Cultural Influences on Antecedents and Consequence of Trust in e-Governance: A Conceptual Framework

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ABSTRACT

This paper reviews past literature and proposes a model to compare the antecedents and consequence of trust in online transactions in the domain of e-governance across different cultures. A comprehensive causal model is developed in which the 'culture' plays a moderating role in determining online transaction intention. Our conceptual model is based on Hofstede's national culture dimensions—individualism/collectivism, power distance, uncertainty avoidance and masculinity/femininity—that moderates the relationship between the antecedents of trust, trust and transaction intention. Our paper offers insights in the similarities and the differences in the relative importance of key variables contributing to trust and transaction intention in e-governance on a global basis.

1. Introduction

E-governance refers to the use of Internet Technology by the government or any organization to facilitate the exchange information and services with citizens and other businesses, it is not restricted to exchange of information involving only the government. It is also concerned with exchange of information involving any organization so as to facilitate governance.

According to Chopra and Lata (2004) e-governance is not just computerization of some of the processes but it should change the way the government operates and interacts with its citizens. E-governance stretches beyond societies. If an organization has to operate across a country involving several cultures and subcultures then it has to consider this cultural diversity while designing the website so as to increase its acceptance among the various citizens spread across different cultures. Chopra and Lata (2004) says that e-governance that spreads across several states does keep in mind the language diversity and there is support for multilingual requirements. However when one is dealing with citizens with different cultural background then there has to be more support than just in terms of multiple languages. It has been shown by Singh et al (2005) that users from different societies have varying preferences for various elements of website. Cyr at al (2005a) have shown that users of different countries have different preferences for

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website of the same company. Companies that operate in different countries have country specific websites for this reason.. Similarly e-governance also deals with citizens with different cultural preferences and so the impact of culture on e-governance cannot be ignored while designing a website for e-governance. Besides, the National Informatics Center of India notes that in future e-governance shall spread across nations and this international aspect of e-governance is required for various activities like tracing stolen vehicles.

2. The Dimensions of Culture

Culture has been defined in different ways by different authors. It is a multidimensional construct. According to Kroeber and Kluckhohn (1952) "Culture consists of patterns, explicit and implicit, of and for behaviour acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artefacts". Kluckhohn and Kelly (1945) say that "culture is historically created designs for living". It is clear from the above arguments that culture a) is a set of values and beliefs acquired from groups with whom we stay and interact in the society and b) has a historical dimension as it is developed over a period of time.

For our study of culture we have used the dimensions developed by Hofstede (1980). This is because his study has been one of the most comprehensive studies on culture. He based his study on IBM employees spread in 72 different countries. He defines culture "as a collective programming of the mind" and gives five dimensions to it. Based on 4 of these Hofstede's Dimension of Culture Scales i.e. uncertainty avoidance, individualism vs collectivism and masculinity vs feminity and Power Distance we describe the moderating role of culture in online buying behaviour of consumers. These dimensions are discussed in the next section.

Culture plays an important role in determining the online behavior of the Internet users. There have been studies in the literature by Singh (2002), Singh et al (2003, 2004, 2005), Cyr et al (2005a, 2005b) extending the cultural frameworks of Hofstede (1980), Hall (1976) and other cross-cultural researchers to study the cultural content of websites. In fact people from different cultural background have different preferences for the antecedents that generate trust and transaction intention with the website. This is why we intend to study the impact of an individual's culture on online transaction behavior.

2.1 Individualism-collectivism

Individualism focuses on the degree up to which the individuals are loose in the society. It depends on whether the society reinforces individual or collective achievement and interpersonal relationships. A high individualism ranking indicates that individuality and individual rights are given very high importance within the society. Individuals in these societies may have a tendency to form a larger number of loose relationships. A low individualism ranking indicates that the society is more collectivist in nature with close ties between individuals. In these cultures group achievements and welfare are given more importance in these societies than the individual's personal achievements.

2.2 Uncertainty Avoidance

Uncertainty avoidance deals with the level of tolerance for uncertainty and ambiguity within the society. A high uncertainty avoidance ranking indicates the country has a low tolerance for uncertainty and ambiguity. This creates a rule-oriented society that institutes laws, rules, regulations, and controls in order to reduce the amount of uncertainty. A low uncertainty avoidance ranking indicates the country has less concern about ambiguity and uncertainty and has more tolerance for a variety of opinions. These types of societies are less rule-oriented and accept changes more easily and have the propensity to take more and greater risks.

