

Effects of National Culture on the Development of Consumer Trust in Online Shopping

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Abstract

This research examines the impact of cultural values on consumer trust in online shopping. Results from a survey of 289 respondents from Korea and the USA show that the individualism-collectivism dimension has indirect effects on online trust. It significantly interacts with the perceptions of technical competency of online shopping systems, sellers' abilities, and sellers' benevolent intentions towards consumers. Although the effects of culture are indirect, this study shows that online trust is not only based on the attributes of Internet sellers and system-related factors but also on their interactions with the underlying cultural norms. Differentiated website strategies across cultures are, thus, recommended.

Keywords: consumer trust, online shopping, Korea, the USA, national culture, moderating effects

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INTRODUCTION

Trust is a valuable contributor to intentions to shop online (Jarvenpaa and Tractinsky 1999; Gefen 2000; Mutz 2005), particularly because online shopping presents a less verifiable and less controllable business atmosphere (Reichheld and Schefer 2000) and, thus, more uncertainty and risk than the traditional brick-and-mortar shopping environment (Lim, et al. 2004). Consumers simply do not trust Internet merchants enough to develop exchange relationships with them (Hoffman, Novak, and Peralta 1999) because of the physical distance to Internet merchants, the absence of salespeople, and the separation between consumers and products on the Internet (Grabner-Kraeuter 2002). Moving Internet users to the purchase click, thus, is proving to be difficult because of the fundamental lack of trust between most businesses and consumers.

Researchers suggest that consumers develop online trust in a variety of different ways, depending upon the consumer's evaluation of the seller's motivations, integrity, and benevolence (Bhattacharjee 2002), ability to fulfill promises (i.e., privacy, security, and technical competence, Yoon 2002; Modahl 2000), and proof of safety through third-party assurance (Noteberg, Christiaanse, and Wallage 1999). While these sources of trust generally facilitate the trust-building process in online shopping, the perceived importance of these sources may differ among Internet shoppers who are scattered around the world (Jarvenpaa and Tractinsky 1999). Whether and how trust is established under uncertain and risky situations may depend upon the societal norms and values (Doney, Cannon, and Mullen 1998), which would affect how information is used to make behavioral decisions (Triandis 1972). Moreover, the fundamental bases of trust may vary by culture (Doney, Cannon, and Mullen 1998). As the Internet has emerged as a perfect vehicle for interactive marketing across the world (Kuhlmeier and Knight 2005), it is critical to understand how national culture affects the development of consumer trust in Internet shopping to achieve a sustainable competitive advantage in the global marketplace.

Previous research has shown that cultural imperatives are likely to have impacts upon the perception of uncertainty and

risk involved in Internet shopping (Choi and Geistfeld 2004; Park and Jun 2003). For instance, people in Confucian-based collectivistic societies generally have a less trusting stance under uncertain situations than those in individualistic cultures because others are trusted only when they are given reasons to trust by others in society (Triandis 1995; Aaker and Williams 1998). In contrast, people in individualistic cultures have a less risk-seeking tendency because they do not expect others to help them bear the possible adverse consequences of risky options (Weber and Hsee 1998). This 'cushion effect' suggests that the 'group diffusion effect in risk perception' could lead to reduced risk perception (Yamaguchi 1998). Research examining consumer innovation adoption also found cultural differences with respect to uncertainty avoidance (Jarvenpaa and Tractinsky 1999; Hofstede and Wedel 1999), which directly addresses the concept of risk, risk preference, and reliance on risk-reducing strategies. People in low uncertainty avoidance cultures (e.g., the United States, Denmark, and the United Kingdom) are less likely to fear the future and more likely to tolerate risk than are those coming from high uncertainty avoidance cultures (e.g., Korea, Greece, and Japan) (Hofstede 1984).

Despite the growing concern with trust in online shopping and the likely role of national culture on online trust, little is known about how national culture influences the development of consumer trust in online shopping. This study is intended as an exploratory investigation into an international assessment of consumer trust in online shopping behavior by comparing current Korean perceptions of online shopping with those of Americans. Koreans and Americans represent cultures exhibiting major differences with respect to individualism-collectivism and uncertainty avoidance (Hofstede 1984). The basic premise of this study is that cultural norms, namely individualism and uncertainty avoidance, influence the development of online trust through interacting with the salient antecedents to online trust: sellers' ability, sellers' benevolence, technical competence of online shopping systems, transaction security, and third-party assurance.

For an effective assessment of cultural impacts on online trust, Korea and the United States provide a fruitful pair of cultures to compare because they are both among the world's leading group

of Internet users and shoppers. The Internet penetration rates of the two countries (i.e., Korea — 67.0%, U.S. — 69.1%) are approximately more than four times the world average of 16.7% (Internet World Stats 2006). More than 90 percent of Internet users in both countries have purchased online products and services (Forrester Research 2006), affirming both nations' status as Internet powerhouses. In addition, the two nations culturally differ from each other because Korea is among the high uncertainty avoidance and collectivistic cultures, whereas the United States is among the low uncertainty avoidance and individualistic cultures (Hofstede 2001).

