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Culture and Consumer Trust in Online Businesses

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Abstract

The importance of consumer trust to the success of online businesses is well documented in the literature. Given the global nature of online transactions, an important question is whether trust and trust formation differ across cultures. This study compared Hong Kong and U.S. consumer trust in online businesses. Specifically, the study examined security and privacy risks related to the purchase of products as well as services. The results show that significant differences exist between consumers from the two countries regarding the perceived level of online business risks and the formation of trust via the transference process. These findings reiterate and underscore the significance of including national culture in studies of trust in e-commerce. The results also have potential implications for online businesses as well as third party certification and assurance services.

Keywords

consumer trust; culture; e-commerce; online business

INTRODUCTION

Concern with the determinants of consumers' willingness to engage in e-commerce has been the focus of numerous studies (e.g., George, 2004; Gefen, Karahanna, & Straub, 2003a, b; Tan & Sutherland, 2004; Jarvenpaa & Tractinsky, 2003; Pavlou, 2003; McKnight, Choudhury, & Kacmar, 2002; McKnight & Chervany, 2001; Jones, Wilikens, Morris, & Masera, 2000). For example, based on the theory of planned behavior, George (2004) finds that trustworthiness is a significant factor in the development of attitudes concerning e-commerce. Similarly, Gefen et al. (2003a, b) used the technology acceptance model (TAM) (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989; Venkatesh & Davis, 2000) to examine the role of trust in consumers' intention to use e-commerce. In a study of repeat customers, Gefen et al. (2003a) find that beliefs about structural assurances such as online seals were significant antecedents of trust, thereby contributing to intended use. In a separate study, Gefen et al. (2003b) found that familiarity and trust primarily determined the purchase intentions of

potential as opposed to repeat customers. They conjecture that in initial encounters with an e-vendor (with its attendant higher uncertainty), potential customers employ the uncertainty reducing constructs of trust and social norms as primary determinants.

Together, the foregoing studies highlight the importance of consumer trust to the success of online businesses. If consumers do not trust the Internet or specific vendors, they are unlikely to engage in online transactions. Individuals may not trust the Internet or online businesses because of various risks related to issues such as privacy violation and inadequate security when completing online transactions. For example, consumers may be worried about the risk that personally identifiable information they submit to a company's Web site may intentionally or inadvertently be used for unintended purposes.

Given the global nature of online transactions, an important question is whether trust issues differ across cultures (Gefen & Heart, 2006; Tan & Sutherland, 2004; Liu, Marchewka, & Ku, 2004; Jarvenpaa & Tractinsky, 2003). Different cultures exhibit differing social norms and propensities to trust (Srite & Karahanna, 2006; Doney, Cannon, & Mullen, 1998). Thus, it is expected that cross-cultural differences may be observed in the propensity to engage in e-commerce. This is relevant since crosscultural differences may have potentially significant implications for online businesses. For example, the design of electronic storefronts may be improved to create a better sense of trust among customers by taking into account possible cultural differences in disposition to trust. Similarly, cross-cultural differences in trust issues may have potential implications for the marketing of third party certification and assurance services. Elliott and Pallais (1997) note that the first step in identifying a new assurance service is to focus on user needs. Differences between cultures may call for different marketing strategies to better meet online customer needs.

The purpose of this study is to examine the effect of culture on consumers' trust in online businesses. It is motivated by two related findings in previous research. First, Tan and Sutherland (2004) specifically highlight the lack of research that examines the effect of culture on consumers' disposition to trust. They posit that consumers' disposition to trust influences their trust in the Internet (institutional trust) as well as their trust in specific online vendors (interpersonal trust). Thus, to the extent that cultures differ in dispositional trust, differences would be expected in institutional and interpersonal trust. The present study focuses on interpersonal trust. Second, while two studies (Jarvenpaa & Tractinsky, 2003; Liu et al., 2004) that specifically examined consumers' trust in online vendors have failed to provide evidence of a cultural effect, a more recent study by Gefen and Heart (2006) found cross-cultural differences in the effects of familiarity with, and predictability of an online vendor on trust beliefs. The present study re-examines potential cross-cultural differences in consumers' interpersonal trust in online businesses.

The current research has potentially significant implications for both research and practice. From a research standpoint, it contributes to the literature in several ways. First, it provides insights into the apparent inconsistency in findings among the mentioned studies. Specifically, consistent with the propositions by Tan and Sutherland (2003), the present study finds cross-cultural differences in consumer trust in online businesses. This is in contrast to the findings of two earlier studies (Jarvenpaa & Tractinsky, 2003; Liu et al., 2004) which did not find such cross-cultural differences. Second, similar to the study by Gefen and Heart (2006) that examined the prediction process as a mode of trust creation, the current research provides evidence of cross-cultural differences in the effectiveness of the transference process as a means of building trust, as postulated by Doney et al. (1998). Third, the current study provides evidence of the generalizability of the recent findings of Gefen and Heart (2006), which suggests that online consumer trust models need to take into account the effect of culture. Whereas, that study compared online consumers in the United States (U.S.) and Israel, the present study examined U.S. and Hong Kong consumers. Moreover, unlike prior studies that examined trust in specific online businesses (e.g., Amazon.com), the present research investigates trust related to various types of online transactions.

