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RESEARCH ARTICLE

WEB STRATEGIES TO PROMOTE INTERNET SHOPPING: IS CULTURAL-CUSTOMIZATION NEEDED?[1]

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Abstract

Building consumer trust is important for new or unknown Internet businesses seeking to extend their customer reach globally. This study explores the question: Should website designers take into account the cultural characteristics of prospective customers to increase trust, given that different trust-building web strategies have different cost implications? In this study, we focused on two theoretically grounded practical web strategies of customer endorsement, which evokes unit grouping, and portal affiliation, which evokes reputation categorization, and compared them across two research sites: Australia (individualistic culture) and Hong Kong (collectivistic culture). The results of the laboratory experiment we conducted, on the website of an online book-store, revealed that the impact of *peer customer endorsements* on trust perceptions was stronger for subjects in Hong Kong than Australia and that *portal (Yahoo) affiliation* was effective only in the Australian site. A follow-up study was conducted as a conceptual replication, and provided additional insights on the effects of customer endorsement versus firm affiliation on trust-building. Together, these findings highlight the need to consider cultural differences when identifying the mix of web strategies to employ in Internet store websites.

Keywords: Cross-cultural study, Internet shopping, trust, web strategies

Introduction

With the globalization of businesses and the advent of the Internet, many firms have set up websites for each country/city in which they have a local presence, featuring the respective local language and contents, but typically with uniform website designs and features. To build trust in Internet stores, particularly if they are new or relatively unknown, numerous web strategies/design features have been proposed in the practitioner literature (e.g., Cheskin Research and Studio Archetype/Sapient 1999). Trust is a critical concern of Internet consumption behaviors (Brynjolfsson and Smith 2000; Keen 1997; Sin 2003; Van Slyke et al. 2004), and has repeatedly been shown to enhance Internet shopping intentions and behaviors (e.g., Jarvenpaa et al. 2000; Lim et al. 2006).

Much of the extant literature on Internet trust has adopted a universalist approach by assuming that trust (particularly its antecedents) is built uniformly across different national cultures (e.g., Jarvenpaa et al. 2000; Lim et al. 2006). Although traditional marketing scholars (e.g., Aaker and Maheswaran 1997; de Mooij and Hofstede 2002; Straughan and Albers-Miller 2001) and Internet practitioners (e.g., A. C. Nielsen 2005) have recognized the importance of culture in influencing consumer behaviors, still, typically similar constructs and relationships are investigated in Internet shopping research regardless of culture. However, scholars have begun to question whether this is appropriate; for example, Gefen and Heart (2006) argued that trust could be formed differently in different cultures. Research also suggests that inherent differences in how people of different cultures build trust could influence the relative effectiveness of trust-building strategies in Internet shopping (Lim et al. 2004). Hence, there exists a gap in the literature: although online trust has been extensively researched, building online trust across cultures has not. Thus, our pioneering study investigates the important yet still unanswered question: Should similar trust building strategies be adopted in studying the impact of trust building on Internet shopping regardless of national cultures, or is a *contingent* approach customized to specific cultures more effective?

Two web strategies, whose effectiveness in building initial trust could be heavily influenced by culture, are *reputable website affiliation* and *customer endorsement*. Reputable website affiliation refers to a website without an established reputation associating itself with another reputable third party website, such as Yahoo, and is one of the most commonly used web strategies to build online trust (Cheskin Research and Studio Archetype/Sapient 1999; Stewart 2003). Reputable website affiliation is used in many new U.S.-based Internet stores such as Buydig.com (Yahoo affiliation) and millionbuy.com (Yahoo affiliation) and some Asian-based web-stores such as Yesasia.com (Yahoo affiliation). Yet, in a ranking of peers versus organizations in Hong Kong, local peers (both recognizable and non-recognizable) are trusted significantly more than reputable organizations (Yahoo.com and Amazon.com) (Lim et al. 2006). Thus, it is not evident whether a trust-building web strategy using a third-party website would be effective in collectivistic cultures (e.g., in Asia), which tend to have more favorable attitudes toward in-group (e.g., local peers, family members, friends, etc), than out-groups entities (e.g., foreigners, foreign organizations, etc.).

Another web strategy that is less commonly used by Internet stores is customer endorsements (Cheskin Research and Studio Archetype/Sapient 1999), despite being ubiquitously used in brick-and-mortar firms (Bearden and Etzel 1982; Blythe 1997). It involves using existing customers to provide positive recommendations to potential ones (e.g., Chinaetravel.com, COL.com.hk). Still, it is not clear if a web strategy based solely on positive feedback or comments would work in an online environment, due to the tendency among Internet users to be suspicious of such comments. Further, in a collectivistic culture, local peers are trusted significantly more than foreigners of the same age-group (Lim et al. 2006). Thus, cultural differences could affect the way people view such positive feedback when provided by customers perceived to be socially close peers (in-group members). These two web strategies are selected because they are good exemplars of two of the three initial trust building mechanisms (reputation categorization and unit grouping) noted in McKnight et al. (1998). The third mechanism of institutional assurance is controlled for in the research. The research question investigated in this study is: What is the impact of national culture on the effectiveness of the two trust building web strategies of portal affiliation and peer customer endorsements in building trust and enhancing purchasing intentions and behaviors?

In this early attempt to study the impact of trust-building web strategies across cultures, we focused on individualism–collectivism since it is the most significant cultural dimension (Triandis 2001). How people respond differently to in-groups versus out-groups is a key factor differentiating individualists from collectivists. The two strategies, portal (Yahoo) affiliation and peer customer endorsement, could invoke an in-group/out-group categorization among subjects based on individualism–collectivism trait differences of people in two different cultures (Australia and Hong Kong). Hence, this permits us to investigate how in-group versus out-group categorizations underlying different web strategies could affect trust building in different cultures. Portal affiliation

involves a U.S.-based portal (an entity external to the research sites of Australia and Hong Kong), versus local peer customer endorsements. This is one of the first attempts to investigate, through a laboratory study, whether trust is built similarly in different cultures through a uniform set of web strategies, or built differently through specific web strategies, with cognitive and behavioral consequences. It extends beyond studying the macro-level relationship between culture and Internet shopping (e.g., Choi and Geistfeld 2004; Park and Jun 2003) by probing more deeply into the impact of culture on specific practical trust-building web strategies that could evoke different culturally based responses. Our results enable website designers to make informed decisions about the cultural impact of each specific trust building web strategy to achieve global presence, an important Information System culture research issue (Leidner and Kayworth 2006).

Theoretical Background and Research Model

Trusting Beliefs and Intentions

Trust is defined as a consumer's perception that an Internet store can be relied upon to engage in generally acceptable business practices and will deliver the promised products/services, despite the possibility of exposure to loss during an Internet shopping transaction (Mayer et al. 1995; McKnight et al. 2002). This is a widely held view of trust in established works on Internet shopping (e.g., Gefen et al. 2003; Jarvenpaa et al. 2000). Trust can be delineated into *trusting beliefs* and *trusting intentions* (Gefen et al. 2008; McKnight et al. 1998). With *trusting beliefs*, a potential consumer perceives that the Internet store can be counted on to adhere to good business practices in the shopping transaction to deliver the promised goods/services, even though doing so could involve risks (Mayer et al. 1995; McKnight et al. 1998). With *trusting intentions*, the potential consumer, having formed trusting beliefs, is willing to be exposed to the risk of loss by intending to make purchases at the Internet store (McKnight et al. 1998). Trusting beliefs is the key dependent variable of interest in this study. The next section presents the research model, which describes the antecedents of interest and the nomological net of trusting beliefs.