CONCEPTUAL BACKGROUND

Cultural Factors

Social scientists have proposed many different definitions of culture (see e.g., Kluckhohn and Kelly 1945; Kroeber and Kluckhohn 1952; Hofstede 1984; Lederach 1995), which differ in important ways, but all share the idea that culture is both shared and learned by individual members of a society. In Hofstede's (1984) extensive analysis of national culture, culture is described as "a collective mental programming: it is part of our conditioning that we share with other members of our nation, region, or group but not with members of other nations or groups" (p.9). Hofstede's notion of collective mental programming coincides with cultural patterns, which rule out their ideas, values, acts, and emotions by historically created systems of meaning. Mooij (2005) suggests that people would have difficulties in living together without cultural patterns, organized systems of significant symbols, and interaction with culture, implying that values, ideas, behaviors, and even emotions of individuals are cultural products, as dictated by culture itself.

While other cultural taxonomies (e.g., Inkeles and Levinson 1969; Schwartz 1994; Trompenaars 1993) may have potential to explain culture's impacts on the development of online trust, the cultural value approach Hofstede (1984) used to identify dimensions makes his taxonomy a particularly useful tool for studying cognitive trust-building processes Internet shopping

involves. Especially, his individualism and uncertainty avoidance dimensions are considered appropriate for the purpose of this study.

Individualism is defined in a way that illustrates its contrast with collectivism. Hofstede (1984) defines the contrast as “people looking after themselves and their immediate family only, versus people belonging to in-groups that look after them in exchange for loyalty.” In individualistic cultures (e.g., the United States, Australia, and the United Kingdom), the needs, values, and goals of individuals take precedence over the group’s, whereas collectivistic cultures (e.g., Korea, Taiwan, and Venezuela) prioritize the group’s needs, values, and goals over individuals’. People in individualistic cultures are characterized as self-reliant, competitive, trusting of others, and focused on utilitarian views of exchange and competence (Bhawuk and Brislin 1992). Under conditions of uncertainty and risk, those in individualistic cultures are more likely to trust others until they are given some reason not to trust, because individualism promotes a trusting stance in general. The individualism dimension influences risk perception, too (Weber and Hsee 1998). People in a collectivistic society have a high risk-seeking tendency only when they expect family and other in-group members to help them bear the possible adverse consequences of risky options (Weber and Hsee 1998). Collectivism in this case acts as a cushion against possible losses, suggesting that the group diffusion leads to less risk perception (Yamaguchi 1998).

Hofstede (1991) defines uncertainty avoidance as “the extent to which a society feels threatened by uncertain or ambiguous situations” (p. 113). Different societies adapt to uncertainty in different ways. For instance Dawar, Parker, and Price (1996) noted that people in strong uncertainty avoidance cultures (e.g., Korea, Greece, and Japan) are decidedly intolerant of ambiguity, which tend to make them distrustful of new ideas or behaviors. In contrast, people in low uncertainty avoidance cultures (e.g., the United States, the United Kingdom, and Singapore) tend to be open to changes, innovations, novelty, and variety. Presumably, this is because change often involves uncertainties. Empirical evidence suggests that the degree of uncertainty avoidance of a particular culture affects how individuals respond to a potential risk, ambiguity, and novelty in business situations

(Taylor, Franke, and Maynard 2000; Dawar, Parker, and Price 1996; Roth 1995). Uncertainty avoidance is especially an important concept in the context of Internet shopping because of the intrinsically uncertain and risky nature of Internet shopping environment. Moreover, Internet shopping presents an enormous change in shopping habits and lifestyle (Lim et al. 2004).

Consumer Trust in Online Shopping

From a social psychological perspective, trust can be defined as the expectations and willingness of actors in a transaction, the risks associated with acting on such expectations, and the contextual factors that either enhance or inhibit the development and maintenance of that trust (see Mayer, Davis, and Schoorman 1995). Based on this view, Doney, Cannon, and Mullen (1998) define trust as “the willingness of a party to be vulnerable to the actions of another party (i.e., trustee) based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (p. 712). This definition incorporates the notion of risk as a precondition for trust, and it includes both the belief and behavioral components of trust. Expectations of the trustee’s trustworthiness drive the trustor’s behavior, and both are necessary for trust to be present.

This approach is widely employed by marketing researchers who note trust as a key component in the development of marketing relationships between buyers and sellers. For instance, conceptualizing trust as a causal link between buyer-seller relationships, customer retention, and loyalty, Frazier, Speckman, and O’Neal (1988) postulate that trust initiates relationships with consumers through satisfactory experience. Trust then facilitates relationships to evolve and change over time (Czepiel 1990), increases retail sales, keeps customer’s interests, processes skills to meet customer needs, and solves customer problems (Beatty et al. 1996). Trust is an especially important concept in Internet shopping because it presents a more uncertain, riskier condition than the traditional brick-and-mortar shopping environment (Lee and Turban 2001; Grabner-Kraeuter 2002). Indeed, the building of trust is a fundamental and yet unresolved issue in the development of Internet shopping

(Hoffman, Novak, and Peralta 1999; Lee and Turban 2001).

The antecedents of trust must be explicitly identified and considered separate from trust itself (Kim and Prabhakar 2004). Several studies suggest a number of predictors of trust in online shopping. For instance, online trust varies by individual traits (e.g., extraversion, neuroticism, agreeableness, Walczuch and Lundgren 2004), while seller-focused perceptions, such as the seller's reputation and similarity, have significant impacts upon trust (Jarvenpaa and Tractinsky 1999; McNight, Choudhury, and Kacmar 2002). Buyers' experience-based factors also affect online trust, including experience of online shopping over time (McNight, Choudhury, and Kacmar 2002), satisfaction, familiarity, and communication (i.e., share of relevant, reliable, and timely information, Yoon, 2002). Among these potential predictors of online trust, this study finds the following antecedents of online trust particularly useful in explaining the impacts of cultural values on the development of trust in online shopping: (1) Internet seller's ability, (2) Internet seller's benevolence, (3) computer system's technical competency, (4) computer system's transaction security, (5) third-party assurance. Individual-level variables, such as buyer's prior experience and familiarity with online shopping, computer usage, and gender, are considered inappropriate for the purpose of this study because little cultural variation is expected with these variables. Discussions of the five predictors are followed in conjunction with cultural norms and values, and research hypotheses are then proposed.

