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Dan J. KIM
Michigan State University

Donald L. FERRIN
Singapore Management University, donferrin@smu.edu.sg

H. Raghav Rao
State University of New York at Buffalo

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ANTECEDENTS OF CONSUMER TRUST IN B-TO-C ELECTRONIC COMMERCE

Dan J. Kim
Michigan State University
dankim@msu.edu

Donald L. Ferrin
State University of New York at Buffalo
dlferrin@acsu.buffalo.edu

H. Raghav Rao
State University of New York at Buffalo
mgmtrao@acsu.buffalo.edu

Abstract

Despite the importance of trust in electronic commerce, there is insufficient theory and evidence concerning the determinants of consumer trust about an Internet vendor's trustworthiness, and the influence of consumer trust on the consumer's purchasing intention. The purpose of this study is to: i) develop a theoretical framework identifying the antecedents of a consumer's trust and purchase intention, ii) test the proposed model using Structural Equation Modeling, analyzing Internet consumer behavior data collected via a Web survey, and iii) provide theoretical and managerial implications. The results of the study show that consumers' disposition to trust, privacy protection, security protection, consumers' perceptions about the selling party's reputation, information quality, and system reliability are strong antecedents of consumers' trust. Interestingly, the presence of a third-party seal did not influence consumers' trust nor consumers' purchase intention. Finally, consumer's trust was a strong predictor of their purchasing intention.

Keywords: Electronic commerce, antecedents of trust, B-to-C consumer trust, security, privacy, Internet consumer behavior

Introduction

Trust is important in exchange relations because it is a key element of social capital (Mayer et al. 1995), and is related to a firm's performance, customer satisfaction, competitive advantage, and other favorable economic outcomes. Trust is identified as an important factor in several pieces of relevant literature which include marketing, behavioral science and electronic commerce (Beatty et al. 1996; Czepiel 1990; Dirks et al. 2001a; Dirks et al. 2001b; Hoffman et al. 1999; Jarvenpaa et al. 1998; Kramer 1999). According to Urban's study (2000), consumers make Internet purchasing decisions based on trust. Since consumer trust plays an essential role in online transactions, it is important to identify antecedents that affect a consumer's trust.

Several researchers and professionals (Ba et al. 1999; Beatty et al. 1996; Brynjolfsson et al. 2000; Czepiel 1990; Hoffman et al. 1999; Jarvenpaa et al. 1998; Ratnasingham 1998; Urban et al. 2000) have focused on various issues of trust in e-commerce. Even so, some scholars (Ratnasingham 1998) have argued that the study of trust has been problematic for several reasons. These include: problems with the definition of trust; confusion between trust and its antecedents, difficulties of observing and measuring trust, the tendency of particular disciplines to provide only partial descriptions of trust antecedents, and a lack of specificity about who the parties are (e.g., trustor and trustee) in a research context in which trust is relevant (Mayer et al. 1995).

This study attempts to consider some of the above issues. We develop a theoretical framework identifying the antecedents of trust and purchase intentions, and test the proposed model using a Structural Equation Modeling technique. The testing is carried out on Internet consumer behavior data collected via a Web survey.

The Antecedents of Trust and Literature Reviews

Several researchers have tried to categorize antecedents or factors of a consumer trust (Barney et al. 1994; Doney et al. 1997; McKnight et al. 2002b; Walczuch et al. 2001; Zucker 1986). Zucker (1986) proposed three major categories which can be used to build trust: 1) process-based (e.g. reputation, experience), 2) characteristic-based (e.g. disposition), and 3) institutional-based (e.g. third-party certification). Doney and Cannon (1997) developed five distinct trust building processes in business relationships: 1) calculative process (trustor calculates the costs and/or rewards of a target acting), 2) prediction process (trustor develops confidence that target's behavior can be predicted), 3) capability process (trustor assesses the target's ability to fulfill its promises), 4) intentionality process (trustor evaluates the target's motivations), and 5) transference process (trustor draws on proof sources from which trust is transferred to the target). They also categorized characteristics of the supplier firm, salesperson and the relationship into four types. Barney and Hansen (1994), and Lewis and Weigett (1985) defined the three levels of customer trust:

Table 1. Selected Studies on Category of Trust Antecedents/Processes

Study Topic and Author(s)	Category of Antecedents	Subcategories or Set of Antecedents
Three central modes of trust production (Zucker 1986)	Process-based	Reputation, brands, gift-giving
	Characteristic-based	Family background, ethnicity, sex
	Institutional-based	Professional, firm associations, bureaucracy, banks, regulation
Five distinct trust building processes (Doney et al. 1997)	Calculative process	Firm's reputation, size, willingness to customize, confidential information sharing, length of relationship with firm, length of relationship with salesperson
	Prediction process	Length of relationship with firm, salesperson likeability, salesperson similarity, frequent social contact with salesperson, frequent business contact with salesperson, length of relationship with salesperson
	Capability	Salesperson expertise, salesperson power
	Intentionality	Firm's willingness to customize, firm's confidential information sharing, salesperson likeability, salesperson similarity, frequent social contact with salesperson
	Transference	Firm's reputation, supplier firm size, trust of supplier firm, trust of salesperson
Trust of a supplier firm and salesperson (Doney et al. 1997)	Characteristics of the supplier firm and firm relationship	Reputation, size, willingness to customize, confidential information sharing, length of relationship
	Characteristics of the salesperson and salesperson relationship	Expertise, power, likeability, similarity, frequent business contact, frequent social contact, length of relationship
Three levels of customer trust (Barney et al. 1994; Lewis et al. 1985)	Strong trust	Interactions, cognitive trust (e.g. the similarity), emotional trust
	Semi-strong trust	Rational-calculation-based trust (e.g. a company's reputation, the threat of punishment)
	Weak trust	Transferred trust (e.g. a well developed market, or word-of-mouth)
Three dimensional generic typology of trust (Mayer et al. 1995)	Ability	Competency, experience, institutional endorsements, knowledgeability
	Integrity	fairness, fulfillment, loyalty, honesty, dependability, reliability,
	Benevolence	Concern, empathy, faith, receptivity

1) Strong trust, 2) Semi-strong trust, 3) Weak trust. Nhattacherjee (2002) proposed three key dimensions of trust: 1) trustee’s ability, 2) benevolence, and 3) integrity, based on a cross-disciplinary literature review which dealt with the dimensions of trust. Mayer et al. (1995) defined trust as a behavioral intention centered upon the expectations of another person. Based on this definition, they proposed a model of dyadic trust in organizational relationships that includes characteristics of both the trustor and trustee which influence the formation of trust. The three characteristics included in the model, representing the perceived trustworthiness of the trustee, are benevolence, integrity, and ability. Figure 1 provides a summary of these typologies.

The Research Model and Constructs

In traditional commerce, trust is affected by the characteristics of customers, and the selling party (salespersons and company) as well as the interactions between the two parties involved (Burt et al. 1996; Doney et al. 1997; Shapiro et al. 1992; Swan et al. 1999). It is also holds true in electronic commerce. Therefore, based on the above-described studies, we developed three categories of antecedents which influence a consumer’s trust toward an electronic commerce vendor. The three categories and a sampling of trust antecedents from previous studies are summarized as follow:

- 1) Consumer personality-oriented: disposition to trust, Internet shopping style
- 2) Consumer experience-oriented: familiarity, ease of use, Internet experience, e-commerce experience, satisfaction
- 3) Consumer perception (observation)-oriented: privacy protection, security protection, presence of third party seals, system reliability, information quality, reputation

The personality-oriented and experience-oriented antecedents (except ease-of-use experience, and satisfaction) are related to the characteristics of consumers, which are not easy to improve and manage from the selling party’s perspectives. The perception-oriented antecedents are associated with salespersons (Websites), company (brand image) and interactions (interface) between the two parties. Since in light of the difficulty of controlling all antecedents at the same time, this study mainly concentrates on the perception-oriented antecedents with some personality and experience-oriented antecedents. Consumer disposition to trust, familiarity with a selling party, ease-of-use, and Internet experience are included in the research model because some studies have shown evidence that they are strong antecedents of consumer trust (Gefen 2000; Luhmann 1979; Mayer et al. 1995; Rotter 1971).

Even though we are interested in the antecedents of trust, there is concern that some antecedents of trust may have a direct effect on purchase intention (McKnight et al. 2002a; McKnight et al. 1998). Therefore it is necessary, at minimum, to test the direct effects of antecedents on a consumer’s purchase intention. Figure 1 shows the research model including direct paths from antecedents to trust and intention. The description of each construct and their relationships with trust follow.

