Consumer Trust in an Internet Store: A Cross-Cultural Validation

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Abstract

Many have speculated that trust plays a critical role in stimulating consumer purchases over the Internet. Most of the speculations have rallied around U.S. consumers purchasing from U.S.--based online merchants. The global
nature of the Internet raises questions about the robustness of trust effects across cultures. Culture may also affect the antecedents of consumer trust; that is, consumers in different cultures might have differing expectations of what makes a web merchant trustworthy. Here we report on a cross-cultural validation of an Internet consumer trust model. The model examined both antecedents and consequences of consumer trust in a Web merchant. The results provide tentative support for the generalizability of the model.

Introduction

A retailer can use an Internet presence to reach consumers all around the world. Quelch and Klein (1996) herald how the Internet makes the expanded range of products, services, and information accessible for consumers from geographically distant and/or emerging markets. Hamel and Sampler (1998) declare the beginning of "a world where customers are no longer hostages to geography..." (p. 88).

There is little doubt that the Internet provides enormous potential benefits for consumers worldwide. Wider choice ranges, lower prices, and entirely new products have become available in many product categories such as books, CDs, and travel packages, to consumers who are physically far away from the world’s centers of traditional commerce (Economist, 1997). Amazon.com sells 20% of its books to foreign destinations (Hamel & Sampler, 1998). One Finnish consumer reported savings of 60% (including surface mail shipping costs) having purchased a business book from an online store, Amazon.com, based in Seattle, US than from a Finnish book store (Filienius, 1996). A price comparison with a UK-based online store, Business Book Direct, was similarly favorable compared to that available locally. A significant price advantage (25%) remained even if the book was shipped via an express package carrier.

Although favorable pricing might be a necessity to win orders by overseas customers, it may not be sufficient. Doney and Cannon (1997) label trust as an order qualifier for purchase decisions. That is, in order for a consumer to place an order, the consumer must trust the merchant first. Trust is a belief or expectation that the word or promise by the merchant can be relied upon and the seller will not take advantage of the consumer’s vulnerability (Geyskens et al., 1996). Trust is a critical factor in any relationship in which the trustor (e.g., consumer) does not have direct control over the actions of a trustee (e.g., merchant or store), and there are possible negative consequences of one party not fulfilling its promises (Deutsch, 1958; Mayer et al., 1995).

Quelch and Klein (1996) speculate that in the early stages of Internet development, trust is a critical factor in stimulating purchases over the Internet. Keen (1997) warns that trust is not only a short-term issue but the most significant long-term barrier for realizing the potential of Internet marketing to consumers. An experiential survey of U.S.-based online surfers, new to Internet based shopping, found the shoppers fascinated by international shopping opportunities on the Web, but they were skeptical about actual purchasing from overseas sites (Jarvenpaa & Todd, 1997). Others report widespread distrust among consumers about Internet-based merchants (Culnan & Armstrong, 1999).
Consequently, the role of trust casts some doubts on Internet consumer merchandising. Consumers are unlikely to patronize Internet stores that fail to create a sense of trust. Trust can only exist if the consumer believes that the seller has both the ability and the motivation to deliver goods and services of the quality expected by the consumer. This belief may be more difficult for an Internet merchant to engender than it is for a conventional merchant. In Internet commerce, merchants depend on an impersonal electronic storefront to act on their behalf. Additionally, the Internet lowers the resources required to enter and exit the marketplace. Internet merchants might be considered fly-by-night as there are fewer assurances for consumers that the retailer will stay in business for some time. In traditional contexts, a consumer’s trust has been found to be affected by the seller’s investments in physical buildings, facilities, and personnel (Doney & Cannon 1997). Retailers on the Internet thus face a situation in which consumer trust might be expected to be inherently low.

The global context of the Internet further challenges engendering trust in a consumer. From traditional marketing contexts, we have learned that consumer trust is most readily developed when the consumer has a positive trusting stance in general, has had prior interactions with the merchant, interacts with a knowledgeable salesperson with similar or familiar background to the consumer, is protected by strong social and legal structures, and expects to be patronizing the merchant for a prolonged period (Geyskens et al., 1998). When consumers are scattered around the world, these sources of trust are not readily available for the merchant to harness.

Moreover, the fundamental bases of trust might vary across nationalities. Those consumers coming from individualistic countries might have a higher trusting stance in general and be more willing to base their trust in the merchant on factors that are inferred from an impersonal web site than consumers from collectivistic countries. Dawar et al (1996) found that personal and impersonal sources of information had different impacts on individuals across cultures. Doney et al (1998) have called for empirical studies examining the ways national culture impacts trust and trust building processes.

Jarvenpaa, Tractinsky, and Vitale (1999) developed and tested a theoretical model about the antecedents and consequences of trust in an Internet store. The model suggests that customers' evaluations of stores' reputation and size affect their trust in the store. In addition, Jarvenpaa et al found that the degree to which consumers trust a Web store affects their perceptions of the risk involved in purchasing from the store and their attitudes towards the store. Our purpose in this paper is to cross-validate the Jarvenpaa et al. model in a cross-cultural setting. The study that Jarvenpaa et al. (1999) carried out in Australia was replicated in Israel and partially replicated in Finland. The replications enabled us to test for cross-cultural differences, and at the same time to assess the validity of the model across national borders.

This paper focuses solely on the consumer’s initial development of trust in a commercial store on the Internet. The scope does not include how trust develops upon repeated visits or how trust operates through third parties that might mediate between the consumer and the store. This paper is
limited to the type of Internet shopping situation in which the consumer is targeting the search to a specific category of merchandise (e.g., books and airline tickets) and is dynamically browsing through a variety of merchants in that category (e.g., books).

The next section reviews literature on trust and culture. The third section outlines the methodology of the experimental survey. The fourth section reports on the results from the empirical study, and the final section discusses the results.

**Conceptual Framework: Consumer Trust in a Web Merchant**

We define trust in the Internet store as a consumer’s willingness to rely on the seller and take action in circumstances where such action makes the consumer vulnerable to the seller. This definition builds on one provided in Mayer et al. (1995) and McKnight et al. (1998). The definition emphasizes the cognitive dimensions of trust and views trust as a rationale choice process. The cognitive view is a narrow treatment of trust excluding the affective and social dimensions (see Kramer, 1999). Mayer et al. (1995) proposed a model of antecedents of organizational trust based on a dyad of trustor and trustee. The antecedent of trusting behavior is trusting intention, or the willingness to be dependent on another person. Trusting intention is in turn influenced by a trustor’s propensity to trust, the trustor’s perceived characteristics of a trustee (e.g., trustworthiness of trustee based on his or her integrity, benevolence, and ability), and indirectly the trustor’s observations of the trustee’s behavior. The model is trustor-centric and acknowledges others only in terms of what they do to the trustor, focuses on the trustor’s purpose of interaction and the trustor’s outcomes of interactions. The model assumes that the decision to trust is made by the trustor and the good resulting from trust is of direct personal benefit to a trustor.

Besides building on the assumptions of the Mayer et al. model, we draw upon research in industrial marketing. There is a scarcity of research on trust in consumer marketing (Geyskens et al., 1998). A meta-analysis of empirical research on antecedents and consequences of trust in marketing relationships found no significant differences in results between industrial and consumer categories of merchandise (Geyskens et al., 1998).

In industrial marketing, the most salient source of a buyer’s trust in the merchant organization is the salesperson; trust in the salesperson is dependent on the salesperson’s expertise, likability, and similarity to the customer (Doney & Cannon, 1997). In the Internet context, the salesperson is replaced by a website (Lohse & Spiller, 1998). The web site mediates the relationship between the consumer and the merchant organization. Sales organizations have been found to create trust in the customer by demonstrating that they consider their customers’ interests and are willing to make short-term sacrifices. These sacrifices convey that the merchant is not purely driven by a selfish short-term profit motive (Ganesan & Hess, 1997).

