AN INTEGRATIVE MODEL OF E-LOYALTY DEVELOPMENT PROCESS: THE ROLE OF E-SATISFACION, E-TRUST, ETAIL QUALITY AND SITUATIONAL FACTORS

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CHAPTER 1

INTRODUCTION

Background

E-loyalty, E-satisfaction and E-trust

Loyalty not only is a strong asset for the firm but also leads the firm to constant growth and profit (e.g., Jacoby & Chestnut, 1978; Oliver, 1999; Reichheld, Markey, & Hopton, 2000a). In determining the development of loyalty, satisfaction has historically been identified as the critical concept in the previous marketing literature (Anderson & Mittal, 2000; Eriksson & Vaghult, 2000; Oliver, 1997, 1999). However, this argument emphasizing a satisfaction-loyalty link was challenged by several studies which claimed that more than half of the satisfied customers eventually switch to another retailer (Jones & Sasser, 1995). These studies indicate that even though a customer was satisfied with a retailer, he/she would seek more satisfaction and would easily leave for a better alternative. Jones and Sasser (1995) also noted that "merely satisfying customers…is not enough to keep them loyal" (p.91). To fill this void in the satisfaction studies, trust was examined to play a critical role in loyalty development. Singh and Sirdeshmukh (2000) proposed that trust, as a relational construct, positively influences loyalty.

The importance of loyalty, satisfaction and trust, and the close relationships among them have also been a critical issue in the study of online retailing (e.g., Park & Kim, 2003; Reichheld & Schefter, 2000; Yang & Peterson, 2004). E-loyalty was proved to bring increased profitability to the online retailer through gaining long-time customer commitment and reducing the cost of acquiring new customers (Reichheld, Markey & Hopton, 2000b). Reichheld et al. (2000b) also noted thatloyal customers are not the ones seeking the lowest prices, but the ones willing to pay premium prices with the online retailer with whom they have built relationships.

In the previous studies, e-satisfaction (viewed as a transaction specific characteristic), and e-trust (viewed as a relational characteristic), have been determined to influence e-loyalty. Anderson and Srinivasan (2003) insisted that a satisfied customer is more likely to build a closer relationship with the retailer, emphasizing the impact of e-satisfaction on e-loyalty. Reichheld and Shefter (2000) focused on the importance of e-trust in establishing e-loyalty, insisting a "virtual circle" (p.108). That is, when customers trust the online retailer, they are willing to disclose their personal information. In turn, with the collected customer information, the online retailer can provide tailored services and products, thus strengthening customer e-loyalty. Few researchers have attempted to examine the sequential relationship between e-satisfaction, e-trust and e-loyalty. The relationship between the three constructs are found as either e-satisfaction→ e-trust→ e-loyalty (Rexha, Kingshott & Aw, 2003), or e-trust→ e-satisfaction→ e-loyalty (Gummerus, Liljander, Pura & Riel, 2004).

Etail Quality[1)]

In controlling the market response outcomes (i.e., e-loyalty, e-satisfaction and e-trust), etail quality, a manageable component of an online business, has been suggested as a critical component for online retailers. Since expectations towards online retailers have increased beyond the price issue, it is critical to better understand customer expectations concerning purchase experience and etail quality (Yoo & Donthu, 2001). Especially in an online retailing context, where there is little person to person interaction that can affect the customer's satisfaction and trust level, the quality of the etail experience is even more critical to enhance customer response towards the online retailer.

Previous studies have examined the impact of etail quality either on e-satisfaction or on e-trust. Etail quality was found to influence the level of e-satisfaction (Coughlan, Anderson, Stern & El-Ansary, 2001; Devaraj, Fan & Kohli, 2002; Montoya-Weiss, Voss & Grewal, 2003; Park & Kim, 2003; Shankar, Smith, & Rangaswamy, 2003; Szymanski & Hise, 2000). In addition, etail quality had a significant impact on the level of e-trust (Gummerus et al., 2004; McKnight & Chervany, 2002) as well.

A majority of the studies measuring etail quality provided empirical evidence that etail quality is a multidimensional construct. Different etail quality scales such as WebQual (Lociano, Watson & Goodhue, 2002), SITEQUAL (Yoo & Donthu, 2001), PIRQUAL (Francis & White, 2002), and Ast (Chen & Wells, 1999) were developed suggesting various dimensions based on different perspectives.

[1)] Etail quality in this study is interchangeable with the term "website quality".

Situational Factors

A situational factor is conceptualized as an exogenous variable which lies outside the basic tendencies and characteristics of the individual, and which affects the current attitude and behavior of the individual (Belk, 1974). In addition, an examination of customer behavior without considering the situational effects was argued to be unrealistic (Belk, 1974).

In the previous studies, the situational effect has been considered an important factor in determining consumer behavior. Situational variables have been found to have significant influence over consumer behavior in information search (Avery, 1996), retail format selection (Gerht & Yan, 2004; Nicholson, Clarke & Blakemore, 2002), product choice (Ratneshwar & Shoker, 1991), consumer attitude (Dabholka & Bagozzi, 2002; Lim & Razzaque, 1997), and purchase intention (Dabholka & Bagozzi, 2002). In addition, situation has been studied as related to other constructs in determining consumer behavior, such as consumer characteristics (Dabholka & Bagozzi, 2002), and stimulus attributes (Dabholka & Bagozzi, 2002; Gerht & Yan, 2004).

The Problem

While e-satisfaction and e-trust have been determined to influence e-loyalty either individually (i.e., e-satisfaction→ e-loyalty, and e-trust→ e-loyalty), or in a sequential order, (i.e., e-satisfaction→ e-trust→ e-loyalty, and e-trust→ e-satisfaction→ e-loyalty), not much is known about the concurrent influence of e-satisfaction and e-trust on e-loyalty. Since e-loyalty can be described as a long-term commitment and favorable attitude followed by purchasing behavior, both relational and transaction specific

experiences should have an influence in framing e-loyalty. E-trust, which denotes relational characteristics, can hold the multiple transaction specific experience together and finally form e-loyalty. Therefore, adding on to the current literature, it can be hypothesized that e-loyalty is developed when e-satisfaction (cumulative favorable evaluation of the firm) and e-trust (relational benefit of the firm) coexist.