Cultural Impacts on Online Trust

Sellers' ability refers to "a group of skills, expertise, information, competencies, and characteristics that enable a seller to have influence within specific area"(Bhattacharjee 2002). Bhattacharjee (2002) observes that in an e-commerce context, consumer perceptions of seller's ability are based on two related beliefs: (1) whether the seller is competent enough to perform the intended behavior, and (2) whether the seller has access to the knowledge required to perform the behavior appropriately. A perceived lack of these beliefs undermines the perception of the online seller's ability (Bhattacharjee 2002; Lee and Turban 2001).

The individualism dimension influences how much value consumers place on seller's capability (Doney, Cannon, and Mullen 1998). Evidence of individual seller's ability may not be particularly valuable in collectivistic cultures like Korea because in collectivistic cultures, the evaluation of seller's performance is based on group achievement and goals — not individual performance (Ueno and Sekaran 1992). Thus, they see an event as the result of contributions from all participants, rather than from individual efforts (Kale and McIntyre 1991). In contrast, a key aspect of individualistic cultures is the focus on individuals' individual initiatives, achievement, and wealth. Consumers in individualistic cultures like the United States, thus, tend to rely more on the individual seller's ability and performance because personal accomplishments are tied closely to rewards (Ueno and Sekaran 1992). The contrast between the norms in individualistic and collectivistic cultures leads to the hypothesis that:

H1: The effect of perceived ability of Internet sellers on online trust will be stronger for Americans than for Koreans.

Sellers' benevolence refers to the perceived intention of online sellers to do good to the consumer beyond its own profit motive (Mayer, Davis, and Schoorman 1995), such as a demonstration of empathy and receptivity toward users' concerns and proactive good-faith efforts to resolve user concerns. Consumers develop trust if they perceive sellers to be genuinely interested in consumers' welfare and motivated to seek joint gain (Mayer, Davis, and Schoorman 1995). In contrast, if they perceive sellers to have only selfish intentions, trust is unlikely to develop. Bhattacharjee (2002) argues that a benevolent seller helps the consumer, even when the seller is not required to do so or is not rewarded for being helpful. Benevolence introduces faith and altruism in a business transaction, which, thus, reduces uncertainty. This source of trust directly relates to consumer perceptions of the seller's characteristics, significantly reduces the perceived risk involved in Internet shopping (Doolin et al. 2005), and positively affects intentions to buy online (Bhattacharjee 2002; Lee and Turban 2001; Gefen 2000).

The individualism dimension may also predict the differences

in consumer perceptions of sellers' benevolence across cultures. In individualistic cultures, it is commonly accepted that people often play adversarial roles and that some degree of conflict is natural (Kale and McIntyre 1991). Consumers perceive that sellers may act in a way that prevent or impede attainment of consumers' goals. Consumers' best interests are not likely to be of paramount importance to the sellers. On the other hand, people in collectivistic cultures would subordinate their personal interests to the goals of their in-group (Doney, Cannon, and Mullen 1998). Because consumers and sellers are likely to be members of the same group, consumers expect sellers to have benevolent intentions for them. The emphasis on joint efforts in collectivistic cultures also suggests that sellers will act in consumers' best interest, as well as in their own. The second hypothesis, therefore, predicts that:

H2: The effect of perceived benevolence of Internet sellers on online trust will be stronger for Koreans than for Americans.

Technical competency refers to the ability of an entire online transaction system, which comprises the desktop computer of the customer, the server of the Internet retailer, and the servers of the involved banks and operators (Grabner-Krauter and Kaluscha 2003), to perform the tasks it is supposed to perform (i.e., timely transaction, accurate transmission of information, provision of all necessary information, and transaction reliability). The physical distance between online buyers and sellers, the absence of salespeople, and the separation between buyers and products (Yoon 2002) make consumers uncertain about whether the system is able to perform the functions it should provide. Lee and Turban (2001) label technical competency 'trustworthiness of Internet shopping medium' and found that the perceived competency of an entire transaction system reduced the perceived risk and positively influenced consumer trust in online shopping. Specifically, Yoon (2002) showed that website properties (i.e., adequacy of product description and width of product selections) and search functionality (i.e., operational efficiency, speedy transmission of words and images, clarity of search-related words, and usefulness of help functions), which represent the utilitarian

value of an online shopping site, positively affected trust in online shopping.

Like the perceptions of sellers' ability, evidence of the system's technical competence can take added importance in individualistic cultures because individualistic consumers tend to place more emphasis on a target's capabilities (e.g., competence and expertise) (Doney, Cannon, and Mullen 1998). A key facet of individualistic cultures is a norm for excelling. On the other hand, in collectivistic cultures, it seems unlikely that consumers will rely on evidence of a target's capabilities to establish trustworthiness because collectivistic people tend to evaluate performance of a target based on group achievements and goals (Hofstede 1984). Since collectivistic social norm is for leveling, the social rewards for individual excellence would be minimal (Doney, Cannon, and Mullen 1998). This discussion leads to the third hypothesis:

H3: The effect of perceived technical competency of an online shopping system on online trust will be stronger for Americans than for Koreans.