**Trust and Risk**

Trust and risk are closely interrelated (Mayer et al., 1995). Trust is a social
lubricant that allows consumers to transact with merchants who are not part
of their immediate network. Trust in a merchant mitigates the consumer’s
perception of the risks involved in a purchase situation. The higher the
initial perceptions of risk, the higher the trust needed to facilitate a
transaction.

Risk is defined as a consumer’s perceptions of the uncertainty and adverse
consequences of engaging in an activity (Dowling & Staelin, 1994). The
Internet is an open, global, heterogeneous, and constantly changing
marketing channel. Moreover, the channel makes it hard to inspect physical
goods. There seems little assurance that the customer will get what he or
she will see on the computer screen, in the quantity ordered. If problems arise,
sellers can always blame technical problems that are beyond their control.
Many sites do not even confirm the order, let alone stay in touch with the
shopper until the merchandise has been received or consumed. Because of
the newness of the channel, many consumers may be uncertain about the
hazards at present and their full consequences. All these reasons increase
the uncertainty, and possibly the perceived riskiness of shopping on the
Internet. When risk is present, trust is needed to make transactions possible.
That is, consumer trust toward a merchant reduces the perceived riskiness of
a specific webstore.

*H1: Higher consumer trust towards an Internet store will reduce the
perceived risks associated with buying from that store.*

**Antecedents of Trust**

Reputation and size have been most frequently suggested as factors that
contribute to consumer trust in a seller organization (Anderson & Weitz,
1989; Doney & Cannon, 1997; Ganesan, 1994). In consumer marketing, the
long-term reputation of the seller has been found to be more important than
short-term product quality movements (Landon & Smith, 1997). Reputation
and size provide assurances of the other party’s ability, integrity, and
goodwill. Assurances help to increase trust, particularly when the parties
have not interacted before and hence do not have first hand knowledge of
each other (McKnight et al., 1998). Indeed, many Web retailers attempt to
promote their reputation in various ways (e.g., by publishing customer
testimonials on their sites or by carrying seals of approval by third parties).
Similarly, Web retailers often use eye-catching banners to promote
consumer perceptions of their large size (e.g., number of items available for
the consumer to choose from).

Reputation is the extent to which buyers believe that the selling
organization is honest and concerned about its customers (Doney &
Cannon, 1997). Reputation is a valued asset (Chiles & McMackin, 1996)
and sellers usually try to avoid getting a bad reputation. Reputation requires
a long-term investment of resources, effort, and attention to customer
relationships. The better the seller’s reputation, the more the seller has
presumably committed resources to build that reputation, the higher the
penalty from violating the consumer’s trust, and hence the more trustworthy
the seller is perceived to be. A good reputation also signals past forbearance
from opportunism (Smith & Barclay, 1997). Similarly, a perception of a
large organization size implies that the merchant has significant resources
invested in the business and has much to lose by acting in an untrustworthy
way. Hence, the larger the firm the more it is perceived by customers that it is in the firm's best interest to fulfill its promises to the consumer. Size and reputation are also likely to interact. Reputational effects are strengthened if associated with longevity (Landon & Smith, 1997). Because of natural growth limits, larger firms might be expected to be around longer and hence firms that are larger and more reputable might be more trusted.

In the Internet marketing context, Quelch and Klein (1996) and Lohse and Spiller (1998) speculate that the reputation of the store will influence perceptions of the online site. Indeed, some Internet merchants publish stories and customer testimonials on their sites attesting to their reputation, and invest in web-page banners boasting of their size.

**H2: The store’s perceived reputation is positively associated with a consumer’s trust in an Internet store.**

**H3: The store’s perceived size is positively associated with a consumer’s trust in an Internet store.**

**Outcomes of Trust**

Perceived reputation, perceived size, and trust are beliefs that the consumer has formed on the basis of information that the consumer has about the merchant. According to the Theory of Reasoned Action (Fishbein & Ajzen, 1975) and the Theory of Planned Behavior (Ajzen, 1985), beliefs affect the person’s attitudes; that is, their favorable or unfavorable evaluations of the merchant and the site. The theory asserts that attitudes in turn influence behavioral intention, which is a good predictor of actual behavior (i.e., actual purchase). See, for example, Ajzen and Driver (1992), East (1993) and Notani (1997) for demonstrations of the good predictive validity of intentions on actual purchases when consumers are under volitional control.

Figure 1 incorporates these theoretical relationships in the web shopping context. A consumer’s willingness to buy from an Internet seller (i.e., behavioral intention) is contingent on the consumer’s attitude towards the store, which, in turn, is affected by the seller’s ability to evoke consumers’ trust (i.e., belief). Consumers are less likely to patronize stores that fail to create a sense of trustworthiness. Higher trust, on the other hand, will not only directly improve attitudes towards a store, but might also have an influence indirectly by way of reducing the perceived level of risk associated with buying from that particular store. Besides helping to shape attitudes, perceived risk might also have an independent, direct influence on the willingness to buy. A consumer may be willing to buy from an Internet store which is perceived as low risk, even if the consumer’s attitudes towards that merchant are not highly positive. Conversely, a consumer may not be willing to buy from a merchant perceived as being high risk, even in the presence of positive attitudes towards that merchant. The direct influence of perceived risk on intention is related to the notion of perceived behavioral control in the theory of planned behavior (Ajzen, 1985, 1991). Individuals are likely to hold beliefs of high personal control, when they feel that successful shopping experience is up to them. The perceived risk associated with shopping in the store may reduce the consumer’s perception of behavioral control, and the extent to which this occurs might negatively influence willingness to shop. Hence the following hypotheses:
**H4:** Higher consumer trust toward an Internet store will generate more favorable attitudes towards shopping at that store.

**H5:** The lower the consumer’s perceived risk associated with buying from an Internet store, the more favorable the consumer’s attitudes towards shopping at that store.

**H6:** Favorable attitudes towards an Internet store will increase the consumer’s willingness to purchase from that Internet store.

**H7:** Reduced perceived risks associated with buying from an Internet store will increase a consumer’s willingness to purchase from that Internet store.

![Figure 1: The Internet Consumer Trust Model (Jarvenpaa et al., 1999). Hypothesized relations between variables are denoted according to this study's hypotheses. (+) denotes positive relation; (-) denotes negative relation between variables.](http://www.ascusc.org/jcmc/vol5/issue2/jarvenpaa.html)

**National Culture and Trust**

Another antecedent of trust may be the cultural background of a consumer. Societal membership socializes people early in life into a national culture with a set of values. These values influence what information is processed and found credible (Hofstede, 1980). In consumer behavior, cultural values have been shown to affect consumers’ motives, attitudes toward choices, intentions, and behavior (Henry, 1976) although there is scarcity of empirical research on cross-cultural consumer behavior (McCort & Malhotra, 1993).

One dimension of culture is individualism-collectivism. Hofstede (1980) found this dimension to have the strongest variation across cultures. In *individualistic* cultures, the needs, values, and goals of individuals take precedence over the group's. In *collectivistic* cultures, the needs, values, and goals of the group take precedence over those of the individual (Gudykunst, 1997). Those high on the individualism scale are characterized as self-reliant, competitive, trusting of others, and focused on utilitarian views of exchange and competence (Bhawuk & Brislin, 1992). Because of the utilitarian view, others are trusted if the circumstances suggest that it is in the other’s own interest to behave well. Individualism also promotes a trusting stance; one gets better outcomes assuming that others are reliable.
Hence, individualists are much more likely to trust others until they are given some reason not to trust. By contrast, those high on collectivism are more likely to base their trust on relationships with first-hand knowledge. Because of the emphasis on social relatedness and interdependence, collectivists are sensitive to the ingroup-outgroup boundary (Triandis, 1989). Members of collectivist cultures are less likely to trust someone who is not part of their ingroup (Yamagishi & Yamagishi, 1994).