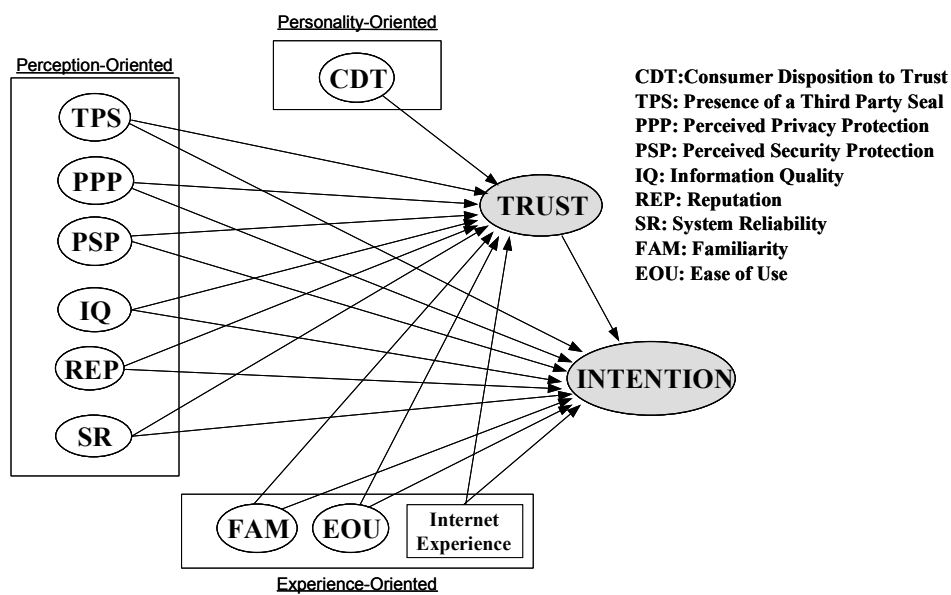


Figure 1. Research Model

A Consumer Trust (TRUST)

In this paper, we define trust as *a consumer's subjective belief that the selling party or entity will fulfill its transactional obligations as the consumer understands them and as such transactions are enabled by electronic processes.*

Trust plays a vital role in almost any commerce involving monetary transactions (Gefen 2002; Jarvenpaa et al. 1999; Urban et al. 2000). Internet business is much more based on the consumer's trust in the processes, in contrast to that of traditional business involving brick and mortar stores, where trust is based on face-to-face personal relationships. Peter Grabosky, in 'The Nature of Trust Online', supports the idea that the key to success in Internet business is the establishment of trusted processes (Grabosky 2001). This fact mandates that Internet sellers create an environment in which a prospective consumer can be relaxed and confident about any prospective transactions. Thus we propose that consumer trust positively influences a consumer's purchase intention in an electronic transaction.

Intention to Purchase (INTENTION)

Intention to purchase (INTENTION) refers to the degree to which a consumer intends to purchase from a certain vendor through the Web. The theory of reasoned action (TRA) presumes that volitional behavior is determined by intentions to act. Ajzen and Fishbein (1980) point out that behavior intention (intention to purchase in this study) is a predictor of actual behavior (purchase) and there is a strong correlation between behavioral intentions and actual behavior (Sheppard et al. 1988; Venkatesh et al. 2000). A consumer's purchase intention is one of the interesting variables for most e-shop vendors.

Consumer Disposition to Trust (CDT)

Consumer disposition to trust refers to a customer's personality traits that lead to generalized expectations about trustworthiness, which is a consumer-specific antecedent of trust. Since consumers have different developmental experiences, personality types, and cultural backgrounds, they differ in their inherent propensity to trust (Gefen 2000). This tendency is not based upon experience with or knowledge of a specific trusted party, but it is the result of ongoing lifelong experiences and socialization (Fukuyama 1995; McKnight et al. 1998; Rotter 1971). If a consumer has a high tendency to trust others in general, this disposition is particularly influential if that same customer has not had extensive personal interaction with the selling parties (McKnight et al. 1998; Rotter 1971). Consumer disposition to trust is an antecedent of trust, but it is not directly related to consumer behavior intention.