Transaction security refers to an online company's institutional status on its payment and refund system, as well as on its policy on the use of private information. Security over payment system contributes to a lessening of perceived risk in online shopping (Yoon 2002). For instance, the presence of logos or symbols representing a website's security helps develop online trust. An acceptable refund policy would increase the company's credibility, as would a statement promising a discretionary use of private information (Liu, Marchewka, and Ku 2004; Kim and Prahakar 2004). McNight, Choudhury, and Kacmar (2002) recognized the importance of protecting private information in encouraging consumers' willingness to engage in online relationships.

This dimension of trust relates to sellers' intentions to ascertain that they act in the buyers' best interest and want to continue intimate relationships with the buyers. The uncertainty avoidance dimension determines the value people place on continuing relationships, thus affecting the relative importance of transaction security as a determinant of online trust. In low

uncertainty avoidance cultures, conflict is acceptable, and people are willing to risk severing existing relationships (Doney, Cannon, and Mullen 1998). In contrast, people in high uncertainty avoidance cultures place more emphasis on stability and fear the unknown because they want to maintain existing relationships. It is, therefore, hypothesized that:

H4: The effect of perceived transaction security of online shopping on online trust will be stronger for Koreans than for Americans.

The presence of third-party assurance is considered an important means by which consumers develop trust in online shopping (Noteberg, Christiaanse, and Wallage 1999). As a risk reduction method, similar to Roselius' (1971) 'endorsements', assurance is provided on consumer concerns to reduce perceived risks and lead to a higher degree of trust. For instance, if a seller fulfills a set of criteria specified by an assurance provider (e.g., an independent accountant, a bank, and a consumer union), it can place the provider's seal on its website to promote a sense of safety and security. The seal offers assurance to concerned buyers that the seller meets the standards on, for instance, the handling of customer privacy and transaction integrity established by the seal provider. The seal also assures that the seller conforms to the rules widely accepted in society and helps consumers reduce the difficulty in predicting the seller's behavior (Noteberg, Christiaanse, and Wallage 1999).

In low uncertainty avoidance cultures where a wide range of behaviors and opinions are tolerated, it is relatively difficult for consumers to predict sellers' behavior (Kale and McIntire 1991) and, thus, there is little emphasis on predictability. In contrast, the prevailing view in high uncertainty avoidance cultures is that human behavior is predictable (Kale and McIntire 1991) because a relatively high value is placed on the predictability of relationships among the members in society. In collectivistic cultures, third-party assurance, thus, plays a pivotal role in helping consumers predict whether the seller conforms to the rules of acceptable behavior. It is, thus, hypothesized that:

H5: The effect of third-party assurance of online shopping

on online trust will be stronger for Koreans than for Americans.

METHODOLOGY

Samples and Procedures

Data for this study were collected in fall of 2007 from a self-administered survey at major urban universities in the American Southwest and Korea. The sample consisted of upper-level undergraduate students exposed to business courses in their curriculum, and several class sections were included to avoid the influence of the instructor. Although student samples present the possibility of over-generalization, this study used student samples because they facilitate sample comparability across cultures (Brislin and Baumgartner 1971; Calder, Philips, and Tybout 1981; Douglas and Craig 1983). In addition, a student population represents a major market segment for the measurement of online buying behavior (Modahl 2000). To increase the likelihood of sample equivalence, subjects were selected based on age, gender, and household income level.

The key demographic characteristics of the two samples are presented in table 1. Compared with the audience profile of Nielsen/NetRatings (www.nielsen-netratings.com), the U.S. sample had slightly more male respondents (59%, compared with 49% in Nielsen/NetRatings). The Korean sample consisted of 61% male students, which compared favorably with the Korea Netizen Profile of 2005 (knp.adic.co.kr, 57% males). The two samples were not statistically different in gender distribution (Chi-square = 0.148, with $df = 1$, n.s.) or average age ($t = 1.934$ with $df = 287$, n.s.). Although the average number of years of

Table 1. Sample Profiles

Country	Sample Size	Percent of Gender		Average Age	Years using the Internet
		Female	Male		
Korea	146	39%	61%	22.6	5.7
US	143	41%	59%	23.2	7.2

Internet usage was higher for the U.S. sample ($M = 7.22$, $SD = 2.16$) than that of the Korean sample ($M = 6.68$, $SD = 2.14$), the difference of approximately six months was not considered large enough to confound the results.

Variables and Measurements

The items used to measure the individualism and uncertainty avoidance were slightly modified from the scales used in previous studies (Hofstede 2001; Robertson and Hoffman 2000; Choi and Geistfeld 2004). A 7-point Likert-type scale with anchors ranging from (1) Strongly disagree to (7) Strongly agree was used. The scale consisting of four items, group harmony, group approval, group loyalty, and sacrificing personal goals measured the individualism dimension, and the scale reliability (Cronbach's alpha) was 0.85 for Korea and 0.82 for the United States. The uncertainty avoidance scale also consisted of four items representing the importance of detailed information, the importance of rules, the importance of written procedures and verbal instructions, and the tolerance of indirect information. Cronbach's alpha of the scale was 0.85 for Korea and 0.79 for the United States.