2.3 Masculinity/Femininity

Masculinity-Femininity gives us a picture of the degree up to which the society reinforces the traditional masculine work role model of male achievement, control, and power. In the cultures with high masculinity, males dominate a significant portion of the society and power structure. A low masculinity ranking indicates that the females are treated equally to males in all aspects of the society. Masculine cultures have been viewed as "doing and acquiring rather than thinking and observing" (Newman and Nollen, 1996), whereas feminine cultures exhibit a greater pattern of nurturing.

2.4 Power Distance

Power distance is concerned about the degree of equality or inequality, among the people in a society. A high power distance score indicates that inequalities of power and wealth are very high within the society. A low power distance on the other hand indicates the society does not give importance to the differences between its citizens' power and wealth and stress the importance of equality for everyone. Power distance is the extent to which members of a society accept that power is unequally distributed in the society. In high power distance countries the relationships between the individuals follow some hierarchy like superior-subordinate. No one argues with a person who is superior in rank or status and a person higher up in the society is respected.

3. Intention to transact: The Consequence of Trust

Trust has been defined in different ways by various authors. The definition varies depending on the perspective of the author. In our study we shall limit ourselves to the domain of online shopping. Trust is, according to Bhattacharya (2002), an expectancy of positive outcomes that can be received from another party. Trust can be based on the expected actions within an interaction characterized by uncertainty. Trust can be viewed as the perceived credibility and benevolence of the other party, Stephens (2004). For measuring trust, Chellapa (2005) had spoken about safety, reliability and transparency of transactions. The user feels safe when he is sure that the information that he is providing is not going to be misused online. Various websites provide safety by making transactions more secure, by assuring the customers that their site is approved by 3rd party assurances like verisign etc. Reliability is concerned about the ability of the site to perform the routine functions in a specified manner. In case of any anomalies while the transaction is in progress it needs to revert and nullify the transaction completely. This needs to be informed to the customer, Chellapa (2005). Transparency implies openness, communication, and accountability. An activity is transparent if all information about it is open and freely available to the customer. In other words the customer should be able to know how the information supplied is being used. According to Yoon (2002) online trust is different from offline trust in 3 ways. a) The physical distance between the buyer and seller. b) Absence of sales person and c) No physical contact between the buyer and the product. However just like offline trust it is an important antecedent for Transaction Intention as empirically shown by Yoon (2002). Markentin et al (2002) have shown that trust is very important in e-governance for transaction intention among the citizens. This is why it is important to explore the factors that are responsible for building online trust with the user. We use this to form our first hypothesis:

  Hypothesis 1: Trust is an antecedent to transaction intention.

Shu and Han (2003) show that trust with an online site depends on the user's past experience with the website. If the customer has a great experience with the website then it is likely that he is going to look upon the site as trustworthy and use it in future too. From the above discussion it is clear that trust is a) a phenomenon that involves interaction among at least two parties, for example in the domain of e-governance the parties are the citizen and the government. b) required when the interaction is associated with uncertainty and c) an ongoing process that leads to intention to transact.

As discussed earlier uncertainty avoidance deals with the level of tolerance for uncertainty and ambiguity within the society. A high uncertainty avoidance ranking indicates the country has a low tolerance for uncertainty and ambiguity. So a user from a society with high uncertainty avoidance should need to have more trust with the website before making a transaction. So we frame our next hypotheses.

> Hypothesis 2: Uncertainty Avoidance shall positively moderate the relationship between trust and transaction intention.

> Hypothesis 3: Individuals high on Uncertainty Avoidance shall pay more importance to Trust for generating transaction intention than individuals who are low on uncertainty avoidance.

4. Antecedents of Trust in e-governance and National Culture: Research Propositions

4.1 Information Content

Information content is concerned with the information that is put up on the site and how the information is organized. Ranganathan and Ganapathy(2002) have pointed out that availability of information to compare across alternatives, availability of decision making aids, completeness of information about firm and availability of options to communicate and interact with the organization are all part of information content and are important antecedents for transaction intention. Further, Corritore et al (2005), has shown empirically that if the customer gets the relevant information in the website then the trustworthiness of the site increases. Hence trust should be a mediator between information content and transaction intention. As information content is an antecedent to trust we generate the following hypothesis.

