

**CUSTOMER TRUST ONLINE:
EXAMINING THE ROLE OF THE
EXPERIENCE WITH THE WEB SITE**

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ABSTRACT

Previous studies have identified trust as an important factor influencing customer participation in web-based commerce. In this empirical study, we test an expanded model that includes the effect of the customers' experience with and beliefs regarding a company's web site on their trust in the company itself. We found that a positive experience with a website that provides customers with enjoyment and perceived control leads to greater trust in the company itself through the customers' perceptions about the web site's usefulness and ease of use. We also confirmed a positive relationship between customer trust in a company and customer retention and intention to buy.

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INTRODUCTION

While customer trust has been studied extensively by marketing and management researchers and psychologists, it has also become relevant to Information Systems (IS) researchers who study web-based commerce. Online customers display low trust levels for web-based merchants (Culnan and Armstrong, 1999) and that is an important reason why many customers do not shop online (Hoffman et al., 1999). Given the lack of face-to-face interaction, the virtual nature of a web store, and often the lack of physical stores, customer trust is difficult to establish. The occasional announcements of hackers breaking into company databases and stealing credit card numbers and the general ignorance about the strength of encryption used today has also contributed to a decrease in customer trust online. The ongoing debate about privacy adds to the unease of online customers, further diminishing their level of trust. (Hoffman et al., 1999).

Even though trust is so important, it has been very difficult to study. One reason is that it is very difficult to define and measure (Mayer et al., 1995; Gulati, 1995). The definition of trust has varied from study to study but one of the definitions that has prevailed was provided by Mayer et al. (1995) and states that trust is “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.” This definition is general enough to encompass trust in all types of operations and transactions. The “actions” of the other party can be the timely

delivery of the product, the delivery of the right product previously agreed upon, or even the use of personal information gathered during the transaction.

LITERATURE REVIEW

Most IS research on online trust has been theoretical and conceptual. Some studies have discussed the various mechanisms used online to promote trust between trading parties including trusted third parties (Palmer et al., 2000; Van den Berg and Lieshout, 2001) and online reputation systems (Kollock, 1999; Resnick et al., 2000). Other studies have proposed new methods of promoting trust in electronic commerce such as agents and virtual reality technologies (Cassell and Bickmore, 2000; Papadopoulou et al., 2001), economic incentive mechanisms (Ba et al., 1999), government involvement (Schoder and Yin, 2000), and video-conferencing (Olson and Olson, 2000).

There have also been several studies that proposed new theoretical models of trust in electronic commerce (Ratnasingham, 1998; Friedman et al., 2000). Tan and Thoen (2000-2001) developed a generic model of trust where trust consists of two basic components: trust in the other party and trust in the control mechanisms used to ensure successful transactions. A more detailed typology of trust is proposed by McKnight and Chervany (2001-2002). The authors define four trust constructs (disposition to trust, institution-based trust, trusting beliefs, and trusting intentions) and several sub-constructs for each construct. They combine all constructs and their sub-constructs and develop an interdisciplinary model for trust.

There have been a few empirical studies examining online customer trust. An earlier study, using data collected in 1997, showed that two important reasons why

