to try shopping a new way and well known Web site for e-business and, reliability. Several publications have shown significant correlations between high levels of social trust and purchasing online as cited in [21]

The versions of Social trust:

- “knowledge-based” or “strategic” trust, that is, trust that results from information or personal experiences about specific others.
- A generalized belief in the goodness of others (what has been referred to as “altruistic” or (“moralistic”) trust).

For those who have never before shopped online, boosting levels of social trust makes them more likely to do so, and lowering levels of social trust makes them less likely to do so.

### III. CULTURAL IMPACT ON E-COMMERCE

Societal culture, as discussed by [22], refers to a set of shared values, beliefs, assumptions and practices that shape and guide members’ attitudes and behavior in the society. Accordingly, culture is defined “as the collective programming of the mind that distinguishes the members of one group or category of people from another.” For this reason, IT developed in one country or culture cannot be simply translated into another without considering cultural adaptation. Hence, culture is viewed as a significant factor that affects the adoption of IT. It is apparent that every culture has developed with its own history, language, and religions creating identities that have been influenced by very different experiences. These experiences clearly affect a country’s perspective on the world. Cultures have shown a definite effect on IT and e-commerce adoption. For example, The Americas statistics reported that there was a marked difference between the percentage of internet users among Hispanic and Anglo Internet users [3]. Hispanics and Anglos are cultures with different perceptions of trust, and as such, view aspects of the e-commerce experience with differing degrees of importance.
A. Hofstede’s Cultural Dimensions

After conducting research in over fifty (50) countries, [23] developed his cultural dimensions model which comprises of the following:

1) **Power distance (PD)**
   Power distance represents the extent of adherence to formal authority channels and is the degree to which the lesser powerful accept the prevailing distribution of power. High power distance cultures have members who are much more comfortable with centralized power than members of low power distance cultures.

2) **Individualism (IDV)/Collectivism**
   In individualistic societies people take care only of their own selves. In collective societies people feel as though they belong to a strong group and always try to protect it. People with high individualism view self and immediate family as relatively more important than the collective.

3) **Masculinity/ Femininity**
   In masculine cultures, winning is important and in feminine cultures, the welfare of disadvantaged members is taken care of.

4) **Uncertainty Avoidance (UA)**
   Uncertainty avoidance is the extent to which the members of a culture feel threatened by uncertain or unknown situations and try to avoid such situations.

5) **Long term/Short term Orientation**
   It is self explanatory. Long-term oriented societies attach more importance to the future. They foster pragmatic values oriented towards rewards, including persistence, saving and capacity for adaptation. For short term oriented societies, values promoted are related to the past and the present, including steadiness, and respect for tradition.

B. Organizational culture

According to [24], Organizational culture is the pattern of basic assumptions that a given group has invented, discovered or developed in learning to cope with its problems of external adaptation and integral integration. Cameron and Quinn [25] defined organizational culture as the core values, assumptions, interpretations and approaches that characterize an organization. The following types of culture are observed on different organizations:

1) **The Hierarchy Culture**
   The organizational culture compatible with this form is characterized by a formalized and structured workplace. Effective process, capability, consistency, maintaining a smooth running, efficiency and timeliness are important. The long term concerns of the organization are stability, predictability and efficiency. Formal rules and policies hold the organization together [25]. The timeliness component of this culture is very important for e-commerce businesses, because customers would be happy to have received their purchased items on time.

2) **Market Culture**
   A market culture has a strong external focus and values stability and control. Organizations with this culture are driven by competition and a strong desire to deliver results and accomplish goals. Because this type of culture is focused on the external environment, customers and profits take precedence over employee development and satisfaction. The major task of the management is to drive the organization towards market share, productivity, and profits. It is assumed that a clear purpose and an aggressive strategy lead to productivity and profitability [25]. We propose that this type of organizational culture, with customer focus and value stability and control, is most appropriate for e-commerce businesses.

3) **The Clan Culture**
   Clan Culture has an internal focus and values flexibility rather than stability and control. It resembles a ‘family’ type organization in which effectiveness is achieved by encouraging collaboration between employees. This type of culture is very “employee focused” and strives to instill cohesion through consensus and job satisfaction and commitment through employee involvement. The organization is held together by loyalty and tradition. The organization emphasizes the long term benefit of individual development with high cohesion and morale being important. Success is defined in terms of the internal climate and concern for people [25], this type of organizational culture cannot be implemented fully to e-commerce as it sidelined the basic requirements of e-commerce startegy, that prioritizes customers at the forefront.

4) **The Adhocracy Culture**
   An adhocracy culture has an external focus and values flexibility. This type of culture fosters the creation of innovative products and services by being adaptable, creative, and fast to respond to changes in the marketplace. Adhocracy Cultures do not rely on the type of centralized power and authority relationships that are part of market and hierarchical cultures. They empower and encourage employees to take risks, think outside the box, and experiment with new ways of getting things done. This type of culture is well suited for startup companies, those in industries undergoing constant change, and those in
mature industries that are in need of innovation to enhance growth [25]. We argue that e-commerce leads to less adhococracy, as centralization and reasonable control is required as a remedy for its highly sensitive characteristic.

