The Effects of a Third-Party Assurance Seal in Consumer Behavioral Intention

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ABSTRACT
Although e-commerce is evolving at an incredible speed, asymmetric information and opportunism have increased online purchasing risks and market inefficiencies. To minimize transaction risks and to encourage consumer trustworthiness on online shopping sites, many Web retailers are now using trust-building methods such as third party assurance seals or certificates of e-commerce assurance for their websites. While the research on Third-Party Authorized Seals (TPAS) is not new, the effectiveness of TPAS has not been persuasively addressed by empirical studies. The results of the study show that (1) the effects of TPAS on perceived risk are channeled through perceived trustworthiness, thus demonstrating the mediating role of perceived trustworthiness in B2C E-commerce, (2) perceived risk, perceived usefulness of website, and subjective norm appear to be significant predictors of intention to purchase from the website.

BACKGROUND AND RELEVANT LITERATURE
The theory of repeated games provides a perspective for understanding the role of extralegal mechanisms in the electronic markets by pointing out that many business interactions are actually repeated, so that the threat of future retaliation by a cheated partner or the whole community may enforce cooperative behavior (Axelrod 1984). Ba et al. (1999) suggest that for each non-repeated transaction, pure personal and community enforcement, such as feedback forums on eBay.com, is not sufficient. Thus, they argue that third parties are needed to achieve efficiency in global online markets by using the prisoner’s dilemma model.

Previous studies in the trust-related area show that consumer trust positively affects the relationship between Web retailers and consumers, and consequently affects behavioral intention to purchase from the website. Trust has an important role in establishing cooperative relationships, and consumer unions, self-report, and no seal). Their study tested the likelihood of purchase based on different product types, vendor types, and seal types (accountants, banks, computer industry, consumer unions, self-report, and no seal).

BACKGROUND AND RELEVANT LITERATURE
Online transactions inherently possess various types of risk due to information asymmetry between buyers and sellers. In face-to-face transactions, people may perceive the social context through cues such as visual appearances and verbal inflections (Tyran et al. 1992). However, online transactions may attenuate these social context cues, and thereby have an impact on the information exchange behavior of those who use websites to conduct business transactions. The purpose of this research is twofold. First, this paper investigates how TPAS affects potential Internet shoppers’ perceived trustworthiness toward Web retailers and perceived risks in the context of online purchasing. Second, this paper examines how potential Internet shoppers’ perceived transaction risk would affect their intention to purchase from the website.

HYPOTHESIS DEVELOPMENT
The Effects of a Third-Party Assurance Seal in Consumer Behavioral Intention

The theory of repeated games provides a perspective for understanding the role of extralegal mechanisms in the electronic markets by pointing out that many business interactions are actually repeated, so that the threat of future retaliation by a cheated partner or the whole community may enforce cooperative behavior (Axelrod 1984). Ba et al. (1999) suggest that for each non-repeated transaction, pure personal and community enforcement, such as feedback forums on eBay.com, is not sufficient. Thus, they argue that third parties are needed to achieve efficiency in global online markets by using the prisoner’s dilemma model.

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TPAS Information

To reinforce the perceived trustworthiness of Internet buyers toward websites, a number of seal assurance programs have been developed by independent trusted third parties. A third-party oversight “seal” program is designed to alleviate online buyers’ concerns about online privacy and security, and increases online buyers’ perceived trustworthiness in the Web retailer. For example, Better Business OnLine allows that online retailers display the reliability and privacy seals on their websites once they have been evaluated and confirmed to meet the program requirements.

Therefore, if a customer sees TPAS in a website, it is expected that the customer’s perceived risk should be reduced because TPAS will increase his/her perceived trustworthiness in the website by giving high elaboration to customers (Kovar et al., 2000). Consequently, if an online buyer sees TPAS in a website, it is expected that his/her perceived risk should be reduced because TPAS will increase his/her perceived trustworthiness in the website, and TPAS directly decrease perceived risk.

H1: The presence of TPAS on a website will increase online shoppers’ perceived trustworthiness toward the online retailers.

H2: The higher the online shoppers’ perceived trustworthiness, the lower their perceived risk in e-transactions.

H3: The presence of TPAS on the website will decrease online shoppers’ perceived risk in e-transactions.

