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AN INVESTIGATION OF CONSUMER ONLINE TRUST AND PURCHASE-REPURCHASE INTENTIONS

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Abstract

There is little research on trust and satisfaction in the electronic commerce from a longitudinal (pre- and post-purchase) perspective. Based on previous frameworks and theories, this study developed a combined model of consumer trust and satisfaction in the context of Internet shopping. From the valance framework and expectation-confirmation theory, several prepurchase and post-purchase factors such as risk, benefit, consumer trust, expectation, confirmation, and satisfaction are investigated as research variables affecting consumer repurchase intention.

The results of the study show that trust is the strongest predictor of the consumer’s purchase intention. In addition, as in traditional consumer satisfaction studies, it holds true in electronic commerce consumer behavior studies that the consumer’s satisfaction is still the critical determinant to its consequence, i.e., willingness to repurchase.

Keywords: Consumer online trust, consumer satisfaction, repurchasing intention, valance framework, expectation-confirmation theory

Introduction

Trust plays a vital role in almost any commerce involving monetary transactions. The issue of trust may be even more critical in electronic commerce since Internet business is based on the consumer’s confidence in the processes, in contrast to that of traditional businesses involving brick-and-mortar stores, where trust is based on personal relationships and on interactions between the consumer and the merchant. A study by Grabosky (2001) supports the idea that the key to success in online business is the establishment of trusted processes. This fact mandates that online sellers create an environment in which a consumer can be confident about any prospective online transactions.

A consumer purchase process consists of three general phases of consumer behavior: prepurchase, purchase, and post-purchase (Blackwell et al. 2001; Blackwell and Stephan 2001; Kalakota and Whinston 1997). The basic consumption process or phases
of consumer behavior have generally been accepted in the context of electronic commerce as well (Blackwell and Stephan 2001). The prepurchase or pre-consumption phase includes the events and consumer actions that precede actual purchase behavior. Since initial consumer trust (i.e., trust in an unfamiliar e-retailer or one with whom the consumer has no prior experience), strongly influences consumer intention to purchase, consumer trust in the prepurchase phase is an important issue to investigate (McKnight et al. 2002b; McKnight et al. 1998). The purchase phase includes purchasing decisions that involve when to buy, where to buy, and how to pay (Blackwell et al. 2001). In the electronic commerce literature, the purchasing decision is considered a trust-related behavior (Jarvenpaa et al. 2000; McKnight et al. 2002b; Urban et al. 2000). After the use of products and services, the consumer evaluates the experience against the expectations developed in the prepurchase phase. Based on the results of the evaluation, including satisfaction with the transaction, the consumer may have repurchase intentions and through repeated purchases may become a loyal consumer. However, if dissatisfaction occurs, the consumer will not have motivation to repurchase.

Cooke et al. (2001) showed that information learned after the purchase occurs has a greater impact on satisfaction than information learned before the purchase. In the post-purchase phase, consumer satisfaction or dissatisfaction is generally accepted to be a significant determinant of repeat purchase and can result in positive word-of-mouth information dissemination and consumer loyalty.

Trust is identified as an important factor in several literatures, including marketing, behavioral science, and electronic commerce (Beatty et al. 1996; Czepiel 1990; Hoffman et al. 1999; Jarvenpaa et al. 1998; Jarvenpaa et al. 1999; Kramer 1999; McKnight and Chervany 2002; McKnight et al. 2002a, 2002b; Stewart 2003). A limitation of most prior research is that only prepurchase intention is considered. A consumer’s repurchasing process is different from the initial purchasing process. Repurchasing is not just another initial purchase since in repurchasing the consumer already has prior experience. Therefore, additional or different theoretical insights will be needed to understand the repurchasing process.

Customer satisfaction is a post-purchase attitude formed through a mental comparison of the service and product quality that a customer expected to receive from an exchange and the level of service quality the customer perceives actually receiving from the exchange (Oliver 1980; Oliver 1999; Oliver and Linder 1981; Spreng et al. 1996). Trust and satisfaction are essential ingredients for successful long-term business relationships with customer (Doney and Cannon 1997; Garbarino and Johnson 1999; Moorman et al. 1993; Morgan and Hunt 1994). Therefore, clearly there is a need to study trust and satisfaction in electronic commerce from a longitudinal (pre- and post-purchase) perspective. In this context, we intend to follow some of the satisfaction research that has extensively focused on the relationship between prepurchase expectations and post-purchase satisfaction (Voss et al. 1998; Yi 1990).