5) Power culture

Harrison and Stokes [26] define power oriented culture as “organizational culture that is based on inequality of access to resources”. A power oriented culture organization is characterized by high centralization and low formalization modes of operation. A power culture has a single source of power from which rays of influence spread throughout the organization. This means that power is centralized and organizational members are connected to the center by functional and specialist strings. Power Culture relies on central figure, central figure communicates outwards with no system of feedback.

6) Person support culture

Person support culture is a structure and culture built around individuals. It allows power to family members and individuals who have either maternal or marital relation with the families of the owners. Harrison and Stokes [26] define person support culture as an “organizational climate that is based on mutual trust between the individuals and the organization”. Thus, is often referred to as family support culture. With Person support organizations, power domination is mostly on elderly bases. The mode of operation of this culture depicts low in standardization and is flexible according to the owners wish. This type of organizational culture opposes e-commerce, because e-commerce demands, high standardization and professional working environment in order to win the rational behavior of customers in the dynamic and competitive market.

7) Bureaucratic culture

Bureaucratic culture is a hierarchical and formal organization that has several levels where tasks, authority and responsibilities are delegated between departments, offices or people. In this type of organizations, power is concentrated in the hands of a few, high ranking managers. This structure is held together by a central or main administration. Organizational charts exist for every department, and everyone understands who is in charge and what his responsibilities are for every situation. A system of administration distinguished by its (1) clear hierarchy of authority, (2) rigid division of labor, (3) written and inflexible rules, regulations, and procedures, and (4) impersonal relationships. Once instituted, bureaucracies are difficult to dislodge or change [27].

8) Professional culture

A professional culture refers to patterns and traits expressed by a particular group that belongs to a certain profession. Professionalism, which is at the heart of professional culture, is defined by Merriam Webster as a “set of Attitudes and behaviors believed to be appropriate to a particular occupation”. Professionalism is comprised of attitudes and behaviors. Attitudes are often described and measured because of their relationship to behaviors. A professional attitude could be defined as a predisposition, feeling, emotion, or thought that upholds the ideals of a profession and serves as the basis for professional behavior. Professional behavior can also be described as “behavioral professionalism”, behaving in a manner to achieve optimal outcomes in professional tasks and interactions [28]. Professionalism is the cornerstone of the business world. At its core, professionalism is how you conduct yourself. The seriousness and sincerity with which you approach your job makes you a professional. Professionals are thorough, and oftentimes meticulous about their work. Professionals hold themselves to a certain set of standards they always seek to maintain [28]. Customers are rational when purchasing items or in any exchange activities; they place a decision making process that is based on making choices that result in the most optimal level of benefit. People would rather be better off than worse off or have more than less. For example, a person is more likely to buy an item at a lower price than a high one or buy items on sale if they believe, it is better value. Therefore, professional culture is the best practice that e-commerce business must develop and pursue to gain trust of customers [27].

IV. CONCEPTUAL BASIS FOR THE HYPOTHESIS DEVELOPMENT

In section II, we identified the following points: - General trust mechanisms are important to consumers in a new e-commerce environment. In contrast, when shopping in a familiar e-commerce store, consumers pay more attention to the current Web experience, diminishing the salience of general trust [13], which implies both trust and familiarity influence e-commerce. Therefore trust in the technology, trust in an Internet vendor and familiarity with the vendor and its procedures influence two distinct aspects of e-commerce intentions: inquiry and purchase [18]. Several publications have also shown a significant correlation between high levels of social trust and purchasing online as cited in [20]. Trust, in general, is built through constructive interactions with other people [20]. High social presence is typically found in face to face communication whereas low social presence is often found in e-mail and paper based mail as in e-commerce activities. This does not mean, however, that social presence cannot be embedded in a Website. It is possible to convey a sense of personal, sociable and sensitive human contact, through photos, personalized mails etc.

In section III, we have described the Hofstede cultural dimensions briefly and discussed different organizational cultures in search of appropriate culture and mode of administration (structure) for e-commerce businesses. It was also highlighted in each heading how it relates with or affects e-commerce directly or indirectly.

In another theoretical setting, the rational behavior of human being and rational choice theory, which are very relevant to the characteristics of e-commerce and customers purchasing behavior in online shopping, are embodied. The rational
behavior of human being tells us that the decision making process is based on making choices that result in the most optimal level of benefit or utility for the individual. In that, people would rather be better off than worse off or have more than less. For example, a person is more likely to buy an item at lower price than a high or buy items on sale if they believe, it is better value.