> Hypothesis 4: Information Content is an antecedent for generating trust with the organization for e-governance.

Information Content and Masculinity

As discussed before a high masculinity ranking indicates the society experiences a high degree of gender differentiation. Masculine cultures have been viewed as "doing and acquiring rather than thinking and observing" (Newman and Nollen, 1996). From the above discussion it is clear that Information Content is more concerned with comparing alternatives, having more information about the firm, having decision making aids on the site. These features are more concerned with 'thinking' and 'observing' the website rather than 'doing'. This is a feminine characteristic as per our discussion, so masculine culture will pay less importance to Information Content.

> Hypothesis 5: Masculinity will negatively moderate the relationship between Information Content and Trust.

> Hypothesis 6: The consumers who are high on masculinity, as compared to consumers low on masculinity, will pay less importance on the Information Content of the website as an antecedent to generate trust with the website.

Information Content and Power Distance

Societies high on power distance accept power and hierarchy in the society and are low on egalitarianism, Hopstede (1980). In lower power distance cultures, the distribution of power is more symmetric proper information exchange between the buyer and the online vendor is very important. Information Content features like options to communicate with the website, options to compare across alternatives and interaction with the site facilitate this information exchange between government and citizen in a purely virtual world. Citizens of low power distance societies would not tolerate poor quality of information exchange from the website although the site owner may have relative power advantage. This is because power is more symmetrically distributed in the society. On the other hand, citizens in large power distance culture, as a result of their tolerance of accepting inequalities in power, would have lower expectation of information exchanges with the website. They would tolerate and accept poor information exchange with the government because of the vendor's relative power advantage. Therefore, we suggest that when power

distance increases, the expectation of information exchange towards establishing trust decreases. So the following hypothesis is formed.

Hypothesis 7: The power distance shall negatively moderate the relationship between Information Content of the website and trust with e-governance.

Hypothesis 8: The consumers low on power distance shall give more importance to Information Content of the website for generating trust with the e-governance.

4.2 Web Design

According to wikipedia web design is a process of conceptualization, planning, modeling, and execution of electronic media delivery via Internet in the form of Markup language suitable for interpretation by Web browser and display as Graphical user interface. Web design has many aspects namely usability, appearance and visibility. So it is primarily concerned about the ease of navigation through the site and time taken for navigation for improving usability. It also incorporates the presence of visual aids (graphics, audio, video) to improve the visibility of the site, Ranganathan and Ganapathy (2002). According to Liang and Lai (2001) the use of carefully designed hyperlinks in the webpage ameliorates navigation through the site and hence is part of better website design. Yoon (2002) has shown empirically that navigational functionalities are positively related to trust generation. So we frame the next hypothesis

Hypothesis 9: Web design is an antecedent for generating trust with the website.

Web Design and Uncertainty Avoidance

According to Singh et al (2003, 2004, 2005), individuals with high scores on uncertainty avoidance have low tolerance for uncertainty and ambiguity. So they would like to have guided navigation, through the website. This would ensure that they reduce ambiguity and uncertainty. Cyr and Smith (2007) have empirically shown that cultures that are high on uncertainty avoidance would prefer to have better navigation features, so that they do not get lost in the website. Thus for these consumers of high uncertainty avoidance better navigation helps in generating trust in the website. Web design subsumes navigation, hyperlinks, importance of visual aids to improve surfing. This leads us to form the following hypothesis.

Hypothesis 10: Uncertainty avoidance shall positively moderate the relationship between web design and trust with the website.

Hypothesis 11: Consumers high on uncertainty avoidance shall give more preference to web design for generating trust compared to consumers low on uncertainty avoidance.

4.3 Self Efficacy

Self-efficacy is an impression that one is capable of performing in a certain manner or attaining certain goals. It is a belief that one has the capabilities to execute the courses of actions required to manage prospective situations. People generally avoid tasks where their self efficacy is low, but engage in tasks where their self efficacy is high. If a person gets anxious and tensed before using the Internet, and if the person is with low self efficacy then this may be taken as a sign of his own inability, and subsequently decrease his efficacy further. On the other hand, a person with high self efficacy is not going to relate these physiological signs to his actual ability, which will continue to be seen as high regardless of distress.