The major contributions of this paper are twofold. First, from a theoretical perspective, while previous theories explaining separately consumer trust and customer satisfaction have been applied to electronic commerce research, there is little research on trust and satisfaction from a longitudinal (pre- and post-purchase) viewpoint. We believe that this study will have an impact on future theory-building research in the area of consumer trust and satisfaction. Second, the findings of this study extend our knowledge of factors influencing consumer Internet purchasing behavior as a two-fold strategy (pre- and post-purchasing) in the context of the Internet cyber-market.

**Background Theories**

Three different perspectives have been identified as background theories for this study: the theory of reasoned action, the valence framework, and expectation and confirmation theory.

The theory of reasoned action (TRA) (Fishbein and Ajzen 1975) provides a framework to study attitudes toward behaviors. TRA is based on the assumption that human beings make rational decisions based on the information available to them. According to the theory, the most important determinant of a person's behavior is behavioral intent (Ajzen and Fishbein 1980).

In marketing management, scholars have incorporated the perception of risk and the perception of benefit in understanding consumers’ purchasing behaviors (Bauer 1960; Bettman 1973; Cunningham 1967; Dirks and Ferrin 2001, 2002; Jacoby and Kaplan 1972; Peter and Ryan 1976; Schaninger 1976; Tarpey and Peter 1975; Taylor 1974; Wilkie and Pessemier 1973; Zikmund and Scott 1973). Summarizing studies on consumers’ purchasing behavior, Tarpey and Peter (1975) identified three fundamental frameworks of consumer decision-making. The first is a perceived risk framework that characterizes consumers as motivated to minimize, or at least to reduce, any expected negative utility (perceived risk) associated with the purchasing behavior. The second is a perceived benefit framework that focuses on consumers’ perceptions toward the benefits of the product. This framework
explains consumers’ purchasing decisions as a process of maximizing the expected positive utility (perceived benefit) with little consideration of expected negative utility. The third is a perceived value or a net valence framework. This model is a combination of the perceived risk and perceived benefit frameworks. The net valence framework assumes that consumers perceive products as having both positive and negative attributes, such that they make decisions to maximize the net valence resulting from the negative and positive attributes of the decision. Intuitively and conceptually, the third, the valence framework, is a superior model (Tarpey and Peter 1975). This framework is consistent with Lewin’s (1943) and Bilkey’s (1953; 1955) theories. Zeithaml (1988) described perceived value in terms of a tradeoff of salient “what you give” and “what you get” components using the valence framework.

While the initial completion of the transaction is an important first step to create a business-to-consumer trust relationship, the long-term relationship depends on post-purchase processes rather than first-time use (Oliver 1993). A satisfactory exchange experience would appear to be one requirement for the type of continued interest in a Website that might lead to repeat purchases (Oliver 1993). Expectation-confirmation theory (ECT) is widely used in marketing literature (Anderson and Sullivan 1993; Bhattacherjee 2001; Dabolkar et al. 2000; Oliver 1993, 1999; Patterson et al. 1997; Spreng et al. 1996; Swan and Trawick 1981) to study consumer satisfaction and repurchase intention and behavior. Evidence for the wide applicability of the ECT is building as studies appear in both product and service areas. The underlying logic of the ECT framework is well described by Oliver (1999) and by Bhattacherjee (2001) as follows. First, consumers form an initial expectation of a specific product or service prior to purchase. Second, after a period of initial consumption, they form perceptions about its performance. Third, they assess its perceived performance vis-à-vis their original expectation and determine the extent to which their expectation is confirmed. Fourth, they form satisfaction based on their confirmation level and the expectation on which that confirmation was based. Finally, the satisfied consumer forms a repurchase intention (see Figure 1).

Note that expectation through repurchase intention forms a process by which consumers reach the repurchase intention state. It is important to note that all constructs in ECT except expectation are post-consumption variables.

![Figure 1. Expectation-Confirmation Theory](image)

The Theoretical Framework

The conceptual framework used for this study is based on the three phases of consumer behavior in marketing—prepurchase, purchase, and post-purchase—and the theoretical framework of this study is adapted from previous background theories—theory of reasoned action, valence framework, and expectation-confirmation theory. In addition to perceived risk and benefit in the valence framework (Tarpey and Peter 1975), we added consumer trust as a critical construct in the pre-purchasing phase since the role of trust has been identified as a vital factor in electronic commerce (Gefen 2000; Jarvenpaa et al. 1999; McKnight and Chervany 2002; McKnight et al. 2002b; Ratnasingam 1998; Urban et al. 2000).