Presence of a Third Party Seal (TPS)

The presence of a third party seal refers to the quality assurance of Internet vendors by third party certifying bodies (e.g. banks, accountants, consumer unions, and computer companies). Recently, a wide variety of third party seals was introduced to help create trust in electronic commerce. The purpose of seals is to provide assurance to consumers that a Website discloses and follows its operating practices, that it handles payments in a secure and reliable way, that it has certain return policies, or that it complies with a privacy policy that says what it can and cannot do with the collected personal data (Castelfranchi et al. 2001; Koreto 1997; Shapiro 1987). An example of a third party involved in the trust of online transactions is TRUSTe, a non-profit, privacy seal program. The TRUSTe trust mark on Websites informs buyers that the owners have openly agreed to disclose their information gathering and dissemination practices, and that their disclosure is backed by credible third-party assurance (Benassi 1999).

The basic argument on the presence of a seal and consumer trust is that the seal on a vendor's site issued from certifying authorities may assure consumers that the site is a reliable and credible place to do business. Therefore, when Internet customers see the seal on a given site, this theory holds that it creates a higher level of trust in that selling Website.

Perceived Privacy Protection (PPP)

Perceived privacy protection refers to a consumer's perception of the likelihood or intention of Internet vendors in protecting the consumers' personal information, which is collected during electronic transactions. The information is protected from

unauthorized use or the disclosure of confidential information. At the time of a transaction, the online seller collects the names, e-mail addresses, phone numbers, and home addresses of buyers. Some sellers pass the information on to telemarketers. For many online consumers, loss of privacy is a main concern. In a recent survey, 92% of survey respondents indicated that they do not have confidence that companies will keep their information private, even when the companies promise to do so (Light 2001). These increasing consumer concerns are forcing sellers to consider privacy protection measures to increase their trustworthiness and thereby to encourage online transactions at e-shops.

Consumers often perceive that one of the obligations of a seller is that the seller should not share or distribute the buyer's private information. Since this is perceived as an obligation that the seller has under the contract, buyers will be more likely to trust a seller who is perceived as willing to protect privacy.

Perceived Security Protection (PSP)

Perceived security protection refers to a consumer's perception that the e-shop will fulfill security requirements, such as authentication, integrity, encryption, and non-repudiation. How a consumer perceives security protection when making online transactions depends on how clearly she or he understands the level of security measures implemented by the seller (Friedman 2000). When an ordinary consumer finds security features (e.g. a security policy, a security disclaimer, encryption, a safe shopping guarantee, SSL technology, etc) on the seller's Website, he or she can recognize the seller's intention to fulfill the security requirements during the online transactions. This positively affects the trustworthiness of the seller as far as security is concerned, and thus the consumer feels comfortable completing the transaction.

Information Quality (IQ)

Even the definition of information is a complex concept and quality of information may be interpreted in multiple ways (e.g. accuracy, relevance, timeliness, reliability, sufficiency, etc). Information quality (IQ) refers to a consumer's general perception of the accuracy and completeness of Website information as it relates to products and transactions. It is well recognized that information on the Internet varies a great deal in quality, ranging from highly accurate and reliable, to inaccurate and unreliable, and even to intentionally misleading. It is often very difficult to tell how frequently the information in Websites is updated and whether the facts have been checked or not (Pack 1999). Thus, potential purchasers on the Internet are likely to be particularly attentive to the quality of information on a Website because the quality of information should help them make good purchasing decisions. To the extent that consumers perceive that a Website presents quality information, they are more likely to have confidence that the vendor is reliable, and therefore will perceive the vendor as trustworthy.

As buyers perceive that the website presents quality information, they will perceive that the seller is interested in maintaining the accuracy and currency of information, and, therefore, will be more inclined to fulfill its obligations, and in a better position to fulfill its obligations.

Positive Reputation of the Selling Party (REP)

Reputation of the selling party refers to the degree of esteem in which public consumers hold a selling party. Positive reputation has been considered a key factor for creating trust in organizations by marketing (Doney et al. 1997; Ganesan 1994) and electronic commerce (Jarvenpaa et al. 1999). Reputation-building is a social process dependent on past interactions (e.g. whether that business partner was honest before) between consumers and the selling party (Zacharia 1999).