Furthermore, the influence of etail quality on the market response outcomes was separately determined in the previous studies without acknowledging the role of etail quality in a comprehensive model of market response outcomes. Moreover, the number of previous studies considered etail quality as a uni-dimension (Taylor & Baker, 1994), instead of examining the relative importance of diverse aspects of etail quality on market response outcomes.

In addition, while there are significant numbers of studies considering situational factors as determinants of consumer attitude and behavior (e.g., retail format choice, product choice, brand attitude), few have explored the impact of situational factors in the online retailing context, especially in the e-loyalty development process. As an important variable determining consumer behavior, the 'situation' in which purchase or consumption occurs would have influence on customer loyalty towards the online retailer. In addition, Bem and Allen (1974) have previously theorized that the characteristics of the stimulus object, individual attitude, and the situation influence the reaction to the stimulus object. Thus, it can be inferred that situational factors have a certain impact on the e-loyalty (reaction to the stimulus object) development process, along with e-satisfaction/ e-trust (individual attitudes) and etail quality (characteristics of the stimulus object).

Purpose of the Study

This study acknowledges the voids existing in the current literature and posits that e-loyalty development can be best described in a comprehensive framework of e-satisfaction, e-trust, etail quality, and the situational variables. The purpose of this study is to propose an integrative model of the e-loyalty development process and to empirically test the model. The following questions guided the research:

Research Questions

(1) What is the relative influence of e-satisfaction and e-trust on e-loyalty?
(2) What is the distinct role thatdiverse aspects of etail quality play on market response outcomes?
(3) What is the moderating effect of the situational variables in the relationship among the market response outcomes?

Significance of the Study

This study contributes to the body of literature concerning e-loyalty development by incorporating critical constructs into the framework. First, the current investigation attempts to build a comprehensive framework of the e-loyalty development process by examining the simultaneous impact that e-satisfaction and e-trust has on e-loyalty. As e-satisfaction and e-trust are distinct concepts (e.g., Anderson, Fornell & Lehmann, 1994; Gwinner, Gremmler & Bitner, 1998), both constructs are suggested to affect e-loyalty concurrently yet independently.

Another significant aspect of the research is derived from the inclusion of diverse etail quality dimensions in the e-loyalty development process. This study adopts four

dimensions from Wolfinbarger and Gilly (2003)'s etailQ scale, which consist of website design, customer service, fulfillment/reliability and security/privacy. We suggest that each dimension has differing effects on market response outcomes in a holistic framework of e-loyalty development.

Lastly, situational factors were suggested as moderating variables on the relationship between e-satisfaction→ e-loyalty and e-trust→ e-loyalty. Through investigating the role of situational factors of the customers, this study will give insight into how external variables affect the attitudinal and behavioral intentions of the customer in the e-loyalty development process.

Hypotheses

H1. The level of e-satisfaction has a positive effect on e-loyalty.

H2. The level of e-trust has a positive effect on e-loyalty.

H3. Website design has a positive effect on the e-satisfaction level.

H4. Customer service has a positive effect on the e-satisfaction level.

H5. Fulfillment/reliability has a positive effect on the e-trust level.

H6. Security/ privacy has a positive effect on the e-trust level.

H7. The following situational factors moderate the relationship between e-satisfaction and e-loyalty.

- H7a. Time poverty.
- H7b. Geographic distance.
- H7c. Physical immobility.
- H7d. Lack of transportation.

H8. The following situational factors moderate the relationship between e-trust and e-loyalty.

- H8a. Time poverty.
- H8b. Geographic distance.

H8c. Physical immobility.

H8d. Lack of transportation.

Operational Definition of Terms

E-loyalty is a customer's favorable attitude and commitment towards the online retailer that results in repeat purchase behavior.

E-satisfaction is a pleasurable fulfillment accumulated over multiple transaction experiences, resulting in an overall evaluation of the online retailer.

E-trust is a belief or confidence that the word or promise by the merchant can be relied upon and the seller will not take advantage of the consumer's vulnerability.

Market response outcomes is a term used to indicate e-loyalty, e-satisfaction and e-trust together.

Etail quality is the customer's evaluation of the website characteristics including the process and outcome quality of the interaction with an online retailer.

Situational factors are diverse external factors occurring at a specific point in space and time, regardless of the characteristics of the consumer and the attributes of the online retailer.

Limitations

1. Our sample was collected in one particular southwestern state of the US, and represented a certain demographic group. The results may vary in different states and with different demographic backgrounds.

2. Our study did not distinguish retail industries in testing the model. Customers may have different purchase motivations for different products, thus leading to various evaluative perceptions in different retail settings.
3. While there are various aspects of situational factors presented in the previous studies, we have incorporated only a limited number of factors in the present study. Diverse aspects of situational variables included in the model might yield different results.

Outline of Work

The thesis consists of five chapters. Chapter one provides an introduction to the problem area, the problem acknowledged in the previous literature, a statement of the purpose of the research, discussion of the potential significance of the findings, suggested hypotheses, definitions of terms used in the study, and the limitations inherent in the research design. Chapter two offers an overview of the existing literature regarding each construct: E-loyalty, e-satisfaction, e-trust, etail quality, and situational factors. This chapter also develops the conceptual framework that underlies this study and offers the hypotheses to be tested. Chapter three describes the research methods, the nature of the sample and design of the study. Chapter four presents the results of the data analysis. Chapter five discusses the findings and presents conclusions, implications, and managerial recommendations. Limitations of the study and an agenda for future research are also provided.