Research Model

The research model is shown in Figure 1. When interacting with new or unknown Internet stores, people could engage in several cognitive processes to build initial trust (Bigley and Pearce 1998; McKnight et al. 2002; McKnight et al. 1998; Stewart 2003; Zucker 1986). They include reputation categorization, unit grouping, and institutional assurances. *Positive reputation categorization* occurs when the trustor associates the trustee (e.g., an Internet store) with a brand of good reputation (Stewart 2003). *Unit grouping* is the extent that the trustee is perceived to share common characteristics and identity with the trustor. Members of one's unit group are viewed more positively, and are considered more trustworthy than nonmembers (Kramer et al. 1996; Zucker et al. 1996). When the trustee is an inanimate object (e.g., a firm), trust can still be formed using unit-grouping through a trust transference process involving an animate entity (Stewart 2003; Swan and Nolan 1985) that shares commonalities with the trustor. *Institutional assurances* refer to the regulations, guarantees by accreditation agencies (e.g., TRUSTe, VeriSign), and legal recourses available. Thus, web strategies that employ reputation categorization, unit grouping, or institutional assurances should lead to increase in initial trust (McKnight et al. 1998). We controlled for institutional assurances in this study, because one needs an adequate level of such assurances (e.g., privacy protection, TRUSTe) to be willing to make online purchases (Cheskin Research and Studio Archetype/Sapient 1999).

Reputable Website Affiliation Strategy and Impact of Culture

Reputation-building mechanisms derived from reputation-categorization cognitive processes could build trusting beliefs (McKnight et al. 1998). In the absence of direct information on a trustee's reputation (e.g., a new online store), trust can be built through reputable third parties such as Yahoo (Pavlou and Gefen 2004; Stewart 2003). Specifically, according to attribution theory (Kelley 1973), a trustor (e.g., potential shopper) could transfer his/her trust in an associated reputable entity (e.g., reputed physical store or Internet firm) to the trustee (e.g., unknown Internet store) (Stewart 2003; Swan and Nolan 1985).

Lim et al. (2004), conducting a multiple-country analysis, found that Hofstede's (2001) cultural dimension of individualism–collectivism is a major predictor of Internet shopping rates. Indeed, individualism–collectivism has been considered to be the *most significant* dimension explaining differences across cultures (Triandis 2001), and referred to as the "deep structure" underlying differences across cultures (Greenfield 2000). It is also the central theme in almost 100 studies published annually on cultural differences (Triandis and Suh 2002).

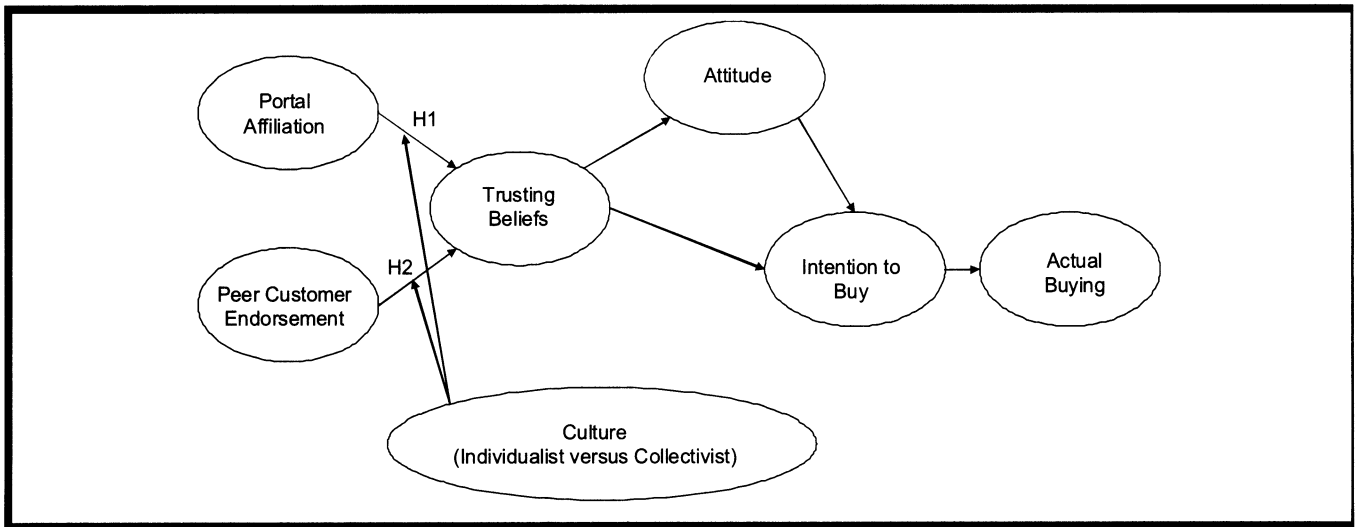

Figure 1. Research Model

Individualism–collectivism is a *country-level* measure of the extent to which the self-concept of people in a country revolves around that of the individual, or of a member of a group (Clark 1990; Hofstede 1991). Table 1 summarizes the characteristics and behaviors of individualists and collectivists identified in past cultural research.

Portal affiliation involves the display of a reputable third-party portal logo on the website of an Internet store as a hyperlink to permit verification of the relationship. Being a widely recognized and reputable portal carries a certain amount of assurance about its quality. A reputable portal that has been popularly used for portal affiliation to build trust is Yahoo (Cheskin Research and Studio Archetype/Sapient 1999) in websites such as Buydig.com, Millionbuy.com, Diamondsafe.com, Kidsmartliving.com, Yesasia.com, etc. Despite being reputable, portals like Yahoo and MSN are organizations that are likely to be viewed by people outside the United States as U.S.-based portals, and thus as external, out-group entities. Collectivists tend to have lesser trust and positive opinions of out-group members. They also tend to behave less favorably towards out-group entities, compared to individualists. Thus, the overall impact of portal (e.g., Yahoo) affiliation on trust building is likely to be dampened somewhat among collectivists. In contrast, individualists tend to view both in-group and out-group members more equitably, and are unlikely to view and treat out-group members less favorably (Doney et al. 1998; Hui et al. 1991; Iyengar et al. 1999; Lee and Ward 1998; Triandis 1972; Triandis and Suh 2002). Thus, although portal (e.g., Yahoo) affiliation is expected to be effective for building trusting beliefs in both individualists and collectivists, given the differential treatment that individualists and collectivists are likely to accord to out-group entities, it is expected that

> *H_1: The positive impact of portal (Yahoo) affiliation on trusting beliefs will be stronger in individualistic cultures than in collectivistic cultures.*

Peer Customer Endorsement Strategy and Impact of Culture

Peer customer endorsement to deliver endorsement messages is a web strategy that invokes unit grouping, which appeals to social similarity to build initial trust (McKnight et al. 1998; Zucker 1986). People tend to exhibit more positive attitudes and trust toward those who share the same characteristics as they do (Doney et al. 1998; Kramer et al. 1996; Zucker et al. 1996). When members of peer groups, whom people deem to be trustworthy, trust a certain entity, other members are likely to transfer their trust to that entity (Stewart 2003; Swan and Nolan 1985), particularly if these peers had interacted with that entity in the past (e.g., as customers). This trust-building process, through positive buying experiences, could also apply to the Internet (Ba and Pavlou 2002).