Prior research on traditional commerce focused primarily on interpersonal trust, such as a customer’s trust in a salesperson. However, Plank et al. (1999) suggest a definition of trust as a multidimensional concept that is related to multiple objects: salesperson, product, and company. They define trust as a global belief on the part of the buyer that the salesperson, product, and company will fulfill their obligations as understood by the buyer. On the Internet, an e-retailer’s Website replaces a salesperson’s functionalities. In addition, a customer’s trust in the Website, the product, and the company is affected by a consumer’s trust in the Internet as a marketing channel. In this paper, Internet consumer trust (TRUST) is defined as a consumer’s subjective belief that the selling party or entity on the Internet will fulfill its transactional obligations as the consumer understands them.
TRA (Ajzen and Fishbein 1980) pointed out that behavior intention (willingness to purchase in this study) is a predictor of actual volitional behavior (completion of purchase). The purchase phase is influenced by the behavior intention and actual behavior relationship.

After purchasing products or services, consumers confirm their expectation through a post-purchase evaluation process. Customers compare their outcomes to their initial expectation prior to purchase. Based on the comparison, they form their satisfaction level, which affects their future repurchase decisions. Consumer satisfaction is directly affected from a consumer’s comparison of post-purchase evaluation with prepurchase expectations (Anderson and Sullivan 1993; Oliver 1993, 1999; Swan and Trawick 1981). Since consumers already have prior experience, the repurchase process is much different from the prepurchase process. This repurchase process is well explained by expectation-confirmation theory. We do not ignore the consumer post-trust effect on consumer’s willingness to repurchase, but in this study, we develop a trust-satisfaction model focusing on consumer trust in the prepurchase phase and consumer satisfaction in the post-purchase. Figure 2 shows the theoretical research framework of the study.

Internet consumers report that they purchase on the Web because they perceive a lot of benefits compared to a traditional mode of shopping (Margherio 1998). The benefits to consumers include convenience, saving money, saving time, and ease of finding shopping information and products. Perceived benefit (BENEFIT) in this study refers to a consumer’s belief about the extent to which he or she will become better off from the online transaction with a certain Website.

The relationship between trust and perceived benefits is a subject of discussion among researchers who have studied trust in business relationships and organizations. A variety of research and evidence suggests that there is a positive relationship between trust and benefits (Barney and Hansen 1994; Doney and Cannon 1997; McAllister 1995; Morgan and Hunt 1994). Although online shoppers see some benefits through the Internet transactions, they may be reluctant to make a transaction unless they trust the Internet vendor with whom they are dealing.

It is common for a customer who is making an online transaction for the first time to be reluctant to purchase on the Web, because the sense of risk may be overwhelming when compared to the traditional mode of shopping. In the case of a brick-and-mortar retail store (e.g., Wal-Mart), consumers can walk into the store, and possibly touch, feel, or even try the product before deciding to purchase it. This directly results in an immediate reduction in the amount of risk, which strengthens customers’ positive opinions about the brick-and-mortar stores. In the same situation for an online store, a customer has to provide all kinds of personal information, including address, phone number, and even confidential credit card information. After providing the necessary information, the shopper expects the transaction to be processed completely and accurately. The truth is, he or she has
to wait for days until the product or service is delivered and the transaction is completed. In this study, perceived risk (RISK) is defined as a consumer’s belief about the potential uncertain negative outcomes from the online transaction. While the perceived benefit of Web shopping deals with relatively certain positive outcomes, the perceived risk deals with very uncertain negative outcomes. This is the main distinction between these two constructs. Thus, perceived risk and perceived benefit are not two ends of a single continuum.

When consumers have to act in the situations of uncertainty and risk, trust comes to the fore. Trust becomes the crucial strategy for dealing with an uncertain and uncontrollable future. Gambetta (1988) argued that trust is particularly relevant in conditions of ignorance or uncertainty with respect to the unknown or unknowable actions of others. Mayer et al. (1995) clarified the relationship between trust and risk. According to their clarification, trust is the willingness to assume risk, while trusting behavior is the assumption of risk. If the level of trust surpasses the threshold of perceived risk, then the trustor will engage in risk-taking in a relationship. In other words, trust is the key factor for overcoming the perceived risk of a negative outcome (Luhman 1988).