CHAPTER 2

LITERATURE REVIEW

Determinants of E-loyalty Development

E-loyalty development is a complex and comprehensive process that calls for several anteceding constructs (i.e., e-satisfaction, e-trust and etail quality) as well as moderating variables (i.e., situational factors). In this section, we discuss the concepts and significance of each construct particularly in the online retailing context. We used the terms e-loyalty, e-satisfaction and e-trust for the online retailing context to distinguish those constructs from the traditional retailing context. Etail quality and the situational variables are also discussed in terms of online retailing.

E-loyalty

Loyalty is defined as the repeated purchase behavior presented over a period of time driven by a favorable attitude toward the subject (Keller, 1993), including both attitudinal and behavioral aspects. This combined conceptualization of loyalty is strongly argued by Jacoby and Chestnut (1978), who criticized the behavioral aspect of loyalty research which focused merely on repeat purchasing. Repeat purchase behavior only reflects the outcome of a decision process in which the emotional, attitudinal facet of loyalty is disregarded. Therefore, the concept of loyalty has to be distinguished from spurious loyalty (i.e., false loyalty), where repeat purchase behavior is driven by inertia, not based

on any commitment at all (Dick & Basu, 1994). True loyalty includes both behavioral and attitudinal preference towards the retailer (e.g., Jacoby & Chestnut, 1978). A true loyal customer was found to have commitment and attachment towards the retailer, and is not easily distracted to a slightly more attractive alternative (Shankar et al., 2003). True loyalty indicates higher purchase intention, resistance to switch, willingness to pay more, and higher benefits from the word-of-mouth effect (Shankar et al., 2003).

Loyalty of the customers toward the exchange party generally encompasses brand loyalty (for a brand name product), vendor loyalty (for industrial goods), service loyalty (for services) and retailer loyalty (for a retailer/store) (Lim & Razzaque, 1997). Retailer loyalty, the loyalty towards a specific retailer, is of extreme interest to merchants, because high customer acquisition costs are difficult to regain without the commitment and repeat purchasing of the customer (Wallace, Giese, & Johnson, 2004). In the current investigation, we focus on retailer loyalty in the online retailing context. For this study, e-loyalty is defined as a customer's favorable attitude and commitment towards the online retailer that results in repeat purchase behavior, based on the study of Srinivasan, Anderson and Ponnavolu (2002).

Establishing customer e-loyalty was viewed as a great challenge since "competing businesses in the world of electronic commerce are only a few mouse clicks away" (Srinivasan et al., 2002, p.41), and the customers are able to compare alternatives with little effort and time. Knutter (1993) even noted that when entering the era of the World Wide Web, customer loyalty would vanish due to instant information and the ability to easily compare the sellers' offers. However, contrary to the previous argument that online shoppers hardly remain loyal, online shoppers not only purchased repeatedly on the

websites in which they have built relationships but also tend to even consolidate their purchase to one primary retailer showing high proclivity towards loyalty (Reichheld & Schefter, 2000; Shankar et al., 2003).

E-loyalty has been found to bring high profit to the online retailer (Nielsen, 1997; Scheraga, 2000). E-loyal customers purchase more than newly acquired customers and can be served with reduced operating costs (Riel, Liljander & Juriëns, 2001). According to Reichheld et al. (2000b), increasing customer retention by as little as 5% could lead to long term profit increases between 25-95%. In addition, loyal customers also frequently refer new customers to the online retailer, providing another rich source of profit (Reichheld & Shefter, 2000). Even though the financial losses in the early stages of establishing e-loyalty are larger than that of traditional retailers, profit growth accelerates at an even faster rate once the relationship has been built (Reichheld & Schefter, 2000). Reichheld and Shefter (2000) also noted in their study that in the case of apparel online retailing, customers spend more than twice as much in months 24-30 of their relationships than they do in the first six months. These previous findings indicate that e-loyalty is not only beneficial for the online retailer but critical for survival in the intense competition on the World Wide Web.

E-satisfaction

Satisfaction has been defined as the perception of pleasurable fulfillment in the customers' transaction experiences (Oliver, 1997). Overall satisfaction can be distinguished from transaction specific customer satisfaction, which is an immediate post purchase evaluative judgment or an affective reaction to the most recent transactional

experience with the firm (Oliver, 1993). Rather than capturing the transient and transaction specific evaluations and emotions, applied market research tends to measure customer satisfaction as the customer's general level of satisfaction based on all experiences with the firm (Gabarino & Johnson, 1999). This overall satisfaction is a cumulative construct, summing satisfaction with specific products, services, and transaction experiences of the organization (Czepiel, Resenberg, & Akerele, 1974). Anderson et al. (1994) conceptualize cumulative satisfaction (i.e., overall satisfaction), as an "overall evaluation based on the total purchase and consumption experience with a good or service over time" (p.54).

E-satisfaction has gained increasing importance in the marketing literature in recent times (Evanschitzky, Iyer, Hesse, & Ahlert, 2004; Szymanski & Hise, 2000; Yi & La, 2004). Based on the conceptualization of Oliver (1999), who viewed satisfaction as the customer's evaluation of every transaction experience, this study defines e-satisfaction as a pleasurable fulfillment accumulated over multiple transaction experiences resulting in formation of an overall evaluation of the online retailer.

Satisfied customers tend to have higher usage of service (Ram & Jung, 1991), possess a stronger repurchase intention, and are often eager to recommend the product or service to their acquaintances (Zeithmal, Berry & Parasuraman, 1996) than those who are not satisfied. According to Winter (2001), customer satisfaction is in the center of the firm's goal of relationship programs in the online retailing context.

