Factors that affect consumer trust in online shopping in Taiwan

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ABSTRACT

The purpose of this paper was to examine the critical factors that affect consumer trust in online shopping environment in Taiwan. Based on the implications derived from the previous literature review, the factors affecting online trust are presented, which provide a basis for the further development model of trust in this study. The study suggests that if there are more perceived trust in online shopping environment and if shoppers felt that online shopping gave them enough comfortable and security about the service and products, the number of online shoppers would be higher. Thus, the objective of this research is to test which factors have an effect on consumers’ trust and on their subsequent intention to purchase online. The purpose of this study is hopefully to help website managers to enhance their website trustworthiness. This model consists of the website quality, the structure assurance, the web vendor reputation and capability, and product information.

INTRODUCTION

Despite the rapid growth of the Internet and the high market potential of business-to-consumer (B2C) electronic commerce, actual online revenues still remain quite modest when compared to the offline world. According to the Pew Internet Project's September 2007 survey, 78% of online Americans agree that shopping online is a way to save time and a convenient way to buy products. But, at the same time, three-quarters (75%) of internet users express discomfort over a key step in online shopping – sending personal or credit card information over the internet.

Lack of trust has been one of the most frequently cited reasons for consumers not purchasing from Internet vendors (Lee and Turban, 2001, p. 75). McKnight, Choudhury and Kacmar (2002, p. 298) also stated that the lack of consumer trust, both in the specific web-based vendors and in the overall e-commerce, has been a hindrance to electronic commerce. So, a number of studies have investigated the role of trust in the e-commerce environment with all kinds of different research foci, analyzing the trust towards several aspects and hoped to explore what factors affected the consumers’ intention to trust (Grabner-Kräuter and Kaluscha, 2003; Shankar, Urban and Sultan, 2002).

This study based on the model proposed by Cheung and Lee (2000) and other previous literature to examine the consumer’s trust in online shopping in Taiwan and hopes to explore the factors which affect their trust in online shopping and give the e-vendors suggestions in their business strategies.

Cheung and Lee’s (2000) model suggests that a customer's trust in Internet shopping is positively related to the trustworthiness of Internet vendors and the external environment. The model proposed that trustworthiness of Internet vendors (including perceived security control, privacy control, integrity and competence) and external environment (third part recognition and legal framework) are positively related to the customer's trust in Internet shopping.

LITERATURE REVIEW

Trust antecedents identified in the literature

Trust has been positively recognized to influence online consumers' purchase intentions (Jarvenpaa et al., 2000; Lim et al., 2001; McKnight et al., 2002; ). Consequently, understanding the factors that influence the trusting beliefs in an online environment is of considerable necessary and important to researchers (e.g. Lee and Turban, 2001; Koufaris and Hampton-Sosa, 2002; McKnight et al., 2002; Chen and Dhillon, 2003; Corritore et al., 2003; Gefen and Straub, 2003). There are a number of literature provides considerable evidence that a number of factors have strong
predictive importance. These factors include the characteristics of the online vendor, situational factors, third-party certification and recommendation. The detailed references are listed in Table 1 and below.

Table 1: Factors Affecting Trust in Online Shopping

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>size</td>
<td></td>
<td>Jarvenpaa et al. (1999, 2000)</td>
</tr>
<tr>
<td>the vendors perceived integrity</td>
<td></td>
<td>Chen and Dhillon, 2003; Chen and Dhillon (2003); McKnight et al. (2002); Cheung and Lee (2000)</td>
</tr>
<tr>
<td>the vendors perceived competence</td>
<td></td>
<td>McKnight et al., 2002; Chen and Dhillon (2003); McKnight et al. (2002); Cheung and Lee (2000)</td>
</tr>
<tr>
<td></td>
<td>Perceived privacy controls</td>
<td>Belanger et al., 2002; Cheung and Lee (2000); Kim, Xu, and Koh (2004)</td>
</tr>
<tr>
<td></td>
<td>situational factors</td>
<td>Bigley and Pearce, 1998; Hagen and Choe, 1998; Lewicki and Bunker, 1995; Sitkin, 1995; Ring &amp; Van De Ven, 1992</td>
</tr>
<tr>
<td>THIRD</td>
<td>third party certification</td>
<td>McKnight and Chervany, 2001; Hoffmann et al., 1999; Jarvenpaa and Grazioli, 1999; Kovar et al., 2000a; 2000b; Cheskin Research, 2000; Cheung and Lee (2000)</td>
</tr>
<tr>
<td></td>
<td>legal framework</td>
<td>Bigley and Pearce, 1998; Fukuyama, 1995; Cheung and Lee (2000)</td>
</tr>
<tr>
<td>FULFILL</td>
<td>Order fulfillment</td>
<td>Iakov Y. Bart Venkatesh Shankar Fareena Sultan Glen L. Urba (2005)</td>
</tr>
<tr>
<td>WEB</td>
<td>Web site design</td>
<td>Kim, Xu, and Koh (2004); Koufaris and Hampton-Sosa (2004)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lee and Turban (2001)</td>
</tr>
<tr>
<td></td>
<td>Trusting beliefs</td>
<td>Chen and Dhillon, 2003; Bhattacharjee, 2002; Lee and Turban, 2001; McKnight et al., 2002; Peters et al., 1997; Mayer et al., 1995; Covello, 1992; Barber, 1983; Cheung and Lee (2000)</td>
</tr>
</tbody>
</table>

