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The Role of National Culture and Gender on Information Elements in E-commerce: A Pilot Study on Trust

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ABSTRACT

The emergence of the Web as a transaction medium has enabled individuals to participate in an increasingly global and multicultural marketplace. One of the key determinants for the success of e-commerce is trust. Consequently, it is important to understand the role that national culture has on trust. In this research we examine how consumers of different national cultures and gender use pieces of information to develop trust. We believe that individuals of different national cultures and gender will not value the same pieces of information while making decisions. We perform a pilot study employing participants in two countries (Thailand and the United States) to examine our research questions. The results provide evidence that Thai and American subjects as well as male and female subjects use different pieces of information to determine the trustworthiness of an e-merchant.

Keywords

Trust, National Culture, Gender, Ranking, Cognitive Processes

INTRODUCTION

The emergence of the Web as a transaction medium has enabled individuals to participate in an increasingly global and multicultural marketplace. One of the key determinants for the success of e-commerce is trust (McKnight and Chervany, 2001/2002). However, empirical studies find that trust is not the most critical factor to predict purchasing behavior (e.g. Gefen et al., 2003). Nevertheless, trust is needed with other factors, such as perceived quality and price, when purchasing judgment is made (Doney and Cannon, 1997). Ba and Pavlou (2002) find that trust allows sellers to charge buyers a premium price. Since the e-commerce market is not limited to only the U.S., it is important to study whether the successful strategies used in the U.S. for building trust can be employed in other countries.

National culture has been found to have a significant impact on social norms and values that lead to a certain beliefs and behavior (Hofstede, 1984). In addition, gender is another factor that is used to categorize individuals to explain differences in beliefs, behaviors, and judgments (e.g. Venkatesh and Morris, 2000). The objective of this study is to examine the role of national culture and gender differences on forming an initial trust towards an e-merchant. We posit that individuals of different national cultures and gender will not value pieces of information the same while making a judgment on an e-merchant's trustworthiness.

LITERATURE REVIEW

Definition and Role of Trust

Trust is topic of interest in a variety of disciplines and has been theorized into many forms and definitions (c.f. McKnight and Chervany, 2001/2002). We adopt a definition in the context of e-commerce; the belief of consumers about an e-merchant to be honest, willing, capable, in the consumer's interest, to deliver products and/or services as promised (McKnight and Chervany, 2001/2002). Trust has been found to play a significant role in consumer's intention and behavior towards future relationships with vendors and suppliers (e.g. Chaudhuri and Holbrok, 2001). In the marketing literature, trust is viewed to have a critical effect on long-term relationships. Previous experience of purchasing products with an e-merchant, on the other hand, has no effect on a consumer's trust belief towards an e-merchant (Gefen et al., 2003). Doney and Cannon (1997) found

that trust is not the most critical factor that determines the purchase decision, but it is one of many required criteria used for future purchasing evaluation. Therefore, a retailer does not have to be the most trustworthy from the consumers' perspective before they decide to engage in a business transaction.

Initial Trust and Its Formation Processes

Forming trust is theorized to be a dynamic process that is developed over time (Becker, 1996; McKnight et al., 1998). At the beginning of a relationship, the level of trust should be low. However, empirical studies found that individuals may display a high level of trust in other individuals when they first meet (e.g. Jarvenpaa et al., 1998). This type of trust is referred as initial trust (McKnight et al., 1998) or swift trust (Jarvenpaa et al., 1998). Initial trust is posited to be influenced by values and norms, cognitive processes, structural assurance beliefs, and situational normality beliefs. With limited knowledge and experience, individuals rely on information cues to determine whether or not they should trust an opposing party (Brewer, 1981).

Trust is based on either cognitive or non-cognitive processes (Becker, 1996). Cognitive trust is based on the rational cognitive processes affecting the belief. Emotions, moods, and attitudes are driven by non-cognitive trust. Since the definition of trust in this study is related to beliefs, we assume that individuals use rational cognitive processes to form initial trust towards an opposing party. Doney et al. (1998) identified five distinct cognitive processes that are used in forming trust; calculative, prediction, intentionality, capability, and transference. Doney et al. (1998) further proposed that national culture is an underlying factor that influences the cognitive processes used in forming trust. In addition to national culture, this study also examines gender as a source that influences individual differences in forming trust.

National Culture and Gender Differences

Culture is theorized to shape the behavior of a collection of individuals (e.g. Hofstede, 1984). Culture is defined as "the interactive aggregate of common characteristics that influence a human group's response to its environment" (Hofstede, 1984 p. 21). National culture establishes social norms and values, which in turn affect individual behaviors and beliefs. Hofstede (1984) identifies four different dimensions of national culture that explain the similarity and the differences of behavior and belief of individuals in different societies; high/low power distance, high/low uncertainty avoidance, masculinity/femininity, and individualism/collectivism.