E-trust

Trust has been regarded as having the ultimate importance in any form of business transactions, termed "the variable most universally accepted as a basis of any human interaction of exchange" (Gundlach & Murphy, 1993, p.41). Especially when individuals confront a situation in which they cannot fully control the action of others in a business transaction, a high complexity of decision making occurs which can actually inhibit intentions to perform any action of exchange (Gefen, 2000). In reducing the complexity in the decision making process, trust is one of the most effective methods that can act as a focal aspect in interacting with any business party (Luhman, 1979).

Trust is considered a critical component in online retailing as well (Hart & Johnson, 1999; Stewart, 1997; Urban, Sultan & Qualls, 2000). Exchanges where trust acts as a critical component are described as having a high level of performance ambiguity (e.g., evaluations of service performance are highly ambiguous), significant consequentiality (e.g., service performance has significant consequences for the value derived by the consumer), and greater interdependence (e.g., when consumers participates in the process) (Sitkin & Roth, 1993). Online retailers possess many of these characteristics since their performance evaluation is mainly based on the customers' interaction experience with the retailer's website. The retailers' performance is almost invisible during the transaction, and consumers become highly dependent on the online retailer when providing credit cards and personal information. Gefen (2000) asserted that trust is an important precondition of online retailing since trust can encourage customers

to be engaged in activities where a person is exposed to a risk without the ability to control the related behavior.

In the previous research, trust was characterized as confidence and reliability towards the subject and was explained with two different components, credibility and benevolence. Morgan and Hunt (1994) defined trust as the perception of "confidence in the exchange partner's reliability and integrity" (p.23). Moorman, Deshpande and Zaltman (1993) also defined trust as "a willingness to rely on an exchange partner in whom one has confidence" (p.82). Gabarino and Johnson (1999) further conceptualized trust as "customer confidence in the quality and reliability of the service offered" (p.71), encompassing both confidence and reliability. In addition to the importance of confidence and reliability in the conceptualization of trust, two different aspects were determined to explain trust; one is credibility, the focal partner's intention and ability to keep promises, and the other is benevolence, evidence of the focal partner's genuine concern for the partner through sacrifices that exceed a profit motive (Ganesan, 1994). Therefore, e-trust in this study is defined as a customers' belief or confidence that the word or promise by the merchant can be relied upon (i.e., credibility), and the seller will not take advantage of the consumer's vulnerability (i.e., benevolence), based on the study of Geyskens, Steenkamp, Scheer, and Kumar (1996).

Through trust, customers reduce the complexity of understanding others into manageable comprehensible units, making an otherwise unjustifiable belief about the future subjectively justifiable (Lewis, 1985; Luhman, 1979). Eventually, trust encourages long term orientation (Fukuyama, 1995; Ganesan, 1994; Morgan & Hunt, 1994), increases the acceptance of interdependence (Schurr & Ozanne, 1985; Zand, 1972),

creates commitment (Moorman, Zaltman, & Deshpande, 1992; Morgan & Hunt, 1994; Zand, 1972) and also reduces perceived risk (Fukuyama, 1995; Morgan & Hunt, 1994).

Etail Quality

For online retailers, websites serve as repositories of information for the customers and offer transaction capabilities, providing a mechanism to serve customers. Online retailers present different shopping environments from the offline retailers as customers interact with a technical interface in a virtual space rather than interacting with service personnel in a physical space. Thus, etail quality was found to be a critical method in understanding whether the retailer is providing the type and quality of information and interaction to customers (Kim & Stoel, 2003). In addition, etail quality has been emerging as a critical component in fulfilling the expectation and enhancing the evaluation of the customers toward the online retailer (Yoo & Donthu, 2001). Therefore, it is important to understand the dimensions of etail quality in order to enhance the customer experience and facilitate the online interaction between a consumer and the online retailer. Etail quality in this study is conceptualized as the customer's evaluation of process and outcome quality of the interaction with an online retailer, based on Gummerus et al. (2004).

To measure etail quality, different scales were developed from various viewpoints and suggested different dimensions for assessment. Little commonality exists among the scales developed for measuring etail quality dimensions important to customers. Webqual (Lociano et al., 2002) identified 12 dimensions of etail quality, such as 'information fit-to-task', 'interactivity', 'trust', 'response time', 'visual appeal', etc. SITEQUAL (Yoo & Donthu, 2001) measures the quality of etailing focusing on the website interface

dimensions such as ‘ease of use’, ‘aesthetic design’, ‘processing speed’ and ‘security’. Ast (Chen & Wells, 1999) is a global measure and includes five attributes such as ‘website relationship building’, ‘intention to revisit’, ‘satisfaction with the service’, ‘comfort in surfing’ and ‘the judgment that surfing the website is a good way to spend time’. PIRQUAL (Francis & White, 2002) scale measured “perceived Internet retailing quality” including six dimensions, ‘web store functionality’, ‘product attribute description’, ‘ownership conditions’, ‘delivery’, ‘customer service’ and ‘security’. EtailQ (Wolfinbarger & Gilly, 2003) was developed to measure the quality of etail experiences. Through offline focus groups, a sorting task and an online survey, four dimensions of etail quality was proposed such as ‘website design’, ‘customer service’, ‘fulfillment/reliability’, and ‘security/privacy’.

Situational Factors

Belk (1974) defined ‘situation’ as including “all factors specific to a time and place of observation, not affected by the person’s knowledge and stimulus attributes” (p.157). He also stated that a “situation” can have an apparent and systematic effect on current behavior.

In a traditional retailing context, situation was studied as having a significant effect on customer behavior. Belk (1974) contributed substantially to bringing consideration of situational factors into the area of consumer research. He also suggested person (e.g., personality, gender), object (e.g., retailer, product), and situations to influence consumer behavior, each as distinct concepts. He later presented five groups of situational characteristics including physical surroundings, social surroundings, temporal

perspective, task definition and antecedent states (Belk, 1975). Nicholson et al. (2002) examined how and why consumers select particular shopping channels in specific situations, applying the study of Belk (1974, 1975) in a multichannel retailing context. They insisted a major role for situational variables in the channel selection process. Dabholka and Bagozzi (2002) also investigated the moderating role of situational factors within the core attitudinal model of technology-based self service (e.g., kiosks, in-store touch screen, website). They have found that situational variables have significant effects on the relationship between the attributes of technology based self service and the attitude toward the service, as well as the link between attitude and intention to use the service. Gerht and Yan (2004) examined the situational influence on the customer choice of retail format and concluded that situational factors have significant influence on online and catalog format selection.