Social psychologists (Prentice et al. 1994) have noted the existence of *specific (common-bond)* in-groups and *generalized (common-identity)* in-groups. Specific in-groups are those with personal ties to and relationships with the individual, such as family members, relatives, and friends. Generalized in-groups, are based on large group memberships and social categories to which an individual has a symbolic attachment, such as fellow university students or other local

Table 1. Characteristics of Individualism and Collectivism

Individualism	Collectivism	Reference
The needs, values, and goals of the individual take precedence over the groups' (individual focus).	The needs, values, and goals of the group take precedence over the individual (group focus).	Gudykunst 1997; Gudykunst et al. 1992
	Collectivists tend to emphasize inter-dependence and sociability. They tend to have more positive attitudes towards and trust people from their in-group (family members or peers) than those from their out-group.	Doney et al. 1998; Lee and Ward 1998
	Collectivists are more strongly influenced by the opinions of referent others, and respond more positively to social proof arguments that their peers have also acted similarly (e.g., "your peers have complied with this request") than people from individualistic cultures.	Cialdini et al. 1999
Individualists tend to view both in-group and out-group members more equitably, and are unlikely to view and treat out-group members less favorably than collectivists.	Collectivists behave more favorably toward in-group members.	Doney et al. 1998; Hui et al. 1991; Iyengar et al. 1999; Lee and Ward 1998; Triandis 1972; Triandis and Suh 2002
	Collectivists have greater preference for interacting with in-group members.	Gudykunst et al. 1992; Oyserman et al. 2002; Wheeler et al. 1989
Individualists are characterized by autonomy, self-reliance, and emotional distance from in-groups. They emphasize efficiency and directness.		Grimm et al. 1999; Triandis 2001
Individualists value consistency and stability of attitudes more than collectivists.		Iyengar et al. 1999; Triandis 1972; Triandis and Suh 2002
Individualists display greater willingness to trust out-group members than collectivists.		Yamagishi 1988; Yamagishi et al. 1998
	Collectivists tend to make group-based decisions rather than individual decisions. They tend to place greater importance on, and react in accordance to, the opinions of in-group members, such as their peers.	Triandis et al. 1985

At the individual level, people who exhibit predominantly individualistic characteristics are termed idiocentrics, whereas those with collectivistic characteristics are called allocentrics (Triandis et al. 1985).

youths. The advertising industry has relied heavily on generalized in-group endorsements (Bearden and Etzel 1982; Blythe 1997).

Peer customer endorsements involving generalized in-group endorsements could help people, regardless of whether they are individualists or collectivists, to build trust in Internet stores, because they could provide valuable advice in the absence of first-hand experiences. Nevertheless, people in collectivistic cultures tend to respond even more positively to endorsements by both specific and generalized in-group peers, than those in individualistic cultures. This is because they respond to social proof arguments (that their peers have also acted similarly) to a greater extent than individualists (Cialdini et al. 1999). In contrast, people in individualistic cultures are relatively more autonomous in decision-making, and are likely to be comparatively less responsive to peer endorsements than collectivists. Thus,

> *H_2: The positive impact of peer customer endorsement on trusting beliefs will be stronger in collectivistic cultures than in individualistic cultures.*

Extending the Nomological Network: Trusting Beliefs, Attitudes, and Behavior

Trusting beliefs in an Internet store could significantly affect consumers' attitudes toward and willingness to engage in Internet shopping (Hoffman et al. 1999; Keen 1997; Ratnasingham 1998; Taylor Nelson Sofres 2001). Research has shown that for many Internet stores (e.g., bookstores, travel agents, etc.), increased trust leads to a more positive attitude, positive attitude leads to greater intention to purchase from the Internet stores (Jarvenpaa et al. 2000), and greater intention leads to more actual buying behavior (Lim et al. 2006). Furthermore, a direct causal link between behavioral beliefs and behavioral intentions was found in several studies on Internet shopping (Gefen et al. 2003; Koufaris 2002; McKnight et al. 2002). Thus, while the main focus of this research is on the impact of culture on trust-building, for nomological completeness, we extended the research model to also include the impacts of trusting beliefs on attitudes, attitudes on buying intentions, trusting beliefs on buying intentions, and intentions on actual buying behavior in both cultures (see Figure 1).

Research Methodology

Identical experimental procedures, task, and web technologies were used in each research site (large universities in Australia and Hong Kong) to ensure comparability of results.

Experimental Task

The task asked subjects (students) to decide on whether or not to purchase *required* course textbooks from an online bookstore, iBook, a realistic activity for them. Subjects were offered incentives to purchase a textbook, yet faced a certain amount of risk and uncertainty, to create a realistic online shopping experience. The benefits included a discount of 5 percent off the university bookstore's purchase price, the convenience of classroom delivery, and a lucky draw with a 3 percent chance of winning. The risks included the unknown reputation of iBook, the need to reveal some personal information including, most importantly, one's bank account number, and the possibility that iBook may renege on its promise to deliver the textbooks. The experiments were conducted during the first week of the new semesters. The research protocol required the administrator (a research associate) to introduce iBook as a relatively new online bookstore. Subjects were explicitly told that the university was not affiliated with iBook and was not liable for its actions. After browsing through the website, subjects had to individually decide whether or not they would purchase the textbooks (alternative ways to obtain the textbooks included buying from the university or other bookstores, or buying used copies from senior students).

Subjects

Subjects were second- and third-year undergraduate IS-major business school students recruited from each research site. The research sites comprised a large university in Australia and another in Hong Kong. Subjects belonged to the age group that formed a substantial portion of Internet shoppers (i.e., 18 to 34 years old) (Scarborough Research 2008), and were likely to exhibit the behaviors of actual Internet shoppers. To encourage participation, all subjects were paid the equivalent of one hour of a research student's pay (about U.S.$7) for every hour of their time. In all, 166 and 128 subjects were recruited from the Australian and Hong Kong sites respectively.

Research Design

Hypothesis H1 is tested using Yahoo affiliation, and Hypothesis H2 is tested using peer endorsement (generalized in-group peers), both in the context of book buying at iBook across Australia (individualistic culture) and Hong Kong (collectivistic culture).

The experiment was a 2 × 2 × 2 factorial design: *culture* (individualism: Australia, versus collectivism: Hong Kong), *portal affiliation* (Yahoo affiliation versus no Yahoo affiliation) and *peer customer endorsement* (endorsement versus no endorsement). Trust building across cultures was investigated through the theoretical lens of the individualism–collectivism dimension, which is among Hofstede's (1991) five dimensions of culture. This is because the practical web strategies of Yahoo portal affiliation and peer customer endorsement are associated with out-group versus in-group recommendations, which could invoke people's individualistic/collectivistic tendencies. Australia and Hong Kong were chosen as they differ widely on the individualism index (Australia: 90; Hong Kong: 25; difference of 65) (Hoftsede 2001). Each peer endorsement and portal affiliation treatment in Australia had between 41 and 42 subjects, while each treatment in Hong Kong had 32 subjects. Appendices A and B show screen shots of the condition with both peer customer endorsement and portal affiliation used in the Australian and Hong Kong research sites, respectively. To provide a certain level of institutional assurances (Cheskin Research and Studio Archetype/Sapient 1999), security seals of approval (TRUSTe) and privacy policy statements were controlled by having *all* website versions (at both sites) display the same TRUSTe logo and privacy statement.

There were three independent variables. *Individualism–Collectivism* is varied using Australia and Hong Kong subjects. *Peer Customer Endorsement* is varied by having website versions with or without peer customer endorsements. The versions with customer endorsements displayed pictures of four customers with a short quote from each stating his/her successful and satisfied shopping experience at iBook (Appendix C). Each endorser was displayed for about eight seconds and cycled repeatedly. Endorsers at respective sites shared features typical of peers of the subjects: they were students in the same university, but not classmates of the subjects. *Portal Affiliation* is varied by having website versions with and without the Yahoo affiliation, which appears as a logo that could be clicked to verify the association. Yahoo was chosen because it is possibly one of the most well-known portals to subjects in Australia (http://au.yahoo. com/) and Hong Kong (http://hk.yahoo.com/).