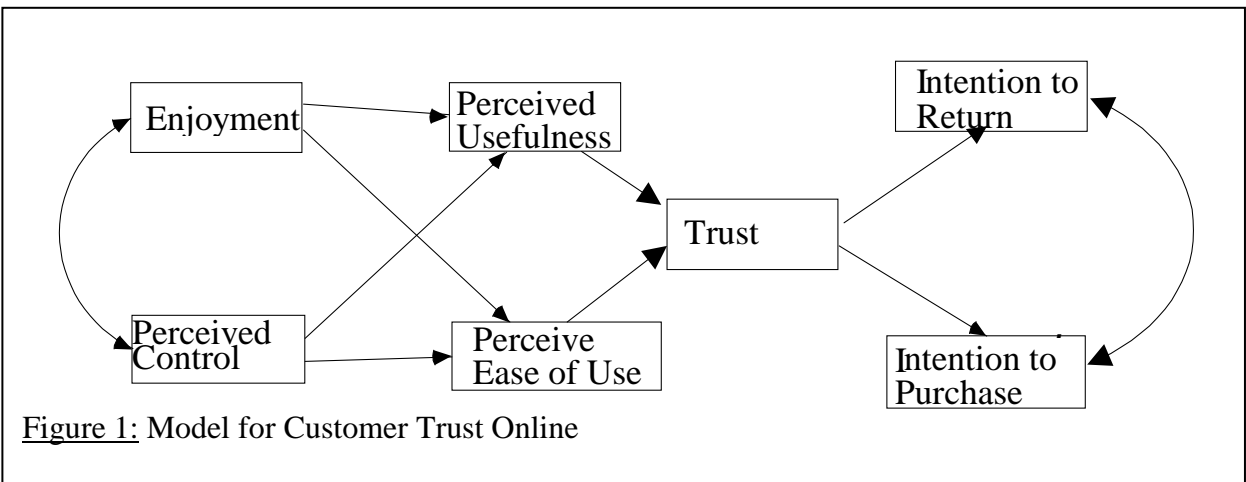
customers do not buy online are lack of trust in the security of online shopping and concern about privacy regarding personal information collected online (Hoffman et al., 1999).

The antecedents and consequences of trust were examined empirically in two related studies. The first examined the effect of perceived company size and perceived company reputation on the level of trust for that online company by customers (Jarvenpaa et al., 2000). The results indicated that reputation has a large positive association with trust and size has a smaller positive association that may depend on the type of company (the effect was significant for travel sites but not for bookstores). Trust also had a positive effect on willingness to buy through its positive relationship with attitude towards the company and its negative relationship with customer risk perception. The second study was a cross-cultural validation of the first (Jarvenpaa et al., 1999). The authors performed the same study in Australia, Israel, and Finland. The results showed no strong cultural differences in the model for trust indicating support for the generalizability of the results.

Cheung and Lee (2001) developed and validated a measurement instrument for a research model that describes the factors that influence trust in Internet shopping and its impact on perceived risk. The model was partially tested by Lee and Turban (2001) who found that the perceived integrity of an Internet merchant is positively related to customer trust in Internet shopping. That positive effect, however, is moderated by the trust propensity of the customer.

MODEL AND HYPOTHESES

The limited empirical research done on online customer trust has concentrated mostly on how customer perceptions of the online company affect their trust. However, while in offline commerce it is the salesperson that often influences the buyer's trust in the seller (Doney and Cannon, 1997) in the Internet context it is the website that does that (Lohse and Spiller, 1998). Therefore, one would expect that the customer experience with the web site would also have a strong effect on customer trust in the company. This study examines how the web site experience can influence customer trust in the company itself through customer beliefs about the web site. The model used can be seen in Figure 1.



The Technology Acceptance Model (TAM) has long been considered a robust framework for understanding how users develop attitudes towards technology and when they decide to adopt it (Davis, 1989; Mathieson, 1991; Szajna, 1996; Straub et al., 1995; Hu et al., 1999; Koufaris 2002). The two main belief variables of TAM are perceived usefulness and perceived ease of use of the technology. We expect that the two TAM belief variables will also be positively associated with customer trust in the web site and the company itself.

In the marketing literature, trust is positively related to the experience of the customer with the salesperson. Characteristics of the salesperson such as expertise (Crosby et al., 1990; Doney and Cannon, 1997) and likeability (Hawes et al., 1989; Doney and Cannon, 1997) are positively associated with customer trust in the salesperson that, in turn, has strong positive association with trust in the company (Doney and Cannon, 1997). In online commerce, the salesperson is replaced by the company's web site. As a result, the customers' experience with and perceptions of the web site can influence their assumptions about the nature of the company and its trustworthiness (Friedman et al., 2000; Tan and Thoen, 2000-2001). Trust in the company is partly determined by trust in its control mechanisms, one of which is its web site (Tan and Thoen, 2000-2001). Therefore, we believe that customer beliefs of perceived usefulness and perceived ease of use of the web site will have a positive effect on customer trust of the online company itself.