In order to measure trust antecedents pertaining to sellers' ability, benevolence, technical competence, transaction security, and third-party assurance, the scales were developed using the items used in previous studies or some new items (see table 2 for items and sources). Six items were used for the measurement of online trust: 'I believe that in general Internet merchants are trustworthy' (Jarvenpaa and Tractinsky 1999), 'Internet shopping is unreliable' (Lee and Turban 2001), 'Internet shopping cannot be trusted because there are too many uncertainties' (Lee and Turban 2001), 'I cannot rely on Internet merchants to keep the promises that they make' (Lee and Turban 2001), 'Anyone trusting Internet shopping is asking for trouble' (Lee and Turban 2001), and 'Internet merchants' behavior meets my expectations' (New). The scale reliability (Cronbach's alpha) was 0.80 for Korea and 0.88 for the United States.

The purchase intention scale consisted of four items, including three new items and one item used in Gefen's (2000) study: 'I would be willing to surf the Internet to find a good Internet

merchant' (New), 'I would be willing to recommend online shopping to others' (New), 'I would use my credit card to purchase from online merchants' (Gefen 2000), and 'I would be willing to buy online in the near future' (New). The scale reliability (Cronbach's alpha) was 0.78 for Korea and 0.88 for the United States.

Finally, demographic questions asked the gender, age, and level of computer usage. Responses to the items on trust antecedents, online trust, and purchase intention were all measured using a 1-7 Likert scale ranging from (1) Strongly disagree to (7) Strongly agree.

The questionnaire was first constructed in English, translated into Korean by a Korean native, back-translated into English by another Korean native, and compared with the original questionnaire to check for congruence. It was then rewritten with some minor revisions. The survey specifically asked respondents to consider online shopping regardless of the national origin of the shopping sites when responding to the items. The respondents were asked to indicate their general perceptions about online shopping with no particular business sector given for consideration.

RESULTS

Questionnaire Validity and Reliability

Following data collection, a principal component factor analysis with varimax rotation was performed with the pooled dataset integrating Korean and U.S. responses to test the construct validity of the questionnaire items used to measure online trust. The results of the anti-image matrix of covariance (Field 2005) and correlation test suggested that out of a total of 32 items included in the original survey questionnaire, 5 items be dropped from analysis because of multicollinearity. In the initial solution with the remaining 27 items, six factors with Eigenvalues greater than one were extracted, accounting for 72.0 percent of the variance. Considering the study's sample size of 289, the scree plot provided a reliable criterion for factor selection (Stevens 1992). Since the result of the scree plot test

Table 2. Factor Analysis of Trust Antecedents

	Antecedents (Source)	Factor Loadings	Alphas			
			Korea	US		
Technical competence of system	Performance of tasks (Lee and Turban, 2001)	.646	.83	.89		
	Technical competence (Lee and Turban, 2001)	.713				
	Accurate transmission of information (New)	.732				
	Timely transaction (New)	.839				
	Provision of all necessary information (New)	.688				
	Transaction reliability (New)	.693				
	Sellers' benevolence	Willingness to assist customer (Gefen, 2000)	.682	.82	.86	
Good intentions (Gefen, 2000)		.760				
Benevolent intentions (Gefen, 2000)		.725				
Openness to customer concerns (New)		.752				
Customers' interests before their own (Gefen, 2000)		.696				
Sellers' ability	Skills and expertise (Bhattacharjee, 2002)	.768	.79	.88		
	Adequate knowledge (Lee and Turban, 2001)	.785				
	Knowledge on excellent service (Gefen, 2000)	.678				
	Competency (New)	.762				
	Ability to meet customer needs (Bhattacharjee, 2002)	.607				
Third-party assurance	Trustworthiness of merchants (Lee and Turban, 2001)	.743	.88	.88		
	Use of invented seals on website (New)	.791				
	Provision of standards of online transaction (New)	.865				
	Good performance (Lee and Turban, 2001)	.825				
Transaction security	Assurance of transaction security (New)		.704	.81		
	A good refund policy (New)			.77		
	Discretionary use of private information (New)		.804	.769		
Eigenvalue		8.93	2.43	1.79	1.43	1.20
Variance explained (%)		38.8	10.6	7.8	6.2	5.2

suggested retaining five factors for the data, a five-factor solution was performed. The five-factor solution, which accounted for 68.5 percent of the total variance, was readily interpretable. Since this study considered a factor loading of an absolute value of more than 0.6 to be important (Stevens 1992), the underlying items and their respective rotated factor loadings higher than 0.6 are reported in table 2.

To check for the presence of common method bias, Harman's one-factor test, a post-hoc remedy that has been recommended as providing evidence of the validity of self-report measures (Spector 1994) was run. The basic assumption of Harman's test is that if a single factor emerges for the factor analysis that explains a significant amount of the variance in the data, there is a strong evidence of common method bias. Since Harman's one-factor test revealed that no single factor emerged to account for the majority of the variance before rotation, common method bias did not overly influence the responses in this study.

The reliability analyses for variables within each factor showed high internal consistency. Highest consistency was found with third-party assurance with Cronbach's alpha of 0.88 (Korea) and 0.88 (US). Following this were technical competence (Korea - 0.83, US - 0.89), sellers' benevolence (Korea - 0.82, US - 0.86), sellers' ability (Korea - 0.79, US - 0.88), and transaction security (Korea - 0.81, US - 0.77).