Doney et al. (1998) argue that each dimension of national culture influences the use of different cognitive process in forming trust. Their propositions regarding dimensions of national culture that influence cognitive processes to form trust are presented in Table 1. According to their propositions, individuals in most nations use almost every cognitive process. For example, a group of individuals that are characterized by the individualism dimension would prefer the use of calculative and capability processes over other cognitive processes. A group of individuals that are characterized by a low power distance dimension would prefer the use of intentionality and transference processes. Based on limited cognitive theory, individuals are unlikely to use all cognitive processes available to them to make trust judgments. Therefore, we believe that culture dimensions influence judgments of trustworthiness towards e-merchants differently.

Another factor captured in this research to examine group differences in forming trust is gender differences. In general, individuals from a country exhibit either masculine or feminine tendencies but "physical" gender differences may also have an influence on one's beliefs and values. Empirical studies have found that gender differences influence job performance, information use, and decision making (e.g. Venkatesh and Morris, 2000). For example, norms and values of females are honoring moral obligation and avoiding conflict while for males are individual achievement and confrontation. Cleveland et al. (2003) found that females acquire more information cues than males before making decisions to purchase a product while males are likely to use the recommendation of experts when making a purchasing judgment. Therefore, we suspect that "physical" gender will play a role how individual form trust beliefs.

Cultural Dimensions	Preferred Cognitive Processes
High power distance	-Calculative -Prediction -Capability
Low power distance	-Intentionality -Transference
High uncertainty avoidance	-Prediction -Intentionality -Capability -Transference
Low uncertainty avoidance	-Calculative
Masculinity	-Calculative -Capability
Femininity	-Prediction -Intentionality -Transference
Individualism	-Calculative -Capability
Collectivism	-Prediction -Intentionality -Transference

Table 1. Influence of Culture Dimensions on Cognitive Processes (adopted from Doney et al. 1999)

RESEARCH MODEL AND HYPOTHESES

We make the assumption in our research framework that individuals only use cognitive processes to make judgments whether an e-merchant is trustworthy. We also assume that not all of the culture dimensions are dominant factors when selecting cognitive processes to determine trustworthiness. Based on these assumptions, we draw from the limited cognitive theory and a decision making model to develop our research model (see Figure 1). The model shows that the information cues used in cognitive processes to determine trust is filtered out by an individual’s social norms and values. The model also shows that national culture and gender differences influence social norms and values.

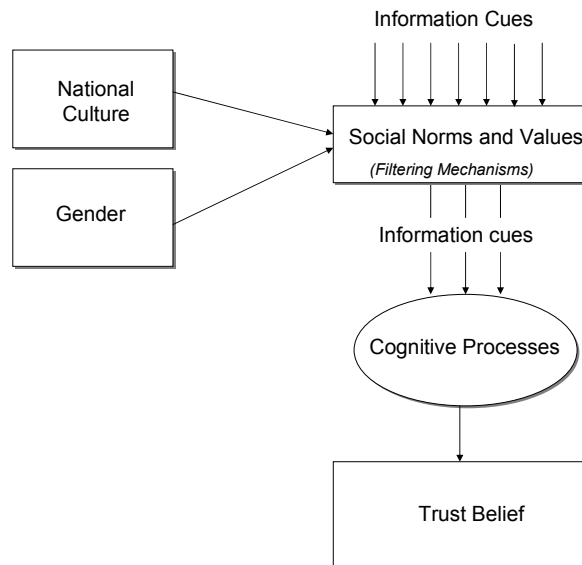


Figure 1: Theoretical Model

In this study, we focus on the formation of an initial trust towards an e-merchant. In this situation, consumers base their trust judgment on information cues that are available in an e-merchant's and infomediary's websites (e.g. epinion.com and bizrate.com). In addition, we do not categorize the use of information cues in a specific cognitive process since each information cue can be perceived differently. For example, "number of clients" can be used as an indication of an e-merchant's capability, while at the same time that piece of information can also be used as an indication of the stability and intentionality of an e-merchant.

According to the limited cognitive theory, individuals have a limited ability to temporarily store information and recall information previously stored (Newell and Simon 1972). To prevent information overload, individuals control the choice of information or stimuli to attend to. Broadbent (1957) theorized that individuals filter out irrelevant information to a task before information is encoded into the perceptual analysis process. Individuals only see or hear things that they pay attention to. Consumers develop a "rule of thumb" or short-cut to overcome limited cognitive resources by eliminating the number of irrelevant information used for determining trust or eliminating the information perceived to be less important for the judgment of trustworthiness.