With respect to practice, the current research provides insights into possible causes of the low rate of online business adoption specifically in Hong Kong where in spite of a high level of Internet use, the success of online businesses has been very limited (Burton, 2002; Ng, 2000). For example, according to a study conducted by the Hong Kong Productivity Council (HKPC, 2003) from January to June 2003, only about 10% of the companies surveyed offer customers the ability to order online. The present study examines the extent to which differences in interpersonal trust between Hong Kong and U.S. consumers may contribute to the observed difference in the rate of online business adoption between the two countries. The results also provide useful insights related to the marketing of third party certification and assurance services in Hong Kong.

The remainder of this article is organized as follows. The next section reviews relevant literature and provides the basis for the study. After the research hypotheses are developed, the survey method is presented followed by a description of the results. The article concludes with a discussion of the findings and their implications.

LITERATURE REVIEW

Online Trust

As noted earlier, the importance of consumer trust to the success of online businesses is well documented in the literature (see Gefen et al., 2003a for an excellent review of trust literature related to e-commerce). Several models (see e.g., Tan & Sutherland, 2004; George, 2004; Pavlou, 2003; McKnight et al., 2002; Jarvenpaa & Tractinsky, 2003) have been suggested for studying online

consumer trust. The framework proposed by Tan and Sutherland (2004) recognizes a three-dimensional construct of trust. Specifically, the authors distinguish among dispositional, institutional, and interpersonal trust. Dispositional trust relates to a person's ability and willingness to trust. It is influenced by individuals' upbringing, personality, and cultural values. Institutional trust in the current context refers to trust in the Internet as a whole. It is primarily affected by individuals' beliefs regarding the adequacy of the Internet's regulatory, legal, or technical protection. Interpersonal trust relates to trust in a specific party such as a particular online vendor. It is influenced by individuals' perception of the other party's competence, predictability, benevolence, and integrity. All three dimensions of trust are interrelated and contribute to the overall assessment of trust. Tan and Sutherland (2004) posit that dispositional trust is the primary foundation to the development of trust and the associated outcomes. Their three-dimensional construct of trust is consistent with that proposed by McKnight et al. (2002). The latter similarly postulate that dispositional trust is an antecedent of both institutional trust and interpersonal trust (trusting beliefs). The present study examines consumers' level of interpersonal trust by assessing their perceived risk associated with online businesses. Next, the relationship between trust and risk, and the relevance of third party assurance are discussed.

Trust and Risk

Consumers' level of trust is associated with their perceived risk in that the former moderates the latter (Jarvenpaa & Tractinsky, 2003; Pavlou, 2003). In general, the higher the initial perceived risk, the higher is the level of trust needed to persuade the consumer to engage in an online transaction. Online businesses attempt to mitigate consumers' perceived risk by creating a sense of trust. One way that this can be achieved is by displaying seals of approval by third parties (Kimery & McCord, 2002; Cook & Luo, 2003; Palmer, Bailey, & Faraj, 2003; Zhang, 2004). Such third party seals enhance trust through a transference process. According to Doney et al. (1998), the transference process describes the trustor's transfer of trust from a trusted third party "proof source" to an unknown entity with which the trustor has little or no direct experience. The present study focuses on online consumers' perceptions related to such assurance seals since they are specifically intended to enhance online vendors' trustworthiness.

Cook and Luo (2003) provide a survey of available third-party assurance seals and providers. Several organizations offer third party certification or assurances to address the risk concerns that consumers may have regarding online transactions. These include logo or seal programs offered by secure electronic transaction (SET), BBBOnline, TRUSTe and the TruSecure Corporation through its International Computer Security Association (ICSA) labs. SET licenses the use of the SET logo (or SET Mark) to Web sites that utilize technology that has passed its compliance testing. BBBOnline, a wholly owned subsidiary of the Council of the Better Business Bureaus, offers a reliability seal and a privacy seal program. TRUSTe, an independent nonprofit organization, awards a TRUSTe seal to

Web sites that adhere to established privacy principles, and agree to comply with ongoing TRUSTe oversight and consumer resolution procedures. TruSecure Corporation provides certification of organizations that meet established requirements necessary to achieve and maintain security. Zhang (2004) finds that some seals are more effective in increasing purchases than others. For example, seals assuring reliability increased sales of both commodity and "look-and-feel" products; assuring the information only increased commodity purchases.