Country Differences in Research Variables

Table 3 presents the descriptive statistics of the research variables as well as the results of t-tests for country differences. The summated mean responses to the scales for individualism, uncertainty avoidance, the five antecedent factors and the level of online trust were compared between Korea and the United States. When calculating the scale mean, items were reverse coded, if necessary. Significant country differences were found with respect to the cultural values. Koreans ($M = 4.44$, $SD = 1.47$) exhibited a significantly higher score in the individualism scale than did Americans ($M = 3.10$, $SD = 1.18$) ($t = 7.83$, $p < 0.001$). Since all the items used to measure individualism were reverse coded, a higher score reflect a greater level of collectivism. The results also show that Koreans had a higher

Table 3. Country Differences in Research Variables

Variables	Korea (n=146)		US (n=143)		<i>t</i>	<i>p</i>
	Mean	SD	Mean	SD		
Individualism	4.44	1.47	3.22	1.18	7.83	<0.001
Uncertainty avoidance	4.46	1.30	3.10	1.18	9.27	<0.001
Technical competence of system	4.00	0.82	5.03	1.04	-9.34	<0.001
Sellers' benevolence	3.63	0.83	3.94	1.04	-2.83	<0.05
Sellers' ability	4.22	0.84	4.66	1.01	-4.04	<0.001
Third-party assurance	3.98	0.98	4.15	1.17	-1.34	0.181
Transaction security	3.95	0.98	3.74	1.29	1.57	0.118
Online trust	4.21	0.85	4.71	1.08	-4.34	<0.001

Note: Scalar extremes were 1 = strongly disagree and 7 = strongly agree

level of uncertainty avoidance ($M = 4.40$, $SD = 1.30$) than did Americans ($M = 3.10$, $SD = 1.18$) ($t = 9.27$, $p < 0.001$), reaffirming the results of Hofstede's (1984) index score analysis on country rankings in these dimensions.

With respect to the perceptions of trust antecedents, as shown in table 3, significant country differences were observed in three factors. American perceptions were significantly more positive in the technical competence of the system, sellers' benevolence, and sellers' ability than were those of Koreans. The results also show that the overall level of online trust was higher for Americans than for Koreans. These results imply that positive responses to the technical competence of the system, sellers' benevolence, and sellers' ability might have caused a higher level of online trust among Americans, compared with Koreans. No significant country difference, however, was observed in the scale means for the perceived third party assurance and transaction security.

Effects of Cultural Values on Online Trust

To examine the roles cultural values play in the development of online trust, multiple regression analysis was conducted. The dependent variable was online trust and the independent variables were the five trust antecedents. The interaction terms between nationality (NAT: Korea coded 0 and US coded 1) and trust factors were also entered into the model because our

hypotheses required testing for the moderating effects of nationality on online trust, as represented by individualism and uncertainty avoidance. It was believed that regression method is straightforward in estimating interaction effects with a dummy variable (i.e., nationality). To check for multicollinearity among the trust antecedents and interaction terms, the variation inflation factor (VIF) was calculated. The VIF ranges from 1.19 to 7.69, all satisfying the acceptable maximum of ten and the average of VIF values was not substantially greater than one, indicating that multicollinearity was not a problem in this study (Field 2005). The regression results are presented in table 4.

The regression model was significant ($F = 11.879$, $df = 13, 275$, $p < 0.001$), and the explanatory power of the model, as indicated by R^2 , was 0.358 (adjusted $R^2 = 0.330$). The results show that uncertainty avoidance (UAI) and individualism (IDV) had no direct effects on online trust. The main effects of technical competence of the online system (TCP, $\beta = 0.417$, $p < 0.05$) and sellers' benevolence (BEN, $\beta = 0.458$, $p < 0.01$) were significant, both of which had positive effects on online trust. The effects of sellers' ability (ABL), transaction security (SEC), and

Table 4. Results of Regression Analysis

Independent Variables	beta	Std. Error	T	p
Technical competence (TCP)	0.417	0.226	2.082	<0.05
Sellers' benevolence (BEN)	0.458	0.189	2.892	<0.01
Sellers' ability (ABL)	0.156	0.181	0.970	0.333
Third-party assurance (TPA)	0.194	0.190	1.150	0.251
Transaction security (SEC)	0.194	0.200	1.097	0.274
NAT*TCP	0.777	0.137	3.942	<0.001
NAT*BEN	-0.366	0.115	-2.199	<0.05
NAT*ABL	0.341	0.112	2.121	<0.05
NAT*TPA	-0.020	0.113	-0.119	0.905
NAT*SEC	-0.120	0.119	-0.683	0.495
Individualism (IDV)	0.059	0.079	0.574	0.566
Uncertainty avoidance (UAI)	-0.111	0.083	-1.069	0.286
NAT	-0.052	0.150	-0.779	0.437
(Constant)		0.169	23.827	<.001
R2 (Adjust R2)		0.358 (0.330)		
Std. Error		0.924		

Notes: Dependent variable: online trust; Nationality: Korea = 0, US = 1.

third-party assurance (TPA), however, were not significant.