H8: Consumers from individualistic cultures exhibit higher trust in specific Internet stores.

Culture has been also found to affect how an individual responds to a potential risk of being exploited by others (Weber and Hsee, 1998; Yamagishi & Yamagishi, 1994). This cognitive propensity to risk is likely to affect the perceptions of the presence of risks as well as the evaluation of the risks (Tse et al., 1988). However, there is much uncertainty about the precise nature of cultural differences in risk perception, particularly as regards the individualism-collectivism dimension.

Weber and Hsee (1998) found that Chinese, representatives of a collectivist country, were the least risk-averse in their pricing choices for risky financial options among respondents from China, the U.S.A, Germany, and Poland. Weber and Hsee (1998) offered the 'cushion' hypothesis as an explanation. In collectivist country like China, family and other in-group members are expected to step in and help the person bear the possible adverse consequences of risky choices: "Collectivism thus acts as a cushion against possible losses" (p. 1208).

The work of Yamagishi and Yamagishi (1994) suggests a different effect on risk from individualism-collectivism. They suggest that in dealings with other than in-group members, collectivists are less trusting and more risk-averse. Exchange relationships with out-group members will only happen in the presence of strong institutional safeguards (strong cultural norms and legal sanctions). Hence, on the Internet where legal and social structures as well as social acceptability of Internet shopping are still emerging, individualists might be expected to perceive the riskiness of buying from a specific Internet store to be lower than collectivists would. Hence, we hypothesize:

H9: Consumers from individualistic countries exhibit a lower perception of risk in specific Internet stores.

Besides trust and risk perception, culture has been argued to affect the relative strength of the sources of trust (Doney et al., 1998). Both size and reputation are traits of the merchant that the consumer cognitively processes from specific cues or gestalt first impressions of the store site. This information is likely to be imperfect or incomplete on the web site and requires the consumer to make inferences. Gudykunst et al. (1996) found that individualistic values facilitate the interpretation of indirect and ambiguous messages, allowing people to form new relationships more esily, particularly with people who were considered to be outsiders. Yamagishi and Yamagishi (1994) suggest that those who have a high propensity to trust in general, such as people from the individualistic cultures, are more likely to seek out others who have good reputations. Collectivists, on the
other hand, are more committed to their existing relationships and refrain from new relationships despite outsiders’ good reputations.

Doney et al. (1998) associate individualistic cultures more with calculative trust building process than collectivistic cultures. A calculative process means that the trustor (i.e., a consumer) calculates the costs and rewards of a target’s (i.e., seller's) acting in an untrustworthy way. Both size and reputation convey information on the seller’s motivational investment in being in business. Motivational investment in turn refers to resources invested by the other party to achieve the current outcomes. Hence, the larger the size and better the reputation, the greater the penalty from a seller’s failing to honor its commitments. Particularly in the Internet context, there are often many sellers that buyers can choose from. Unhappy customers can disclose negative knowledge about products and services offered by a Web site and rapidly disseminate that to thousands if not millions of people. Hence, consumers from individualistic cultures might be more likely to exercise the calculative process, resulting in reputation and size having a stronger effect on trust. Hence, our last hypothesis is that:

**H10: In an individualistic culture, size and reputation will have a stronger effect on trust than in a collectivist culture.**

As control variables, we included in the study general risk perception of shopping on the Internet, the length of Internet usage, the frequency of Internet shopping, shopping enjoyment in general, attitudes towards computers and past direct shopping experience.

These variables were suggested by research in direct marketing channels and technology supported marketing contexts.

**Cross-Country Validation of the Model**

**Methodology**

Jarvenpaa et al. (1999) conducted an experiential web survey in Australia, in which they tested the model presented above (H1 through H7). In the following section we report on a cross-country validation of the model. The study was conducted in Israel about five months after the Australian study. The Israeli culture ranks lower on individualism (Hofstede score of 54 out of 100) than the Australian culture (Hofstede score of 90 out of 100) (see Hofstede, 1980). The Israeli study included 198 first-year undergraduate student volunteers who received course credit for their participation. The demographic profile of the participants in both the Australian and the Israeli study is summarized in Table 1. The groups exhibit similar profiles except for two distinctions: (1) there are almost twice as many males as females in the Australian group, whereas the ratio is just the opposite for the Israeli group; (2) on average, the Australian group has almost 2 more years of higher education relative to the Israeli group.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Australia</th>
<th>Israel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>66</td>
<td>134</td>
</tr>
<tr>
<td>Male</td>
<td>118</td>
<td>64</td>
</tr>
</tbody>
</table>
Table 1, Demographic profile of study participants

The participants' World Wide Web experience is summarized in Table 2. The data indicate that more members of the Australian sample have WWW access and experience compared to the Israeli group. The Australians used web browsers more frequently and had more positive attitudes towards the Internet. These differences may be indicative of greater WWW penetration in Australia (Economist, 1999).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Australia</th>
<th>Israel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Age</td>
<td>22.35</td>
<td>22.25</td>
</tr>
<tr>
<td>Average years of post-secondary education completed</td>
<td>2.45</td>
<td>0.59</td>
</tr>
<tr>
<td>Average years of working experience</td>
<td>3.86</td>
<td>2.97</td>
</tr>
<tr>
<td>Average number of countries lived in</td>
<td>1.86</td>
<td>1.47</td>
</tr>
<tr>
<td>Average number of countries worked in</td>
<td>1.22</td>
<td>1.32</td>
</tr>
<tr>
<td>Average number of countries traveled</td>
<td>5.0</td>
<td>5.86</td>
</tr>
</tbody>
</table>

Table 2: Degree of Internet Experience Among Study Participants

Experimental Tasks

We created web pages for both groups that outlined the shopping tasks and provided links to various shopping sites. Pointers to the shopping sites and instructions for participants in the Israeli study are available at http://www.ie.bgu.ac.il/noam/
As in the Australian study, the participants in the Israeli study completed tasks of selecting and buying a book as a gift for a friend, and planning a holiday trip to London. The shopping tasks were meant to be typical of those that the consumer might routinely perform. The book shopping and the airline ticket purchasing activities represent two of the three top online purchase categories according to a recent survey (Fox, 1998, p.11). From among the four bookstores used in the Australian study, two were present in the Israeli study as well (Amazon.com and The Internet Bookshop). One Israeli site (Opus) and one US site (Barnes and Noble) replaced the two local Australian bookstores in the Australian study. For the travel activity four different sites were chosen in the Israeli study: El Al (Israel's major carrier), British Airways, a well-known youth-oriented Israeli travel agent (ISSTA), and the Internet-based travel service Travelocity. British Airways replaced the Quantas site and ISSTA replaced a local Australian travel agent in the Australian study. Hence, the experiential materials in the study were structurally equivalent across the two studies. Participants were required to visit all sites in both studies.

Procedures

Participants first completed a demographic questionnaire and a consent form, followed by reading a brief overview of the study. The participants were then pointed to the introductory web page and told to begin. The shopping sites were ordered in alphabetical order on the introductory web page, but participants were free to visit the sites in any order. For all sessions lab assistants were present to answer questions, help the participants find specific sites, and assist in navigation over the Web.

Measures

For the Israeli study, all items from Jarvenpaa et al. (1999) were translated to Hebrew by the second author and were pre-tested by Israeli students to ensure that their original meaning was preserved. The participants’ assessments of perceived size and reputation were based on their own impressions of the sites as well as on the summary page that was available for each site (see Appendix B). The summary page captured sales, figures, number of products available, location, and the date when the business had been founded. The study did not systematically control for "size" and "reputation" of the store sites although the summary information was intended to generate perceptions of size and reputation.