Perceived Risk in the Context of Online Purchasing

Perceived risk can be understood as a function of the uncertainty of the purchase outcome and the consequences associated with that unfavorable purchase outcome (Simon and Victor 1994). The perceived risk concept in consumer behavior research, first introduced by Bauer (1964), explains that consumer behavior involves risk in the sense that any action toward a consumer may lead to unpleasant consequences (Simon and Victor 1994). Trust in a merchant mitigates the consumer’s perception of the risks involved in a purchase situation. The higher the initial perception of risk, the higher the trust needed to facilitate a transaction (Jarvenpaa 2000).

H4: The lower the perceived risk in the context of online purchasing, the higher the consumer’s intention to purchase from the website.

Perceived Usefulness of Website, Perceived Ease of Use of Website, and Intention to Purchase from the Website

Technology acceptance model (TAM) (Davis 1989), as an adaptation of theory of reasoned action (TRA), helps predict the user acceptance related to various applications of information technology (IT) based on two specific behavioral beliefs: perceived ease of use and perceived usefulness. In the context of B2C e-commerce, it is justifiable to evaluate the principal constructs of TAM in various settings in order to see if the constructs are valid in explaining customer’s intention to purchase from websites. TRA and theory of planned behavior (TPB) presume that an individual’s volitional behavior is predominantly the result of his/her intention to behave (Ajzen and Fishbein 1980; Ajzen 1991).

H5: The higher the consumer’s perceived trustworthiness regarding the website, the greater the consumer’s intention to purchase from the website.

H6: The higher the consumer’s perceived ease of use regarding the website, the greater the consumer’s intention to purchase from the website.

Subjective Norm and Intention to Purchase from the Website

TAM2 incorporates additional theoretical constructs spanning social influence processes and cognitive instrumental processes (Venkatesh and Davis 2000). As another extension of TRA, TPB asserts that behavioral intention is formed by one’s attitude, perceived behavioral control, and subjective norm, which reflect perceptions that significant referents desire the individual to perform or not perform a certain behavior (Taylor and Todd 1995). From a media richness perspective, social influence is exerted through messages and signals that help form perceptions of the value of a product or an activity (Salancik and Pfeffer, 1978; Fulk et al. 1987; Fulk and Boyd 1991).

H7: The higher a consumer’s subjective norm, the greater the consumer’s intention to purchase from the website.

RESEARCH METHODOLOGY

The purpose of this research is to investigate how TPAS affects potential Internet shoppers’ perceived trustworthiness toward Web retailers and perceived risk in the context of online purchasing, and to examine how potential Internet shoppers’ perceived risk is linked to the intention to purchase from the website. The instruments were developed based on measures validated by prior research. Authors adapted measurement items so as to conform to the e-commerce trust context.

The research hypotheses were tested using LISREL8.3 (Jöreskog and Sörbom 1993) through the measurement items shown in Table 1. This survey utilized a seven-point Likert-type scale to measure respondents’ overall perceptions about measurement items. Measurement items for each construct asked the respondents to rate the extent to which...
Table 2. Results of Hypothesis Testing

<table>
<thead>
<tr>
<th>Paths From</th>
<th>Paths To</th>
<th>R²</th>
<th>Standardized Path Coefficients</th>
<th>Hypotheses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third Party Assurance Seal</td>
<td>Perceived Trustworthiness</td>
<td>0.20</td>
<td>0.37 ***</td>
<td>Yes</td>
</tr>
<tr>
<td>Third Party Assurance Seal</td>
<td>Perceived Risk</td>
<td>0.37</td>
<td>0.14 *</td>
<td>Yes</td>
</tr>
<tr>
<td>Perceived Risk</td>
<td>Intention to Purchase from the Website</td>
<td>0.64</td>
<td>0.50 ***</td>
<td>Yes</td>
</tr>
<tr>
<td>Perceived Usefulness of Website</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Ease of Use of Website</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subjective Norm</td>
<td></td>
<td></td>
<td>0.18 ***</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*p<0.10;  ** p<0.05;  *** P<0.001.

they felt or agreed with the feature described by the statement on a scale of 1 through 7, where 1 = strongly disagree; 7 = strongly agree.