The results show that technical competence was a significant predictor of online trust ($\beta = 0.417$, $p < 0.05$), as was sellers' benevolence ($\beta = 0.458$, $p < 0.01$). Although nationality (NAT) had no direct effect on online trust, it showed significant interactions with three trust antecedents. First, the interaction between nationality and technical competence (NAT*TCP) was significant ($\beta = 0.777$, $p < 0.001$). Since the estimated coefficient is positive, the effect of technical competence on trust is stronger for Americans than for Koreans. Nationality (NAT) also had a significant interaction with sellers' benevolence ($\beta = -0.366$, $p < 0.05$). The negative coefficient indicates that the effect of sellers' benevolence was stronger for Koreans than for Americans. In addition, the interaction between nationality and sellers' ability (NAT*ABL) was significant ($\beta = 0.341$, $p < 0.05$), indicating that the effect of sellers' ability was stronger for Americans than for Koreans. Hypotheses 1, 2, and 3, therefore, were supported. Third-party assurance and transaction security, however, did not show significant interactions with nationality, rejecting hypotheses 4 and 5.

DISCUSSION

The main objective of the study was to examine the effects of cultural values, which are represented by the individualism and uncertainty avoidance dimensions, on consumer trust in Internet shopping. Specifically, Hofstede's (1984) individualism and uncertainty avoidance dimensions were employed as theoretical guidelines to see how Koreans and Americans develop different trusting relationships with Internet sellers from the cross-cultural perspective. The effects of five salient predictors of online trust — sellers' ability, sellers' benevolence, technical competence of the online shopping system, transaction security, and third-party assurance — were measured and compared. The interaction effects of nationality were then analyzed to unravel the cultural complexity involved in trusting relationships in online shopping.

The findings show that Koreans differed significantly from Americans in the degree of individualism and uncertainty

avoidance. Koreans had higher scores in both dimensions, indicating that they are less individualistic and more oriented toward uncertainty avoidance. This result reaffirms the effectiveness of Hofstede's dimensional system of cultural differences, implying that individualism and uncertainty avoidance can be used as surrogates for national cultures, as found in a number of previous studies (see e.g., Han and Shavitt 1991; Kale and McIntyre 1991). However, these two cultural factors do not appear to have a direct impact, but play an intervening role in predicting consumer trust in online shopping. Consistent with previous findings (Yoon 2002), the direct, positive effect of the perceived technical competence of the online shopping system on online trust was confirmed in this study. As mentioned earlier, one of the major differences between online and offline transaction is the absence of a salesperson. Without having salespeople assisting and facilitating business transactions, the Internet devices (e.g., personal computer, Web TV, the servers of Internet sellers) replace the role of a traditional salesperson in online shopping. This study implies that the extent to which consumers believe that this computerized medium is able to replace the role of salespeople may be the key to consumers' overall trust in online shopping.

Despite the positive effect of the perceptions of technical competence of online system, this study found that it significantly interacted with nationality. As hypothesized, its effect on the development of trust was greater for Americans than for Koreans. This finding is not surprising given what has been discussed concerning the individualism-collectivism differences between the two countries. When targeting American Internet shoppers who value the capabilities of the Internet shopping system, marketers may need to emphasize the system's functionality and reliability.

The results show that the perceptions of sellers' benevolence had the greatest effect on online trust for both countries. Considering that uncertainty and risk are of the utmost concern to most online shoppers (Tan 1999; Grabner-Kraeuter 2002) this result is perhaps not surprising. Uncertainty can be significantly reduced by the faith and altruism sellers introduce in business relationships (Mayer, Davis, and Schoorman 1995). However, despite the greatest direct, positive effect of sellers' benevolence

on online trust, a significant interaction took place between nationality and benevolence. The effect of benevolence was larger for Koreans than for Americans, confirming the indirectness of individualism effect on online trust. A lower level of individualism (collectivism) results in higher level of perceived benevolence of Internet sellers, which, in turn, increases online trust.

It appears that uncertainty avoidance also relates to the development of online trust through sellers' benevolence. Since the uncertainty avoidance dimension determines the value consumers place on continuing current relationships (Doney, Cannon, and Mullen 1998), consumers in low uncertainty avoidance cultures are more likely to accept conflict and risk severing existing relationships than are those from high uncertainty avoidance. Therefore, marketers do not necessarily provide evidence that they will act in consumers' interest. The reverse is true in high uncertainty avoidance cultures. Consumers in high uncertainty avoidance cultures are often motivated to maintain existing relationships because they value stability and fear the unknown. Therefore, the sellers have to act in the consumers' best interest by providing evidence that they have benevolent intentions towards consumers.

Contradictory to previous findings (Reichheld and Scheffer 2000; Bhattacharjee 2002), this study found that the perceptions of sellers' ability did not significantly affect online trust for either country. This result is surprising given that consumers usually go through a process where they assess the sellers' ability to meet their obligations as well as consumers' expectations, based on an assumption that individual sellers differ in their competence, ability, and expertise and, thus, their ability to deliver promises. Its significant interaction with nationality may provide plausible explanations for this finding. Our regression analysis shows that the perceptions of sellers' ability significantly interacted with nationality, indicating that the effect of sellers' ability was stronger for Americans than for Koreans. Doney, Cannon, and Mullen (1998) suggest that the perceived ability of sellers is important in a society where there is a large 'ability' gap among them. Presumably, a non-significant effect of the perceived ability is attributable to the fact that either Koreans have not yet perceived a major 'ability' gap among the Internet sellers or they do not place much value on the ability of

individual Internet sellers. The latter makes more sense if examined within the context of cultural differences in the individualism scale. Consumers in collectivistic cultures tend to place value on group achievements, harmony, and goals, whereas those in individualistic cultures place value on individual goals, achievements, or capabilities.