Characteristics of the online vendor

Previous studies consider trust to be a perception of trustworthiness from a number of e-vendors’ characteristics (Covello, 1992; Lee and Turban, 2001). Chen and Dhillon’s (2003) concluded from the trust literature and identified competence, integrity and benevolence as key dimensions of trust in an Internet vendor.

Situational factors

Institutional factors are suggested to be able to encourage risk taking and consequent trusting behavior by some studies (Lewicki and Bunker, 1995; Sitkin, 1995; Bigley and Pearce, 1998; Hagen and Choe, 1998). Shapiro (1987: 635) indicated that the institutional arrangements, social structures, processes and norms are able to engender trusting beliefs. Structural assurance beliefs are thus defined as the outcome from signifying structural protections or governance mechanisms by Shapiro. (1987: 204) In order to facilitate the formation of trusting beliefs, it can gain support from the guarantees, safety nets and other supporting structures that let consumers to perceive protect of the individual's rights and property. (Fukuyama, 1995)

Third-party certification and recommendation

From previous studies, third-party certification bodies are often considered to influence the consumer's trust in online shopping. For example, McKnight and Chervany (2001) and Hoffman et al. (1999) pointed that some third-party seals have the influence to form the trusting beliefs. Jarvenpaa and Grazioli (1999) supported the importance of a good reputation and endorsements from independent third parties in influencing the formation of consumer trust beliefs. Kim and Benbasat (2003) indicated the logos of security supporting firms to have a positive effect on trusting beliefs and intentions.
Survey Design
The survey questionnaire was uploaded to the web site. All of the items were measured on a 7-point Likert-type scale. Respondents indicate their level of perception with each of the questions on a rating scale ranging from 7 (strongly agree), through 4 (neutral), to 1 (strongly disagree). Roughly, 100 people will be asked to fill out the questionnaire on the web for the pilot test. After the revision of the questionnaire, an invitation letter, along with the hyperlink to the web site of the revised questionnaire will e-mail to the sample respondents, asking them to fill out the questionnaire on the web.

Research population and samples
The population of this survey is defined as “20-40 years old internet users in Taiwan.” The total sample number in this study was 300.

The hypothesis and variables
The eight predictor variables (i.e. Online store’s reputation, security and privacy policies, Third-party certification, Recommendation and testimonies, product information, Website User Interface design, order fulfillment, Service Quality) are most critical factors in increasing consumer trust in online shopping in Taiwan are most critical factors in increasing the consumer trust in online shopping in Taiwan.

METHODOLOGY

Multiple regression analysis test:
Multiple regression analysis was used to measure and predict which independent variables were the most important factors to the dependent variable (trust in online shopping).

Hypothesis:
Hypothesis tries to identify the influential factors in increasing consumer trust in online shopping. Hypothesis is restated in the following:

The eight predictor variables (i.e. Online store’s reputation, security and privacy policies, Third-party certification, Recommendation and testimonies, product information, Website User Interface design, order fulfillment, Service Quality) are the influential factors in increasing consumer trust in online shopping.

THE STATISTICAL RESULTS
A scatterplot matrix (see Figure 1) displays elliptical shapes that indicate linearity and normality. The residuals plot is somewhat scattered but again is not extreme (see Figure 2). Thus, multivariate normality and homoscedasticity can be assumed. Regression was then conducted using the forward method.

The three major parts of a multiple regression output - model summary, ANOVA table, and coefficient table are presented in Tables 2, Table 3 and Table 4.