Trust is a solution for the specific problems of risk (Luhman 1988). In e-commerce transactions, consumers make a purchasing decision based on their perception of benefit and risk. Although consumers have perceived risk, they make a transaction with a certain degree of trust. With a complete absence of trust, one would probably not be able to finalize a transaction. Due to the properties of the Internet mode of shopping, there will always be a certain level of risk and, therefore, a certain lack of trust. Because of the uncertainty and uncontrollability of e-commerce conditions, consumers will always experience some level of risk. They make bets about the uncertainty of the future (e.g., unknown new technologies) and the unmanageable actions of others (e.g., Web vendors and hackers). For example, I trust buy.com to perform my transaction without a problem; hence, I buy a computer from that site even if I perceive some risks related to the Internet transaction.

Once purchased, the product or service from e-retailer will be evaluated in the context of the consumers’ prior expectations and the actual performance of the product and service as perceived after its consumption. The term expectation (EXP) refers to what consumers believe they should and will receive from their e-retailers. Perceived performance (PF) is the consumer’s perception of the quality or value of the product or service after it is purchased (Churchill and Surprenant 1982).

Confirmation (CF) is defined as the customer’s evaluation of a product’s or service’s performance against some prepurchase standards. Confirmation is the consumer’s judgment of the actual performance relative to a prepurchase comparison standard such as expectation. When performance is greater than expectations, resulting in positive confirmation, a high level of satisfaction occurs. When performance is less than expectations, resulting in negative confirmation, a low level of satisfaction occurs. Therefore, consumer satisfaction (SF) is the result of a process of post-purchase evaluation and comparison, which affects intention for future repurchase (Anderson et al. 1994; Bearden and Teel 1983; Churchill and Surprenant 1982; Fornell and Westbrook 1984; Oliver 1980; Oliver and Linder 1981; Yi 1990).

Research Methodology and Data Collection

This study used a Web-based survey. The instrument development was carried out following the three stages suggested by Moore and Benbasat (1991): (1) item creation, (2) scale development, and (3) instrument testing. In the first stage, item creation, existing measurement items were reviewed for the study. Most of the instruments were adapted from previous research and modified to fit the context of this research. Some new instruments were developed based on the results of a literature review on the topics. For the second stage, scale development, a panel of experts reviewed the instrument to ensure the validity and to identify ambiguous items of the instruments created in the first step. All instruments were measured using multi-item scales. As recommended by Anderson and Gerbing (1984) and Bentler and Chou (1987), each construct was measured by at least three observable indicators. The items were written in the form of statements or questions. Most of the scales used a seven-point scale Likert rating system with end points such as strongly disagree/strongly agree, extremely unlikely/extremely likely, and not at all confident/completely confident. For the instrument testing, the last stage of instrument development, a pilot test was conducted prior to collecting data for the field test.

To ensure the appropriateness of the research instrument, it was tested for reliability, content validity and construct validity using a pilot study. The Cronbach reliability coefficients of all variables are higher than the minimum cutoff score of 0.65 (Lee and Kim 1999). Appendix A shows the constructs, reliability (Cronbach’s alpha) of the scales, and adapted literature sources.

For the field study, two rounds of surveys were distributed to a group of students at public universities in the northeastern United States. All questions related to prepurchase intentions, including expectation (EXP), were collected from the first round survey. Survey questions which related to post-purchase intentions (PF, CF, SF, and WRP) were collected from a second round survey.

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While students represent only a portion of the online shopper population, several studies (Houston and Taylor 1999; Kovar et al. 2000) have utilized them as subjects, as they provide a reasonable surrogate for online consumers. Online consumers are generally younger and more educated than are conventional consumers, according to the OECD report (OECD 1998) and Kotkin’s (1998) research. Another reason for collecting data from students is that this study needs two rounds of longitudinal data for both pre-purchase and post-purchase processes. Since it is not easy to collect online consumers’ longitudinal data from actual Internet online shoppers, students make up a relatively good sample set for online shoppers.