WebTrust, a more comprehensive assurance program is offered by licensed certified public accountants (CPAs). The WebTrust assurance program was jointly created by the American Institute of Certified Public Accountants (AICPA) and the Canadian Institute of Chartered Accountants (CICA). The intended goal is to alleviate concerns that consumers have when transacting online. For example, individuals may be concerned about the privacy of personally identifiable data that they submit to a Web site to complete an online purchase.

In a WebTrust engagement, a licensed practitioner verifies whether an online business complies with principles and criteria regarding matters such as privacy, security, availability, and business practices. If a business meets the WebTrust principles and criteria, it is awarded an electronic seal that can be displayed on the company's Web site. Consumers can click on the seal to view the digital certificate that authenticates the seal. In addition, they can review the report of the public accountant as well as the company's business practices.

WebTrust has recently been introduced in several European and Asian countries including Hong Kong. It is regarded as the catalyst that can help in the development of online businesses. As in the U.S., it is also viewed as a new product with significant potential for CPAs if it is marketed correctly (Pawlyna, 2000). Because of the comprehensiveness of its program, the current research uses the WebTrust framework of principles to examine consumers' interpersonal trust. The present study specifically assesses individuals' risk related to the WebTrust privacy and security principles.

Culture and Trust

The interaction of culture and information systems has been the focus of several streams of research. See Leidner and Kayworth (2006) for a review. In the present context, Tan and Sutherland (2004) note the lack of research that examines the effect of culture on online consumers' disposition to trust. They suggest that cultural values may play a role in influencing individuals' dispositional trust. According to Hofstede (1997), "The core of culture is formed by values. Values are broad tendencies to prefer certain states of affairs over others." Based on a survey of IBM employees around the world, Hofstede identified four value dimensions of culture: power distance, individualism (versus collectivism), masculinity (versus femininity), and uncertainty avoidance. Power distance refers to the extent to which less powerful members of institutions and organizations within a country expect

and accept that power is distributed unequally. Individualism relates to the degree to which individuals emphasize self-interests versus the interests of the group (collectivism). Masculinity pertains to the importance attached to goals such as career and material success whereas femininity relates to the emphasis on social goals such as relationships, helping others, and the physical environment. Uncertainty avoidance refers to the degree to which members of a society feel uncomfortable with uncertainty and ambiguity. Later, a fifth dimension, Confucian dynamism, was identified. It pertains to the extent to which one has a long-term versus a short-term orientation in life.

A number of studies have specifically examined trust across different cultures. Jarvenpaa and Tractinsky (2003) posit that relative to consumers from collectivist cultures, those from individualistic cultures will tend to exhibit higher trust and a lower perception of risk in specific Internet stores. These expected relationships are based on the notion that collectivists are less trusting of outsiders and more riskaverse. In particular, Jarvenpaa and Tractinsky (2003) note "individualists are more likely to trust others until they are given some reason not to trust. By contrast, collectivists are more likely to base their trust on relationships with first-hand knowledge." Peszynski (2003) makes a similar argument in a study of New Zealand Māori Internet shoppers.

The study by Jarvenpaa and Tractinsky (2003) focused on trust issues related specifically to the purchase of a book and the planning of a holiday trip online. The results showed no support for the hypothesized cultural effects among their samples. Jarvenpaa and Tractinsky (2003) nevertheless caution online businesses against concluding that the same Web site attributes can be used to create a sense of trust among consumers from different cultures. They further note that the lack of findings may be attributable to the relative cultural homogeneity across their samples (consumers from Australia, Israel, and Finland), the use of country as a surrogate measure of culture, or the narrow measurement of trust.

Similarly, Liu et al. (2004) compared American and Taiwanese perceptions of privacy issues related specifically to a fictitious electronic commerce bookstore. They found no evidence of cultural differences related to privacy, trust, and behavioral intention. In general, they note that the lack of difference between American and Taiwanese consumers could be attributable to aspects of the new Internet environment within which individuals' perceptions and behavior may be unaffected by cultural background. Liu et al. (2004) suggest more research to better understand the effect of cultural values in the global marketplace.

Together, the foregoing two studies failed to provide support for Tan and Sutherland's (2004) propositions regarding the effect of culture on trust. More recently, however, Gefen and Heart (2006), found differences in the effectiveness of modes of trust creation between online consumers in the

U.S. and Israel. In particular, they observed that familiarity (with an online vendor, i.e., the trustee) has a stronger effect on trusting behavioral intentions in Israel than in the U.S. In contrast, predictability (ability to predict the trustee's behavior) contributed more trust in the U.S. than in Israel. An important implication of the findings of Gefen and Heart (2006) is the need to include national culture in e-commerce trust studies.