Review of the tolerance statistics presented in the coefficients table (see Table 4) indicate that all IVs were tolerated in the model (with the tolerance statistics exceeding 0.1). Mertler and Vannata (2005) stated that if the tolerance value for a given IV is less than 0.1, then multicollinearity is a distinct problem (p. 169). Thus, collinearity is not a serious problem for these survey data. The model summary (see Table 2) and the ANOVA summary (Table 3) indicate that the overall model of the eight IVs is significantly related to consumer trust in online shopping \( R^2 = .493, \text{ Adjusted } R^2 = .478, \text{ F (8, 285) } = 34.595, \text{ p.<.005}. \)

Therefore, the results supported Hypothesis 1: that the 8 dimensions are significantly correlated with consumer trust in online shopping in Taiwan. The statistical results also showed that vendor reputation, security, order fulfillment, and service quality, are significant in predicting the consumer trust in online shopping. The statistical results here led to the development of a multiple-regression function using “Standardized Coefficients” (see Table 4).
While using the standard regression approach, four variables (i.e. vendor Reputation, security, order fulfillment, service quality) are significant in predicting the consumer trust in online shopping. Based on the statistical results, the author developed a multiple regression function as below. (See Table 4)

Table 2: General Model: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R Square Change</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Sig. F Change</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.702(a)</td>
<td>.493</td>
<td>.478</td>
<td>.985</td>
<td>.493</td>
<td>34.595</td>
<td>8</td>
<td>285</td>
<td>.000</td>
<td></td>
</tr>
</tbody>
</table>

a Predictors: (Constant), service quality, web design, third party certification, recommendation, order fulfillment, security, product information, vendor factor

b Dependent Variable: trust in online shopping

Table 3: General Model: ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>268.324</td>
<td>8</td>
<td>33.540</td>
<td>34.595</td>
<td>.000(a)</td>
</tr>
<tr>
<td>Residual</td>
<td>276.316</td>
<td>285</td>
<td>.970</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>544.639</td>
<td>293</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Predictors: (Constant), service quality, web design, third party certification, recommendation, order fulfillment, security, product information, vendor reputation

b Dependent Variable: consumer trust in online shopping

Table 4: General Model: Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Correlations</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>Zero-order</td>
<td>Partial</td>
<td>Part</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>.201</td>
<td>.404</td>
<td>.499</td>
<td>.618</td>
<td></td>
</tr>
<tr>
<td>VENDOR</td>
<td>.283</td>
<td>.074</td>
<td>.230</td>
<td>3.832</td>
<td>.000</td>
<td>.465</td>
</tr>
<tr>
<td>SECURE</td>
<td>-.120</td>
<td>.060</td>
<td>-.115</td>
<td>-2.011</td>
<td>.045</td>
<td>.270</td>
</tr>
<tr>
<td>THIRD</td>
<td>.050</td>
<td>.058</td>
<td>.049</td>
<td>.849</td>
<td>.397</td>
<td>.300</td>
</tr>
<tr>
<td>RECOM</td>
<td>-.069</td>
<td>.061</td>
<td>-.063</td>
<td>-1.131</td>
<td>.259</td>
<td>.176</td>
</tr>
<tr>
<td>PRODUCT</td>
<td>-.009</td>
<td>.068</td>
<td>-.007</td>
<td>-1.126</td>
<td>.899</td>
<td>.229</td>
</tr>
<tr>
<td>WEB</td>
<td>.100</td>
<td>.073</td>
<td>.077</td>
<td>1.358</td>
<td>.176</td>
<td>.233</td>
</tr>
<tr>
<td>FULFILL</td>
<td>.142</td>
<td>.061</td>
<td>.128</td>
<td>2.342</td>
<td>.020</td>
<td>.456</td>
</tr>
<tr>
<td>SERVICE</td>
<td>.588</td>
<td>.064</td>
<td>.513</td>
<td>9.156</td>
<td>.000</td>
<td>.659</td>
</tr>
</tbody>
</table>

a Dependent Variable: consumer trust in online shopping

The general model for the hypothesis of present study:

\[ Y(\text{consumer trust in online shopping}) = 0.230X (\text{internet vendor reputation}) -0.115X (\text{perceived privacy and security}) + 0.049X (\text{external environment}) - 0.063X (\text{recommendation}) - 0.007X (\text{product description}) + 0.077X (\text{web site design}) + 0.128X (\text{delivery policy}) + 0.036X (\text{Security}) + 0.041X (\text{Tangibles}) - 0.036X (\text{Understanding the customers}) + 0.513X (\text{contact information and service}). \]
Histogram

Dependent Variable: trust online shopping

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: trust in online shopping

Scatterplot

Dependent Variable: trust online shopping
REFERENCES

Barber, B. (1983), The Logic and Limits of Trust. Rutgers University Press, New Brunswick, NJ.


Iakov Y. Bart ,Venkatesh Shankar, Fareena Sultan, Glen L. Urban( 2005) Are the Drivers and Role of Online Trust the Same for all Web Sites and Consumers?: A Large Scale Exploratory Empirical Study


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