Students participated in the study voluntarily for extra credit. They were asked to visit at least any two business-to-consumer retailer Websites (e.g., amazon.com, barnesandnoble.com) to shop for an item of their choice (e.g., book, CD, clothes, software, an auction, wine) using a credit card. Students were asked to go through the entire buying process at both sites, up to but excluding the clicking of the buy button to purchase the product. Then, to ensure that the data had adequate variance in the dependent variable, students were randomly assigned to complete one of two questionnaires: one questionnaire asked questions about the site from which the student was more inclined to make a purchase; the other questionnaire asked questions about the site from which the student was less inclined to make a purchase. Finally, after completing the survey, students were asked to go ahead and purchase the item from their preferred site.

The second round survey for the research model was conducted a few weeks later after the respondents of the first round survey received and began using an item that they ordered. A total of 512 responses for the first round survey and 493 responses for the second round survey were received. After eliminating duplicate or incomplete responses, a total of 468 usable responses were included in the sample for construct validation and hypothesis testing for the pre-purchase intention model. Out of 468 usable responses 59 respondents (13 percent) changed the sites that they were more inclined to purchase from. Given our interest in repurchase behavior, for the post-purchase process analysis, these respondents were excluded. Further as noted above, for testing the post-purchase process model, 258 responses by students who completed a transaction with the site from which participants were more inclined to purchase were used. (The remaining 151 responses were regarding the site from which the student was less inclined to make a purchase.)

Data Analyses and Results

To test the proposed research model, data analyses for both the measurement model and structural model were performed using the PLS and factor analysis method. To ensure the appropriateness of the research instrument, it was tested for reliability, construct validity, and content validity. Since all constructs 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 constructs validity (Bollen 1989; Chin and Gopal 1995).

Reliability: The internal consistency for reliability of the measurement models was tested using Cronbach’s alpha and Fornell’s composite reliability1 (Fornell and Larcker 1981). The Cronbach reliability coefficients of all variables are higher than the minimum cutoff score of 0.60 (Nunnally 1978), 0.65 (Lee and Kim 1999), or 0.70 (Nunnally 1978; Nunnally and Bernstein 1994) except that willingness to repurchase (WRP) is a little less than 0.70 but still over 0.60 (see Table 1).

Construct Validity: Construct validity was examined by convergent validity and discriminant validity (Chin et al. 1997). Convergent and discriminant validity are both considered subcategories and subtypes of construct validity. The important thing to recognize is that they work together; neither one alone is sufficient for establishing construct validity (Chin 1998b). The acceptable level of convergent validity is when all item loadings are greater than 0.50 (Wixom and Watson 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 cumulative percentages of variance explained by each factor are greater than 57 percent at least. Appendix A shows the descriptive statistics of measures, their loadings, eigenvalues, and the cumulative percentage of variance for all factors.

\[ \text{Composite Reliability} = \frac{\left( \sum \lambda_i \right)^2 \var F}{\left( \sum \lambda_i \right)^2 \var F + \sum \Theta ii} \]
## Table 1. Descriptive Statistics and Reliability Coefficients for Constructs

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Number of Items</th>
<th>Mean</th>
<th>S.D.</th>
<th>Alpha</th>
<th>Composite Reliability</th>
<th>AVE*</th>
<th>Scales adapted from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Trust (TRUST)</td>
<td>3</td>
<td>5.02</td>
<td>.97</td>
<td>.80</td>
<td>0.911</td>
<td>0.774</td>
<td>Gefen 2000, Jarvenpaa et al. 2000, Portz 2000</td>
</tr>
<tr>
<td>Perceived Risk (RISK)</td>
<td>4</td>
<td>5.03</td>
<td>1.04</td>
<td>.79</td>
<td>0.866</td>
<td>0.682</td>
<td>Jarvenpaa et al. 2000, Kohli 1989</td>
</tr>
<tr>
<td>Perceived Benefit (BENEFIT)</td>
<td>4</td>
<td>5.42</td>
<td>1.21</td>
<td>.85</td>
<td>0.906</td>
<td>0.707</td>
<td>Davis 1989, Moore and Benbasat 1991, Swaminathan et al. 1999</td>
</tr>
<tr>
<td>Willingness to Purchase (WP)</td>
<td>3</td>
<td>5.03</td>
<td>1.26</td>
<td>.79</td>
<td>0.879</td>
<td>0.708</td>
<td>Gefen 2000, Jarvenpaa et al. 2000</td>
</tr>
<tr>
<td>Expectation (EXP)</td>
<td>3</td>
<td>4.84</td>
<td>.67</td>
<td>.85</td>
<td>0.796</td>
<td>0.568</td>
<td>Fornell 1992, Fornell et al. 1996</td>
</tr>
<tr>
<td>Perceived Performance (PF)</td>
<td>4</td>
<td>5.20</td>
<td>.87</td>
<td>.85</td>
<td>0.899</td>
<td>0.640</td>
<td>Davis 1989, Davis et al. 1989</td>
</tr>
<tr>
<td>Confirmation (CF)</td>
<td>4</td>
<td>5.21</td>
<td>.85</td>
<td>.92</td>
<td>0.955</td>
<td>0.843</td>
<td>Bhattacherjee 2001, Oliver 1999</td>
</tr>
<tr>
<td>Satisfaction (SF)</td>
<td>4</td>
<td>5.64</td>
<td>.99</td>
<td>.84</td>
<td>0.957</td>
<td>0.847</td>
<td>Spreng et al. 1996</td>
</tr>
<tr>
<td>Willingness to Repurchase (WRP)</td>
<td>4</td>
<td>4.90</td>
<td>.86</td>
<td>.68</td>
<td>0.910</td>
<td>0.718</td>
<td>Gefen 2000, Jarvenpaa et al. 2000, Mathieson 1991</td>
</tr>
</tbody>
</table>