Results

We begin this section with a descriptive analysis of our participants’ preferences and an evaluation of the visited sites. Next we present results about the relations among the study variables. We then analyze the fit between the data collected for the seven sites and the hypothesized model.

Background Variables

Averages of participants' responses on the background scales are shown in Figure 2. Four of the scales were included in both studies, enabling direct comparison between the two groups. T-tests for independent groups were conducted for each of these variables. The differences between the groups
were all significant at the .001 level (\(t_{379} = 5.51\) for Shopping Enjoyment, \(t_{379} = 5.27\) for Direct Shopping Experience, \(t_{378} = 3.60\) for Web-Shopping Risk Perception, and \(t_{375} = 7.88\) for Attitudes toward Computers). However, both groups displayed similar pattern of responses. Both groups, especially the Israeli, lacked direct shopping experience, although both groups (particularly the Israeli) exhibited favorable attitudes towards shopping in general. Attitudes towards computers were positive in both groups, especially among the Australians. However, both groups perceived web-shopping to be quite risky. In addition, we asked the Israeli group whether they would prefer shopping in Hebrew web sites and in Web sites which belong to Israeli firms. In general, participants exhibited a tendency to prefer sites that belonged to local firms and which displayed information in their vernacular language. The correlations among the background variables and between the model’s variables and control variables were quite low in Israel as they were in Australia (Jarvenpaa et al., 1999). Consequently, subsequent statistical analyses of the theoretical model concentrate on its main variables only (i.e., those that appear on Figure 1).

![Figure 2: Average responses on background Web-shopping variables (1 = very low, 7 = very high).](http://www.ascusc.org/jcmc/vol5/issue2/jarvenpaa.html)

**Preferences**

Table 3 presents the percentage of participants who most liked and least liked each of the two bookstore sites that were used in both the Australian and the Israeli studies, as well as the difference between, and the ratio of these percentages. The two groups exhibited different preferences. The Amazon.com site was most liked by a similar proportion in the two groups. However, a smaller proportion of Israelis disliked it, relative to the Australians. The Internet bookshop was noticeably more liked and less disliked by Australians relative to Israelis.
Table 3: Percentage of people who most liked / disliked a bookstore site, differences between percent most liked and percent disliked and ratio of most liked to least liked.

Figure 3 displays the average scores on the model’s variables for the two bookstores. The scores are on a 1 (low) to 7 (high) scale. The figure demonstrates the consistent pattern of relationships among the model variables for both sites in both groups.

Cross-validating the Measurement Model

The construct validity and reliability of the model’s scales were established by Jarvenpaa et al. (1999) for the Australian study. To test whether it holds across countries we cross-validated the confirmatory factor analysis (CFA) results of the Australian study with those obtained in Israel. The comparison was made using the data about the two common sites for these studies:
Amazon.com and The Internet Bookshop. We used a 3-stage process for comparing groups as suggested by Bollen (1989). The CFA was conducted using AMOS ver. 3.6 (Arbuckle, 1997). The CFA's results are reported in Table 4, using 5 fit indices. The Chi-Square value was significant at the 0.01 level for all sites. A significant Chi-Square, however, might be an artifact of the sample size (e.g., Kline, 1998); thus the other fit indices are more indicative of the model's fit. In most cases, these indices are within the recommended range for both groups in both sites.

![Table 4](image)

Table 4: Fit indices of confirmatory factor analyses of the data obtained from the Australian and the Israeli groups for two Internet stores.

* df = 89, p <.01

The results in Table 4 support the validity of the factor model for each group (Australian and Israeli) separately. Next, we conducted a CFA to test the hypothesis that the same model form applies to both groups (cf. Bollen, 1989). We term the model that tests this hypothesis Model I. Fit indices of a two-group analysis of the measurement model are presented in Table 5. The values of the indices are indicative of good fit, supporting the basic hypothesis that the measurement model's form is appropriate for both the Australian and the Israeli groups. After establishing form equivalence, we tested whether the coefficients linking the observed variables to the latent variables are the same in both groups (the applicable model is termed Model II). The CFA was run after the coefficients were constrained to be the same for both groups (cf. Bollen, 1989), and the fit indices are reported in the two rightmost columns of Table 5. Subtracting the Chi² values of Model I from those of the more restrictive Model II yield values of 12.25 and 16.36 for the Amazon.com and the Internet Bookshop sites, respectively, with 10 degrees of freedom. These values are not significant at the 0.05 level for both sites, supporting the hypothesis that the coefficients linking the latent to the observed variables are the same for both the Australian and the Israeli groups.
Table 5: Fit indices of a two-group analysis of the two measurement models.
* df = 178, p < .001; ** df = 188, p < .001

<table>
<thead>
<tr>
<th></th>
<th>Amazon.com</th>
<th>The Internet Bookshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi^2</td>
<td>385.78*</td>
<td>299.80*</td>
</tr>
<tr>
<td>Chi / df</td>
<td>2.17</td>
<td>1.68</td>
</tr>
<tr>
<td>rmsea</td>
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<td>.048</td>
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<td>.921</td>
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<td>rni</td>
<td>.920</td>
<td>.952</td>
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</tbody>
</table>

Structural Model

After establishing that the measurement model (i.e., the CFA) was the same across countries, the study’s path model was tested using AMOS 3.6 with maximum likelihood estimation. Similar to the comparisons between the two countries regarding the measurement model, we used a three-stage process to test the degree of similarity between the two countries. First, we tested whether the model fits the data for each group separately. The results, shown in Table 6, indicated good fit for both sites.

Table 6: Fit indices of the path model for separate analyses of the Australian and the Israeli groups.
*df = 96; p < .001; ** df = 96; p < .05

<table>
<thead>
<tr>
<th></th>
<th>Amazon.com</th>
<th>The Internet Bookshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi^2</td>
<td>170.79*</td>
<td>222.441*</td>
</tr>
<tr>
<td>Chi / df</td>
<td>1.779</td>
<td>2.32</td>
</tr>
<tr>
<td>rmsea</td>
<td>.074</td>
<td>.092</td>
</tr>
<tr>
<td>Delta 2</td>
<td>.929</td>
<td>.920</td>
</tr>
<tr>
<td>rni</td>
<td>.928</td>
<td>.918</td>
</tr>
</tbody>
</table>

Next, we tested for invariance of the structural model across the Australian and the Israeli groups. Again, the term Model I refers to the model that assumes the two groups share the same model form, whereas Model II refer to the model that assumes equivalent path coefficients for both groups. The two leftmost data columns in Table 7 present the results of testing the hypothesis that the structural model is of the same form for the Israeli and the Australian groups. The fit indices are satisfactory for both sites, suggesting that the structural model applies to both groups. The next step to assess group similarity is to test whether the path coefficients of the model are the same in both groups (Bollen, 1989). The results of this test are presented in the two rightmost columns of Table 7. The fit indices are generally in the recommended range. The difference in the values between Model I and Model II is 18.86 and 5.89 for the Amazon.com and the Internet Bookshop sites, respectively, with 7 degrees of freedom. This difference is significant at the 0.01 level for the Amazon.com site but is highly insignificant for the Internet Bookshop site. Thus, while most indices
support the adequacy of the equality of path coefficients across groups, they are contradicted by the significant statistical difference between Model I and Model II for the Amazon.com site. Further evidence regarding the model's fit can be found by comparing the standardized path coefficients of both groups that were obtained under Model II in both shopping sites (Table 8). The coefficients are similar both across sites and across groups within sites, landing more support to Model II's validity.