In light of the foregoing inconsistent findings, the present study re-examines the effect of culture on consumers' interpersonal trust in online businesses. However, it differs from the research by Jarvenpaa and Tractinsky (2003), Liu et al. (2004), and Gefen and Heart (2006) in several ways. First, whereas these studies examined consumers from Australia, Israel, and Finland, from the U.S. and Taiwan, and from the U.S. and Israel respectively, the present research compares U.S. and Hong Kong consumers' interpersonal trust. Second, unlike the prior studies, the current investigation does not focus on trust related to one specific vendor. Instead, the present study examines consumers' interpersonal trust by assessing their perceived risk across a variety of online transactions. Third, the prior research did not investigate online consumers' trust related to individual WebTrust principles. The current study examines interpersonal trust with respect to the privacy and security principles. The specific research hypotheses are presented in the next section.

RESEARCH HYPOTHESES

The present study compares the interpersonal trust of online consumers from two specific countries: Hong Kong and the United States. While each country has its unique characteristics, it is generally accepted that the two countries reflect cultural values of the East and the West respectively. For example, although they are unique as a result of having been under British rule for more than a century, Hong Kong Chinese share Confucian values with other Chinese societies such as Taiwan and Mainland China. The present study's hypotheses are based primarily on known differences in these deeprooted cultural values (Hofstede, 1980, 1997, 2001) between the two countries as shown in Table 1. No hypothesis is based on masculinity, given that the U.S. and Hong Kong differ only marginally on that dimension.

Trust and Risk

According to Hofstede (2001), "Individualism stands for a society in which the ties between individuals are loose: Everyone is expected to look after him/herself and her/his immediate family only. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty." Based on this significant difference in cultural values, it is expected that relative to consumers from collectivist societies, those from individualist cultures will tend to view online businesses as more trustworthy. This is because relative to individualists, collectivists tend

to be less trusting of outsiders. Moreover, people from individualist societies are accustomed to opportunistic behavior. Consequently, they expect and are more tolerant of such behavior than people from collectivist societies (Doney et al., 1998). In collectivist societies, the likelihood of opportunistic behavior is lower because people hold group values and seek collective interests. Collectivists are thus, less tolerant of opportunistic behavior. Based on the foregoing, it is expected that the novelty of, and lack of familiarity with, online vendors are expected to increase the sensitivity to and the perceived likelihood of opportunistic behaviors among consumers from collectivist cultures. Moreover, this effect is anticipated to be less pronounced among consumers from individualist cultures. This expectation is consistent with those postulated by Gefen and Heart (2006), Tan and Sutherland (2004), Jarvenpaa and Tractinsky (2003), and Peszynski (2003).

The long-term orientation dimension is also expected to influence consumers' trust in online businesses. The definitions of individualism and collectivism reflect their close association with the long-term/short-term orientation values. Indeed, long-term orientation has been found to be strongly and negatively associated with affiliation with outsiders (Hofstede, 2001). The relationship between long-term/short-term orientation and individualism/collectivism, and their significance to trust can be illustrated using *guanxi*, which is an important concept in Asian business. *Guanxi* refers to personal connections and acquaintances that are essential in business. The significance of developing relationships reflects the collectivism dimension whereas the importance of maintaining *guanxi* for a lifetime reflects the long-term orientation dimension (Hofstede, 2001). Thus, in the current context, it can be expected that relative to short-term oriented consumers, long-term oriented consumers are less likely to exhibit interpersonal trust in online businesses. This is because they perceive that developing and maintaining a trusting relationship with a new and unfamiliar online vendor are a long-term endeavor. That view is not likely to be shared by short-term oriented consumers.

Together, the foregoing suggests that people from individualist (collectivist) and shortterm oriented (long-term oriented) cultures will exhibit higher (lower) interpersonal trust. Consequently, compared to their Hong Kong counterparts, U.S. consumers can be expected to be less concerned about the WebTrust principles and to perceive a lower risk of violation of the WebTrust principles. Given that Hong Kong is more collectivist and long-term oriented than the U.S., the first two hypotheses are:

H1: Compared to U.S. consumers, Hong Kong consumers have higher levels of concern about the WebTrust principles.

H2: Compared to U.S. consumers, Hong Kong consumers perceive a higher likelihood of violation of the WebTrust principles.

Transference Process

As noted earlier, trust can be developed through a transference process (Doney et al., 1998). In that process, a trustor (consumer) transfers trust from a known entity (third party assurance provider) to an unknown one (online vendor). Research findings suggest that the transference process is effective in the U.S. For example, studies by Hunton, Benford, Arnold, and Sutton (2000) and Kovar, Burke, and Kovar (2000) find that, overall, U.S. consumers view third party seals to be valuable because it alleviates concerns that they may have about transacting online. Zhang (2004) finds that seals effectively increase online consumers' willingness to buy and are especially effective with inexperienced online consumers.