Items for individualism–collectivism were based on Hofstede's (2001) Values Survey Module 1994. Items for portal affiliation and peer endorsement were self-developed (Appendix D). The dependent variables were trusting beliefs (in iBook), attitude (toward buying from iBook), intention to buy (from iBook), and actual buying behavior (coded as "1" for an actual purchase made if a subject completed the direct debit authorization form, "0" otherwise). Items measuring trusting beliefs, attitude, and buying intention were adapted to the context of iBook from Jarvenpaa et al. (2000) and Lim et al. (2006) to ensure content validity. Actual buying behavior is an *objective* measure. All items were reflective indicators of the respective underlying constructs, with the exception of the trusting beliefs construct that was formative in nature (i.e., the items form a latent construct and could vary independently from one another within the construct) (Chin and Gopal 1995; Cohen et al. 1990; Petter et al. 2007). This is because the latter included measures that probed the subjects' beliefs about iBook concerning benevolence, integrity, and ability, the three subdimensions of trusting beliefs (Mayer et al. 1995). All items were measured using a seven-point Likert scale.

Variables such as age and gender of subjects, Internet experience, and Internet usage, which could potentially affect Internet behaviors, were controlled through randomization; and experience with Internet shopping, which could affect trusting beliefs (Gefen 2000), was included in the research model as a control variable.

Experimental Procedures

Each session, held in a computer laboratory, had between 20 and 30 subjects. The experimental procedure consisted of a preexperimental briefing, the experiment proper, and a debriefing. Subjects were randomly assigned to a computer and treatment. The experimental administrator then introduced the task. The subjects were told they had no obligation to buy from iBook. Furthermore, they were told not to communicate with one another.

The subjects had 15 minutes to carefully browse through their assigned website version. To make a purchase, a subject had to complete an online form with personal details and a bank direct debit authorization form. This payment method is commonly used by students in both universities to pay tuition fees and dormitory rent, among others (such as trading shares or even credit-card bills). The subjects then completed a questionnaire containing measurement scales of research variables (Appendix D) and the individualism–collectivism (IDV) index (Hofstede 2001). Thus, the individualism–collectivism index for each research site was measured. Finally, after all experimental sessions were completed, the research associate fully debriefed the subjects on the actual purpose of the study. The ordered textbooks were delivered to subjects during their lectures the following week.

Results

Subject Demographics and Manipulation Checks

F-tests revealed that subjects within each research site did not differ in their age, Internet experience, and Internet usage across the four treatment conditions (Portal Affiliation × Peer Customer Endorsements). Kruskal-Wallis tests similarly found no difference due to gender ratio across treatments within each research site. At the Hong Kong site, no significant differences in the Internet shopping experience ("I shop on the Internet very frequently") were detected on a seven-point Likert-type scale ($F = 0.554$, $p = 0.646$). However, significant differences in Australian subjects were found across the four treatments for Internet shopping experience ($F = 11.96$, $p < 0.01$), making it a potential covariate. Table 2 summarizes the demographics of the subjects in the two research sites, which are comparable to those participating in Internet shopping research conducted in Hong Kong and Australia (e.g., Cheung and Lee 2006; Jarvenpaa et al. 2000). Manipulation checks further showed that the treatments were successful (see Appendix E).

PLS Analyses

Partial least squares (PLS), a second-generation causal modeling technique (Chin 1998; Fornell 1982; Wold 1982), was used to test the research model. PLS is appropriate as the research is exploratory, and the trust construct comprises formative indicators (Chin et al. 2003). Further, to compare between-group differences, component-based structural equation modeling techniques (i.e., multigroup PLS analysis in Appendix F) is appropriate for this study (Qureshi and Compeau 2009). The statistical package used was PLS-GRAPH (version 3.0 2000).

The Measurement Model Assessment

The individual item reliabilities, composite reliabilities, Cronbach's alphas, and average variances extracted by the constructs for the Australian and Hong Kong models (see Tables 3 and 4) indicated that they had acceptable levels of convergent validity and reliability (Cook and Campbell 1979; Fornell 1982; Hair et al. 1992; Fornell and Larcker 1981; Nunnally 1978.

The constructs also exhibited sufficient discriminant validity (Table 5) as the average variance extracted for each construct is greater than the squared correlations between constructs (Fornell and Larcker 1981; Grant 1989). Multicollinearity is not a major concern as the squared correlations between constructs in the correlation matrix did not exceed 0.8 and variance inflation factors in the collinearity diagnostics did not exceed 10 (Amoroso and Cheney 1991; Hair et al. 1992). To assess common methods bias, the widely used Harman's one-factor test (Iverson and Maguire 2000; Podsakoff et al. 2003; Podsakoff and Organ 1986) was performed. The expected five factors were extracted. No single factor accounted for a majority of the covariance. Also, the research model includes the *objective* measure of actual buying behavior. Together with the Harman test, the use of temporal and methodological separation of measurements alleviated concerns about common method bias (Podsakoff et al. 2003).

The Structural Model Assessment

The structural models were examined for their explanatory power and path significance using the bootstrapping technique (Neter et al. 1993). The boostrapping sample used in PLS analyses was 200. A 5 percent significance level was employed. The results of PLS analyses for the Australian model and the Hong Kong model are shown in Figures 2 and 3 respectively. The means and standard deviations of the dependent and independent variables of the research models are shown in Table 6. The descriptive statistics of trusting beliefs for the four experimental treatments in each research site are reported in Table 7. As a formative construct, trusting beliefs are made up of four items whose item weights are reported in Table 8.

In this study, culture is modeled as a moderator (Sharma et al. 1981). To compare the research model across the two cultures, a multigroup PLS analysis was conducted by comparing differences in coefficients of the corresponding structural paths for the two research sites (see Table 9 and Appendix F) (Chin 2000; Keil et al. 2000). The analysis revealed that the path coefficient from portal affiliation to trusting beliefs of the Australian model is significantly stronger than of the Hong Kong model ($t_{spooled} = 1.986$, AU path coeff. $= 0.306$; HK path coeff. $= 0.051$). Thus, H_1 is supported. Also, as the path coefficient from customer endorsement to trusting beliefs of the Hong Kong model is significantly stronger than of the Australian model ($t_{spooled} = 1.996$, AU path coeff. $= 0.283$, HK path coeff. $= 0.490$), H_2 is also supported. In both cultures, trusting beliefs led to attitudes, attitudes to buying intentions, and buying intentions to actual buying behavior. In the Australian model, trusting beliefs led directly to buying intentions, but not in the Hong Kong model. In general, the nomological relationships between trusting beliefs, attitudes, buying intentions, and buying behavior are supported in both cultures.