H1: Perceived usefulness of the web site is positively associated with customer trust in the online company.

H2: Perceived ease of use of the web site will be positively associated with customer trust in the online company.

We also test how customer beliefs about the web site are affected by the experience of the customer while visiting the site. One important experiential factor is enjoyment. Shopping enjoyment can have a significant impact on customer attitudes and behavior on the web and can increase customer intention to return (Jarvenpaa and Todd, 1997;

Koufaris, 2002). Research using the TAM model has found that perceived enjoyment of using a system has a positive relationship with perceived ease of use (Venkatesh, 1999; Venkatesh, 2000; Moon and Kim, 2001) and perceived usefulness of the system (Agarwal and Karahanna, 2000). Therefore, we expect that an enjoyable experience online will be positively associated with perceived ease of use and usefulness of the web site.

H3a: Enjoyment is positively associated with perceived ease of use of the web site.

H3b: Enjoyment is positively associated with perceived usefulness of the web site.

Another experiential factor in our model is customer perceived control, i.e. how much the customer feels in control over his or her actions while shopping at the company's web site. Perceived control has been studied in the context of electronic commerce and found to have a positive effect on customer attitudes and behavior (Ghani et al., 1991; Novak et al., 2000; Koufaris et al., 2001-2002). Perceived control is also similar to Bandura's self-efficacy (1982), since it is specific to an action and it can be different across situations or actions. Computer self-efficacy has in fact been shown to be strongly associated with perceived ease of use (Venkatesh and Davis, 1996). Also, perceived behavioral control is an important determinant of beliefs in the Theory of Planned Behavior (Ajzen, 1991) on which TAM is based. Therefore, we expect that our two belief variables (perceived usefulness and perceived ease of use) will be positively related to perceived control.

H4a: Perceived control is positively associated with perceived ease of use of the web site.

H4b: Perceived control is positively associated with perceived usefulness of the web site.

Customer trust in a company can play a significant role in determining the customer's actions regarding that company. Consistent with the Theory of Planned Behavior (Ajzen, 1991), customer trust (a belief) influences customer intentions. Empirical research has shown that trust increases customer intention to purchase a product from a company (Jarvenpaa et al., 2000) as well as customer intention to return to a company (Doney and Cannon, 1997). We expect our results to reflect those past findings.

H5: Customer trust is positively associated with customer intention to purchase

H6: Customer trust is positively associated with customer intention to return

Finally, an individual's trust propensity can have a significant effect on their trust in online shopping in general even when other important determinants of trust are present (Lee and Turban, 2001). We expect that individual trust propensity also has an effect on customer trust of a specific online company. Therefore we include trust propensity in our model as a control variable.

METHODOLOGY

In order to test our model, we adopted a survey approach. Subjects browsed a web site they had never visited before and searched for a particular product. Subsequently, they answered a series of questions regarding their experience on that site. The subjects were undergraduate and graduate students of a major Northeast U.S. university. Each participant was paid \$10 and made eligible for a drawing of \$100 for completing the experimental process, which took approximately thirty to forty-five minutes to finish.

During the sessions, each participant was first asked to indicate web sites, out of a list of eight, they had visited in the past. This served as a screening procedure that enabled us to send each subject to a web site they had not visited before. This way, we eliminated the effects of prior experience with the company and its web site on customer trust (Doney and Cannon, 1997). We directed each subject to a website they had not visited before and gave them a set of instructions that asked them to search for either a laptop or flight tickets for a trip to California. The subjects searching for a laptop were required to indicate the model, price, and certain product specifications and those shopping for the tickets were required to indicate airline, flight numbers, and ticket price. We chose to be very specific regarding the shopping tasks in order to ensure that the participants browsed the site extensively, becoming familiar with it, and thus increasing the validity of their survey responses. The sites used for laptops were PCPricelist (www.pcpicelist.com) and BCD2000 (www.bcd2000.com). The travel site choices were Expedia (www.expedia.com) and Trip.com (www.trip.com). Once the participants found their products and completed their responses on the instruction form, they were asked to fill out an online questionnaire.