Whether the transference process is effective in other cultures is unknown. Doney et al. (1998) postulate that trust is more likely to be formed via the transference process, among low power distance than among high power distance cultures. Presumably, compared to people in high power distance societies, people in low power distance societies feel less threatened by others because equality of rights is valued. Consequently, relative to people in high power distance societies, people in low power distance societies also tend to be more trusting of others. Because people in high power distance societies are less trusting of others (including assurance providers), the transference process is thus less likely to be effective in among consumers from high power distance cultures than among those from low power distance cultures.

Similarly, Doney et al. (1998) postulate that relative to people in low uncertainty avoidance cultures, those in high uncertainty avoidance cultures are more likely to form trust via the transference process. This is because low uncertainty avoidance reflects "high tolerance for behavior and opinions that are different" from one's own and possibly a lower propensity to "judge others to be similar." As a result, identifying a source from which to transfer trust may be difficult.

Together, the foregoing suggests that forming trust via the transference process is less (more) likely to be effective in a high (low) power distance and low (high) uncertainty avoidance culture. Given that power distance is higher and uncertainty avoidance is lower in Hong Kong than in the U.S., the third hypothesis is:

H3: Compared to U.S. consumers, Hong Kong consumers will perceive the seal of assurance to be less valuable in reducing concerns about the WebTrust principles.

A key component of the transference process is the identity and trustworthiness of the proof source (assurance seal provider). In the current context, some may prefer CPAs because of their reputation for objectivity and integrity. Others may see an advantage in assurance providers that are perceived to have superior knowledge of specific technical areas. Yet others may prefer a government agency

to attend to issues such as privacy, security, and availability. According to Hofstede (2001), people from high (low) collectivism cultures tend to exhibit emotional dependence on (independence from) institutions and organizations. Given their higher collectivism, Hong Kong consumers are likely to view a government agency as the most trusted assurance provider because it is the best-known institution/organization. In contrast, the more individualist U.S. consumers are expected to be less likely to select a government agency as an assurance provider. Given that Hong Kong is more collectivist than the U.S., the fourth hypothesis is:

H4: Compared to U.S. consumers, Hong Kong consumers are more likely to view a government agency as the most trusted assurance provider for the WebTrust principles.

METHOD

Subjects

Following other studies of Internet users (e.g., Srite & Karhanna, 2006; Pavlou & Fygensen, 2006; Venkatesh & Ramesh, 2006; Galletta, Henry, McCoy, & Polak, 2006), participants in the present research were undergraduate students from both cultures. According to Kovar et al. (2000), student-subjects provide a reasonable surrogate for online consumers who tend to be younger and more educated than traditional consumers.

In the present study, the Hong Kong participants were 214 undergraduate students enrolled in a managerial accounting principles course at a university in Hong Kong. The U.S. subjects were 217 undergraduate students enrolled in an introductory management information systems course in the U.S. Using students as subjects allowed the samples to be closely matched. The two groups were comparable in that they consisted of students enrolled in a required (accounting or information system) course, and intending to major in different fields in business. Moreover, the two samples did not differ significantly in age ($p>0.10$).

Table 2 shows Hong Kong and U.S. subjects' experience with the seven online transactions surveyed. The results confirm the continued limited experience of Hong Kong consumers with online transactions relative to U.S. consumers. For example, 90% of the Hong Kong consumers surveyed had never purchased a plane ticket online compared to 35% of the U.S. consumers. In addition, only 27 (12.6%) of the Hong Kong respondents, compared to 113 (52%) of the U.S. subjects, indicated that they had engaged in online transactions other than the seven listed. These included buying gifts, clothing, and concert or movie tickets. Overall, 107 (50%) of the Hong Kong subjects, compared to only 9 U.S. respondents (4.1%), had never completed online transactions of any type.

Procedures

The survey was administered to the subjects during their classes. The time required to complete the questionnaire ranged from 15 to 20 minutes. Subjects received extra credit for their participation.

Questionnaire

As noted earlier, prior studies by Jarvenpaa and Tractinsky (1999) and Liu et al. (2004) did not find any effect of culture on interpersonal trust. This may be due the specificity of the online vendors (bookstores and travel agencies) examined. The current research employed a different approach to examine the potential effect of culture on interpersonal trust. Rather than focusing on a particular vendor, the present study surveyed consumers across a variety of online transactions representing different types of businesses. Although such an approach does not allow the examination of detailed attributes specific to one individual vendor, it enables the study of consumer interpersonal trust across a wider spectrum of online business types (e.g., service versus product vendors).

Moreover, as previously mentioned, third party assurance seals such as those provided by WebTrust are specifically intended to enhance consumers' trust in individual online vendors. Thus, one way to assess consumers' interpersonal trust in online businesses is to examine their perceptions related to (1) the level of concern about the principles addressed by the assurance seals, (2) the likelihood of violation of the principles, (3) the value of the assurance seals, and (4) the trust in the provider of the assurance seals. The instrument described below was designed to assess these consumer perceptions based on the intended purpose of third party seals, which is to enhance trust in online vendors. It was developed based on the AICPA's description of the WebTrust principles.