Table 2. Demographics of Subjects

	Australia		HK	
Website Version	Mean	Std. Dev.	Mean	Std Dev.
Internet Experience*	3.21	1.24	2.47	0.65
Internet Shopping Experience*	3.92	1.87	2.72	1.57
Internet Usage*	5.01	2.23	6.2	0.99
Age	21.70	1.95	21.21	1.32
	Percentage		Percentage	
Male	73%		47%	
Female	27%		53%	

*Scale ranges from 7 (Strongly Agree) to 1 (Strong Disagree)

Table 3. Convergent Validity of Constructs Across Research Sites

		Australia		Hong Kong	
Construct	Items	Item Loading on Construct	Item-Construct Correlation	Item Loading on Construct	Item-Construct Correlation
Peer Customer Endorsement	PeerCustEndorse1	0.96	0.96	0.73	0.85
	PeerCustEndorse2	0.97	0.96	0.93	0.85
Portal	Portal1	0.94	0.96	0.98	0.97
	Portal2	0.97	0.96	0.95	0.97
Trusting Beliefs	TrustBe1	0.81	0.83	0.86	0.87
	TrustBe2	0.82	0.88	0.90	0.91
	TrustBe3	0.93	0.90	0.87	0.81
	TrustBe4	0.88	0.85	0.6	0.71
Attitude	Attitu1	0.88	0.89	0.87	0.91
	Attitu2	0.92	0.92	0.90	0.92
	Attitu3	0.90	0.89	0.87	0.82
Intent-to-Buy	IntBuy1	0.87	0.87	0.86	0.85
	IntBuy2	0.89	0.89	0.86	0.85
	IntBuy3	0.90	0.90	0.91	0.92
	IntBuy4	0.89	0.90	0.85	0.85

Table 4. Cronbach's Alphas, Composite Reality, and Variance Extracted Scores

Culture	Construct	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Australia	Peer Customer Endorsement	0.92	0.96	0.93
	Portal	0.90	0.95	0.91
	Trusting Beliefs	0.89	0.92	0.74
	Attitude	0.88	0.93	0.81
	Intent-to-Buy	0.91	0.94	0.79
HK	Peer Customer Endorsement	0.63	0.83	0.70
	Portal	0.94	0.96	0.93
	Trusting Beliefs	0.84	0.89	0.67
	Attitude	0.86	0.91	0.77
	Intent-to-Buy	0.89	0.93	0.76

Table 5. Correlation and Square Root of Average Variance Extracted of Constructs: Australia and Hong Kong

	PCE		PORTAL		TRUSTBE		ATTITUDE		INTBUY	
	AU	HK	AU	HK	AU	HK	AU	HK	AU	HK
PEERCUSTENDORSE	0.97	0.84								
PORTAL	-0.02	0.24	0.96	0.97						
TRUSTBE	0.42	0.50	0.33	0.16	0.86	0.82				
ATTITUDE	0.40	0.27	0.28	0.10	0.68	0.37	0.90	0.88		
INTBUY	0.47	0.32	0.31	0.11	0.73	0.37	0.71	0.57	0.90	0.87

Table 6. Descriptive Statistics of Independent and Dependent Variables

	Australia		HK	
Research Variables	Mean	Std Dev.	Mean	Std Dev.
Peer Customer Endorsement	3.75	1.92	3.96	1.06
Portal	3.74	2.07	4.14	1.28
Trusting Beliefs	4.60	1.35	4.11	0.91
Attitude towards iBook	4.61	1.39	4.77	0.99
Intention to Buy	4.48	1.61	4.17	1.07
Internet Experience	3.92	1.87	2.67	1.60

Table 7. Descriptive Statistics of Trusting Beliefs Across Treatments (Seven-Point Likert Scale: Australia Sample: 166; Hong Kong Sample: 128)

	Australia		HK	
Website Version	Mean	Std. Dev.	Mean	Std Dev.
Peer Cust. Endorsement & Portal	5.09	0.93	4.27	0.99
Peer Cust. Endorsement Only	5.2	0.92	4.26	0.9
Portal Only	5.11	0.88	4.25	0.94
None	2.90	1.27	3.76	0.90

Table 8. Item Weights for Trusting Beliefs Construct Across Cultures*

	Australia	HK
Trust	Item Weight	Item Weight
Item 1	0.273	0.347
Item 2	0.109	0.29
Item 3	0.405	0.434
Item 4	0.355	0.111

*To assess whether the path coefficients differ across cultures because of differences in the way people form trusting beliefs in this study, additional analyses were performed on the research model in each culture. A common way to assess the impact of potentially inequivalent items is to drop them to maintain the cross-cultural equivalence of a scale (e.g., Hulin and Mayer 1986). Consequently, each item of the formative Trusting Beliefs construct was dropped, one at a time, to see if the PLS model results would be different. Results of the additional PLS analyses showed that in each model (with one item dropped at a time) the significance of differences in path coefficients and significance of the t-statistics are preserved across both cultures, indicating that the relationships between the web strategies and trusting beliefs indeed differ consistently with the findings across the two cultures of Australia and Hong Kong.

Table 9. Path Comparison Statistics Between Australia and Hong Kong

Paths	$t_{spooled}$	Australia Path Coefficient	Hong Kong Path Coefficient	Hypothesis Support
H1: Portal Affiliation → Trusting Beliefs	1.986**	0.306	0.051	Supported
H2: Peer Endorsement → Trusting Beliefs	1.996**	0.283	0.490	Supported

**Significant at 5% level.

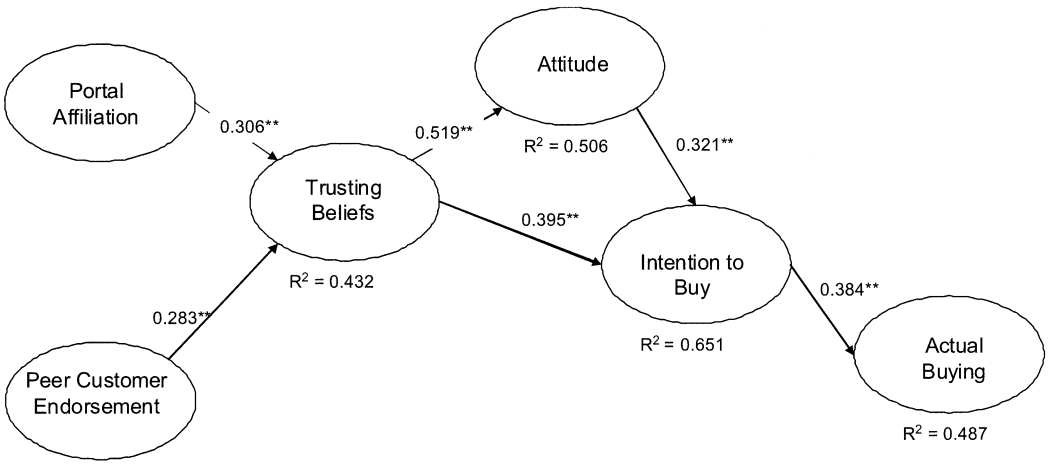

Figure 2. Australian Model: Path Estimate (Standard Error) of PLS Analyses

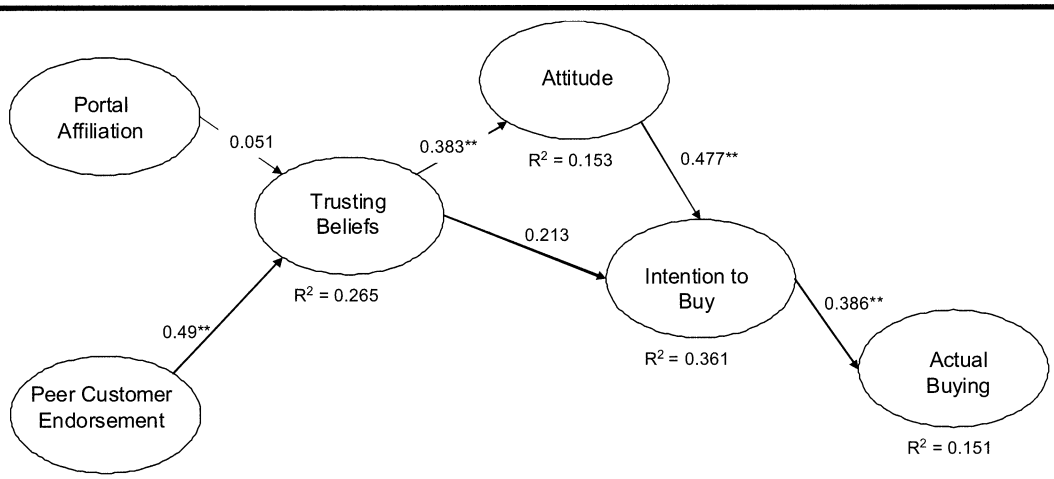

Figure 3. Hong Kong Model: Path Estimate (Standard Error) of PLS Analyses

The research variables in the Australian and Hong Kong models respectively accounted for 65.1 percent and 36.1 percent of variances in intention to buy, and 48.7 percent, and 15.1 percent of variances in actual buying behavior. Thus, the research models provide an adequate prediction of the buying intention and actual behavior of potential consumers (Falk and Miller 1992).