The questionnaire was set up so that the participants were required to answer all the questions before they could submit their responses, eliminating any potential missing values in the dataset. The online survey instrument used in our study consisted of seven point Likert scales derived from previous research. The scales for perceived ease of use and usefulness were adapted from Koufaris (2002) and those for perceived control and enjoyment were adapted from Koufaris et al., (2001-2002). The scale used for trust was based on work by Jarvenpaa et al. (2000) and Doney and Cannon (1997) and the scale for trust propensity was based on Cheung and Lee (2001). Customer intention to buy and intention to return were single items derived from Koufaris (2002). The subject instructions for the travel sites and the survey instrument can be found in Appendix A.

RESULTS

Our sample size was 111 of whom 56 were male and 55 were female. Nearly 80% of the students were 25 years old or younger. In order to test our instrument for construct validity, we perform confirmatory factor analysis using AMOS 4.0. Ideally, we would test all of the items in one model. However, our sample size of 111 is not large enough to test the 26 different items of our instrument together. The number of cases per measured variable required for SEM is between 10 and 15 (Bentler and Chou, 1987; Stevens, 1996). Therefore we tested three separate confirmatory factor analysis models: one for Trust and Trust Propensity, one for Perceived Ease of Use and Perceived Usefulness, and one for Enjoyment and Perceived Control. Table 1 shows the Chi-square values and other fit indices along with reported guidelines for good model fit (Arbuckle and Wothke, 1999;

Jarvenpaa et al., 2000). Despite the significant Chi-square values for two of the models, all other indices show good fit.

Fit indices	Guidelines	Trust and Trust Propensity Model	Perceived Ease of Use and Perceived Usefulness Model	Enjoyment and Perceived Control Model
Chi-square		35.59 df=34 (p=0.394)	47.34 df=19 (p=0.000)	43.42 df=19 (p=0.001)
CMIN/DF	2<CMIN/DF<3	1.047	2.491	2.285
NFI	NFI>0.9	0.926	0.933	0.926
TLI	TLI>0.9	0.995	0.939	0.936
GFI	GFI>0.9	0.942	0.902	0.910
AGFI	AGFI>0.9	0.907	0.815	0.830
Delta 2	Delta 2>0.9	0.996	0.959	0.957

Table1: Fit indices and guidelines for confirmatory factor analysis models

We tested the reliability of each scale using Cronbach's alpha. The results can be seen in Table 2.

Scale	Mean	St. Dev.	Cronbach's alpha
Trust	4.2	1.16	0.87
Perceived Usefulness	4.49	1.72	0.93
Perceived Ease of Use	5.24	1.51	0.89
Enjoyment	4.25	1.64	0.94
Perceived Control	5.08	1.32	0.79
Trust Propensity	3.46	1.30	0.78