In order to fully understand consumers' motivations to engage in online shopping, situational factors have to be taken into account. Since consumers in today's market can choose a particular retail channel, various situational factors that encourage or discourage online shopping are considered to be critical in explaining the prosperity of online retailing (Gehrt & Yan, 2004). In the online retailing context, situational factors such as time poverty, shopping task, product category, geographic distance, need for special items and attractiveness of alternatives were considered as influences on customer behavior (Avery, 1996; Gehrt & Yan, 2004; Monsuwé, Dellaert, & de Ruyter, 2004). In this study, situational factors are conceptualized as various external factors occurring at a specific point in space and time, regardless of the characteristics of the consumer and the attributes of the online retailer.

Model Development

This particular section consists of two parts: 1) relationships among market response outcomes (i.e., e-loyalty, e-satisfaction and e-trust), 2) links between etail quality and the market response outcomes, and 3) moderating effect of the situational factors. Figure 1 presents the proposed research model and hypotheses.

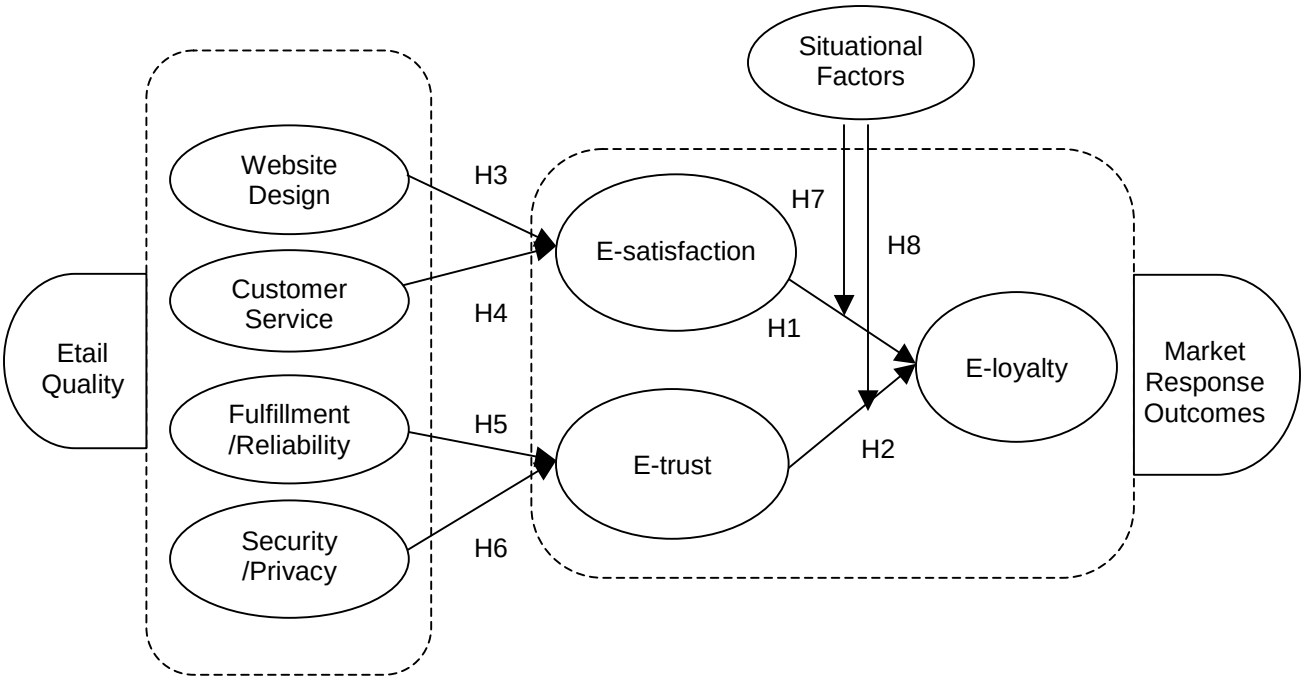

Figure 1. The Proposed Model of E-loyalty Development Process

E-satisfaction and E-loyalty

Loyalty and satisfaction are two distinct concepts. Whereas satisfaction is considered as the customer's evaluation of every transaction experience, loyalty is defined as the continuous and enduring preference toward the retailer (Oliver, 1999). The positive influence of satisfaction on loyalty has been proved (Eriksson & Vaghult, 2000). A number of research studies suggested a sequential chain of various antecedents leading to

satisfaction and further to customer loyalty (Anderson & Mittal, 2000; Oliver, 1997, 1999).

In the online retailing context, it was found that satisfaction generated customer loyalty as well (Abbott, Chiang, Hwang, Paquin, & Zwick, 2000; Park & Kim, 2003; Riel et al., 2001; Wolfinbarger & Gilly, 2003; Yang & Peterson, 2004). A dissatisfied customer was found to be more likely to search for information through alternatives and switch to another retailer, and they are more resistant to developing a closer relationship with the retailer (Anderson & Srinivasaan, 2003). Shankar et al. (2003) even insisted that the positive effect of e-satisfaction on e-loyalty was even higher online than offline.

E-trust and E-loyalty

Trust has a significant impact on the establishment of loyalty (Chaudhuri & Holbrook, 2001; Chiou, Dorge & Hanvanich, 2002; Eriksson & Vaghult, 2000; Hening-Thurau & Klee, 1997; Lau & Lee, 1999; Sirdeshmukh, Singh, & Sabol, 2002). Singh and Sirdeshmukh (2000) proposed that trust, as a relational construct, positively influences loyalty.