The survey assessed participants' perceptions regarding the WebTrust privacy and security principles on separate pages. The order in which the principles appeared was alternated to preclude order effects in the perception assessment. Demographic data including subjects' experience with online transactions were collected on the last page.

The Appendix shows a page of the survey eliciting the subjects' responses with respect to privacy. A description of the WebTrust principle is provided at the top of the page to ensure that subjects understood the nature of the principle. A seven-point Likert scale elicited the extent of the subject's concern about the principle for each of seven types of online transactions. The scale was anchored from "not at all concerned" (1), to "extremely concerned" (7). This "perceived concern" measure is used to test H1.

A seven-point Likert scale was also used to assess the subject's perception of the likelihood that the principle may be violated. The scale was anchored from "extremely unlikely" (1), to "extremely likely" (7). This "likelihood of violation" measure is used to test H2.

In the next part, subjects were provided examples of violations of the principle and a description of the assurance provided by the WebTrust seal for the principle. Description of the assurances included the disclosure of an entity's practices, compliance with the practices, and the maintenance of effective controls. Subjects were then asked to indicate the degree to which an assurance seal would reduce their concern about the principle using a seven-point Likert scale anchored at "not at all" (1), and "to a great extent" (7). This "perceived value" measure is used to test H3.

Finally, subjects were asked to select the independent assurance entity that they would most trust to provide assurance about each principle from the following: the Better Business Bureau, experts in information technology, CPAs, a government-appointed agency, a nonprofit organization, and some other party. This measure is used to test H4.

DATA ANALYSIS AND RESULTS

Concern About WebTrust Principles (H1)

Recall that the subjects' concern scores for the seven types of transactions were measured on separate seven-point scales (see Appendix). Prior to testing H1, the seven concern scores were analyzed using an exploratory factor analysis to determine if some or all of the transactions were related to a common construct. The analysis was undertaken to enable common transactions to be combined, thereby simplifying the data analysis. For each WebTrust principle, subjects' seven concern scores were subjected to a principal-component factor analysis with varimax rotation. In each case, the results yielded two factors with eigenvalues greater than one. The results (see Table 3) show that four transactions (buying plane tickets, trading stocks, banking & paying bills, and filing taxes) load on one factor, which accounts for 41.37 % and 43.22 % of the variance for the privacy and security principles respectively. This first factor is labeled as the "purchase of services" type of transaction. The remaining three transactions (participating in auctions, buying books & CDs, and buying computers) load on a second factor, which accounts for 33.78% and 35.57 % of the variance for the privacy and security principles respectively. This second factor is labeled as the "purchase of products" type of transaction. The Cronbach alphas (see Table 3) for each principle suggest reasonable reliability for the measures.

To test H1, the scores to the four transactions (buying plane tickets, trading stocks, banking & paying bills, and filing taxes) that loaded on the "purchase of services" type of transaction were averaged. Similarly, the scores of the three transactions (participating in auctions, buying books & CDs, and buying computers) that loaded on the "purchase of products" type of transaction were averaged. These two average scores provided the responses for transaction type (service vs. product) which was analyzed as a within-subjects factor.

To test H1, a 2(culture) x 2 (transaction type) x 2 (WebTrust principle) analysis of variance (ANOVA) was performed on the concern scores with the latter two factors as within-subject variables. The results in Panel A of Table 4 show a main effect of culture ($F(1, 429) = 20.64, p < 0.001$). Panel B of Table 4 shows the Hong Kong and U.S. participants' mean level of concern about the privacy and security principles across the two main types of transactions examined. Hong Kong respondents consistently viewed each WebTrust principle as more of a concern than U.S. respondents across both types of transactions ($p < 0.05$). Taken together, these results support H1.

Panel A of Table 4 also shows that the culture main effect is qualified by an interaction effect of culture and principle ($F(1, 429) = 5.54, p = 0.019$). Whereas U.S. consumers are apparently less concerned about security (4.39) than they are about privacy (4.56), Hong Kong consumers appear to be similarly concerned about the two principles (5.10 and 5.03 respectively). The results also show a main effect of transaction type ($F(1, 429) = 261.38, p < 0.001$). Online consumers from both Hong Kong and the U.S. are significantly more concerned about the purchase of services (5.21) than they are about the purchase of products (4.25).

Likelihood of Violation of WebTrust Principles (H2)

To test H2, a 2(culture) x 2 (principle) ANOVA was performed on the violation scores with the latter factor as a within-subject variable. The results in Table 5 Panel A show a significant interaction effect of culture and principle ($F(1, 427) = 22.45, p < 0.001$). Panel B shows that Hong Kong consumers (4.50) perceived a significantly lower likelihood of violation of the Privacy principle than U.S. consumers (4.83). However, Hong Kong consumers (4.43) perceived the likelihood of violation of the security principle to be higher than U.S. consumers (4.02) did. These results partially support H2.

