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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 strategies 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.

INTRODUCTION

Although e-commerce is evolving at an incredible speed, asymmetric information (Akerlof 1970; Clemons and Weber 1994) and opportunism have increased online transaction risks and market inefficiencies. The lack of tangible contacts and the inability of the customer to examine tangible products mean that online businesses must demonstrate to their customers that they offer reliable information, while simultaneously convincing consumers of their trustworthiness.

To increase online shopping sites' trustworthiness and to help the users overcome their online fears, many Web retailers are now seeking various trust-building strategies such as seals or certificates of e-commerce assurance for their websites (Ernst and Young 2001a). As one of such methods, a third party assurance seal (TPAS) has been used on websites to minimize transaction risks and to encourage consumer trustworthiness and confidence in online transactions. Web retailers must pay a first-time engagement fee, license fee or annual fee for TPAS and must meet strict requirements in terms of business experience, business practices, and privacy and security policies to use TPAS on their websites.

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.

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 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 by lowering the risk involved in transactions (Mayer et al. 1995). A consumer's trust in Internet shopping is positively related to the trustworthiness of Web retailers and a consumer's perceived risk toward shopping is negatively related to trust in Internet shopping (Borchers 2001).

Although commercial websites have adopted and used TPAS, only a few studies have been conducted to evaluate the effect of TPAS with regard to the customers' willingness to purchase online. Houston and Talyor (1999) studied the impact of WebTrust on consumers' willingness to make Internet purchases. The results suggest that while WebTrust provided no additional assurances with respect to business and security practices, it resulted in higher perceived product quality. Kovar et al. (2000) explore the influence of assurance services on consumers' online transaction expectations and online purchase intention. While they do not directly measure consumer trust, their results demonstrate that viewing a third-party assurance seal affects consumer expectations of positive future behavior on the part of Web retailers. Nöteberg et al. (1999) concluded that, unlike Houston and Taylor's (1999) results, assurance services do provide an additional effect on the likelihood of purchase. 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).

Little empirical research has been conducted to assess the relationship between TPAS and perceived trustworthiness, and between TPAS and perceived risk in the context of B2C e-commerce, even though perceived trustworthiness and perceived risk are important factors associated with intention to purchase from a website.

HYPOTHESIS DEVELOPMENT

Figure 1 shows the proposed research model. Unlike prior research, we attempt here to synthesize a meaningful relationship for determining consumer's intention to purchase in the e-marketplace and for examining the influence of TPAS on trustworthiness and perceived transaction risks toward online retailers, and intention to purchase online.

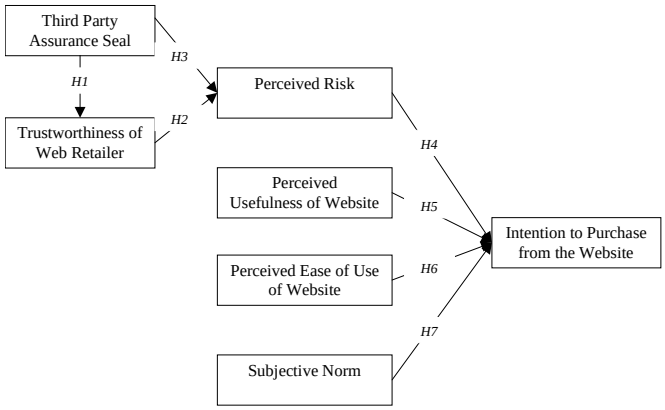

Figure 1. Proposed Research Model

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 retailers. 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 usefulness 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 customer'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 1. Constructs and Measurement Items

Constructs (Source)	Revised Measurement Items
Perceived Usefulness (Taylor and Todd 1995; Lee et al. 2001)	I can have some benefit from online purchasing.
	I can save money through online purchasing.
	I can save time through online purchasing.
Perceived Ease of Use (Taylor and Todd, 1995; Lee et al. 2001)	Online website is easy to operate.
	Online website is easy to use.
	Online website is easy to access at any time.
Subjective Norm (Taylor and Todd 1995)	When people such as friends, who influence my behavior, make online purchasing, I am more likely to make online purchasing.
Perceived Risk (Lee et al. 2001; Borchers 2001)	I don't worry about my privacy such as releasing my information on online purchasing.
	I can comfortably give my credit card number to Web retailers
	I feel comfortable doing online purchasing because online shopping is accurate (not risky).
Seal Assurance (Borchers 2001)	The seal assurance label makes me feel safe in online purchasing.
	The seal assurance label makes me feel comfortable toward the Web retailers.
	The seal assurance label is trustworthy.
Perceived Trustworthiness (Borchers 2001)	Web retailers implement security measures to protect online shopper.
	Web retailers are concerned about consumers' privacy.
	Web retailers act sincerely in dealing with consumers.
	Web retailers have the ability to handle purchasing on the website.
Intention to Purchase on the Website (Taylor and Todd, 1995)	I intend to use the online purchasing from now on.
	I intend to use the online purchasing frequently.

Table 2. Results of Hypothesis Testing

Paths		R^2	Standardized Paths Coefficients	Hypotheses
From	To			
Third Party Assurance Seal	Perceived Trustworthiness	0.20	0.37 ***	Yes
Third Party Assurance Seal	Perceived Risk	0.37	0.14 *	Yes
Perceived Trustworthiness			0.64 ***	Yes
Perceived Risk	Intention to Purchase from the Website	0.64	0.50 ***	Yes
Perceived Usefulness of Website			0.62 ***	Yes
Perceived Ease of Use of Website			-0.03	No
Subjective Norm			0.18 ***	Yes

**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

Fit measure	Recommended Value	Fitness Measure
Chi-Square		394.12
Chi-Square/df	<= 3.0	2.0527
NFI	>=0.80	0.86
NNFI	>= 0.90	0.89
GFI	>=0.90	0.84
AGFI	>= 0.80	0.78
RMSEA	<= 0.08	0.08

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: cð ^{2} = 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.