Chan and Lu (2004) in the context of shopping found that self efficacy on the Internet is generated when the user is confident about his online shopping if clear instructions are provided, when there is no one around the online consumer to help him and if the online store has help functions in the website. Complexity, knowledge barrier are causes of lack of self efficacy. Saji and Dash (2007) have shown that Self-efficacy plays an important role in generating trust with any website. Thus self efficacy is positively correlated to trust.

Hypothesis 12: Self Efficacy is an antecedent to trust with the website.

Self Efficacy and Uncertainty Avoidance

A citizen coming from a society with high uncertainty avoidance has less tolerance for ambiguity and uncertainty. He would ideally like to do the transactions without having to ask for help. As discussed earlier, the citizens from high uncertainty avoidance societies would like to have clear-cut directions for work as they come from rule based society. So as per our discussion they shall prefer self efficacy of the website for trust generation.

> Hypothesis 13: Uncertainty Avoidance shall positively moderate the relationship between self efficacy and trust with the website.

> Hypothesis 14: The consumers high on uncertainty avoidance shall pay more importance to self efficacy as an antecedent for generating trust as compared to consumers low on uncertainty avoidance.

4.4 Social Presence

According Zhao et al (2003), Social Presence has two dimensions: Social Presence as mode of being with others, and Social Presence as sense of being with others. Mode of Social Presence refers to the physical conditions that facilitate human interaction. Sense of Social Presence, on the other hand, refers to the subjective experience of being with others that an individual acquires in interaction. The social presence in the Internet domain speaks of how human warmth and sociability can be integrated through the web-interface in order to positively influence user attitudes towards the use of the website. Social presence of websites speaks of human touch in the website, Gefen and Straub (2004), possibility of interaction in the website, Finin et al (2005), friendliness and belongingness to the web store, Brock (1998). According to Fulk et al (1987) it the extent to which the user would feel the presence of the other person. Social Presence is the online users' sense of awareness of the presence of the interaction partner. So increased level of Social Presence of the website should lead to better perception about e-governance. In fact Gefen and Straub (2004), Finin et al (2005) have shown empirically that social presence can positively affect the trust with the website.

> Hypothesis 15: Social Presence is an antecedent to trust with the website.

Social Presence and Collectivism

Individualism measures the extent to which individuals are loose in the society, Hofstede (1980). The individual is not much concerned about socializing or welfare of his group or community. Collectivism of culture on the other hand is more concerned with group welfare. Singh (2002) has suggested that the collectivist consumers shall prefer to have chat rooms, clubs and community newsletters in the website. According to Singh et al (2005) collectivist persons prefer community relations like presence of community policy, social responsibility policy, clubs or chat rooms and newsletter like online subscriptions, etc in the website. In this way they are able to feel the physical presence of the website. So people from collectivist culture should prefer more social presence of the website to generate trust as compared to people from individualistic societies. Using this argument we propose the next hypotheses

> Hypothesis 16: Collectivism shall positively moderate the relationship between social presence and trust with the website.

> Hypothesis 17: The collectivist customers shall give more preference to social presence compared to the individualistic customers in order to generate trust with the website.

4.5 Website Repute

Repute is the state of being held in high esteem and honour. Koufaris and Hampton-Sosa (2004), Jarvenpaa and Tractinsky (1999), Grazioli and Tractinsky (2000) have all empirically shown that if an online company is well known and has a good reputation then it has a positive effect on trust. Koufaris and Hampton-Sosa (2004) further state that if a website is known to be honest and concerned for the users then it has a positive effect on their trust. McKnight et al (1998) have shown empirically that reputation of any

online company develops from the beliefs that one generates from second hand sources of information. When the consumer hears from someone else about the good repute of the company then he reduces the perception of insecurity and risk.

      Hypothesis 18: Vendor Repute is an antecedent to trust with the website.

Website Repute and Uncertainty Avoidance

Consumers who are from societies with high uncertainty avoidance have less ability to tolerate ambiguity and uncertainty. So if the reputation of the website is very high in the mind of these consumers then it will significantly reduce the uncertainty and ambiguity that they might have about online shopping. This will result in more trust with the website. Thus we frame the next two hypotheses

      Hypothesis 19: Uncertainty Avoidance shall positively moderate the relationship between repute and trust with the website.

      Hypothesis 20: The consumers high on uncertainty avoidance shall pay more importance to repute as antecedents for generating trust with the website as compared to the consumers who are low on uncertainty avoidance.