A positive reputation provides information that the selling party has honored or met its obligations toward consumers in the past, or, in the case of a negative reputation, that it has failed to honor or meet its obligations. Based on this reputational information, a consumer may infer that the selling party is likely to continue in its behavior. In the case of a positive reputation, one is likely to infer that the company will honor its specific obligations to oneself, and therefore conclude that the selling party is trustworthy. By the same reasoning, an individual may conclude that the selling party will not honor its specific obligations, and hence conclude that it is untrustworthy. A positive reputation generates a feeling of trust and willingness to engage in the transaction.

System Reliability (SR)

System reliability refers to the consumer's perception that a Web vendor system is always available, fast and makes few errors at all levels, that the transaction record is correct, and that services will not fail during a transaction. As a technical dimension to support electronic commerce, system reliability considers key factors such as the following: access is always fast and available, very few errors are allowed at all levels, the transaction record is correct and remains correct, and services do not fail during a transaction. For example, a site may not totally fail but site access may become so slow that a sale is lost. This is not a hard failure, but may be classified as a soft failure. Even, in the case of a soft failure, consumers' trust regarding that site may be negatively impacted.

Familiarity with the Selling Party (FAM)

Familiarity with the e-shop is a consumer experience-oriented antecedent of trust, which refers to the degree of consumers' acquaintance with the selling party. Familiarity would include enough knowledge to search for products and information, and to order through the Website's purchasing interface.

Familiarity is a "precondition or prerequisite of trust" (Luhman 1979), which is an antecedent of trust. Familiarity leads to an understanding of the current actions while trust deals with beliefs about the future actions of other entities (Gefen 2000). For example, a consumer's familiarity based on previous good experience with salespersons (i.e. Website), their services (i.e. searching products and information, etc) lead the consumer to create concrete ideas of future expectations. As in electronic commerce in general, the more customers are familiar with such a selling party, the more their favorable expectations (trust) are likely to have been confirmed. It is thus hypothesized that more familiar a consumer is with a selling party, that level of familiarity may affect customers' trust in the selling entity.

Ease of Use (EOU)

Ease of use of a Website primarily deals with ease of navigation, ease of searching for products and information, and ease of understanding content. These trappings, along with the user's movement throughout the site, are as integral to the overall user experience as the transaction the user wants to execute. Parallel to the importance of user interface design for software development, the Internet Website interface design has received enormous research attention. Poorly designed e-shop sites have an adverse influence on consumers' shopping behavior (Lohse et al. 1998). We posit that ease of use increases a consumer's trust toward the selling party.

Data Collection and Research Methodology

This study used a Web-based survey. Web-based surveys have many advantages over traditional methods: they are convenient, cheap, fast, more accurate, and can survey hard-to-reach respondents. On the other hand, there are some limitations to Web surveys: unequal opportunity and self-selection to participate (David 2000; McCullough 1998). Even though only respondents who are able to access the Internet were able to participate in this survey, this bias is exactly what is desired of the data for respondents of this study, since it provides them with data about actual Internet customers. That is why a Web-based survey was chosen.

The instrument development was carried out following the three stages suggested by Moore and Benbasat (1991): item creation, scale development, and instrument testing. The data of this study were collected from a group of students enrolled in two public American universities. Online consumers are generally younger and more educated than are conventional consumers, according to the OECD report (OECD 1998) and Kotkin's research (Kotkin 1998). While students represent only a portion of the e-shop population, several studies (Houston et al. 1999; Kovar et al. 2000; McKnight et al. 2002b) have utilized them as subjects, as they provide a reasonable surrogate for online consumers.

The human subjects participated in the study voluntarily for extra credit. A total of 512 responses were received. After eliminating incomplete and inappropriate responses (e.g. duplicate), a total of 468 usable responses were included in the sample for construct validation and hypothesis testing. The mean age of the respondents is 21.53. Male responses accounted for approximately 58 %

of the sample population while female accounted for 42 % of the sample. The average level of self-reported skills on the computer and Internet are 5.31 and 5.52 respectively in terms of 1-Novice to 7-Expert scale.