Panel A of Table 5 also shows a significant main effect of principle ($F(1, 427) = 31.72, p < 0.001$). Consumers from both Hong Kong and the U.S. perceived a higher likelihood of violation of the privacy principle (4.67) than of the security principle (4.23).

Value of seal of Assurance (H3)

To test H3, a 2 (culture) x 2 (principle) ANOVA was performed on the value scores with the latter factor as a within-subject variable. The results in Table 6 Panel A show a significant main effect of culture ($F(1, 421) = 13.80, p < 0.001$). Panel B shows that Hong Kong consumers perceived the privacy (4.47) and the security (4.33) assurance seals to be less valuable than U.S. consumers (4.87 and 4.78 respectively) did in reducing concerns about these principles. These results are consistent with H3.

Relative Trustworthiness of Assurance Providers (H4)

To test H4, the percentage of consumers selecting a government-appointed agency as the most

trusted assurance provider was computed for each country for each principle. As shown in Table 7, for both the privacy and the security principles, the percentage is higher among Hong Kong consumers (55.9% and 51.2% respectively) than among U.S. consumers (29.0% and 31.8% respectively). Using a z-test for comparing proportions in two independent populations, the difference is significant for both the privacy ($z=5.44$, $p<0.001$) and the security ($z=4.06$, $p<0.001$) principles. This pattern of results supports H4.

DISCUSSION

The purpose of this study was to examine the effect of culture on online consumers' interpersonal trust based on Tan and Sutherland's (2004) three-dimensional construct of trust. The present research compared specifically Hong Kong and U.S. consumers' perceptions regarding privacy and security. Cross-cultural differences were predicted based primarily on known differences in Hofstede's (1980, 1997, 2001) value dimensions. The results in general suggest a cross-cultural difference in interpersonal trust between consumers from the two countries. First, compared to U.S. consumers, Hong Kong consumers expressed a higher level of concern regarding both privacy and security. Moreover, the level of concern was higher for Hong Kong respondents for both purchases of services and purchases of products. Second, compared to U.S. consumers, Hong Kong consumers perceived a higher risk of violation of the security principle. In contrast, U.S. consumers perceived a higher risk of violation of the privacy principle than did Hong Kong consumers. Third, relative to U.S. consumers, Hong Kong consumers did not perceive as much value in the assurance seals for privacy and security. Fourth, compared to U.S. consumers, Hong Kong consumers indicated a stronger preference for government-appointed agencies for providing assurance seals. Taken together, the observed pattern of evidence suggests that Hong Kong consumers exhibit lower interpersonal trust than U.S. consumers.

The results of the present study have potentially significant implications for both research and practice. From a research standpoint, it contributes to the literature about cross-cultural consumer trust issues regarding online transactions in several ways. First, the results are generally consistent with Tan and Sutherland's (2004) propositions regarding the importance and the effect of culture on their three-dimensional construct of trust. In addition, the findings are consistent with the predictions based on known differences in Hofstede's (1980, 1997, 2001) value dimensions between Hong Kong and the U.S. This is significant since contrary to the findings of research by Jarvenpaa and Tractinsky (1999) and Liu et al. (2004), the present study found cross-cultural differences in interpersonal trust. One possible reason for the divergent findings may be the difference in countries examined between the present research (i.e., Hong Kong and U.S.) and those studied by Jarvenpaa and Tractinsky (2003) (i.e., Australia, Israel, and Finland), and by Liu et al. (2004) (i.e., U.S. and Taiwan). Another possible reason may be the difference in the specificity of the online vendor

between the current and the prior research. Whereas the research by Jarvenpaa and Tractinsky (2003) and Liu et al. (2004) focused on interpersonal trust in specific vendors (bookstores and travel agencies), the present study examined trust across different transactions and different principles.

Second, the current results provide support for Doney et al.'s (1998) postulate regarding differences in the effectiveness of the transference process across cultures. Similar to the study by Gefen and Heart (2006) that examined the prediction process as a mode of trust creation, the current research provides evidence of cross-cultural differences in the effectiveness of the transference process as a means of building trust.

Third, the current study provides evidence of the generalizability of the recent findings of Gefen and Heart (2006), which suggests that online consumer trust models need to take into account the effect of culture. Whereas that study compared online consumers in the United States and Israel, the present study examined U.S. and Hong Kong consumers. Moreover, unlike prior studies that examined trust in specific online businesses (e.g., Amazon.com), the present research investigates trust related to various types of online transactions. The present study together with that by Gefen and Heart (2006) highlight the importance and the need to include national culture as a central issue in studying online trust.

With respect to practice, the findings indicate a lower frequency of online transactions among Hong Kong subjects than among their U.S. counterparts. More importantly, the results provide evidence regarding possible causes of the low rate of online business adoption specifically in Hong Kong. In particular, consumers in Hong Kong appear less trusting than U.S. consumers when it comes to online transactions regarding privacy and security.