<table>
<thead>
<tr>
<th>Model I: Equal Form of the Australian and Israeli Groups</th>
<th>Model II: Equal Path Coefficients of the Australian and Israeli Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>Amazon.com</td>
</tr>
<tr>
<td>Chi ²</td>
<td>393.18*</td>
</tr>
<tr>
<td>Chi ²/ df</td>
<td>2.05</td>
</tr>
<tr>
<td>rmsea</td>
<td>0.059</td>
</tr>
<tr>
<td>Delta 2</td>
<td>0.924</td>
</tr>
<tr>
<td>rni</td>
<td>0.922</td>
</tr>
</tbody>
</table>

Table 7: Tests of the path model's similarity for the Australian and the Israeli groups.
* df = 192; ** df = 199

<table>
<thead>
<tr>
<th>Path</th>
<th>Amazon.com</th>
<th>The Internet Bookshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size -&gt; Trust</td>
<td>-0.03</td>
<td>-0.03</td>
</tr>
<tr>
<td>Reputation -&gt; Trust</td>
<td>0.86</td>
<td>0.77</td>
</tr>
<tr>
<td>Trust -&gt; Risk Perception</td>
<td>-0.65</td>
<td>-0.77</td>
</tr>
<tr>
<td>Trust -&gt; Attitudes</td>
<td>0.54</td>
<td>0.56</td>
</tr>
<tr>
<td>Risk Perception -&gt; Attitude</td>
<td>-0.29</td>
<td>-0.25</td>
</tr>
<tr>
<td>Risk Perception -&gt; WTB</td>
<td>-0.29</td>
<td>-0.26</td>
</tr>
<tr>
<td>Attitude -&gt; WTB</td>
<td>0.53</td>
<td>0.54</td>
</tr>
</tbody>
</table>

Table 8: Model II's standardized path coefficients for both groups in both shopping sites.

In addition to the fit measures, the model also accounts for a relatively large proportion of variance in the dependent variables. Table 9 presents the $R^2$ of each endogenous latent variable for both groups in both sites. The results are similar across sites and groups, although some differences exist, both within and between groups. For example, the model seem to explain better the Australians' trust in the Internet stores, and the Israelis' risk perception of the sites. In addition, the variance in some variables is explained better in one store relative to the other (for example, the difference in $R^2$ between Trust in Amazon.com and in The Internet Bookshop).
Table 9: R² of Model II’s endogenous variables for both groups in both sites.

Testing for Culture Effects

In this section we report the results of statistical tests on the effects of national culture on risk and trust in Internet shopping. A relatively high percentage of participants in both the Israeli, and especially the Australian studies were not natives of these countries. Therefore, using those participants could have introduced uncontrolled effects to the examination of how culture affects trust and risk. Thus, for this portion of the study, we only used those participants who either specified Australia as their home country (n = 91 for the Australian group) or Hebrew as their mother tongue (n = 150 for the Israeli group).

We conducted simple independent sample t-tests to test whether consumers from the individualistic culture of Australia exhibit higher trust and lower perception of risk in specific stores than those of the collectivist culture of Israel (H8 and H9). Contrary to Hypothesis 8, the Israeli sub-sample had higher trust toward Amazon.com than the Australians (see Appendix C). Also, contrary to Hypothesis 9, the Australian sub-sample had a slightly higher perception of risk with regard to Amazon.com, (mean = 3.70 vs. 3.38) and the Internet Bookshop (mean = 3.99 vs. 3.73). These differences are not strongly significant for Amazon.com ($t_{216} = 2. p=.043$) or for the Internet Bookshop ($t_{215} = 1.74, p=.084$).

Partial Replication in Finland

Six months after the Israeli study, Saarinen (1999) replicated portions of the trust model in Finland. This time, only book stores were included (no travel sites). Finland is reported to have the highest per capita diffusion of consumer web transactions in the world (Lyytinen & Goodman, 1999). Finnish culture is characterized as more individualistic than Israeli, but less than Australian culture (Hofstede’s score for Finland is 63 out of 100). The Finnish setting allowed the validation of the model with consumers who were on average much more experienced in the use of the Web in general and Web shopping in particular. Compared to the average Internet experience of 20 months in the Australian study and 9 in Israel, the average Internet experience of the responding Finnish sample (those that responded to the Jarvenpaa et al. portions of the study) was 29 months. Of the sixty-six respondents who answered a question about previous web-shopping, 26 (39.4%) indicated that they have previously bought through the Internet. The study utilized the Finnish Consumer Centre’s consumer panel that

<table>
<thead>
<tr>
<th></th>
<th>Amazon.com</th>
<th></th>
<th>The Internet Bookshop</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Australia</td>
<td>Israel</td>
<td>Australia</td>
<td>Israel</td>
</tr>
<tr>
<td>Trust</td>
<td>.71</td>
<td>.57</td>
<td>.86</td>
<td>.77</td>
</tr>
<tr>
<td>Risk</td>
<td>.42</td>
<td>.59</td>
<td>.32</td>
<td>.57</td>
</tr>
<tr>
<td>Attitude</td>
<td>.58</td>
<td>.59</td>
<td>.67</td>
<td>.58</td>
</tr>
<tr>
<td>WTB</td>
<td>.56</td>
<td>.54</td>
<td>.40</td>
<td>.54</td>
</tr>
</tbody>
</table>

Table 9: R² of Model II’s endogenous variables for both groups in both sites.
consisted of volunteer participants. This panel was not a random sample from the population; rather, it constituted a set of respondents who have participated in other consumer studies in the past. The panel overrepresents people who are avid book readers. Among the Finns, women read more than men and reading is much more common among the educated population.

Of the 1120 forms sent, about 70% (786) were returned. Of the 786 returned forms, 115 had completed the portions pertaining to the partial replication of the Jarvenpaa et al. (1999) model. Only a portion of the 786 respondents to the Saarinen survey were familiar with the Internet in general and with Internet shopping in particular. Those respondents who were familiar with Internet shopping and had an immediate connection to the Internet at the place they were completing the survey were asked to browse through four book stores and evaluate them. Other parts of the 35 page survey dealt with evaluations of different delivery channels, information sources and channels to evaluate their properties, quality and the related purchasing costs in the case of new (not used) physical books. Of the 115 people who responded to the items from the Jarvenpaa et al. (1999) study, 78 were women, 93 reported good or excellent competency in English, and 89 had a higher education degree. The respondents were 39 years old on average.

From among the four bookstores in the Australian and Israeli studies, two were present in the Finnish study: Amazon.com and the Internet Bookshop. Two other Finnish sites were used. One was a Finnish bookstore with both online and traditional operations and the other was a web-only Finnish bookstore. The consumers in the Finnish study were provided with URLs to the book sites. However, unlike the previous studies, no summary page was provided highlighting the stores’ tenure, sales, location and the number of titles available. The consumers had to infer that information from the sites themselves. Unlike the Australian and Israeli studies, there were no lab assistants present to answer questions or help the participants navigate through the sites.

The participants were asked to perform two tasks. The tasks asked the consumer to "buy a new book as a birthday gift in 5 months" and to "buy a course book about Microsoft Office for a course starting within 3 weeks." The respondents were free to select the gift book out of all the available books in the bookstores. The respondents were asked to browse through the sites and were asked questions about their trust, willingness to buy, perceived size of the store, and perceived reputation of the stores.

For the Finnish study, an abbreviated set of items was used from Jarvenpaa et al. (1999). The items were translated to Finnish and pre-tested with a sample of Finnish consumers to ensure that their original meaning was preserved. The study added one new item, satisfaction with prior Web shopping experience.

Results of the Finnish Study

We could not employ structural equation modeling to test the research model directly (Figure 1) and to compare the results to those obtained in Australia and in Israel. The Finnish questionnaire did not include items about one of our model's variables (perceived risk). In addition, attitudes towards the store were measured by a single item. Hence, we used two
separate regression analyses to assess the effects of perceived size and reputation on trust and the effects of trust in the store and attitudes toward it on consumers' willingness to buy from the store. The results of the analyses are provided in Tables 10 and 11 for the Internet Bookshop and Amazon.com respectively.

