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TRUST IN INTERNET SHOPPING: A TEST OF A MEASUREMENT INSTRUMENT

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Abstract

This study tests a measurement model of consumer's trust in Internet shopping (CTIS), proposed by C. Cheung and M. Lee. The model posits trustworthiness of Internet vendors (including perceived security control, privacy control, integrity and competence) and external environment (third part recognition and legal framework) as being positively related to CTIS and moderated by propensity to trust. The model also posits a negative relationship between CTIS and perceived risk in Internet shopping. The author sampled 118 day and evening MBA students at a midwestern university using Cheung's instrument. The model was partially supported. Confounding influences from a multinational sample influenced the results.

Introduction

This study tests the measurement model proposed at the AMCIS 2000 conference by Christy Cheung and Matthew Lee (Cheung and Lee, 2000). As shown in Figure 1, this model suggests that a customer's trust in Internet shopping (CTIS) is positively related to the trustworthiness of Internet vendors and the external environment, moderated by one's propensity to trust. One's perceived risk in shopping is negatively related to trust in Internet shopping. The managerial importance of this topic is clear. Customers that do not trust Internet shopping are not likely to make on-line purchases.

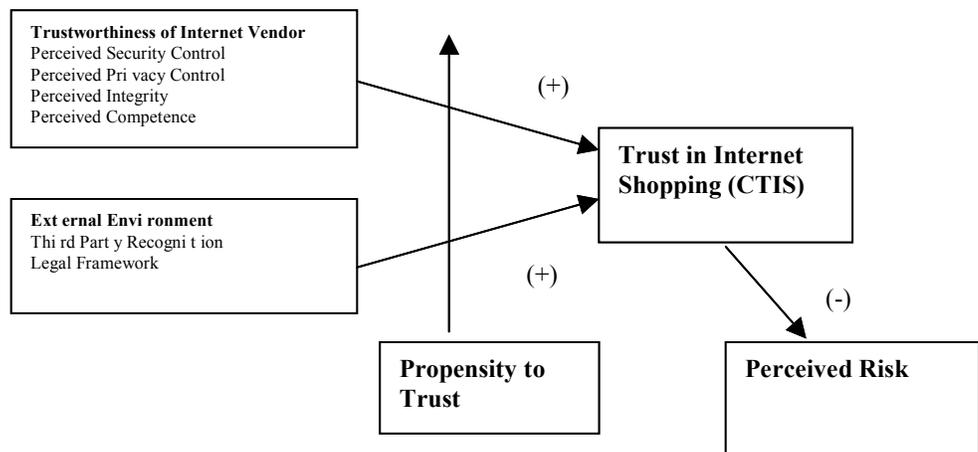


Figure 1. Research Model

Cheung and Lee (2000) developed this model considering three aspects: "properties of a trustor, attributes of a trustee and a specific context in which trust is conferred." (Cheung, 2000). In their work they started instrument development from scratch due to a lack of available instruments. They completed a three step process of item creation, scale development and instrument testing. In their work they identified thirteen hypotheses but do not present results of any hypotheses tests.

Methodology

The author took a sample of 118 volunteer students in day and evening graduate programs at a Midwestern university. Students were administered the 30 items from Cheung and Lee's instrument (shown in Appendix A). In addition, demographic questions were included on gender, age, nation of birth and nation of childhood. Notably, the composition of the sample comes from several nations as shown in Table 1.

Table 1. Nation of Birth and Childhood

Area	N of Nation of Birth	N of Nation of Childhood
US and Canada	51	57
Indian Sub-Continent	13	11
Far East	40	38
Other	12	11

Checks of internal reliability were consistent with Cheung and Lee's work, with one exception. Table 2 shows the Cronbach's alpha values for each of the constructs. The cultural environment construct did not work well with this sample, however. The two items in this construct, trust in family and trust in society, are not consistent when viewed across the sample. This may in fact be due to the multiple nationalities of the participants.

Table 2. Reliability Statistics

Construct	Cronbach's Alpha	Cronbach's Alpha - Cheung/Lee
Perceived Security Control	.8049	.794
Perceived Privacy Control	.7496	.810
Perceived Integrity	.8246	.764
Perceived Competence	.8379	.846
Personality	.8724	.881
Cultural Environment	.5307	.833
Experience	.9630	.880
Third Party Recognition	.8209	.795
Legal Framework	.9125	.882
Trust In Internet Shopping	.8643	.860
Perceived Risk	.8476	.864

In order to test the 13 proposed hypotheses from Cheung and Lee's work, the author used correlation and partial correlation.

Findings

Results for the 13 hypotheses originally suggested by Cheung and Lee are shown in Table 3 below.

These results show partial support for the Cheung and Lee model. The strongest aspect, the negative relationship between CTIS and Perceived Risk, is quite strong. The other relationships, however, are much weaker or are statistically insignificant. Notably, the Propensity to Trust construct does not appear to moderate the relationships as suggested in the model. It had no significant impact on correlations when controlled for.

Weak results in these tests prompted the author to look carefully at the data. A review of the data suggested that there are significant differences in levels of CTIS between participants of different nationalities. A one-way ANOVA (with a Bonferroni post hoc analysis) on the trust variable using place of birth as a factor, revealed significant differences in CTIS across the three areas (US/Canada, Indian Sub-continent and Far East). Appendix B shows the statistical result. This suggests that nationality may have an influence on CTIS and, since it is not specifically included in the model, be confounding the results.