Moreover, compared to U.S. consumers, Hong Kong consumers tend to trust their government more than any other third party for the purpose of providing privacy and security assurance seals. This is noteworthy because it suggests that in a collectivist culture such as Hong Kong, third parties such as SET, BBBOnline, TRUSTe, SET, and WebTrust may not be as trusted as the government. Consequently, the effectiveness of the transference process (Doney et al., 1998) in facilitating trust in ecommerce transactions depends on the specific "proof source." The current results tentatively suggest that the partnering between third party assurance services and the government in Hong Kong is a way to provide the necessary trust via the transference process.

The findings of the present study should be interpreted in light of its limitations. First, only one dimension (interpersonal) of trust was examined. Second, trust was not directly assessed. Instead, it was inferred from subjects' responses related to perceptions about the privacy and security principles. Third, subjects were undergraduate students who represent only one segment of the

online consumer market. Fourth, the nature of cross-cultural research is such that it is usually impossible to control for all possible extraneous factors and the present study is subject to this limitation.

The results and limitations of the present study suggest several avenues for future research directed at understanding cultural differences in trust. First, research can examine the effect of culture on other dimensions (dispositional and institutional) of trust. Second, future studies can investigate whether these differences are attributable purely to cultural differences or differences in understanding of the nature of Web-based transactions and processes. Hsu (2003) addresses Chinese culture-related issues that have design and content implications for online businesses including trust. Similarly, Cyr et al. (2005) examined cross-cultural differences in preferences of local and foreign Web sites subsequent perceptions of trust, satisfaction, and e-loyalty. Third, the present study was limited to the examination of only two principles and seven types of transactions. Moreover, subjects (young and college-educated consumers) represented only one segment of the potential market. Future research can examine other principles and other types of online transactions within other market segments. Fourth, future studies can identify the specific reasons why non-government organizations are not perceived to be the most trusted assurance providers in Hong Kong. Such findings would guide future efforts at the marketing of third party certification and assurance. Fifth, similar studies can also be conducted in other Asian countries to determine the generalizability of the current findings. Results of the foregoing suggested research can provide insights into cross-cultural trust issues, which in turn may enhance the level of online business adoption and the likelihood of success of third party assurance services globally.

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APPENDIX

PRIVACY

People who are concerned about privacy are worried about how a company will use personally identifiable information that they submit to the company's Web site. Such information may include their name, address, telephone number, e-mail address, and credit card number. Without their consent, the personal data that they input on a Web site may be sold to other companies for a variety of uses. Below, circle a number to indicate how concerned you would be about the **PRIVACY** of personally identifiable data that you submit for each of the following types online transactions:

Buying plane tickets

not at all concerned 1--- 2--- 3--- 4--- 5--- 6--- 7 extremely concerned

Trading stocks

not at all concerned 1--- 2--- 3--- 4--- 5--- 6--- 7 extremely concerned

Banking and Paying bills

not at all concerned 1--- 2--- 3--- 4--- 5--- 6--- 7 extremely concerned

Participating in auctions

not at all concerned 1--- 2--- 3--- 4--- 5--- 6--- 7 extremely concerned

Buying books and CDs

not at all concerned 1--- 2--- 3--- 4--- 5--- 6--- 7 extremely concerned

Filing your taxes

not at all concerned 1--- 2--- 3--- 4--- 5--- 6--- 7 extremely concerned

Buying a computer

not at all concerned 1--- 2--- 3--- 4--- 5--- 6--- 7 extremely concerned

In your opinion, what is the likelihood that in e-commerce, without your consent, information about you maybe disclosed to a third party or used for purposes other than that for which it was originally intended?

Extremely unlikely 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 Extremely likely

Concern over privacy has grown following major privacy policy changes made on some popular Web sites. For example, last September, online retailer **Amazon.com** revised its privacy policy to allow the disclosure of personal customer information to third parties. More recently, online market place **eBay** received complaints after it reversed customers' previously selected preference to not get called by telemarketers.

One possible solution to reduce privacy concerns is to have an **independent party** evaluate and test whether a company (1) discloses its online privacy practices, (2) complies with such privacy practices, and (3) maintains effective controls to provide reasonable assurance that personally identifiable information obtained in e-commerce is protected in conformity with its disclosed privacy practices. To indicate that a company has met the foregoing conditions, a **seal of assurance** would be displayed on the company's Web site. To what extent would such a seal of assurance reduce any concern that you may have about privacy?

not at all 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 to a large extent

In your opinion, which **one** of the following would you **trust the most** to be able to **independently** provide the above seal of assurance? **PLEASE SELECT ONE ONLY.**

- The Better Business Bureau Experts in Information Technology
- Certified Public Accountants A Government-appointed Agency
- A Nonprofit Organization Some other party (Specify: _____)