

An Empirical Study for Factors that Affect Undergraduate Students' Trust in Online Shopping in Taiwan

Mei-Jane Chan, DBA candidate, Northwestern Polytechnic University, USA

ABSTRACT

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. Chen and Dhillon, 2003; Corritore et al., 2003; Gefen and Straub, 2003). This study tested the research question to understand factors affecting undergraduate students' trust attitude in online shopping in Taiwan: what is the relationship between the consumer trusts in online shopping and the 8 dimensions proposed in this study(online store's reputation, security and privacy policies, third-party certification, recommendation and testimonies, product information, website user interface design, order fulfillment, service and contact quality)? And which dimensions are the most important?

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

REPUT	Reputation	Kim,M. and Ahn, J(2007); Doney and Cannon,(1997); <i>Kim, Xu, and Koh(2004)</i> ; Pavlou (2002)
	size	Jarvenpaa et al. (1999, 2000)
	the vendors perceived integrity	Chen and Dhillon, 2003; Chen and Dhillon (2003); McKnight et al. (2002); Cheung and Lee (2000)
	the vendors perceived competence	McKnight et al., 2002; Chen and Dhillon (2003); McKnight et al. (2002); Cheung and Lee (2000)
SECURITY	perceived security controls	Gauzente, 2004; Cheung and Lee (2000); <i>Kim, Xu, and Koh(2004)</i>
	Perceived privacy controls	Belanger et al., 2002; Cheung and Lee (2000); <i>Kim, Xu, and Koh(2004)</i>
	situational factors	Bigley and Pearce, 1998; Hagen and Choe, 1998; Lewicki and Bunker, 1995; Sitkin, 1995; Ring & Van De Ven; 1992
THIRD	third party certification	McKnight and Chervany, 2001; Hoffmann et al., 1999; Jarvenpaa and Grazioli, 1999; Kovar et al., 2000a; 2000b; Cheskin Research, 2000; Cheung and Lee (2000)
	legal framework	Bigley and Pearce, 1998; Fukuyama, 1995; Cheung and Lee (2000)
RECOM	Recommendation and testimonials	Kim and Prabhakar (2002); Jarvenpaa et al. 2000 ; Grabner-Kräuter, S. (2002)
PRODUCT	Product information	Lee and Turban (2001) ; Grabner-Kräuter, S. (2002)
FULFILL	Order fulfillment	Iakov Y. Bart Venkatesh Shankar Fareena Sultan Glen L. Urba(2005)

WEB	Web site design	<i>Kim, Xu, and Koh(2004)</i> ; Koufaris and Hampton-Sosa(2004) Lee and Turban (2001)
SERVICE	Service quality	<i>Kim, Xu, and Koh(2004)</i>
	Trusting beliefs	Chen and Dhillon, 2003; Bhattacharjee, 2002; Lee and Turban, 2001; McKnight <i>et al.</i> , 2002; Peters <i>et al.</i> , 1997; Mayer <i>et al.</i> , 1995; Covello, 1992; Barber, 1983; Cheung and Lee (2000)

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 “undergraduate students in Taiwan.” The total sample number in this study was 300.

The Hypothesis and Variables

H1: There is a significant and positive relationship between consumer trust in online shopping and the eight dimensions of independent variables in this study (the perceived online store’s reputation, third-party certification, recommendation and testimonies, security and privacy policies, order fulfillment, product information, website user interface design, service quality)

Dependant Variable: Consumer trust in online shopping

Independent Valuables: perceived online store’s reputation, recommendation and testimonies, third-party certification, security and privacy policies, order fulfillment, product information, website user interface design, service quality

Statistical Method: Pearson’s Correlation and Multiple Regression Analysis

STATISTICS RESULTS

Pearson Correlation Analysis Test

The mean and standard deviation are listed in Table 2 in below. The summary table of the Pearson Correlation is listed in the following. (See Table 3).

Table 2: Mean and standard deviation of Descriptive Statistics

	Mean	Std. Deviation	N
trust in online shopping	5.40	1.363	294
reputation	5.9122	1.10922	294
recommendation	5.0901	1.23841	294
third party certification	5.3923	1.34534	294
security	4.9347	1.30364	294
order fulfillment	5.2812	1.22742	294
product information	4.9065	1.18984	294
web design	5.0810	1.06093	294
service quality	5.0844	1.18970	294

The Correlation Matrix shows (see Table 3) that the dependent variable (Consumer trust in online shopping) is significantly and positively correlated with all the eight independent variables. Thus, the null hypotheses are rejected and thus, Hypotheses 1 is supported. Online consumers who scored high on the perceived online store’s reputation, recommendation and testimonials, third-party certification, security and privacy policies, returns and refund policies,

product information, website user interface design, contact information also tended to score high on their trust in online shopping.

Table 3: the Correlation Matrix Correlations (DV: Trust)

	REPUT	SECURE	THIRD	RECOM	PRODOT	WEB	FULFILL	SERVICE
trust	.457(**)	.273(**)	.301(**)	.170(**)	.219(**)	.232(**)	.446(**)	.649(**)
	.000	.000	.000	.003	.000	.000	.000	.000
	299	300	298	300	298	299	300	300

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Detailed table is showed in Appendix A , Table 4- 8(detailed table)

Multiple regression analysis

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 1 tries to identify the influential factors in increasing consumer trust in online shopping.

Statistical results

The model summary (see Table 4) and the ANOVA summary (Table 5) indicate that the overall model of the eight IVs is significantly related to consumer trust in online shopping [R2 =.465, Adjusted R2 = .462, F (8, 285) = 153.392, p<.005].