4.6 Size of e-governance

Perceived size of any organization is defined as how big the organization is in the minds of the customers. According to Jarvenpaa et al (2000), the perceived size of the organization also has a positive effect on trust. If the organization is very large, if it is one of the bigger players in the web or if it is a large player in the market for goods that it sells then it shall have a positive effect on trust. This is because the consumers believe that the big players have the capability to provide the support they desire.

      Hypothesis 21: Organization Size is an antecedent to trust with the website.

Size and Uncertainty Avoidance

According to Jarvenpaa et al (2000) the organization size has a positive relationship with trust when the person is purchasing air tickets, but when the person is purchasing book, which is a low risk item, then there is no such effect. As discussed earlier the societies high on uncertainty avoidance cannot tolerate ambiguity and uncertain situations. So if the risk is higher, as is the case with consumers with high uncertainty avoidance, then the size of the organization shall be preferred to generate more confidence about the website and this in turn shall reduce the uncertainty and ambiguity of transactions on the Internet by these customers. Going by the above discussions we formulate the next hypothesis

      Hypothesis 22: Uncertainty Avoidance shall positively moderate the relationship between organization size and trust with the website.

      Hypothesis 23: The consumers high on uncertainty avoidance shall pay more importance to organization size as antecedents for generating trust with the website as compared to the consumers who are low on uncertainty avoidance.

4.7 Website Security and Privacy

According to the Computer Security Institute three of the major areas of security are: confidentiality, integrity, and authentication or availability. Confidentiality means that information cannot be accessed by unauthorized parties. Integrity means that information supplied by the user cannot be tampered by unauthorized parties. Authentication means that no one should be able to impersonate others when they are using the Internet.

Ranganathan and Ganapathy (2002) emphasize the use of secure modes by online companies for transaction. They advocate for provisioning alternate, non-online modes for financial transactions with the online vendor. Further the individual should be able to create his own login id and password on the website. Krishnamurthy (2001) says that the website should also be certified by 3rd party assurance to improve

security. According to Koufaris and Hampton-Sosa (2004), improvement in security results in increase in trust with the website.

While confidentiality, integrity, and authenticity are the most important concerns of a computer security manager, privacy is another important aspect of computer security for everyday Internet buyers. Privacy on the Internet is about protecting one's personal information. Due to the ease with which information in electronic format can be shared among companies and also because of the fact that pieces of related information from different sources can be integrated to form a composite information about the user so it is important that consumers are able to have some control over what information that the online companies are collecting from them and how it is being used.So, privacy over the Internet is the ability to control what information one reveals about oneself over the Internet, and to control who can access that information. Web site privacy talks about the concern of the user that the website is gathering personal information, negative attitude towards website that asks for personal information, hesitation in sharing personal information, statement on how information will be used, Ranganathan and Ganapathy (2002).

Cookies are used by many online vendors to profile customers. The process of profiling assembles and analyzes several events that the user does when using the Internet. According to Miyazaki and Fernandez (2001), this kind of gathering, sharing personal information, placing cookies on the computer and contacting the consumer without his consent, reduces privacy. Privacy has been shown, by Ranganathan and Ganapathy (2002), Miyazaki and Fernandez (2001), to be playing an important role in online transactions. Breward (2007) have shown that website privacy is an antecedent to trust.

> Hypothesis 24: Website a) privacy and b) security shall be antecedents for generating trust with the online organization.

Web Security-Privacy and Uncertainty Avoidance

As discussed earlier the societies high on uncertainty avoidance cannot tolerate ambiguity and uncertain situations. If they encounter uncertain situation with respect to the privacy of information that they are supplying to the website or if they believe the online store is not secure then they may not transact with the site. So the privacy and security aspects discussed above shall be important for them in order to generate trust. We use this to form the following hypotheses

> Hypothesis 25: Uncertainty Avoidance shall moderate the relationship between a) privacy and trust and b) security and trust with the website.
> Hypothesis 26: The consumers high on uncertainty avoidance shall pay more importance to a) privacy and b) security as antecedents for generating trust with the website as compared to the consumers who are low on uncertainty avoidance.