Table 2: Descriptives and reliability analysis for scales

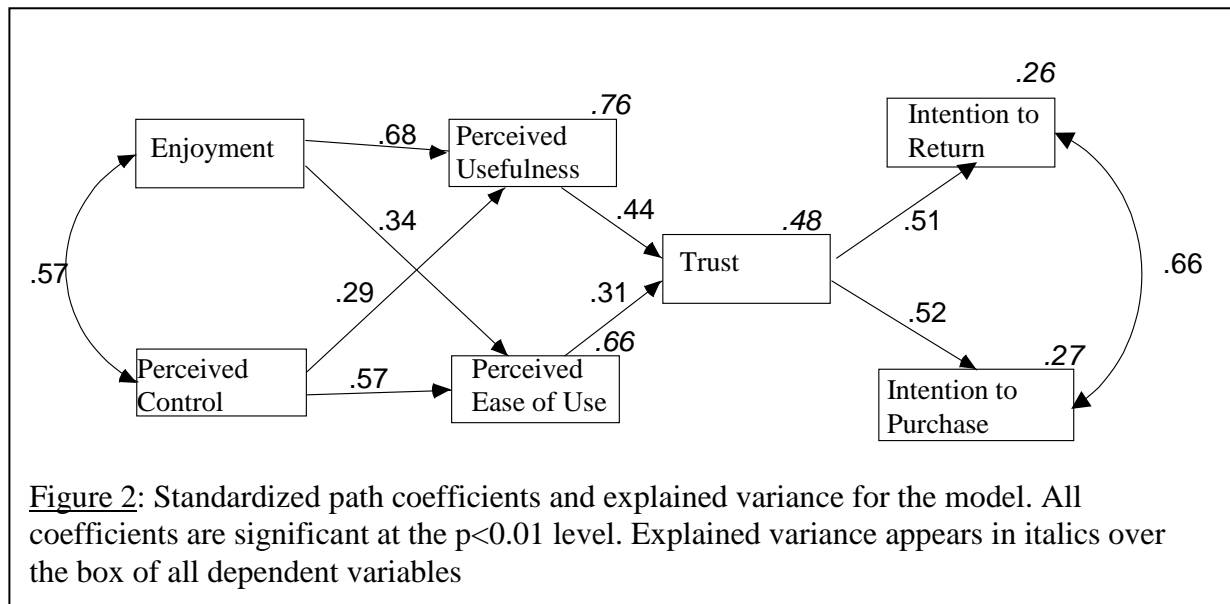
We tested the correctness of our model using Structural Equation Modeling techniques with AMOS 4.0. The Chi-square statistic of the model was 40.16 with 17 degrees of freedom (p=0.001) that would indicate a poor fit of the model. However, the

chi-square test is very sensitive to sample size so a large number of other indices are also used to test the model fit. Table 3 shows some of those indices along with reported guidelines for good model fit (Arbuckle and Wothke, 1999; Jarvenpaa et al., 2000).

Fit Index	Guidelines	Model values
Chi-square		40.16 df=17 (p=0.001)
CMIN/DF	2<CMIN/DF<3	2.363
NFI	NFI>0.9	0.928
TLI	TLI>0.9	0.928
GFI	GFI>0.9	0.923
AGFI	AGFI>0.9	0.838
Delta 2	Delta 2>0.9	0.957

Table 3: Fit indices and guidelines for model analysis.

The standardized path coefficients for this model are presented in Figure 2. Also, the variance explained for each dependent variable is given in italics on top of each square.



The model explains a significant proportion (48%) of variance in trust. In turn, trust alone explains 26% and 27%, respectively, of the variance in intention to return and intention to purchase. Even more impressive is the variance explained in the TAM variables by enjoyment and perceived control, 76% for perceived usefulness and 66% for perceived

ease of use. All path coefficients are significant at the $p < 0.001$ level indicating support for all of our hypotheses. Our control variable, trust propensity, did not have a significant relationship with customer trust.

DISCUSSION

Our study looked at how the web site experience can influence customer trust in the company itself through customer beliefs about the web site. We examined this effect after the first visit to a company's web site, before prior experience with the site or the company can become an important factor. This is one of the first studies to empirically test the effect of the customer's experience with and beliefs about a company's *web site* on the customer's trust in the company itself. Prior research has concentrated on the effect of customer beliefs about the *company* on their trust in the company. Our results have shown that a positive experience with the web site is also very important. If customers find a company's web site easy to use and useful they will also view the company more favorably and perceive it as being more trustworthy. The effect is significant even after the first customer visit to the web site. We also confirmed that customer trust in the company is an important determinant of customer retention and intention to buy. Past research has identified lack of trust as an important reason why customers do not participate in online commerce. Therefore, it is essential that companies design web sites that are useable and functional to earn the trust of their customers in order to retain them and persuade them to buy. The lack of salespersons in the online world makes the web site the most important representative of the company and our results confirm that.