Table 10: Regression coefficients and significance level with Trust as a dependent variable in the Finnish study.

<table>
<thead>
<tr>
<th>Site</th>
<th>Independent Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Beta</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Bookshop</td>
<td>Perceived Size</td>
<td>.20</td>
<td>.10</td>
<td>.19</td>
<td>&lt;.10</td>
</tr>
<tr>
<td></td>
<td>Perceived Reputation</td>
<td>.50</td>
<td>.14</td>
<td>.35</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Amazon.com</td>
<td>Perceived Size</td>
<td>.14</td>
<td>.10</td>
<td>.13</td>
<td>n.s.</td>
</tr>
<tr>
<td></td>
<td>Perceived Reputation</td>
<td>.58</td>
<td>.11</td>
<td>.51</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Table 11: Regression coefficients and significance level with Willingness to Buy as a dependent variable in the Finnish study.

<table>
<thead>
<tr>
<th>Site</th>
<th>Independent Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Beta</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Bookshop</td>
<td>Trust</td>
<td>.24</td>
<td>.12</td>
<td>.19</td>
<td>&lt;.05</td>
</tr>
<tr>
<td></td>
<td>Attitude</td>
<td>.37</td>
<td>.06</td>
<td>.56</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Amazon.com</td>
<td>Trust</td>
<td>.41</td>
<td>.11</td>
<td>.34</td>
<td>&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Attitude</td>
<td>.35</td>
<td>.06</td>
<td>.48</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

In general, the results are comparable to those obtained in Australia and in Israel with a few deviations. Generally, it was found again in Finland that for Internet book shopping perceived reputation has stronger effect on trust than perceived size. However, in this study, reputation did not explain trust as thoroughly as it did in the other two countries.

As in the other two countries, the willingness to buy from an online bookstore by Finnish customers was explained to a large extent by consumers' trust of the bookstore and their attitude towards the store.

Combining the Three Country Studies: The Effect of Culture on Perceived Size and Reputation

The means and standard deviations for perceived size, perceived reputation, trust, and willingness to buy obtained in each of the three countries, together with the results of tests for differences between the means are reported in Appendix C. While we were unable to compare the results from the three countries on the entire model, it was still possible to compare them with
regard to trust and its antecedents. To test the effect of the consumer's country on trust we ran hierarchical regression analyses of trust as a dependent variables. There were three sets of independent variables, which were introduced to the regression analyses in the following order. The first set included perceived reputation and perceived size, the two original antecedents of our model. The second set represented the three countries in which our studies were conducted. The country affiliation of each participant was represented by two dummy variables. On these dummy variables, the Australian sample was coded 0,0; the Israeli sample was coded 1,0; and the Finnish sample was coded 0,1. The third set was an interaction set that was computed by multiplying each of the two variables in the first set by each of the two dummy variables of the second set. The regressions were run separately for responses on the Internet Bookshop and for responses on Amazon.com. Tables 12 and 13 show the results of the regression analyses. The tables list the independent variables of each set, their standardized regression coefficient (Beta), t-value and level of significance. In addition, for each set of variables the tables display the variance explained by that set and the sets that preceded it as well as the increase in explained variance attributed to that set.

Table 12. Results of a hierarchical multivariate regression analysis with trust as dependent variable, for a set of trust antecedents, a set of dummy variables representing sample country, and an interaction set - using data on the Internet Bookshop.

<table>
<thead>
<tr>
<th>Set of Dependent Variables</th>
<th>Dependent Variable</th>
<th>Beta</th>
<th>T</th>
<th>Model R²</th>
<th>R² Increas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Antecedents</td>
<td>Perceived Reputation</td>
<td>.547</td>
<td>6.820**</td>
<td>.385</td>
<td>.385</td>
</tr>
<tr>
<td></td>
<td>Perceived Size</td>
<td>-.014</td>
<td>-.179</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Consumer's Country</td>
<td>Country1 (Dummy)</td>
<td>-.455</td>
<td>-1.886</td>
<td>.393</td>
<td>.008</td>
</tr>
<tr>
<td></td>
<td>Country2 (Dummy)</td>
<td>.121</td>
<td>.484</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Interactions</td>
<td>PR * D1</td>
<td>.116</td>
<td>.413</td>
<td>.404</td>
<td>.011</td>
</tr>
<tr>
<td></td>
<td>PR * D2</td>
<td>.161</td>
<td>.573</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PS * D1</td>
<td>.408</td>
<td>1.786</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PS * D2</td>
<td>-.351</td>
<td>1.982*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** p< .001, * p<.05.

Table 12. Results of a hierarchical multivariate regression analysis with trust as dependent variable, for a set of trust antecedents, a set of dummy variables representing sample country, and an interaction set - using data on the Internet Bookshop.
Table 13. Results of a hierarchical multivariate regression analysis with trust as dependent variable, for a set of trust antecedents, a set of dummy variables representing sample country, and an interaction set - using data on Amazon.com.

As can be seen in both tables, the model's variables explain a moderate portion of the variance in trust (.40 in the Internet Bookshop data, and .44 in Amazon.com's). Yet, it is clear that the major contribution to the explained variance stems from the model's original trust antecedents (i.e., perceived reputation and perceived size) whereas the participants' country as well as the interactions between the variables in the two sets have only a marginal effect on trust. More specifically, in agreement with the previous analyses, perceived reputation seems to be the stronger precursor of trust. In both the Amazon.com and Internet Bookshop analyses, the regression weight of perceived reputation was highly significant. Perceived size was a lesser contributor to trust in the Amazon.com data. The regression weights of the dummy variables representing the participants' country did not reach statistical significance in both sites, and their contribution to the explained variance beyond the variance explained by reputation and size was minimal. Consequently, Hypothesis 10 was not supported. We were unable to substantiate in this study any of the culture-related hypotheses.

**Discussion**

One of the most important issues facing Internet merchants is how to engender trust in a consumer when that consumer might be located in another country or even a continent away and the consumer has had no prior interactions with the merchant either in traditional or Internet channels. The current study examined the generalizability of the Internet consumer trust model (initially reported in Jarvenpaa et al., 1999). The model focuses solely on initial trust development and does not address trust the issue of repeated visits.

The current paper contributes four findings to the literature. First, the key relationships in the model held across a sample of consumers in Australia, Israel, and Finland. The model in Figure 1 along with Hypothesis 1 through 7 received support for the U.S.-based (Amazon.com) and British-based (The Internet Bookshop) online book stores among Australia and Israeli consumers. A partial test of the model also received support for the same book store sites among a sample of Finnish consumers. The respondents in
Australia and Israel were largely undergraduate students with little experience in web shopping and in the case of Israel, little experience with the Internet in general. The Finnish respondents were considerably older and more experienced in web shopping. These results provide additional support for the Jarvenpaa et al. (1999) model as a robust starting point for further related theoretical and empirical work in this area.

Second, of the two trust antecedents, perceived merchant reputation had a more significant effect on a consumer’s trust than the merchant size. We found a strong main effect of reputation on trust in all three countries. The main effect of size on trust was much weaker. We strongly argue for studies to identify those information cues on web sites which consumers use to form reputational impressions of merchants.

Third, contrary to expectations, no strong cultural effects were found regarding the antecedents of trust. Consumers formed relatively similar perceptions of the sites. In all three countries, Amazon.com was characterized as a larger merchant and as a more reputable merchant than the Internet Bookshop. The lack of cultural effects might be due to several factors: (1) the use of country as a surrogate measure of culture in general and individualism-collectivism specifically, (2) the countervailing and situationally dependent effects from different cultural dimensions on trust and risk, (3) relative cultural homogeneity across Australia, Israel, and Finland (thereby ignoring cultural differences within a country), and (4) the use of convenience sample of college students who might be similar in their orientations toward risk and trust across cultures. In any case, one should be cautious in making generalizations beyond the three samples and countries studied here. We can only echo Weber and Hsee (1998, p. 1216), "Given the variability of knowledge, beliefs, customs, and habits within any culture, it is a gross oversimplification to describe a difference found between two samples from two different cultures as a difference between "Americans" and "[other country]" in general.