5. Discussions, Limitations and Future Research Directions

We used the hypotheses generated above to construct a model where we have various antecedents of trust and trust as a mediator between transaction intention and those antecedents of trust. Culture plays the role of a moderator in the relationships. Figure 1 depicts the various dimensions of culture that moderates the relationships between a) trust and its antecedents and b) Online Transaction Intention and Trust. The conceptual development offered in this paper offers researchers working propositions that will direct enquiry into the various antecedents of trust in cross-cultural background. With the advent of globalization the organizations implementing e-governance will increasingly deal with consumers with different cultural background. Past research indicated that companies have to be more versatile in terms of website design, page layout etc, while dealing with consumers from different cultural background. The same would hold for e-governance too if it has to cater to the needs of culturally diverse citizens. However there were no exhaustive studies on the antecedents of trust across different cultures. Figure 1 provides detailed descriptions of concepts that future researchers may use in attempting to empirically test the study

propositions. Researchers have acknowledged that culture is relevant in business dealings hence should not be ignored. The cultural influences, however, are not only nationality based—they may be from among sub-cultures within larger national settings. Donthu and Yoo (1998) discovered individual level variations in service quality expectations across several countries. So in our study we suggest not to use country as a surrogate for culture.
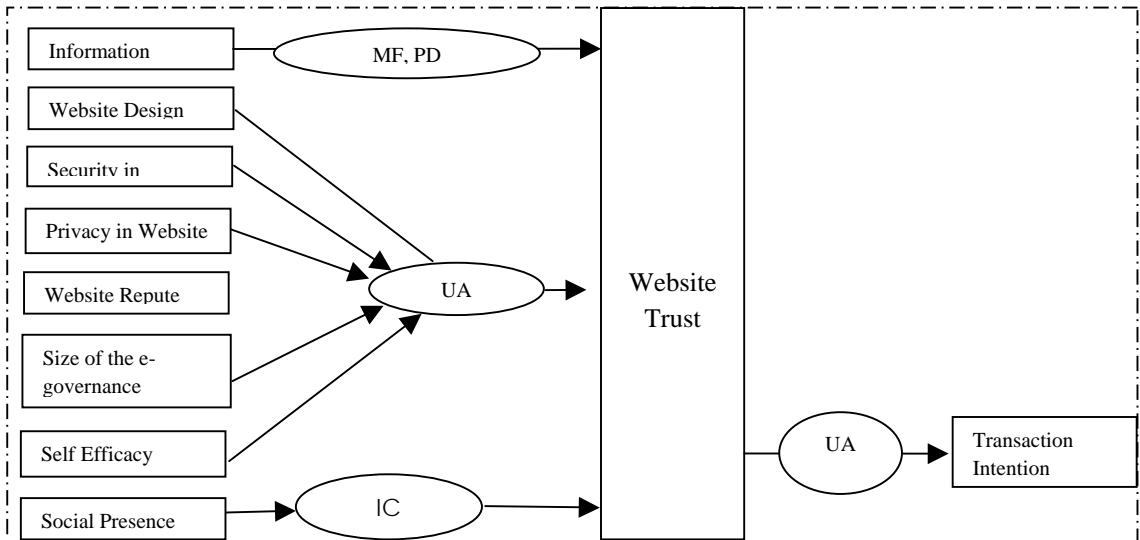
NB.   IC – Individualism-Collectivism, UA- Uncertainty Avoidance, PD- Power Distance, MF- Masculinity-Feminity

Figure 1: The various antecedents to trust and intention to transact along with the cultural moderators

We have summarized past works and integrated several ideas derived from these works into our model which were interesting and useful. However, we do not have any empirical findings and that is one of the limitations of our conceptual model. We believe that if further theorizing and empirical testing of our work is done then our model can be of greater significance. Empirical validation of moderating effects of culture on established linkages between trust, its antecedents and consequences will have far reaching implication for e-governance operating in multicultural environment. This will help e-governance operating in multinational context to devise differential marketing strategies which will fit to different cultural context. Therefore, we recommend future researchers to test our hypotheses and validate the moderating role of cultural value e-governance context.

We employed Hofstede's dimensions of national cultural values for generating the conceptual model. This differs from cultural values discussed by other researchers. Expanding the analysis to include more cultural dimensions would provide managers and researchers more incisive insights into the dynamics occurring between the citizens and the organization employing e-governance. Future studies should review the effect of other cultural dimensions, like high context vs low context culture, on the relative importance of the antecedents to trust. This would be a possible extension for future research.

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