Sample Description
Data were collected and analyzed from business students from one midwestern, one eastern, and one southern state university in the U.S. Questionnaires were distributed during MIS classes and subjects participated voluntarily. Complete and usable questionnaires were received from 165 respondents.

Characteristics of the sample are as follows. In terms of computer proficiency of participants, most were proficient: power-users (11.5 percent), above-average (45.5 percent), average (33.9 percent) and below-average (6.13 percent), and novice (2.7 percent). Participants’ year in school varied: freshman (12.7 percent), sophomore (10.3 percent), junior (21.8 percent), senior (43.0 percent), and MBA students (21.2 percent). Finally, males and females constitute 59.1 percent and 40.9 percent of respondents respectively.

Table 3. Measures of Model Fit

<table>
<thead>
<tr>
<th>Fit measure</th>
<th>Recommended Value</th>
<th>Fitness Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>&lt;= 3.0</td>
<td>394.12</td>
</tr>
<tr>
<td>Chi-Square/df</td>
<td></td>
<td>2.0527</td>
</tr>
<tr>
<td>NFI</td>
<td>&gt;=0.80</td>
<td>0.86</td>
</tr>
<tr>
<td>NNFI</td>
<td>&gt;=0.90</td>
<td>0.89</td>
</tr>
<tr>
<td>GFI</td>
<td>&gt;=0.90</td>
<td>0.84</td>
</tr>
<tr>
<td>AGFI</td>
<td>&gt;= 0.80</td>
<td>0.78</td>
</tr>
<tr>
<td>RMSEA</td>
<td>&lt;= 0.08</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Reliability and Validity of Research Model
Regarding the validity of constructs, we calculated the standardized factor loading (Lambda) and t-values (p<0.05). Our analysis showed overall significant loadings for each item on its hypothesized construct (Lapierre et al. 1999). Most of the squared multiple correlations are above .50, indicating a moderate level of reliability.

RESULTS
The hypothesized paths in the research model were tested by the means of LISREL8.3 (Jöreskog and Sörbom 1993). Table 2 presents the standardized path coefficients and the result of hypothesis testing in the research model.
The measures of overall goodness-of-fit for the entire model are good as shown in Table 3. To assess the model, multiple fit indices are presented. The overall model showed an acceptable fit: c² = 394.12, p<.00; chi-square/df = 2.0527, NFI = 0.86; NNFI = 0.89; GFI = 0.84; AGFI = 0.78; RMSEA = 0.079 (Jöreskog and Sörbom 1993). The RMSEA value (0.08) of our research model is equal to the recommended value of reasonable fit (Browne and Cudeck 1993; Taylor and Todd 1995).

FINDINGS AND CONCLUSION
Our research findings are as follows. With regard to perceived risk, perceived trustworthiness (t= 5.54) and seal assurance (t= 1.73) the constructs appear to be significant predictors of perceived risk. In addition, seal assurance also affects perceived trustworthiness of Web retailers (t= 5.41). Interestingly, the results indicate that perceived trustworthiness affects perceived risk more than seal assurance. On the other hand, TPAS influences perceived trustworthiness more than it directly influences perceived risk. These research results indicate that TPAS contributes to online shoppers’ trustworthiness toward Web retailers.

The perceived usefulness of website construct is statistically significant as it has been in previous IT adoption studies. Strongly positive coefficients (t = 4.66) indicates that the perceived usefulness of a website is a robust factor for determining intention to purchase from the website. The perceived ease of use of a website does not affect online shopper intention to purchase from the website. This finding is consistent with the results of previous technology adoption studies (Adams 1992; Szajna 1996; Gefen and Straub 1997; Lee et al. 2001). With regard to subjective norm, our results also show that, as Venkatesh and Brown (2001) suggested, social influence from referents has a significant influence (t = 2.22) on future online shoppers in the context of B2C e-commerce.

The results of this study suggest that the TPAS is strongly associated with perceived trustworthiness toward Web retailers, but it is weakly associated with perceived risk. Another interesting finding is that online shoppers’ perceived trust as filtered through TPAS can decrease online shoppers’ perceived risk toward intention to purchase from the website. These research results indicate that the effects of TPAS on perceived risk are channeled through perceived trustworthiness, thus demonstrating the mediating role of perceived trustworthiness in the B2C e-commerce.

REFERENCES
Full paper and references are available upon request from authors.