Fourth, collectively across the three countries, the results very tentatively suggest that greater experience with the web is associated with lower trust and higher risk in a particular merchant (see Appendix C). Israelis, who were less experienced in web browsing and shopping, exhibited on average higher trust and lower risk perception than the Australians. Finns, who were most experienced in web browsing and web shopping, exhibited even lower trust than the Australians. An earlier study in the U.S. found that the more experienced the consumer in web usage, the more likely the consumer was to report higher levels of perceived risk in shopping on the Internet in general (Jarvenpaa & Todd, 1997). These findings lead us to speculate that as consumers gain experience in Web shopping, they might become even more uncertain of current risks and their consequences, and less trusting and more risk-averse in regards to specific Web merchants. These results contradict the speculation of Quelch and Kline (1996) that trust is a critical factor in the early stages of Internet development and supports the prediction of Keen (1997) that the issue of consumer trust is a long-term issue.

Finally, we were surprised by the lack of effect of control variables on the model variables, particularly web shopping risk perception. A consumer’s general stance toward a particular context might be expected to play an
important role in initial trust formation (McKnight et al., 1998). Sitkin and Pablo (1992) demonstrated how the general tendency to behave in a risky situation helped to resolve paradoxical findings which only considered situational and task related variables previously. One might assume that when consumers perceive web shopping to be risky they are more likely to scrutinize the seller’s web site carefully, to guard against possible opportunism, and assume an untrustworthy seller unless explicit information is provided to the contrary. But surprisingly, we found no support for these arguments in the Israeli and Australian studies. A consumer's general perception of risks in web shopping did not seem to affect their perceptions of trust antecedents, trust, perceived risks associated with buying from a web store and willingness to buy from that particular merchant. We encourage future studies in this area.

Limitations

There are several limitations of the study that must be taken into account in interpreting the results. First, the results of the cross-cultural validation might be biased given the youth, the limited Internet experience, the gender mix, and cultural homogeneity of the sample in both Australia and Israel. What might alleviate these concerns in areas other than cultural homogeneity is that Finnish respondents were considerably older and more experienced in Web shopping. Nevertheless, we caution against over generalization of results, particularly to highly collectivist countries. Moreover, although the sampling procedures were close to equivalent in Australia and Israel, they were very different in Finland.

Second, the procedures also might have biased the results. The consumers in Australia and Israel had an easy access to the two online book stores through an introductory page. They did not have to go through the frustrating experience of finding the sites and were only exposed to a limited number of sites in the study. In the Australian and Israeli studies, the respondents also had access to assistance. In the Finnish study, the subjects were on their own and were not furnished with an introductory page for access. The results, however, support the key relationships in the model.

Third, the study used real-world sites. The time lags across the three sites introduced likely changes in sites across the three experiments. Also, we did not measure or control the content, site design, aesthetics, and ease of use.

Fourth, the current study focused only on bookstore sites. The results might be quite different for other merchandise. In the Australian study (Jarvenpaa et al., 1999), we found that although the effect of merchant size was still weaker than the effect of merchant reputation on a consumer’s trust in the case of travel sites, the effect of size was stronger for travel sites than for book store sites.

Finally, the study measured culture by varying country alone. Although using a country as a surrogate for culture is common in business research, it is an insensitive measure and disregards the possibility that within-country cultural differences can be greater than the cross-country cultural differences.

Conclusion
The cross-validated model is merely a modest step toward building a theory of consumer trust in an Internet merchant. In both the Israeli and the Australian studies, the two trust antecedents explained a large portion of the variance in trust and trust in the willingness to buy. By contrast, in the Finnish study that was much less controlled and involved a more heterogeneous sample of consumers, the two trust antecedents explained less than 40% of the variance in trust and trust explained approximately only 50% of variance in willingness to buy.

Hence, there are likely to be a number of factors other than size and reputation that affect trust with heterogeneous consumer pools. The design, ease of use, aesthetics, and the native language of the site might have an impact. For example, usability might signal the web site’s concern for consumers. Usable sites might also been seen as having required greater resources and investments from the merchant. The other explanation involves the halo effect. That is, because aesthetics, usability, and the language affect the interaction aspects immediately, they might color later perceptions and inferences about other site characteristics, such as trust. We encourage research exploring the relative strength of these factors on a consumer’s attitudes toward the store and the willingness to buy.

Besides the interface aspects of the website mediating trust between the consumer and the merchant organization, other factors are likely to play a role. These might include the degree of personalization or customization of the site for the customer, geographic closeness of the merchant to the consumer, existence of a physical store, and the industry and product group in question. The web-site’s links with other web sites might also impact a consumer’s trust. That is, tie-ins and endorsements by well-known sites might engender trust. Finally, free trial periods and small gifts from the merchant to a consumer might encourage customer interaction and these interactions might increase consumer trust. Of course, gift giving has widely varying traditions around the world and hence might have interesting cultural effects on trust. Additionally, consumers are likely to rely heavily on their past experiences with merchants who have both an online and physical presence to infer trust. Finally, trust might be transferred from third parties such as friends or family who have had experience with the particular web merchants. Again, all these speculations need empirical validation.

This study did not find strong cultural differences in the antecedents of trust and the rest of the model. Although we recommend building on the basic model of trust studied here in different cultural contexts, we specifically encourage examinations of cultural differences in the antecedents of trust and the levels of trust in culturally representative samples. The Internet is increasing at an exponential rate the number of cross-cultural interactions between merchants and consumers. It is critical we understand the existence and nature of cultural differences on trust in economic interactions.

Let us reemphasize that the current results should not be used to suggest that web merchants can use the same site design attributes to engender trust among consumers from different cultures. We expect there may be cultural differences, particularly when the concept of trust is broadened to include affective and social components. The lack of cultural differences in the current study might be due to sampling bias, the insensitive measure of
culture in the current study, or the narrow measurement of trust. Others have noted that trust in different cultures is a different phenomenon and hence any study that tries to apply a uniform definition and process of trust is suspect (Noorderhaven, 1999). We encourage studies exploring cross-cultural differences in trust and factors building trust. Cannon, Doney, and Mullen (1999) offer suggestions for research methods studying cultural differences in trust.

In conclusion, Hoffman et al. (1999) argue that the lack of trust is stopping large numbers of people from engaging in commercial transactions on the web. This study reports on a cross-validation of the Internet consumer trust model in the spirit of understanding how to engender greater consumer trust in Internet merchants. The empirical results of this study support tentatively the notion discussed in the beginning of the paper that while favorable prices might be a necessity to win orders by an overseas customer on the web, trust might operate as a rather universal qualifier for Web-based purchase decisions.

References


Gudykunst, W. B., Matsumoto, Y., Ting-Toomey, S., Nishida, T., Kim, K.