To test the proposed research models, data analyses for both the measurement model and structural model were performed using the structural equation modeling technique of Partial Least Squares (PLS) and factor analysis method. The PLS program used to perform the analysis was PLS-Graph 3.0.279 with bootstrapping method (Ravichandran et al. 2000; Wixom et al. 2001). As a second generation data analysis technique (Bagozzi et al. 1982), PLS analyzes structural equation models, including measurement and structural models with multi-item variables that contain direct, indirect, and interaction effects (Chin 1998b). PLS can be used not only for theory confirmation, but also for suggesting where relationships might or might not exist and suggesting propositions for later testing (Chin 1998b; Wold 1985). The combined analysis of the measurement and the structural model enables measurement errors of the observed variables to be analyzed as an integral part of the model, and factor analysis to be combined in one operation with the hypotheses testing (Gefen et al. 2000). To ensure the appropriateness of the research instrument, it was tested for content validity, reliability and construct validity.

To ensure content validity, a thorough review of the literature on the subject of the study was conducted. The questionnaire was also pilot tested by having a panel of experts (professors and IS professionals) review it, after which necessary changes were made to improve both the content and clarity of the questionnaire. Then a sample of respondents separate from those included in the pilot test was asked to check the questionnaire. These and all pilot test respondents were excluded from the sample used for data analysis.

Since all variables in this study are reflective, the assessment of the measurement model includes the estimation of internal consistency for reliability, and the convergent and discriminant validity for construct validity (Bollen 1989; Chin et al. 1995). The internal consistency for reliability of the measurement models was tested using Cronbach's Alpha and Fornell's composite reliability¹ (Fornell et al. 1981). The Cronbach reliability coefficients of all variables are higher than the minimum cutoff score of 0.60 (Nunnally 1978), 0.65 (Lee et al. 1999), or 0.70 (Nunnally 1978; Nunnally et al. 1994). Unlike the Cronbach's alpha, which implicitly assumes that each item carries the same weight, the composite reliability relies on the actual loadings to construct the factor score and is thus a better measure of internal consistency (Fornell et al. 1981). Table 2 shows the descriptive statistics of constructs, reliability (Cronbach's Alpha) of the scales, and sources from which they were adapted.

Construct validity was examined by convergent validity and discriminant validity (Chin et al. 1997). Convergent and discriminant validity are both considered subcategories or subtypes of construct validity. The important thing to recognize is that they work together since neither one alone is sufficient for establishing construct validity. The acceptable level of convergent validity is when all item loadings are greater than 0.50 (Wixom et al. 2001), and the items for each construct load onto only one factor with an eigenvalue greater than 1.0; this is an indication of convergent validity. The composite reliability should be greater than the benchmark of 0.7 to be considered adequate as recommended by Fornell and Larcker (1981). All composite reliabilities of constructs have a value higher than 0.7, indicating adequate internal consistency (Nunnally 1978). All constructs have an Average Variance Extracted (AVE), a construct validity measure, of at least 0.5 (Fornell et al. 1981). AVE having greater than 0.5 means that more than 50% of the variance of the measurement items can be accounted for by the constructs. Table 2 shows the summarized reliability indices. The Reliability alpha, the composite reliability, and the calculated AVE of all constructs have values higher than the suggested criteria.

¹Composite Reliability =
$$\frac{(\sum \lambda_i)^2 \text{var } F}{(\sum \lambda_i)^2 \text{var } F + \sum \Theta_{ii}}$$

Table 2. Descriptive Statistics and Reliability Indices for Constructs

Constructs	Number of Items	Mean	S.D.	Alpha	Composite Reliability	AVE ^a	Scales adapt from
Consumer Disposition to Trust (CDT)	4	4.41	1.07	0.85	0.899	0.899	(Gefen 2000)
Presence of Third Party Seal (TPS)	4	4.49	1.08	0.85	0.907	0.907	New items
Privacy Protection (PPP)	6	3.96	1.42	0.90	0.924	0.924	(Chen 2000)
Security Protection (PSP)	5	5.16	.97	0.86	0.898	0.898	(Gefen 2000; Swaminathan et al. 1999)
Information Quality (IQ)	7	5.60	.95	0.95	0.957	0.957	(Doll et al. 1988)
Reputation (REP)	4	5.66	.98	0.84	0.906	0.906	(Doney et al. 1997; Gefen 2000; Jarvenpaa et al. 2000; Moorman et al. 1993)
System Reliability (SR)	4	5.42	.98	0.89	0.934	0.783	(Larcker et al. 1980)
Familiarity (FAM)	4	4.82	1.47	0.92	0.962	0.962	(Gefen 2000; Kohli 1989)
Ease of use (EOU)	4	5.81	1.03	0.92	0.944	0.807	(Davis 1989; Doll et al. 1988; Moore et al. 1991)
Consumer Trust (TRUST)	3	5.02	.97	0.80	0.911	0.911	(Gefen 2000; Jarvenpaa et al. 2000; Portz 2000)
Intention to Purchase (INTENTION)	3	5.03	1.26	0.79	0.879	0.707	(Gefen 2000; Jarvenpaa et al. 2000)