Table 3. Hypothesis Results

Hypothesis	Hypothesis #	Correlation - Overall (US)	Significance - Overall (US)
<i>CTIS is negatively associated with perceived risk in Internet shopping.</i>	13	-.631 (-.616)	.000 (.000)
<i>The perceived security control of an Internet vendor is positively related to CTIS.</i>	1	.288 (.333)	.002 (.018)
<i>The perceived privacy control of an Internet vendor is positively related to CTIS.</i>	2	.142 (.171)	.126 (.234)
<i>The perceived integrity of an Internet vendor is positively related to CTIS.</i>	3	.169 (.276)	.068 (.052)
<i>The perceived competence of an Internet vendor is positively related to CTIS.</i>	4	.098 (.302)	.293 (.033)
<i>The perceived effectiveness of the third party recognition is positively associated with CTIS.</i>	5	.165 (.313)	.076 (.027)
<i>The perceived effectiveness of the legal framework is positively associated with CTIS.</i>	6	.106 (.272)	.253 (.056)
<i>Propensity to Trust moderates the relationships between CTIS and the perceived security control, perceived privacy control, perceived integrity, perceived competence, perceived effectiveness of 3rd party recognition and perceived effectiveness of the legal framework.</i>	7-12	No - r values drop when PTT is controlled	

A further test of Cheung and Lee's hypotheses done separately with US and Far Eastern participants yielded most interesting results. Studying US participants only yielded much more significant results (as shown in parenthesis in Table 3 above). Studying Far Eastern participants yielded much weaker results than the full sample. This may be due to subtle misunderstandings of the instrument by Far Eastern participants whose native language is not English.

Conclusion

This paper is a first step in testing Cheung and Lee's proposed measurement model. Several refinements are in order. First, the propensity to trust construct fared poorly in this study. It needs to be revisited in such a way as to work reliably across cultures. Second, the overall strength of the relationships in the data is not strong. Further testing with a larger sample size drawn from a single nationality may show stronger results. The model stands, however, as a starting point for further research in the area.

Reference

Cheung, C. and M. Lee, "Trust in Internet Shopping: A Proposed Model and Measurement Instrument", *Proceedings of the 2000 America's Conference on Information Systems (AMCIS)*, August, 2000 pp. 681-689.

Appendix A - Instrument

Perceived Security Control

- Q1 Internet vendors implement security measures to protect Internet shoppers.
- Q2 Internet vendors usually ensure that transactional information is protected from accidentally altered destroyed during transmission on the Internet.

Perceived Privacy Control

- Q3 Internet vendors concern about consumers' privacy.
- Q4 Internet vendors will not divulge consumers' personal data to other parties.
- Q5 I feel safe about the privacy control of Internet vendors.

Perceived Integrity

- Q6 Internet vendors are honest to their consumers.
- Q7 Internet vendors act sincerely in dealing with customers.

Perceived Competence

- Q8 Internet vendors have the ability to handle sales transactions on the Internet.
- Q9 Internet vendors have sufficient expertise and resources to do business on the Internet.
- Q10 Internet vendors have adequate knowledge to manage their business on the Internet.

Personality

- Q11 It is easy for me to trust a person/thing.
- Q12 My tendency to trust a person/thing is high.
- Q13 I tend to trust a person/thing, even though I have little knowledge of it.
- Q14 Trusting someone or something is not difficult.

Cultural Environment

- Q15 A high degree of trust exists in my family.
- Q16 I am living in a high trust society.

Experience

- Q17 Using the Internet has been a good experience to me personally.
- Q18 I have positive experiences of using the Internet.
- Q19 I have good experiences of using the Internet.

Third Party Recognition

- Q20 There are many reputable third party certification bodies available for assuring the trustworthiness of Internet vendors.
- Q21 I think third party recognition bodies are doing a good job.
- Q22 Existing third party recognition bodies are adequate for the protection of Internet shoppers' interest.

Legal Framework

- Q23 The existing law is adequate for the protection of Internet shoppers' interest.
- Q24 The existing legal framework is good enough to protect Internet shoppers.

Trust in Internet Shopping

- Q25 Internet shopping is unreliable.
- Q26 Internet shopping cannot be trusted, there are just too many uncertainties.
- Q27 In general, I cannot rely on Internet vendors to keep the promises that they make.

Perceived Risk

- Q28 Internet shopping is risky.
- Q29 Shopping on the Internet entails uncertainty or vulnerability.
- Q30 I find it dangerous to shop on the Internet.

Appendix 2

Descriptives
TRUST

	N	Mean	Std. Deviation	Std. Error
US	54	3.1173	1.0282	.1399
India	11	3.5455	1.5222	.4590
Far East	38	3.8202	.9852	.1598
Total	103	3.4223	1.1129	.1097

ANOVA
TRUST

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.206	2	5.603	4.867	.010
Within Groups	115.117	100	1.151		
Total	126.323	102			

Multiple Comparisons
Dependent Variable: TRUST
Bonferroni

(I) Q34	(J) Q34	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
US	India	-.4282	.3549	.692	-1.2924	.4360
	Far East*	-.7029	.2272	.008	-1.2561	-.1497
India	US	.4282	.3549	.692	-.4360	1.2924
	Far East	-.2747	.3673	1.000	-1.1692	.6197
Far East	US*	.7029	.2272	.008	.1497	1.2561
	India	.2747	.3673	1.000	-.6197	1.1692

*The mean difference is significant at the .05 level.