Discussion and Conclusion

Culture Differences in Effectiveness of Web Strategies

In the Australian model, portal affiliation was moderately more effective than customer endorsement at building trust (Figure 2). However, adding one to the other did not lead to significantly higher trusting beliefs (Table 7), suggesting that their effects are substitutive rather than additive. In contrast, for the Hong Kong model (Figure 3), subjects responded positively to customer endorsement but not to portal affiliation. These findings support our theoretical arguments (Doney et al. 1998; Lee and Ward 1998) that individualistic cultures (Australia) tend to treat both in-group and out-group members more equally, whereas collectivistic cultures (Hong Kong) tend to view in-group members more positively than out-group members. Similarly, past research (Lim et al. 2006) found that in Hong Kong, local peers (in-groups) are trusted significantly more than foreign firms like Amazon or Yahoo (out-groups).

Path comparison between customer endorsement and trusting beliefs across the two research sites indicated that Hong Kong subjects responded more positively and are more strongly influenced by peer (generalized in-group) endorsements than Australian subjects. This is consistent with Lim et al.'s (2006) findings that in Hong Kong, website endorsements by local youths were significantly more believable than endorsements by foreign youths.

Path comparisons also showed that the path between portal affiliation and trusting beliefs was positively significant for Australia, but not for Hong Kong. Australian subjects could have evoked the cognitive process of reputation categorization based on the Yahoo affiliation when assessing whether or not iBook is trustworthy. This trust transference process could have been muted in Hong Kong due to the perception of Yahoo as an out-group entity.

The above discussion on cultural differences, regarding the impacts of peer customer endorsements and Yahoo affiliation, could raise questions about whether the type of peers (local versus foreign), and the type of organizational affiliations (local versus foreign firms), would have differential effectiveness in building trust. To provide insights on the cultural impacts of local and foreign peers and local and foreign organizations, and to further explore the generalizability of the study's findings, we conducted a follow-up survey in Hong Kong and Australia and obtained 53 responses from Hong Kong and 51 responses from Australia. The demographics of the two sets of respondents closely match those of the main study, being sampled from similar year-of-study (second year undergraduate) and gender profiles. The paper-based survey asked respondents to rank their trusting beliefs toward various versions of the iBook website featuring different endorsements/affiliations: (1) local peer customers; (2) foreign peer customers (from a different country—Hong Kong respondents saw Australian endorsers, whereas Australian respondents saw Hong Kong endorsers); (3) local reputable bookstore affiliation (Swindon Bookstore for Hong Kong, Angus & Robertson for Australia); and (4) foreign bookstore affiliation (Amazon). Thus, the survey also served as a conceptual replication (investigating relative effectiveness of local versus foreign entities in both cultures) of the main experiment by unveiling the relative ranks of the different web strategies to build trusting beliefs.

Wilcoxon signed-rank tests showed that, in Australia, affiliations with the local bookstore (Angus & Robertson) and foreign bookstore (Amazon) was ranked significantly higher in trusting beliefs toward iBook than local peer endorsement, which is in turn significantly higher than endorsement by foreign peers. In contrast, the results for Hong Kong revealed that endorsement by local peers is significantly higher than affiliation with Amazon, which is in turn significantly higher than endorsement by foreign peers and the local bookstore (Swindon). This indicates that the influence of in-group peers is particularly strong in Hong Kong, compared to out-group entities comprising foreign bookstores (Amazon), followed by the local bookstore or foreign peers. This result demonstrates the strong impact of unit-grouping among Hong Kong respondents. Local peers, whom they viewed as in-group members, are significantly stronger at building trusting beliefs than foreign customers, whom they viewed as out-group members. The finding also shows that for Hong Kong, the impact of unit-grouping (through local peer endorsement) is significantly stronger than that of reputation categorization (through foreign and local organization affiliation). Among the two organizational affiliations (local versus foreign) that invoke reputation categorization, reputation of the firm would play a bigger role in building trusting beliefs. Thus, Amazon was more effective at building trust as compared to the local Hong Kong bookstore (Swindon), because it is a global com-

pany many times larger than Swindon. In contrast, Australian respondents viewed local and foreign organizational affiliations more equally, and better than local peers, followed by foreign peers, at building trust. This shows that in Australia, peer endorsements could still be useful, but the impact of reputable organizational affiliations, regardless of whether they are local or foreign, would make an even greater impact on enhancing trusting beliefs toward an unknown bookstore. The results of the follow-up study, comprising an entirely different research design and method, are thus strongly supportive of, and converge with, the findings in the main study.

In general, the impacts of trusting beliefs on attitudes and buying intentions were consistent with those of earlier research (e.g., Jarvenpaa et al. 2000; Lim et al. 2004), hence establishing the validity of the nomological set of related research constructs connecting web strategies to trusting beliefs and buying intentions.

Limitations and Future Research

It is prudent to caution against over-generalizing the results due to the limitations of the research. First, relatively homogeneous student subjects were used for the two research sites. Whether the results are applicable to other Internet users could only be assessed by replicating the study using different groups of subjects. Nevertheless, the subjects fall within the 18 to 34 age group that represents the most dominant group of Internet shoppers (Scarborough Research 2008). Thus, they should be representative of a significant portion of potential Internet shoppers.

Second, past research has suggested that gender differences can have an influence on Internet shopping. For instance, females tend to be more responsive to recommendations and opinions of relevant others than males in online shopping (Garbarino and Strahilevitz 2004). This is consistent with technology adoption research, which found that females are more strongly influenced by relevant others than males (Srite and Karahanna 2006; Venkatesh and Morris 2000; Venkatesh et al. 2000). Further, such gender impacts could occur across cultures (Srite and Karahanna 2006), and within the context of Internet shopping (Gefen and Straub 1997). Given the differences in gender ratio across the research sites of this study, we performed additional PLS analyses by splitting the data across gender and research sites. The results revealed that path coefficients (and significances) between the two web strategies (Yahoo affiliation and peer endorsements) and trusting beliefs, in the male and female models in each research site, were consistent with those of the original model for that site, regardless of gender. This suggests that the impact of web strategies in building trusting beliefs is relatively stable regardless of gender within each culture. Nevertheless, we feel that the issue of gender is still a very intriguing one, particularly since females have been found in earlier studies to be receptive to the opinions of significant others, and could be investigated further in future research to better understand its precise impact on trust-building and Internet shopping.

Third, only two specific web strategies, Yahoo affiliation and peer endorsements, were investigated. More in-depth studies of other practical web strategies (see Cheskin Research and Studio Archetype/Sapient 1999) associated with other dimensions of culture could be interesting topics for further research. Further, strategies for bringing out-group members into the in-groups of collectivists could be interesting areas of future work. Fourth, the study could be replicated across different product brand equities in different cultures to extend the external validity of the findings. Fifth, despite our reminder not to do so, we were not able to collect any information on whether or not the subjects discussed the study with one another.