Note: N= 468

$$^a\text{Average Variance Extracted} = \frac{\sum \lambda_i^2 \text{ var } F}{\sum \lambda_i^2 \text{ var } F + \sum \Theta_{ii}}$$

The average variance extracted (AVE) can also be used to evaluate discriminant validity. The AVE from the construct should be higher than the variance shared between the construct and other variables in the model (Chin 1998a; Fornell et al. 1981). Discriminant validity can be checked by examining whether the correlations between the variables are lower than the square root of the average variance extracted. Table 3 indicates that all the square roots of each AVE value are greater than the off-diagonal elements. This indicates discriminant validity among variables.

Table 3. Correlations of Latent Variables

	CDT	FAM	PTS	REP	SR	EDU	PPP	PSP	IQ	TRUST	INTENTION
CDT	0.83										
FAM	0.02	0.93									
PTS	0.02	0.09	0.84								
REP	0.17	0.41	0.10	0.84							
SR	0.07	0.04	0.00	0.06	0.88						
EOU	0.16	0.04	0.04	0.07	0.01	0.90					
PPP	0.10	0.16	0.03	0.25	0.02	0.03	0.82				
PSP	0.10	0.09	0.06	0.13	0.03	0.04	0.12	0.80			
IQ	0.20	0.33	0.12	0.50	0.07	0.17	0.04	-0.16	0.87		
TRUST	0.23	0.30	0.05	0.48	0.10	0.14	0.68	0.21	0.63	0.88	
INTENTION	0.09	0.04	0.02	0.35	0.03	0.05	0.26	-0.13	0.41	0.44	0.84

Diagonal elements are the square root of Average Variance Extracted. These values should exceed the inter-construct correlations for adequate discriminant validity.

Structural Model Assessment

The assessment of the structural model includes estimating path coefficients and R-square. Both R-square and the path coefficients indicate model fit, i.e., how well the model is performing (Hulland 1999). The model fit will be analyzed as a measure of the validity of the model, and statistical testing (t-test) of path coefficients is used to test the relationships. The R-square value is an indicator of how well the model fits the data (Chin 1998b). Figure 2 shows the results of structure model assessment. Significant paths at the .05 level are shown with a solid line arrow. The results indicate consumer trust (TRUST) shows a strong positive effect on a consumer’s purchasing intention (INTENTION). As a consumer personality-oriented antecedent, a consumer’s disposition to trust (CDT) positively affects the consumer’s trust (TRUST). In the consumer perception-oriented antecedents, a consumer’s perceived privacy protection (PPP), a consumer’s perceived security protection (PSP), information quality (IQ), reputation of selling party (REP), and system reliability (SR) have positive effects on a consumer’s trust. In the perception-oriented antecedents, only information quality has positively affects a consumer’s purchase intention while familiarity (FAM) and ease of use (EOU) positively affects a consumer’s purchase intention as the experience-oriented antecedents. Interestingly they do not show significant effects a consumer trust at the 0.05 level. Another interesting result is that the presence of third party seal (TPS) does not show significant paths to consumer trust or purchase intention. The R-square for TRUST is .65 reflecting that the model provides a strong explanation of the variance in TRUST.