The critical link between trust and loyalty has evolved in the study of online retailing. This link suggests that e-loyalty is highly influenced by gaining consumers' e-trust (Park & Kim, 2003; Stewart, 1997). E-loyal customers tend to consolidate their purchases in a sector with one online retailer and consider trust, not price, as the most important factor (Reichheld et al., 2000b). Reichheld and Schefter (2000) even asserted that "to gain the loyalty of customers, you must first gain their trust. That's always been

the case but on the web…it's truer than ever" (p.107), emphasizing the importance of e-trust.

E-satisfaction and E-trust as Antecedents of E-loyalty

In explaining the development of e-loyalty, e-satisfaction (Park & Kim, 2003; Shankar et al., 2003; Yang & Peterson, 2004) and e-trust (Reichheld et al., 2000b; Stewart, 1997) have been critical components. Based on the distinct conceptualization of e-satisfaction and e-trust, a number of studies examined those constructs independently, such as e-satisfaction→ e-loyalty (Park & Kim, 2003; Shankar et al., 2003; Yang & Peterson, 2004), or e-trust→ e-loyalty (Reichheld et al., 2000b; Stewart, 1997).

While a number of studies determined the individual influence of e-satisfaction and e-trust on e-loyalty, recent research has attempted to explain e-loyalty considering both e-satisfaction and e-trust. The research of Rexha et al. (2003) was one of the studies that considered both e-satisfaction and e-trust in e-loyalty development for online banking. They focused on the trust dimension as a key and central factor of e-loyalty, suggesting a sequential relationship of e-satisfaction→ e-trust→ e-loyalty. Gummerus et al. (2004) insisted that e-loyalty is mainly driven by e-satisfaction, when e-satisfaction is influenced by the level of e-trust, suggesting e-trust→ e-satisfaction→ e-loyalty link. In their study, e-trust was emphasized as a factor mediating the link between online service quality and e-satisfaction which further leads to e-loyalty. Anderson and Srinivasan (2003) indicated that e-satisfaction→ e-loyalty relationship can be emphasized by the moderating effect of e-trust. However, they did not test the relationship between e-trust and e-loyalty.

Whereas there is a notable amount of research concerning e-loyalty, e-satisfaction and e-trust, not many research studies have built a comprehensive framework considering both e-satisfaction and e-trust as independent variables in explaining e-loyalty. Since e-loyalty can be described as a long-term commitment to the online retailer which requires both favorable attitude and repeated purchasing behavior, the relational (trust) and transaction specific experiences (satisfaction) should coexist in framing e-loyalty. Therefore, the following hypotheses were proposed.

H1. The level of e-satisfaction has a positive effect on e-loyalty.

H2. The level of e-trust has a positive effect on e-loyalty.

Etail Quality as Antecedents of E-satisfaction and E-trust

Etail quality was considered a determinant of the level of e-satisfaction and e-trust. Montoya-Weiss et al. (2003) insist that the quality of the service delivered by the online retailer affects the satisfaction level (see also Devaraj et al, 2002; Riel et al, 2001; Shankar et al., 2003). Park and Kim (2003) suggested the quality of the product, the service and the interface provided by the online retailer was significantly related to e-satisfaction development. Etail quality delivered by the online retailer was found to impact e-trust as well. Gummerus et al. (2004) concluded that the quality of e-service had a direct and positive influence on e-trust. McKnight and Chervany (2002) also proposed that perceived etail quality impacted e-trust. However, little is known about the role of etail quality in a comprehensive framework of e-loyalty, e-satisfaction and e-trust. Thus, we propose etail quality as an antecedent of e-satisfaction and e-trust which in turn affects e-loyalty.

This study used etailQ scale developed by Wolfinbarger and Gilly (2003). The etailQ scale consists of four factors including website design, customer service, fulfillment/reliability, and security/privacy. While etail quality was examined as uni-dimension in a number of studies (e.g., Taylor & Baker, 1994), this study suggests that each dimension has differing effects on market response outcomes. We hypothesize that website design and customer service have significant impacts on the e-satisfaction level, whereas fulfillment/reliability and security/privacy influence e-trust.

Antecedents of E-satisfaction

Website Design

Website design embraces all elements of the consumer's interaction with the website, including navigation, in depth-information, and order processing (Wolfinbarger & Gilly, 2003). The functionality and ambience of the website could play a role in the extent to which consumers are satisfied or dissatisfied with their online shopping experiences. A website design that leads to a pleasurable and satisfying shopping experience includes fast, uncluttered, and easy-to navigate features (Pastrick, 1997; Szymanski & Hise, 2000). Montoya-Weiss et al. (2003) suggested an indirect relationship between the website design factors, such as information content, navigation, and graphic style, and the level of e-satisfaction. Devaraj et al. (2002) measured consumer satisfaction through the Technology Acceptance Model, and concluded that ease of use has an indirect effect on e-satisfaction. Szymanski and Hise (2000) insisted that website design plays a prominent role in e-satisfaction assessment as well. Number of studies determined the importance of information content, which is included in website design dimension in

our study, in determining the level of e-satisfaction. Peterson, Balasubramanian and Bonnenberg (1997) asserted that more extensive and higher quality information available online leads to better buying decisions and higher satisfaction (see also Shankar et al., 2003). Therefore, this study suggests that website design influences the level of e-satisfaction.

H3. Website design has a positive effect on e-satisfaction.