Therefore, the results supported Hypothesis 1: that the 6 in 8 dimensions in this survey are significantly correlated with consumer trust in online shopping in Taiwan. As we can see in the statistical results , it showed that the perceived online store’s reputation, security and privacy policies, order fulfillment policies, product information, web site design and contact information are significant in predicting the consumer trust in online shopping. To our surprise, it shows no significant impacts in “Third-party certification” and “recommendation and testimonials”. This is not consistent with previous studies. Based on the statistical results(See Table 6), the author developed a multiple regression function as below.

The general model for the hypothesis of present study:

$Y(\text{consumer trust in online shopping}) = 0.185X (\text{the perceived online store's reputation}) + 0.008X (\text{recommendation and testimonials}) + 0.017X (\text{third-party certification}) - 0.095 X (\text{security and privacy policies}) + 0.139X (\text{returns and refund policies}) + 0.063X (\text{product information}) + 0.096X (\text{website user interface design}) + 0.521X (\text{contact information})$

Table 4: Model Summary(b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change	R Square Change	F Change	df1	df2
1	.682(a)	.465	.462	.959	.465	153.392	8	285	.000

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

b Dependent Variable: trust in online shopping

Table 5: ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1129.737	8	141.217	153.392	.000(a)
	Residual	1301.773	285	.921		
	Total	2431.509	293			

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

b Dependent Variable: trust in online shopping

Table 6: Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta	Tolerance	VIF	B	Std. Error
1	(Constant)	.076	.214		.355	.723		
	reputation	.276	.039	.185	7.098	.000	.558	1.792
	recommendation	.008	.031	.008	.277	.782	.505	1.980
	third party certification	.018	.028	.017	.644	.520	.576	1.735
	security	-.112	.031	-.095	-3.559	.000	.537	1.864
	order fulfillment	.151	.027	.139	5.558	.000	.608	1.646
	product information	.068	.027	.063	2.521	.012	.598	1.672
	web design	.121	.032	.096	3.747	.000	.572	1.748
	service quality	.598	.029	.521	20.547	.000	.589	1.697

a Dependent Variable: trust in online shopping

Stepwise for Hypothesis 1

The stepwise multiple regression function for Hypothesis 1 is explained in more detail in the following:

The Model for Stepwise Hypothesis 1: (for Beta weight, see Table 7)

$Y(\text{consumer trust in online shopping}) = 0.521X(\text{contact and service information}) + 0.190X(\text{the perceived online store's reputation}) + 0.140X(\text{order fulfillment policies}) - 0.086X(\text{security and privacy policies}) + 0.098X(\text{website user interface design}) + 0.066X(\text{product information})$

CONCLUSION

For the internet vendor in Taiwan, they should emphasize on these six variables as the most important factors in increasing the consumer trust in online shopping: the priority is Service quality, reputation Policy, order fulfillment policy, security policy, web site design and product information.

Table 7: Variables Entered/Removed(a)

Model	Variables Entered	Variables Removed	Method
1	service quality		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
2	reputation		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
3	order fulfillment		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
4	security		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
5	web design		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).
6	product information		Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

a Dependent Variable: trust in online shopping

Table 8: Model Summary(g)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change	R Square Change	F Change	df1	df2
1	.646(a)	.417	.416	.999	.417	1015.432	1	292	.000

2	.659(b)	.434	.434	.984	.018	44.069	1	292	.000
3	.673(c)	.453	.452	.968	.019	49.076	1	291	.000
4	.677(d)	.458	.456	.964	.005	11.992	1	291	.001
5	.680(e)	.462	.460	.961	.004	10.623	1	290	.001
6	.681(f)	.464	.462	.959	.003	6.796	1	290	.009

- a Predictors: (Constant), service quality
b Predictors: (Constant), service quality, reputation
c Predictors: (Constant), service quality, reputation, order fulfillment
d Predictors: (Constant), service quality, reputation, order fulfillment, security
e Predictors: (Constant), service quality, reputation, order fulfillment, security, web design
f Predictors: (Constant), service quality, reputation, order fulfillment, security, web design, product information
g Dependent Variable: trust in online shopping

Table 9: ANOVA(g)

Model		Sum of Squares	df	Mean Square	F	Sig.
6	Regression	1129.255	6	188.209	204.648	.000(f)
	Residual	1302.255	287	.920		
	Total	2431.509	293			

- a Predictors: (Constant), service quality
b Predictors: (Constant), service quality, reputation
c Predictors: (Constant), service quality, reputation, order fulfillment
d Predictors: (Constant), service quality, reputation, order fulfillment, security
e Predictors: (Constant), service quality, reputation, order fulfillment, security, web design
f Predictors: (Constant), service quality, reputation, order fulfillment, security, web design, product information
g Dependent Variable: trust in online shopping

Table 10: Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta	Tolerance	VIF	B	Std. Error
6	(Constant)	.098	.211		.463	.643		
	service quality	.598	.029	.521	20.612	.000	.593	1.687
	reputation	.284	.036	.190	7.781	.000	.634	1.578
	order fulfillment	.152	.027	.140	5.727	.000	.637	1.570
	security	-.102	.028	-.086	-3.593	.000	.655	1.528
	web design	.123	.030	.098	4.107	.000	.670	1.492
	product information	.066	.025	.061	2.607	.009	.683	1.463

- a Dependent Variable: trust in online shopping

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