In line with this, rational choice theory (RCT) attempts to explain all social phenomena in terms of how self-interested individuals make choices under the influence of their preference. It treats social exchange as similar to economic exchange where all parties try to maximize their advantage or gain, and to minimize their disadvantage or loss. RCT’s basic premises are that (1) human beings base their behavior on rational calculation, (2) they act with rationality when making choices, (3) their choices is aimed at optimization of their pleasure or profit [29]. This concept has applications in economics and marketing. Incorporating the above concepts in to the e-commerce context, we have formulated four hypotheses in the next section. At this conceptual stage, the paper brought immense concepts and broad factors, such as trust, familiarity, social presence, social trust, cultural dimensions, organization culture and the rational behaviors, together in to the e-commerce view. Hence e-commerce society can take these thoughts in to their consideration, in their move towards maximization of advantages and minimizing of losses.

V. DEVELOPMENT OF HYPOTHESIS

Internet consumers report that they purchase on the Web because they perceive many benefits (search cost and comparison process, better purchasing decisions in a short time frame, increased convenience, cost savings, time savings, and increased variety of products to select from), compared to the traditional mode of shopping. These benefits of e-commerce from trusted e-tailers may enable consumers to start buying online even if risky [19; 30]. It is apparent that, Consumers’ have no volitional actions on the seller on their e-commerce participation, such as online purchasing; it is based on their confidence in the processes that are not transparent online. Hence consumers are hesitant to make purchases unless they trust the seller and the technology through which the transaction is processed. We argue that e-commerce organizations will not be successful without institutionalizing professional culture, market orientation and intensive planning.

In addition to the above, it is clear today that the Internet and the Web can facilitate business processes, to add value to organizations, but this technology has to be managed with considerable care. E-commerce must be launched in a more thoughtful and professional way, keeping a close watch on all the important business variables [31]. This is because, in cases of e-commerce failures, the sum of the potential loss will be very big. It could be fully ventured in the full light of the public media as most unattractive prospect and spread out through word of mouth communications. Therefore centralized mode of operation must be institutionalize with strict control, through which all business stakeholders including suppliers can be involved to foster greater cooperation and coordination among businesses. Strategic and operational planning must be deliberated by the participation of all managers, such as IT manager, database manager, finance manager, marketing manager, business analyst, commercial manager, website manager etc. then necessary updates can be administered to all business units. Moreover the literature on e-commerce successes and failures, for example [31] who mentioned that lack of centralization was one of the causes of failure in kalahari.net, give us scope to forward the propositions below.

\( H_{1a} \): E-Commerce leads to more professional/rational behavior,
\( H_{1b} \): E-Commerce leads to more market culture.
\( H_{1c} \): E-Commerce will oppose person support culture.
\( H_{2} \): E-commerce leads to more centralization.

With regards to power distance index (PDI), empirical researches have shown that consumers from higher PDI countries are less likely to trust service providers and have higher privacy concerns than do the consumers from low PDI countries [32;33]. Even though high PDI countries have higher tolerance for unequal distribution of power in their society, high PDI also generates higher mistrust for powerful groups such as a company. Individuals from a high power distance culture are more comfortable with centralized power than individuals from low power distance cultures. On the other hand Cross cultural comparison study by [34] revealed that, consumers from different culture exhibit variation in conducting e-commerce; but the cultural difference is only evident among consumers with no prior e-commerce experience i.e. the difference disappears among consumers with prior e-commerce experience. It seems that e-commerce experience tended to mediate the relationship between cultural propensity to trust and confidence in conducting e-commerce; hence experience can build trust and confidence. Results from [35] also revealed that the e-commerce development communities in USA and Saudi Arabia have their own identity in terms of cultural dimensions. This leads to the argument that e-commerce itself influences (transform) culture. The discussions on [18; 34; 35], lead us to the following proposition.

\( H_{3} \): Societies with proliferated e-commerce experience have low power distance.

In less individualistic cultures, social factors like social pressure and social expectations can be an important positive influence on Internet use and online behavior. Individuals from cultures high in individualism, and low in power distance indices have a higher comfort (or trust) with impersonal activities such as the online activities on e-commerce, than individuals from cultures exhibiting the opposite levels [32]. According to [36], those cultures that score high in
individualism (IDV), and low in power distance (PD) indices tend to be innovative and more likely to accept new innovations. This is because they tend to develop higher initial trust towards others more readily than do the less individualistic countries. Based on the above discussion and the evidences from, [18; 19; 30; 34; 35], e-commerce experience leads to more individualistic culture and favored online participation; having this, in mind, we propose the following proposition.

**H4**: Societies with more individualistic culture tend to encourage e-commerce.

### VI. Conclusion

In this paper through literature review, we have identified that societal culture affects customer’s participation in e-commerce. On the other hand, the nature of Internet based applications and e-commerce, which enable more information sharing, and provide convenience of purchase themselves lead to more trust and rationality. This phenomenon can reduce the impacts of societal cultures such as power distance and individualism on e-commerce participation. We have also found that professional culture and, market culture are the appropriate organizational cultures to be established by e-commerce businesses. Furthermore, centralized structure with strict control must be institutionalized through which all business stakeholders including suppliers can be involved to foster greater cooperation and coordination among business units. The study provides new insights about the influences of trust, IT and e-commerce on culture in new and familiar e-commerce environments. The proposed hypotheses will be verified through empirical data in the next version.

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