Sixth, this research mainly investigated the impact of culture on positive endorsements by customers. There are websites, such as tripadvisor.com, that allow posted reviews about hotels or travel packages to contain both positive and negative comments. It is thus unclear how the presence of both positive and negative comments could affect the trusting beliefs and attitudes toward a website, and this is worthy of future investigation. Seventh, while differences in impacts of web strategies on trusting beliefs across cultures have been established in this research, the findings of Fan and Poole (2006) indicate that various web strategies could also be used to enhance customer loyalty through personalization of the user interface and website contents. It would thus be very interesting to extend this research beyond first-time or unknown Internet vendors to those that are now focusing more on customer retention and loyalty. Specifically, it would be interesting to investigate how various web strategies could build customer loyalty across different cultures. Eighth, the reliability score (Cronbach's alpha) of peer endorsement for the Hong Kong data was somewhat lower at 0.63 than the typical threshold of 0.7. This is acknowledged as a limitation of the research.

Implications

This study has theoretical and practical implications. As one of the first attempts to question the effectiveness of a uni-

versalistic approach to web design by studying the impact of web strategies on trust building through an individualism–collectivism lens, we open up a new avenue of inquiry. Future research could study the impacts of other cultural dimensions on trust-building strategies and other online consumer behaviors in general.

In terms of theory development, the results first demonstrate that adopting a universalistic approach in trust building does not seem appropriate in all cultures. As demonstrated in our study, a web strategy that works for one culture may not work in another culture. In collectivistic cultures like Hong Kong, in-group members involving peers are more effective at trust-building than out-group members. The results of the follow-up survey provided additional insights that local peers (in-group) would be more effective than foreign peers (out-group) at building trust. Local peers (in-group) were also more effective than firm affiliations, regardless of whether they are foreign or local, at enhancing trusting beliefs toward an unknown Internet store. Conversely, for individualistic cultures like Australia, both reputable organization affiliations and peers could be effective at building trust. The follow-up study revealed insights that organizational affiliations could build trust better than local peers. But the impact of in-groups is still present in individualistic cultures, because endorsements by local peers could still enhance trusting beliefs more effectively than foreign peers. Overall, these findings suggests that trust is built differently through different web strategies in different cultures, indicating that future research models on trust building need to be culturally customized when conducting research in different cultures. This study also contributes to the emerging evidence (e.g., Gefen et al. 2003; Jarvenpaa et al 2000; McKnight et al. 2002), that trusting beliefs is a critical factor in Internet shopping research, as it affects buying intentions and behaviors across cultures. Finally, the research demonstrates the significant Internet shopping intention to actual buying behavior link in different cultures.

This research also has some practical implications. It demonstrates that a one-design-fits-all strategy in designing websites is not necessarily the most cost-effective for organizations. The use of specific web strategies to build trust should depend on the extent that they appeal to the specific cultural traits (e.g., individualism–collectivism) of potential customers. Yahoo affiliation (invoking reputation categorization), which is a foreign firm and thus an out-group entity, was not effective at building trust in unknown Internet stores in collectivistic cultures such as Hong Kong, and need not be incorporated in their web designs. Peer customer endorsements (invoking unit-grouping) is a useful trust-building strategy in both cultures. The follow-up study further showed that local peers (in-groups) would be effective in trust-building strategies that employ the theoretical mechanism of unit-grouping. For consumers in individualistic countries such as Australia, new Internet stores could employ reputable firm endorsement (e.g., Yahoo affiliation) or in-group endorsement (e.g., local peer customer endorsements) to effectively build trust. The follow-up study further showed that reputable organization affiliations, regardless of whether it is local or foreign, are effective at building trust. By employing a contingent approach to the use of web strategies, trust could be built in Internet retailers even in highly collectivistic countries that have traditionally low Internet shopping rates such as China, Hong Kong, and Malaysia (Lim et al. 2004) because, as this research has found, in-group endorsements are particularly effective in such places. Costs could be saved by Internet retailers in collectivistic cultures (e.g., Hong Kong) because foreign portal (e.g., Yahoo) affiliation as a web strategy would not help increase consumers' trust in them. Overall, the findings support the call by consumer behavior scholars (e.g., Aaker and Maheswaran 1997; de Mooij and Hofstede 2002; Straughan and Albers-Miller 2001) to be cognizant of the heterogeneity of consumers across different cultures in the Internet environment.

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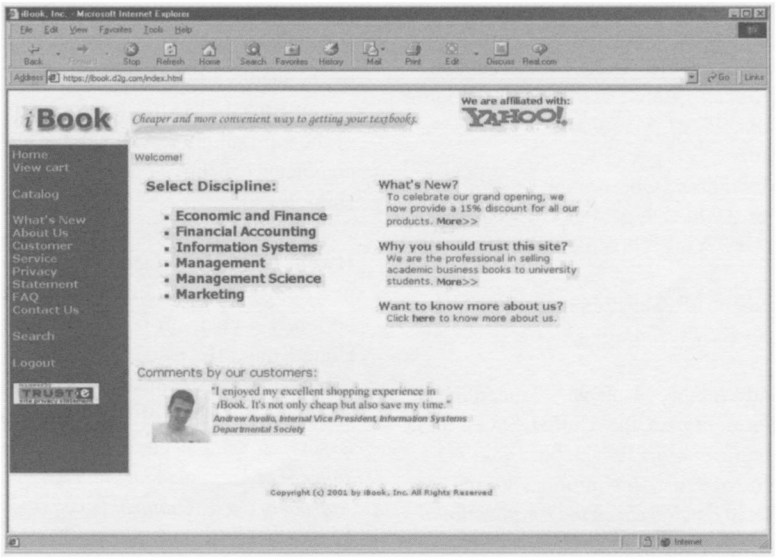
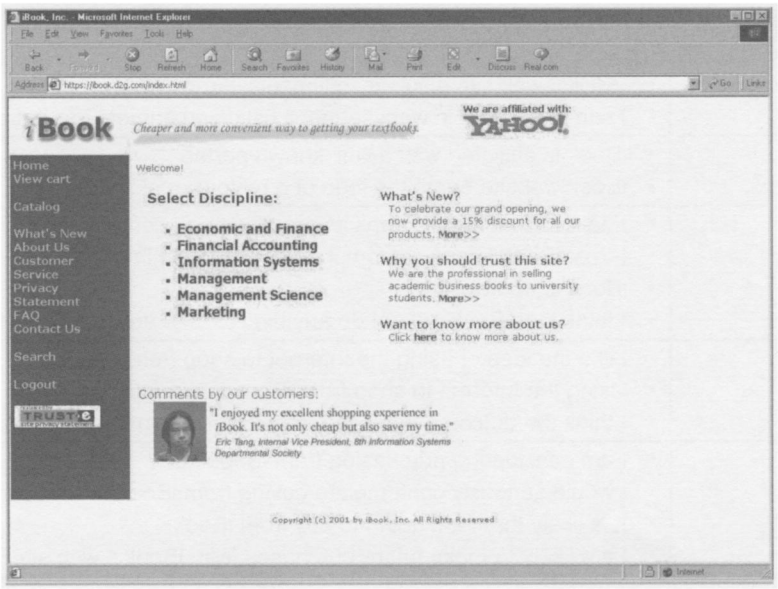
Appendix A

An Example of the Online Book Store Home Page Used in Australia



Appendix B

An Example of the Online Book Store Home Page Used in Hong Kong



Appendix C

List of Quotes Used for Peer Customer Endorsements

I enjoyed my excellent shopping experience in iBook. It's not only cheap but also save my time. – Eric T., Vice President, 8th Information Systems Department Society and Current Student.
I'm impressed by the customer services. Once I had some problems with my order. The friendly staff helped me to fix the problem, and I got the book next day. – Mike C., Graduate Student.
In the past, I never shopped in the Internet because of the security problem. But this site is secure. I feel comfortable with its security level. Now I just visit iBook. – Rachael I., Former Student.
It is very convenient and fast to get the books I want here. They even deliver books to classrooms. So, this online bookstore saves me a lot of time. – Karen L., Current Student.