Customer Service

Customer service is described as the responsive, helpful, and willing service that responds to customer inquiries quickly (Wolfinbarger & Gilly, 2003). Coughlan et al. (2001) concluded that customer service of retailers is critical in the level of satisfaction. Kim and Stoel (2004) also found that response time had an impact on the level of e-satisfaction. According to Devaraj et al. (2002), the service and support provided by the channel determines the continued satisfaction. In addition, Devaraj et al. (2002) found that seller empathy, which is a component of customer service, is important in the formation of e-satisfaction. Through the investigation of 100 U.S. retailer's websites, Griffith and Krampf (1998) insisted that a lack of prompt response, especially to e-mail inquiries, is the most common negatively perceived phenomenon in online retailing. Yang, Peterson and Huang (2001) also insisted that timely responses to customers' concerns and inquiries are critical for e-satisfaction. They further argued that since e-mail is an important means of customer communication, online retailers need to promptly respond to e-mail inquiries. Consequently, the customer service factor is likely to affect the satisfaction level of the consumers.

H4. Customer Service has a positive effect on e-satisfaction.

Antecedents of E-trust

Fulfillment/Reliability

Fulfillment/ reliability is explained as the delivery of the right product within the time frame promised, and the accurate information displayed for the product on the website so that customers receive what they expect to receive (Wolfinbarger & Gilly, 2003). Urban et al. (2000) suggested that the important factor leading to e-trust is fulfillment, which includes shipping the right product at the right time. Ample evidence has emerged that consumers are especially concerned about order fulfillment when building trust towards the online retailer rather than towards traditional retailers (Reynolds, 2000). Further, Forsythe and Shi (2003) suggested that risk of financial loss (i.e., not getting the product ordered) and product performance (i.e., product does not perform as expected) hindered online purchases. Thus, if a customer feels there is less risk associated to fulfillment/reliability, he/she would purchase from the online retailer with more comfort and an increased level of e-trust. Reichheld et al. (2000b) also noted that delivering on the promises that the product will arrive is critical in developing e-trust. Therefore, the study suggests that fulfillment and reliability of an online retailer impact customer e-trust.

H5. Fulfillment/Reliability has a positive effect on e-trust.

Security/Privacy

Security/ privacy include security of credit card payments and privacy of shared information (Wolfinbarger & Gilly, 2003). Assurance of security plays an important role in building e-trust by reducing the consumers' concerns about personal data abuse and

vulnerability of transaction data (Jarvenpaa & Todd, 1997; Ratnashingham, 1998). Thus, when the perceived level of security assurance meets the consumer's expectations, a consumer may be willing to disclose his/her personal information with an increased level of trust (Park & Kim, 2003). McKnight and Chervany (2002) also hold that if an online retailer assures customers that a privacy policy exists on the site by posting a privacy policy or using a third party seal, the customer is more likely to trust the online retailer when disclosing personal information (Gummerus et al., 2004). Urban et al. (2000) argued that privacy protection as well as a third party seal is critical in building e-trust (see also Schoder & Yin, 2000). Therefore, the following hypothesis was proposed.

H6. Security/Privacy has a positive effect on e-trust.

Situational Factors as Moderator of the Relationship among Market Response Outcomes

Lim and Razzaque (1997) have previously suggested the interaction effect of situational variables on the relationship between brand attitude and customer loyalty. Comparing the view points of ‘personalogist’ and ‘situationist’, they have suggested the ‘interactionist’ perspective. The interactionist perspective acknowledges that both the person and the situation can have a significant influence over loyalty, while personologists ignore the different consumption and purchase situations, and situationalists disregard the effect of personal traits and customer attitude in establishing loyalty. Belk (1974) also noted that relationships of brand attitudes (i.e., e-satisfaction and e-trust), personality (i.e., customer characteristics), and customer loyalty is likely to be explained more clearly with consideration of situational variables.

In line with the interactionist's view point, this study propose that a wide variety of situational aspects can have a moderating (i.e., interaction) effects on the relationship between e-satisfaction→ e-loyalty and e-trust→ e-loyalty. Four factors such as geographic distance, time poverty, physical immobility and lack of transportation were suggested as situational moderators. Geographic distance is considered as the consumers' travel time and distance to a traditional store (Monsuwé et al., 2004). Time poverty is defined as the perception of time available for an individual to perform a task (Gehrt & Yan, 2004). Physical immobility and lack of transportation is explained as consumers who are ill, pregnant, or immobilized, and who do not have available transportation (Avery, 1996). Customers with such situational constraints might present higher loyalty based on a certain level of satisfaction and trust compared to the customers not experiencing such constraints. For example, consumers with little time to shop might be forced to use the Internet as a shopping medium as they are unable to spend time traveling to traditional stores. When these customers are satisfied with an online retailer and build trust, they might be less likely to search for another retailer, compared to customers motivated by some other reasons such as price. In other words, time lacking customers would prefer to stick to the retailer once they have established satisfaction and trust and might not bother to look for another retailer spending more time and effort, thus showing a stronger link between satisfaction/trust and loyalty. In addition, customers living in the rural community would tend to remain loyal to the online retailer they have built a satisfying and trusting relationship with since they would be less distracted by the traditional retailer than the customers without geographic limitation. This would be

similar to the customers with physical transportation constraints. Based on the argument, the following hypothesis is proposed;

H7. The following situational factors moderate the relationship between e-satisfaction and e-loyalty.

H7a. Time poverty.

H7b. Geographic distance.

H7c. Physical immobility.

H7d. Lack of transportation.

H8. The following situational factors moderate the relationship between e-trust and e-loyalty.

H8a. Time poverty.

H8b. Geographic distance.

H8c. Physical immobility.

H8d. Lack of transportation.

CHAPTER 3

METHODOLOGY

This chapter introduces the methods used in the study. First, the survey instrument design and pre-test procedure are discussed. The explanation of the data collection procedures, and the description of the sample's characteristics follows. Finally, the measurement validation process and the final scale items are presented.

Survey Instrument Design

The survey instrument consists of five sections. Scales to measure each of the factors in the model were developed based on the previous literature. In the first section, respondents were asked to name the online retailer they had purchased products from most often in the past year. This technique allowed us to ensure that respondents possessed sufficient experience to answer questions about their perception of the online apparel retailer. Four items regarding online shopping behavior (e.g., How often do you visit this online retailer a month? What are the most frequently bought items at the online retailer?) were asked in this section.