Different elements of information are required for particular cognitive processes. National culture is posited to impact the type of cognitive processes used to form trust (Doney et al., 1998). In addition to national culture, gender is also used to categorize groups of individuals having different beliefs and behaviors. Kahneman and Tversky (1979) suggest that norms and values influence how individuals exclude and include information cues for their analysis. Since national culture and gender may influence social norms and values, we propose:

Proposition 1: National culture differences influence how individuals value the relative importance of information elements for forming the initial trust towards an e-merchant

Proposition 2: Gender differences influence how individuals value the relative importance of information elements for forming the initial trust towards an e-merchant

METHODOLOGY

A method used to determine the relative importance of information and systems is ranking. Zhang and von Dran (2001/2002) use a ranking method to determine the important features of different website domains. Silver (1988) determines the perceived restrictiveness of decision support systems based on user's rankings. We employ this method with participants to indicate their relative importance of different information elements in forming trust judgments.

Thailand and the United States are selected in this study due to the fact that Thai people are opposite to American people in all the dimensions of national culture (Hofstede, 1984). In another word, Thailand and the United States have a totally different culture and would hold different social norms and values that drive their behavior and beliefs. Individuals in the U.S. are used as a benchmark comparison since U.S. consumers more widely accept online purchasing than consumers in Thailand. Accompanied with a literature review, 30 information elements that frequently appear on both U.S. e-merchant and infomediaries websites were identified by two experts.

Twenty participants from each nation, 10 male and 10 female, are asked to rank 30 elements of information according to their importance for determining trustworthiness towards an e-merchant. The Thai participants are from Bangkok, use the Internet regularly, and already have a bachelor's degree. This sampling reflects the demographics of Internet users in Thailand. The US participants are business students from a university in Midwest US. Participants in both nations have credit card accessibility and they have indicated an intention to purchase a product from an e-merchant, even if they have never purchased anything online before. All of the participants from US have purchased online at least once while only one participant from Thailand has an experience purchasing online.

In this study we use principal component analysis to determine the ranking of relative importance of information elements in forming trust, and use the Mann-Whitney test to compare the differences between the two nations and genders of how they rank the information. The results of the pilot study are shown in Tables 2, 3, and 4.

Rank	US	Thailand
1	Guarantee policy and privacy assurance section	A number of negative expert reviews
2	E-mail recommendation from closed friends/family members	A number of expert reviews
3	Security section describing safe transaction	A number of sales/clients
4	The sign/logo shows that e-vendor meet the institution standard (VeriSign)	Guarantee policy and privacy assurance section
5	Credential of Experts	A number of peer reviews
6	Expert reviews Rate	A number of years in online business
7	Quality of web design	A number of peer reviews
8	Recent expert reviews	A number of positive expert reviews
9	A number of year in business	Content of negative expert reviews
10	Content of negative expert reviews	A positive/negative ration of the peer reviews

Table 2. Ten Most Important Information Elements by Nation

Rank	Female	Male
1	Guarantee policy and privacy assurance section	E-mail recommendation from closed friends/family members
2	E-mail recommendation from closed friends/family members	Security section describing safe transaction
3	Security section describing safe transaction	The sign/logo shows that e-vendor meet the institution standard
4	Credential of Experts	Quality of web design
5	Quality of web design	Guarantee policy and privacy assurance section
6	Expert reviews Rate	Recent expert reviews
7	A number of years in online business	Credential of experts
8	Content of positive expert reviews	Expert reviews Rate
9	The sign/logo shows that e-vendor meet the institution standard (VeriSign)	Recent peer reviews
10	A number of years in business	A number of years in business

Table 3. Ten Most Important Information Elements by Gender

Information Cues	US	Thailand
A number of expert reviews	X	
A number of sales/clients	X	
A number of years in online business	X	
Content of negative peer reviews		X
Content of positive peer reviews		X
Peer review rate		X
Testimonial from well known persons	X	
Information Cues	Female	Male
E-mail recommendation from closed friend/family members	X	
Guarantee policy and privacy assurance	X	
Trend of positive/negative expert reviews		X (Weak)

Table 4: Results of Mann-Whitney Test

CONCLUSION

There are several implications for both researchers and practitioners. The findings of this type of research confirm differences in the dimensions of culture and gender for selecting information elements in trusting judgments towards e-merchants. These differences are rarely accounted for in the literature, which suggests their inclusion in future information systems research. This research also is able to discern salient pieces of information that are used in forming trust among different groups of individuals. This knowledge may be useful for practitioners in designing a strategy to effectively gain the trust of specific gender or global markets.

This research presents the findings of a pilot-study. Since the study involves a relatively small sample size, the findings are limited and should not be generalized to a larger population as yet. These tentative findings do support our propositions, however, and present results which indicate that individuals of different national cultures and gender do not value the same pieces of information while making decisions. Future work for this study will be to collect data from a large sampling of participants to confirm our provisional findings. Another data collection technique may also be employed to further validate the anticipated results of this research. The findings will help practitioners and researchers design websites that provide information cues to build trust beliefs in countries having different cultures.

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