*Average Variance Extracted = \[ \frac{\sum \lambda_i^2 \text{var} F}{\sum \lambda_i^2 \text{var} F + \sum \Theta ii} \].

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) of at least 0.5 (Fornell and Larcker 1981). Table 1 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.

For evaluating discriminant validity, the average variance extracted (AVE) can also be used. It is suggested that the AVE from the construct should be higher than the variance shared between the construct and other constructs in the model (Chin 1998a; Fornell and Larcker 1981). The discriminant validity can be checked by examining whether the correlations between the constructs are lower than the square root of the average variance extracted.

**Content 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.

The assessment of the structural model includes estimating path coefficients and R-square. Both R-square and the path coefficients indicate model fit (effectiveness), 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 make conclusions regarding the research hypothesis. The $R^2$ value is an indicator of how well the model fits the data. The result of model assessment is presented in Figure 3.
As shown in Figure 3, for the pre-purchase phase, consumer trust (TRUST) shows a strong positive effect on a consumer’s purchasing intention (WP). TRUST has a strong negative effect on perceived risk (RISK). TRUST has a positive effect on Perceived Benefit (BENEFIT) but not significant at the 0.05 level. The path coefficient between RISK and WP is significant. The coefficients between BENEFIT and WP are positive but not significant at the 0.05 level. The R² for RISK is .49, reflecting that the model provides a strong explanation of the variance in perceived risk. For the post-purchase phase, all hypothesized paths are significant at the 0.05 level. Expectation of performance (EXP) has a negative effect on confirmation (CF) as well as a positive effect on willingness to purchase (WE). Perceived performance (PF) shows a strong positive effect on CF, and CF also has a strong positive effect on satisfaction (SF). Finally, the path coefficient between SF and willingness to repurchase (WRP) is significant at the level p < 0.001.

**Discussion and Conclusion**

Based on previous frameworks and theories, this study developed a combined model of consumer trust and satisfaction in the context of Internet shopping. From the valence framework and expectation-confirmation theory, several pre-purchase and post-purchase factors such as risk and benefit, consumer trust, expectation, confirmation, and satisfaction are investigated as research variables affecting consumer repurchase intention.

The empirical findings suggest that consumer trust directly and indirectly affects the customer’s purchase intention. This study provides evidence that a consumer’s trust strongly affects the consumer’s perception of risk and the consumer’s perception of risk reduces the consumer’s purchase intention. Consumer’s trust has a strong positive effect on the consumer’s purchase intention. Consumer’s trust affects the consumer’s perception of benefit but it is not statistically significant. The study results also show that a consumer’s perception of benefit does not affect the consumer’s purchasing intention, a finding that is not consistent with the valence framework. We may interpret this result as follows: trust and risk may have a greater impact than benefits on the consumer’s purchase decision in the pre-purchase phase. In the purchase phase, a consumer’s purchasing intention, willingness to purchase, has a significant effect on the consumer’s behavior, completion of purchase.