Appendix D

Questionnaire Containing Measures of the Research Variables

Measures*	
Peer Customer Endorsement	• iBook's web site displays testimonials from satisfied customers. • I can see from the website that existing customers are satisfied with iBook.
Portal	• iBook is affiliated with a well-known portal. • iBook website bears the logo of a major portal.
Trusting Beliefs	• I believe that iBook keeps its promises and commitments. • I trust iBook keeps customers' best interests in mind. • iBook is trustworthy. • I think that iBook will not do anything to take advantage of its customers.
Attitude	• I like the idea of using the Internet to shop from iBook. • Using the Internet to shop from iBook is a good idea. • I think the outcome of buying from iBook using Internet should be positive.
Intention to Buy	• I am considering purchasing from iBook now. • I would seriously contemplate buying from iBook. • It is likely that I am going to buy from iBook. • I am likely to make future purchases from iBook's web site.

* Scale ranges from 7 (Strongly Agree) to 1 (Strong Disagree).

Appendix E

Manipulation Checks

To test that the manipulations are successful, it needs to be demonstrated that subjects exposed to a certain manipulation treatment responded significantly differently to manipulation check questions about the treatment, compared to those not exposed to that treatment. The following manipulation checks were performed:

1. The *calculated* individualism indexes of Hofstede's (2001) Values Survey Module 1994 for Australian (AU) and Hong Kong (HK) subjects were 129 and 69, respectively.[2] The magnitude of difference is 60, which is consistent with the difference of 65 (90 for Australia; 25 for Hong Kong) in Hofstede (2001).

2. Manipulation checks on portal affiliation showed that in both Hong Kong and Australia, subjects exposed to Yahoo affiliation indeed agreed that iBook was affiliated with a well-known portal (Hong Kong: $t = 5.00$, $p < 0.01$; Australia: $t = 24.06$, $p < 0.01$), and that the iBook web page bears the logo of a major portal (Hong Kong: $t = 3.43$, $p < 0.01$; Australia: $t = 27.25$, $p < 0.01$), compared to those subjects not exposed to the Yahoo affiliation treatment. Manipulation checks on peer customer endorsement also showed the subjects shown the customer endorsements agreed iBook's website displayed testimonials from satisfied customers (Hong Kong: $t = 5.40$, $p < 0.01$; Australia: $t = 22.68$, $p < 0.01$), and that they can see from the iBook website that existing customers are satisfied with iBook (Hong Kong: $t = 2.12$, $p = 0.036$; Australia: $t = 21.94$, $p < 0.01$), compared to those subjects who were not shown the customer endorsements. Thus, the manipulation of Yahoo affiliation and customer endorsement appeared to be successful (see Table E1).

[2]Hofstede's Individualism (IDV) index should be used at the country level rather than at the individual level (Hofstede 2001). This is because the mean responses (to several IDV measures) of the entire set of respondents in each country/city are used to derive the index for that country/city. The index was calculated by summing, for the entire set of respondents in each site, the mean scores of four items measuring the extent of individualism–collectivism. No IDV score is generated for each respondent at the individual level.

Table E1. Manipulation Checks

	Hong Kong	Australia
Portal Affiliation		
• iBook is affiliated with a well-known portal*	Portal: 4.62 (1.354)** No Portal: 3.62 (1.084) t = 5.00, p < 0.01	Portal: 5.79 (1.086) No Portal: 1.86 (1.02) t = 24.06, p < 0.01
• iBook's web page bears the logo of a major portal	Portal: 4.52 (1.371) No Portal: 3.76 (1.132) t = 3.43, p < 0.01	Portal: 5.60 (0.98) No Portal: 1.82 (0.794) t = 27.25, p < 0.01
Peer Customer Endorsement		
• iBook's website displayed testimonials from satisfied customers	PCE: 4.75 (1.047) No PCE: 3.54 (1.200) t = 5.40, p < 0.01	PCE: 5.6 (1.142) No PCE: 1.99 (0.896) t = 22.68, p < 0.01
• I can see from the website that existing customers are satisfied with iBook.	PCE: 4.06 (1.076) No PCE: 3.51 (1.252) t = 2.12, p = 0.036	PCE: 5.35 (1.058) No PCE: 1.99 (0.909) t = 21.94, p < 0.01

*Scale ranges from 7 (Strongly Agree) to 1 (Strong Disagree).
**Treatment: Mean (Standard Deviation).

3. Questions probing whether the processes of reputation categorization and unit grouping have indeed taken place revealed that respective respondents agreed that Yahoo is reputable, that the customers are familiar to them and the customer endorsements are effective (see Table E2).

Thus, in summary, the selection of the two research sites based on cultural trait differences and manipulations on portal affiliation and customer endorsement appeared to be successful.

Table E2. Probing Questions on Reputation Categorization and Unit Grouping

	Hong Kong	Australia
Reputation of Yahoo†		
• Yahoo is a reputable third party certification body that assures the trustworthiness of iBook*	Mean = 4.96, Std. Dev. = 1.29	Mean = 5.38, Std. Dev. = 0.92
Familiarity of Customers		
• I recognize some of the satisfied customers appearing on the testimonials	Mean = 4.81, Std. Dev. = 1.48	Mean = 5.21, Std. Dev. = 1.09
• Endorsement from satisfied customers can positively affect my decision to buy from iBook	Mean = 4.46, Std. Dev. = 1.23	Mean = 5.52, Std. Dev. = 1.08

*Scale ranges from 7 (Strongly Agree) to 1 (Strong Disagree).
†The higher Yahoo reputation for Australia as compared to Hong Kong raises the question of whether it could be a potential covariate. Further PLS analyses of the research models for Australia and Hong Kong, with Yahoo reputation as a possible covariate were performed. The results revealed that paths and their significance in both models were very similar regardless of whether Yahoo's reputation was controlled for or not. The inclusion of Yahoo's reputation in the research model as a possible covariate did not cause any significant changes in the paths in the Australian or the Hong Kong model. Thus, it is unlikely that the reputation of Yahoo is a covariate in the research models.

Appendix F

Multigroup PLS Analysis

Multigroup PLS analysis is a component-based structural equation modeling that permits the comparisons of structural model differences across naturally occurring groups, like people in different countries or cultures (Chin 2000; Qureshi and Compeau 2009). It is performed by making a parametric assumption, taking the standard errors for the structural paths, and comparing the corresponding paths across different groups (cultures, in this study) by performing t-tests on their path coefficients, with the pooled standard error, as follows:

$$S_{pooled} = \sqrt{\{[(N_1 - 1)^2 / (N_1 + N_2 - 2)] \times SE_1^2 + [(N_2 - 1)^2 / (N_1 + N_2 - 2)] \times SE_2^2\}}$$

$$t_{spooled} = (PC_1 - PC_2) / [S_{pooled} \times \sqrt{(1/N_1 + 1/N_2)}]$$

where S_{pooled} is the pooled estimator for the variance
$t_{spooled}$ refers to the t-statistic with $(N_1 + N_2 - 2)$ degrees of freedom
N_i is the sample size of dataset for culture i
SE_i is the standard error of path in structural model of culture i
PC_i is the path coefficient in structural model of culture i