**Appendix A: Items/Scales of the Model Variables and Control Variables**

**Reputation**

r1. This store is well known. (strongly disagree / strongly agree) *

r2. This store has a bad reputation in the market. (strongly disagree / strongly agree) [reverse]

r3. This store has a good reputation. (strongly disagree / strongly agree)

**Perceived Size**

s1. This store is a very large company. (strongly disagree / strongly agree)

s2. This store is the industry's biggest supplier on the web. (strongly
disagree / strongly agree)*

s3. This store is a small player in the market. (strongly disagree / strongly agree) [reverse]

**Store Trustworthiness**

t1. This store is trustworthy. (strongly disagree / strongly agree)

t2. This store wants to be known as one who keeps promises and commitments. (strongly disagree / strongly agree)

t3. I trust this store keeps my best interests in mind. (strongly disagree / strongly agree)

t4. I find it necessary to be cautious with this store. (strongly disagree / strongly agree) [reverse] *

t5. This retailer has more to lose than to gain by not delivering on their promises. (strongly disagree / strongly agree)*

t6. This store's behavior meets my expectations. (strongly disagree / strongly agree)*

t7. This store could not care less about servicing a person from Australia. (strongly disagree / strongly agree)* [reverse]

**Attitudes towards a Store**

a1. The idea of using the Internet to shop from this store is appealing. (strongly disagree / strongly agree)

a2. I like the idea of using the Internet to shop from this store. (strongly disagree / strongly agree)

a3. Using the Internet to shop from this store is a good idea. (strongly disagree / strongly agree)

**Willingness to Buy (WTB)**

w1. How likely is it that you would return to this store's web site? (very likely / very unlikely)

w2. How likely is that you would consider purchasing from this store in the next 3 months? (very unlikely / very likely)

w3. How likely is it that you would consider purchasing from this store in the next year? (very unlikely / very likely)

w4. For this purchase, how likely is it that you buy from this store? (very unlikely / very likely) *

**Risk Perception**
rp1. How would you characterize the decision of whether to buy a product from this web retailer? (significant opportunity / significant risk)

rp2. How would you characterize the decision of whether to buy a product from this web retailer? (high potential for loss / high potential for gain) [reverse]

rp3. How would you characterize the decision of whether to buy a product from this web retailer? (very positive situation / very negative situation)

rp4. What is the likelihood of your making a good bargain by buying from this store through the Internet? (very unlikely / very likely) [reverse] *

**Shopping Enjoyment**

se1. I view shopping as an important leisure activity. (strongly disagree / strongly agree)

se2. I dislike shopping. (strongly disagree / strongly agree) [reverse]

se3. For me, shopping is a pleasurable activity. (strongly disagree / strongly agree)

se4. I would prefer somebody else to do my shopping. (strongly disagree / strongly agree) [reverse]

**Attitudes towards Computers**

ac1. Computers make work more interesting. (strongly disagree / strongly agree)

ac2. I enjoy interacting with computers. (strongly disagree / strongly agree)

ac3. Working with computers is fun. (strongly disagree / strongly agree)

ac4. I use computers for fun. (strongly disagree / strongly agree)

**Direct Shopping Experience**

ds1. I frequently buy products through television shopping channels. (strongly disagree / strongly agree)

ds2. I frequently watch infomercials on television. (strongly disagree / strongly agree)

ds3. I frequently buy products from printed catalogs. (strongly disagree / strongly agree)

**Web-Shopping Risk Attitudes**

wr1. I would feel safe completing commercial transactions over the Internet. (strongly disagree / strongly agree) [reverse]
wr2. There is too much uncertainty associated with shopping on the Internet. (strongly disagree / strongly agree)

wr3. Compared with other ways of shopping, buying on the Internet would be more risky. (strongly disagree / strongly agree)

* Item dropped from the analysis

**Appendix B: The Perceived size and Reputation Information for the Internet Stores: The Australian and Israeli Studies**

For each store, this information was extracted from the store’s Internet Web site and placed in a page that participants accessed before accessing the store’s web site itself. The number of titles was updated to reflect the most current number reported on the website.

**AMAZON.COM**

<table>
<thead>
<tr>
<th>Founded</th>
<th>1994</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996 Sales</td>
<td>US$15,750,000</td>
</tr>
<tr>
<td>Location</td>
<td>Seattle, Washington, USA</td>
</tr>
<tr>
<td>Titles Available</td>
<td>2.5 million</td>
</tr>
<tr>
<td>Special Features</td>
<td>Will ship anywhere</td>
</tr>
<tr>
<td>For Shop’s Home Page</td>
<td>Click Here</td>
</tr>
<tr>
<td>To Return to Task</td>
<td>Click Here</td>
</tr>
</tbody>
</table>

**THE INTERNET BOOKSHOP**

<table>
<thead>
<tr>
<th>Founded</th>
<th>1994</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996 Sales</td>
<td>US $850,000</td>
</tr>
<tr>
<td>Location</td>
<td>Oxford, UK</td>
</tr>
<tr>
<td>Titles Available</td>
<td>894,000</td>
</tr>
<tr>
<td>Special Features</td>
<td>Will ship anywhere</td>
</tr>
<tr>
<td>For Shop’s Home Page</td>
<td>Click Here</td>
</tr>
<tr>
<td>To Return to Task</td>
<td>Click Here</td>
</tr>
</tbody>
</table>

**Appendix C: A Comparison of Means on Trust, Perceived Size, Perceived Reputation, and the willingness to Buy**

Mean ratings (standard deviations) of trust obtained in the three countries. The results from Finland have been transformed from a five-point to seven-point scale to allow comparisons to the results in Australia and Israel.
Mean ratings (standard deviations) of perceived size obtained in the three countries. The results from Finland have been transformed from a five-point to seven-point scale to allow comparisons to the results in Australia and Israel.

<table>
<thead>
<tr>
<th></th>
<th>Amazon.com</th>
<th>Internet Bookshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>4.56 (.78)</td>
<td>4.57 (.76)</td>
</tr>
<tr>
<td>Israel</td>
<td>5.06 (.85)</td>
<td>4.70 (.94)</td>
</tr>
<tr>
<td>Finland</td>
<td>4.31 (1.10)</td>
<td>4.29 (.97)</td>
</tr>
</tbody>
</table>

**p < .01, * p < .05

Mean ratings (standard deviations) of perceived reputation obtained in the three countries. The results from Finland have been transformed from a five-point to seven-point scale to allow comparisons to the results in Australia and Israel.

<table>
<thead>
<tr>
<th></th>
<th>Amazon.com</th>
<th>Internet Bookshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>4.91 (1.00)</td>
<td>4.51 (1.04)</td>
</tr>
<tr>
<td>Israel</td>
<td>5.19 (1.05)</td>
<td>4.52 (1.05)</td>
</tr>
<tr>
<td>Finland</td>
<td>5.28 (.99)</td>
<td>4.64 (.91)</td>
</tr>
</tbody>
</table>

** p < .01, * p < .05

Mean ratings (standard deviations) of perceived reputation obtained in the three countries. The results from Finland have been transformed from a five-point to seven-point scale to allow comparisons to the results in Australia and Israel.
Mean ratings (standard deviations) of willingness to buy obtained in the three countries. The results from Finland have been transformed from a five-point to seven-point scale to allow comparisons to the results in Australia and Israel.

<table>
<thead>
<tr>
<th></th>
<th>Amazon.com</th>
<th>Internet Bookshop</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australia</strong></td>
<td>3.90 (1.40)</td>
<td>3.74 (1.38)</td>
</tr>
<tr>
<td><strong>Israel</strong></td>
<td>3.72 (1.48)</td>
<td>3.17 (1.45)</td>
</tr>
<tr>
<td><strong>Finland</strong></td>
<td>3.36 (1.39)</td>
<td>3.15 (1.24)</td>
</tr>
</tbody>
</table>

**t-tests of differences between the means:**

<table>
<thead>
<tr>
<th></th>
<th>Amazon.com</th>
<th>Internet Bookshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia vs. Israel</td>
<td>ns</td>
<td>***</td>
</tr>
<tr>
<td>Australia vs. Finland</td>
<td>**</td>
<td>***</td>
</tr>
<tr>
<td>Israel vs. Finland</td>
<td>*</td>
<td>ns</td>
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</tbody>
</table>

*** P < .001, ** p < .01, * p < .05

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