Contradictory to previous findings (McNight, Choudhury, and Kacmar 2002; Kim and Prabhakar 2004; Noteberg, Christiaanse, and Wallage 1999), this study shows that the perceptions of transaction security and third-party assurance do not have significant impacts on the development of online trust for either country. Nationality showed no significant interactions with these two factors, either. As found in the table 3, the results of t-tests also revealed no significant country differences in the perceptions of these variables. Since online marketers perceive that transaction security is the single most important factor that increases trust in the context of the Internet and generates more repeat visits and more purchases (Schneider 1998), it appears that they have already made significant efforts in establishing a secure payment system, return policy, and privacy policy and providing the evidence of third-party assurance (e.g., independent accountant, bank, computer industry, and consumer unions). For instance, many multinational brands' online shopping sites (e.g., Ebay.com, Amazon.com, Coach.com, and Nike.com) have integrated the notice, access, choice, and security dimensions into the design of their websites. Instead of providing self-reported statements, many Korean shopping sites provide a seal of assurance by independent banks at the storefront or at the payment screen to ensure the safety of credit card information and personal information (e.g., Kyobobooks.co.kr, CJmall.com, Interpark.com, etc.). It appears that these strong, universal efforts made by the online marketers of both countries have outweighed the cultural variations in the perceptions of these variables. However, considering the relatively short history of online shopping in the global marketplace, these findings should be considered tentative and reserved for further assessment.

MANAGERIAL IMPLICATIONS

The indirect effects of cultural values found in this study offer some marketing implications to marketers. To develop a marketing strategy that helps increase the overall level of consumer trust across cultures, it is necessary to consider culture-bound characteristics of consumer trust. Marketers can adopt different executional strategies on their shopping website to encourage repeat visits and purchase. The technical competence of a system can be measured by such parameters as the speed and reliability of the transaction and the availability of necessary information (Lee and Turban 2001). The results of this study suggest that marketers targeting consumers of individualistic cultures focus more on these factors to build trusting relationships. For instance, the computer system and the devices should meet the needs of individualistic consumers by accurately transmitting product information through help, navigation, and comparison functions and completing the transaction in a reliable and speedy manner to increase the level of trust. Yoon (2002) suggests that the functionality of a shopping website directly affects consumer satisfaction and reinforces the company's overall image for long-term success.

The results imply that an effective online strategy for those marketers targeting collectivistic consumers may be one that emphasizes their benevolent intentions. For instance, investment companies or banks may provide free educational seminars for their clients on investment strategies, although there may be a cost of doing so (e.g., Priden.com, Myasset.com, and Sks.co.kr). When they find it difficult to anticipate consumers' need for developing benevolent services or it is overtly expensive to deliver such services, marketers may at least demonstrate their receptivity and empathy toward consumers' concerns and needs (Bhattacharjee 2002).

The dichotomy in the perception of sellers' ability in performing online shopping functions also suggests that marketers need to implement differentiated strategies for individualistic and collectivistic consumers. For instance, those who target consumers in individualistic markets may need to explicitly demonstrate their ability to perform the tasks by informing

consumers of the number of established accounts, customers, items sold, and other transactional information on their websites.

CONCLUSION

The contribution this study makes to theories of online trust concerns the role cultural values play in influencing the development of trust in Internet shopping. Presumably, cultural impacts are limited in Internet shopping because shopping online is basically an individual activity. The Internet and telecommunication technology have helped create a new environment where cultural differences are blurred (Liu, Marchewka, and Ku 2004). In a "global village" (McLuhan 1964), an individual's desires, aspirations, and perceptions of their rights may be similar regardless of their cultural background. Subsequently, consumers' shopping practices in the Asian culture may be similar to those in the Western cultures.

This study, however, suggests that the impacts of cultural values, though indirect, are prevalent in the development of trusting relationships between consumers and online merchants. Especially, the individualism-collectivism difference significantly affects how much value and importance consumers place on the technical competence of the online shopping system, vendors' ability, and their benevolent intentions to consumers, all of which, in turn, positively influence online trust. These findings imply that there is a greater chance that an international trusting relationship will form between Internet shoppers and sellers across the world when the sellers understand the cultural patterns buyers follow to establish whether sellers are trustworthy. To increase consumer trust, the websites targeted toward consumers of individualistic cultures should not only demonstrate their ability to perform all the tasks they are supposed to do, but also provide relevant functions that facilitate accurate transmission of information and completion of the transaction in a reliable and speedy manner. On the other hand, the websites targeted toward consumers of collectivistic cultures should emphasize their benevolent intentions. Although this study does not directly address how trust is established between

parties from different cultures, it is possible that the patterns of developing trust will hold when buyers and sellers from different countries are congruent in their cultural values or the sellers respond directly to the cultural pattern the buyers follow.

This study is not without limitations. First, one may question whether there exist other salient factors of online trust that are related to cultural norms and values. Although content validity of the scale was assured through an extensive review of the literature to discover all possible trust dimensions across different contexts, the resulting scale may not be comprehensive. For example, perceptions of sellers' integrity may also relate to cultural norms, as they pertain to the sellers' intentions. In addition, future studies should develop a comprehensive model of international online trust, involving other possible variables, such as Internet usage, e-commerce infrastructure, adoption of innovativeness, perceived risk, as well as demographic variables. In doing so, a structural equation model is desired to identify the exact causal relationships among variables. The second limitation is found due to the weak external validity of the study sample. Although the use of student samples helped ensure matching samples across the two countries, it may have eliminated some of the external sources of variance. The use of other cohorts (e.g., adult groups) could provide different results because they may be less or more likely to trust or adopt Internet shopping than college students.

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