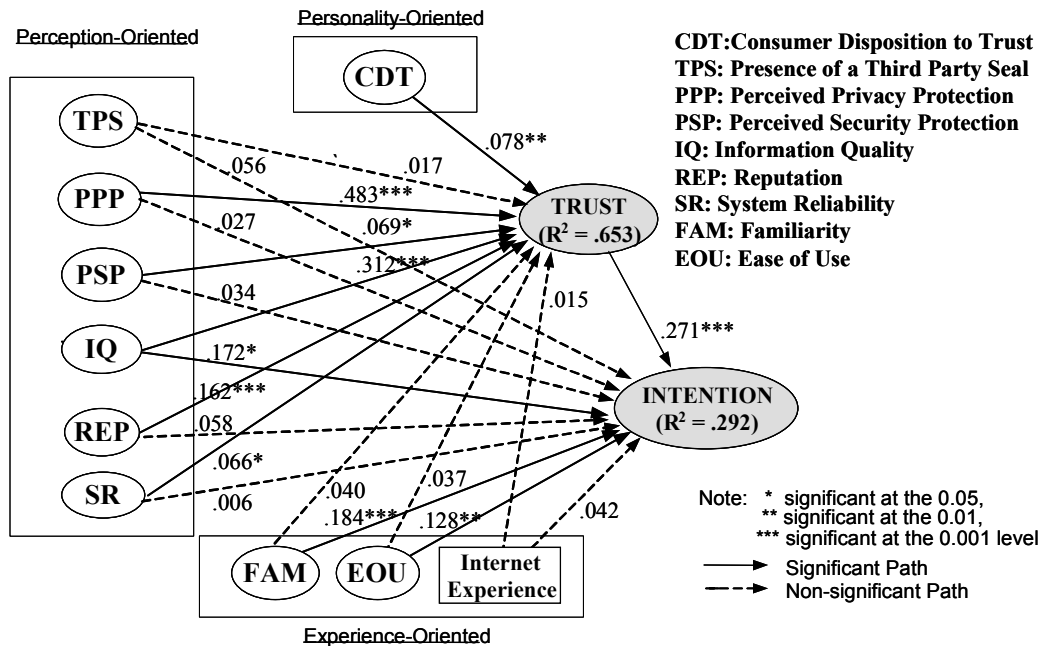


Figure 2. Results of Structure Model

Discussion and Conclusion

The empirical findings suggest that a customer’s trust strongly affects the customer’s Internet purchasing intention. According to the results, all of the perception-oriented antecedents except the presence of a third party seal (TPS) have a significant effect on consumers’ trust. Two experience-oriented antecedents (familiarity with the selling party and ease of use a Website) increase consumer’s purchase intention. This study also provides evidence that consumers’ perception of selling party’s privacy and security protection efforts significantly affect consumers’ trust formation. In other words, the more consumers perceive that a Website is well prepared for protect consumers’ privacy and security, the more they feel comfortable to make Internet transactions.

Our findings provide evidence that trust plays an important role in transmitting the effects of website features to consumers’ purchase intentions. Trust fully mediated the effects of PPP, PSP, REP and SR on purchase intentions, and partially mediated the effects of IQ on purchase intentions. For managers, this suggests that a number of website features may only influence purchase

intentions by influencing trust, which highlights the importance of building and preserving trust. For researchers, this adds to the evidence that trust is an important if not crucial explanatory variable in e-commerce.

Perhaps the most interesting finding is that the presence of third-party seals did not influence consumers' trust as well as purchase intention. A possible interpretation of this fact is that consumers did not recognize the meaning of third party seals on the Websites. This interpretation is supported by the data collected that 73.7% of respondents said they were not aware that Websites are endorsed by third parties. Considering that there is a relatively large industry centered on providing third-party seals, the industry should provide more consumer education about their seal services. In addition, further research should be done to examine whether, and the extent to which, third party seals influence consumers' perceptions and buying behavior.

The study has both theoretical and practical implications. First, from a theoretical perspective, the model of trust provides a framework of antecedents of consumers' trust in an e-shop's Website. Second, the findings of this study extend our knowledge of factors influencing purchasing behavior from the conventional market to the Internet cyber market. Third, this study tests the direct relationships both between trust antecedents and consumer trust, and between antecedents and purchase intentions. It also tests the direct relationship between consumer trust and a consumer's intention to purchase from a website. Thus, it provides new insights into the dynamics of trust in B-to-C electronic commerce transactions.

From a practical standpoint, the results highlight several trust-enhancing factors that guide the successful completion of electronic commerce transactions in B-to-C environments. Specifically, the study identifies a number of potentially-important determinants of customers' trust in a website (such as privacy protection, security protection, information quality, reputation, and system reliability), and ultimately of their likelihood of purchasing from a website, and then provides evidence about the direct effects of these determinants on consumers' trust and purchase intentions. Thus the theory and results may allow Internet retailers and third parties to better incorporate trust-building mechanisms into websites by focusing on the trust antecedents identified in this study.

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