The results of the post-purchase phase fully support ECT contentions that satisfaction is a strong predictor of consumer’s continuance intention (willingness to repurchase); that confirmation has a relatively stronger positive effect on satisfaction; that a consumer’s expectation has a strong effect on satisfaction; that a consumer’s expectation has a negative influence on consumer’s
confirmation and also has a positive effect on the consumer satisfaction; and that a consumer’s perceived performance is positively associated with confirmation.

The result that consumer’s expectation has a negative influence on consumer’s confirmation can be explained by the common view that the higher the expectation, the harder it is to fulfill. The result provides a new angle for future research. Can a consumer’s expectation become a liability for e-retailers? In-depth studies are needed to answer the question.

The study has several contributions. First, this study provides a combined model of consumer trust and satisfaction from a longitudinal (pre- and post-purchase) viewpoint. We believe that this study will have an impact on future theory-building research in the area of consumer trust and satisfaction. Second, the findings of this study extend our knowledge of factors influencing consumer Internet purchasing behavior as a two-fold strategy (pre- and post-purchasing) in the context of the Internet cyber-market.

From a practical standpoint, the results of the study show that trust is the strongest predictor of the consumer’s purchase intention, followed by perceived risk as a significant but weaker predictor. Thus e-retailers should put more emphasis on the trust relationships with their customers. In addition, another important issue is to keep customers satisfied for enhancing long-term trustworthy relationships with customers. As in traditional consumer satisfaction studies, it holds true in electronic commerce consumer behavior studies that the consumer’s satisfaction is still the critical determinant to its consequence, i.e., willingness to repurchase.