We have also shown that two factors regarding the web site experience can have a positive effect on the customers' beliefs about the web site. Customers who enjoy their visits and feel in control while using the site are more likely to perceive the site as useful and easy to use. There is some research that indicates how web sites can be designed to be enjoyable and provide a sense of control for their customers. Web sites that provide value added information such as product reviews and recommendations as well as web sites designed to provide positive challenges to the user have been shown to offer a more positive and enjoyable experience (Koufaris et al., 2001-2002; Koufaris, 2002). Our study suggests that companies who provide such features may be able to increase their customers' trust in them.

An additional contribution of this study was the validation and extension of previous TAM studies. We confirmed prior research that found that enjoyment when using a system could increase the user's perceived usefulness and ease of use of the system (Venkatesh, 1999; Venkatesh, 2000; Moon and Kim, 2001; Agarwal and Karahanna, 2000). Our study showed that those relationships also hold in the context of web-base shopping. We also extended the work done on the antecedents of the TAM variables by looking at the impact of perceived control on them. The positive results of our study are consistent with the Technology of Planned Behavior that identifies perceived behavioral control as a determinant of beliefs (Ajzen, 1991).

Our study is not without limitations. Our sample consists of students who are not representative of the entire web customer population and the study used only two types of web sites, computer retailers and travel sites. Our results may not be generalizable to other types of customers or web sites. Due to practical limitations, we could not expand our

sample or web site types. Further research should test our results with different subjects and other types of online companies. There are also other potential determinants of customer trust that were not controlled in the study, such as prior experience with the web and trust in online shopping in general. Once again, our study was constrained by practical limitations. Our sample size did not allow us to have a very large set of variables. Future studies should test the significance of those additional variables.

Our study has added to our understanding of how customers come to trust an online company, an important factor in online commerce. We hope that it will also prompt new questions and further studies that will also provide more guidelines for web-based companies who are looking to improve their trustworthiness in the eyes of their customers in order to increase their customer base and sales.

APPENDIX

1. INSTRUCTIONS FOR SUBJECTS

Imagine that you are planning a vacation to California for the summer. You can assume that you have enough money to pay for such a vacation. Use the online travel site you have been assigned to research possible flights to California during the summer break. **DO NOT ACTUALLY BUY** anything from the travel agency. You will **NOT** be reimbursed for any purchases that you make. You are only required to research the information available and see if you can find a flight that you like. Do not research information at any other online travel site. Once you have found a flight that you are satisfied with, please fill out the following information and raise your hand to let the researchers know that you are ready to proceed to the second part of the study:

Flight to California

Airline _____ Flight# _____

Departure date _____

Return flight from California

Airline _____ Flight# _____

Return date _____

Round trip fare _____

2. SURVEY INSTRUMENT

Trust (Jarvenpaa et al., 2000; Doney and Cannon, 1997):

This company is trustworthy

I trust this company keeps my best interests in mind

This company wants to be known as one who keeps promises and commitments

This company will not always be honest with me (*reversed*)

I believe in the information that this vendor provides me

This company is genuinely concerned about me

Perceived Usefulness (Koufaris, 2002):

Using this web site can improve my shopping performance
Using this web site can increase my shopping productivity
Using this web site can increase my shopping effectiveness
I find using this web site useful

Perceived Ease of Use (Koufaris, 2002):

Learning to use this web site would be easy for me
My interaction with this web site is clear and understandable
It would be easy for me to become skillful at using this web site
I find this web site easy to use

Trust Propensity (Cheung and Lee, 2001)

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

Shopping Enjoyment (Koufaris et al., 2001-2002):

I found my visit to this web site interesting
I found my visit to this web site enjoyable
I found my visit to this web site exciting
I found my visit to this web site fun

Perceived Control (Koufaris et al., 2001-2002):

During my visit to this web site I felt confused (*reversed*)
During my visit to this web site I felt calm
During my visit to this web site I felt in control
During my visit to this web site I felt frustrated (*reversed*)

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