**Acknowledgments**

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**References**


### Appendix A

**Proposed Measurement Items for Constructors**

<table>
<thead>
<tr>
<th>Constructors</th>
<th>Measurement Items</th>
<th>Mean</th>
<th>S.D.</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumer Trust (TRUST)</strong></td>
<td>This site is trustworthy.</td>
<td>5.42</td>
<td>1.16</td>
<td>.899</td>
</tr>
<tr>
<td></td>
<td>This Website vendor gives the impression that it keeps promises and commitments.</td>
<td>5.48</td>
<td>1.14</td>
<td>.910</td>
</tr>
<tr>
<td></td>
<td>I believe that this Website vendor has my best interests in mind.</td>
<td>5.07</td>
<td>1.27</td>
<td>.830</td>
</tr>
<tr>
<td><strong>Perceived Risk (RISK)</strong></td>
<td>Purchasing from this Website would involve more product risk (i.e., not working,</td>
<td>4.19</td>
<td>1.69</td>
<td>.822</td>
</tr>
<tr>
<td></td>
<td>defective product) when compared with more traditional ways of shopping.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Purchasing from this Website would involve more financial risk (i.e., fraud,</td>
<td>4.46</td>
<td>1.63</td>
<td>.848</td>
</tr>
<tr>
<td></td>
<td>hard to return) when compared with more traditional ways of shopping.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How would you rate your overall perception of risk from this site?</td>
<td>3.68</td>
<td>1.34</td>
<td>.807</td>
</tr>
<tr>
<td><strong>Perceived Benefit (BENEFIT)</strong></td>
<td>I think using this Website is convenient.</td>
<td>5.61</td>
<td>1.22</td>
<td>.791</td>
</tr>
<tr>
<td></td>
<td>I can save time by using this Website.</td>
<td>5.57</td>
<td>1.35</td>
<td>.887</td>
</tr>
<tr>
<td></td>
<td>Using this Website enables me to accomplish a shopping task more quickly than</td>
<td>5.49</td>
<td>1.39</td>
<td>.859</td>
</tr>
<tr>
<td></td>
<td>using traditional stores.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Using this Website increases my productivity in shopping (e.g., make purchase</td>
<td>5.22</td>
<td>1.38</td>
<td>.824</td>
</tr>
<tr>
<td></td>
<td>decisions or find product information within the shortest time frame.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constructors</td>
<td>Measurement Items</td>
<td>Mean</td>
<td>S.D.</td>
<td>Loading</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>-------</td>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td></td>
<td><strong>Willingness to Purchase (WP)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>I am likely to purchase the products(s) on this site.</td>
<td>5.08</td>
<td>1.56</td>
<td>.829</td>
</tr>
<tr>
<td></td>
<td>I am likely to recommend this site to my friends.</td>
<td>5.22</td>
<td>1.38</td>
<td>.855</td>
</tr>
<tr>
<td></td>
<td>I am likely to make another purchase from this site if I need the products that I will buy.</td>
<td>4.79</td>
<td>1.53</td>
<td>.840</td>
</tr>
<tr>
<td></td>
<td><strong>Expectation (EXP)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How would you rate your overall expectations regarding the quality of the purchasing (process) from this Website</td>
<td>5.46</td>
<td>1.01</td>
<td>.837</td>
</tr>
<tr>
<td></td>
<td>How well does the Website fit your personal requirements needs?</td>
<td>5.31</td>
<td>1.01</td>
<td>.788</td>
</tr>
<tr>
<td></td>
<td>How would you rate your expectations that things would go wrong in buying from this Website?</td>
<td>4.74</td>
<td>1.51</td>
<td>.620</td>
</tr>
<tr>
<td></td>
<td><strong>Perceived Performance (PF)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Using this Website improved my performance in shopping.</td>
<td>5.17</td>
<td>1.09</td>
<td>.802</td>
</tr>
<tr>
<td></td>
<td>Using this Website increased my productivity in shopping.</td>
<td>5.16</td>
<td>1.08</td>
<td>.818</td>
</tr>
<tr>
<td></td>
<td>Using this Website enhanced my effectiveness in shopping.</td>
<td>5.37</td>
<td>1.06</td>
<td>.770</td>
</tr>
<tr>
<td></td>
<td>Overall, using this Website is useful in shopping.</td>
<td>5.18</td>
<td>1.11</td>
<td>.844</td>
</tr>
<tr>
<td></td>
<td><strong>Confirmation (CF)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>My experience with using this Website was better than what I had expected.</td>
<td>5.00</td>
<td>1.16</td>
<td>.916</td>
</tr>
<tr>
<td></td>
<td>The product and service provided by this Website was better than what I had expected.</td>
<td>4.87</td>
<td>1.17</td>
<td>.920</td>
</tr>
<tr>
<td></td>
<td>Overall, most of my expectations from using this Website were confirmed.</td>
<td>5.52</td>
<td>1.13</td>
<td>.909</td>
</tr>
<tr>
<td></td>
<td>The expectations that I have regarding this Website were correct.</td>
<td>5.43</td>
<td>1.18</td>
<td>.927</td>
</tr>
<tr>
<td></td>
<td><strong>Satisfaction (SF)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>How do you feel about your overall experience of the Website use:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Very dissatisfied/Very satisfied</td>
<td>5.74</td>
<td>1.07</td>
<td>.922</td>
</tr>
<tr>
<td></td>
<td>Very displeased/Very pleased</td>
<td>5.69</td>
<td>1.06</td>
<td>.930</td>
</tr>
<tr>
<td></td>
<td>Very frustrated/Very contented</td>
<td>5.62</td>
<td>1.11</td>
<td>.930</td>
</tr>
<tr>
<td></td>
<td>Absolutely terrible/Absolutely delighted.</td>
<td>5.50</td>
<td>1.09</td>
<td>.899</td>
</tr>
<tr>
<td></td>
<td><strong>Willingness to Repurchase (WRP)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If I were to buy the same product again, I would likely buy it from this Website.</td>
<td>5.70</td>
<td>1.29</td>
<td>.838</td>
</tr>
<tr>
<td></td>
<td>I am likely to return to this Website for my next purchase.</td>
<td>5.50</td>
<td>1.31</td>
<td>.887</td>
</tr>
<tr>
<td></td>
<td>I am likely to make another purchase from this site in the next year.</td>
<td>5.54</td>
<td>1.41</td>
<td>.806</td>
</tr>
<tr>
<td></td>
<td>I intend to continue using this Website rather than discontinue its use.</td>
<td>5.48</td>
<td>1.22</td>
<td>.855</td>
</tr>
</tbody>
</table>

Eigenvalue: 2.87  Percent of explained variance: 71.76

Eigenvalue: 2.12  Percent of explained variance: 70.77

Eigenvalue: 1.70  Percent of explained variance: 56.84

Eigenvalue: 3.19  Percent of explained variance: 63.96

Eigenvalue: 2.24  Percent of explained variance: 86.32

Eigenvalue: 3.38  Percent of explained variance: 84.70

Eigenvalue: 2.87  Percent of explained variance: 71.76