In the second section, respondents were asked to evaluate the online retailer they had named previously in terms of etail quality. To measure website quality, different scales such as WebQual (Lociano, Watson & Goodhue, 2002), SITEQUAL (Yoo & Donthu, 2001), and Ast (Chen & Wells, 1999) were suggested. This study selected etailQ

developed by Wolfinbarger and Gilly (2003) which is a reliable and valid scale that encompasses various necessary components for assessing the quality of online purchase experiences. The etailQ consists of 14 items that cover four dimensions of website design, customer service, fulfillment/reliability, and security/privacy. Five items for website design, three items for customer service, three items for fulfillment/reliability, and three items for security/privacy were included.

In the third section, the respondents' level of e-loyalty, e-satisfaction and e-trust towards the online retailer were assessed. To measure e-loyalty, seven items were adapted from Srinivasan et al. (2002). The loyalty measure captured the facets of both attitudinal and behavioral aspects. Three e-satisfaction items were developed by the researcher based on Fornell, Johnson, Anderson, Cha and Bryant (1996). Four e-trust items were adapted from the study of Gabarino and Johnson (1999) to assess the overall trust that possesses the relational nature towards the online retailer.

In the fourth section, the situational variables were assessed using the scales developed by the researcher based on the conceptualization of Monsuwé et al. (2004). Each of the situational variables (i.e., time poverty, geographic distance, physical immobility, and lack of transportation) was measured by one item. Lastly, demographic information such as age, gender, and academic background was also collected. Table 1 presents the initial set of items for the core constructs, etail quality, e-loyalty, e-satisfaction, e-trust and situational factors

Table 1. Items Retained for the Survey Instrument

etailQ	*Website Design* This website is well designed in order not to waste my time. This website provides in-depth information. It is quick and easy to complete a transaction on this website. The level of personalization at this site is about right, not too much or not too little. This website has good selection. *Customer Service* This website is willing and ready to respond to customers' needs. Inquiries are answered promptly. When you have a problem, this website shows a sincere interest in solving it. *Fulfillment/Reliability* The product was represented accurately by the website. The product is delivered on time as promised by the company. You get what you ordered from the website. *Security/Privacy* This website has adequate security features. I feel safe in my transactions with this website. I feel my privacy is protected on this website.	Adopted from Wolfinbarger & Gilly (2003)
E-loyalty	When I need to make a purchase, this website is my first choice. I believe this is my favorite website to buy the same kind of product. To me, this website is the best retail website to do business with. As long as the present service continues, I doubt that would switch to another website. I seldom consider switching to another online retailer. I try to purchase at this online retailer whenever I need to make a purchase. I like shopping at this online retailer.	Adopted from Srinivasan et al. (2002)
E-satisfaction	I am satisfied with the product of this online retailer. I am overall satisfied with this online retailer. I am satisfied with the purchase experience at this online retailer.	Developed by the researcher
E-trust	I trust what this online retailer says about its products. This online retailer is reliable. I trust the claims and promises this website makes about a product. I think some of this online retailer's claims about its service are exaggerated.	Adapted from Gabarino & Johnson (1999)
Situational Factors	Geographic distance prevents me fron shopping at a retail store. I cannot shop at a retail store due to lack of time. I cannot shop freely at a retail store due to lack of time. Transportation is not available for me to get to a retail store.	Developed by the researcher

For a pre-test, the developed questionnaire was distributed to 23 individuals from diverse demographic groups who had online purchase experiences. The pre-test results were reviewed by researchers for clarity and completeness, and modifications to refine and shorten the instrument were made. Two items from the website design factor were deleted after pre-test, since those items failed to measure the aspects of website design intended to be assessed in this study, thus not presenting face validity. One item from the fulfillment/reliability factor was taken off as it confused most of the respondents.

A total of 11 items for etail quality, 14 items for market response outcomes, and 4 items for situational factors were finalized for the questionnaire (see Appendix A for the final items for the questionnaire). All items were measured by a five-point Likert scale (1=strongly disagree, 5=strongly agree), except the items assessing online shopping behavior and demographic information.

Data Collection

For the data collection process, we have employed multiple methods in order to include respondents of diverse demographic background and situational factors. The respondents were selected at public facilities (i.e., universities, public library, and local mall) in three major cities in a southwestern state of the US. At the universities, we randomly approached the students in the library, student lounge or at the cafeteria, and also visited a class with the professor's permission and asked the students to fill out the survey during the class period. At the local mall and public library, we have used a convenience sampling method to collect data. Since we could not get permission to collect the data

inside the mall property, we have approached the individuals in the cafeteria, around the patio, and near the parking lots.

Before going out for data collecting, we have trained interviewers by explaining the purpose of the study and the content of the survey. Interviewers for the survey consisted of three graduate students including the researcher. Trained interviewers have approached individuals and asked them if they have any online purchase experience. When the person answered 'yes', we explained the purpose of our study and asked them to complete the survey. The interviewers also notified the respondents that this study is approved by the Institutional Review Board at Oklahoma State University. The survey took approximately 15 minutes, and the interviewers asked the respondents to return the questionnaire after completing. Sample from the public library and local mall enabled us to obtain age diversity of our sample, whereas the sample collected at the universities were mainly between the ages 19-24. We gave out small presents (e.g., chocolate bars) as incentives for in class data collection at the university, since the interviewers dealt with large group of people and needed to encourage them to fill out the survey completely and sincerely by giving incentives. However, at other places the interviewers approached each individual and could communicate with the respondents for sincere responses. Therefore, we decided not to give out incentives at the public library and the local mall.

Initially we have distributed total of 224 questionnaires. We discarded 42 questionnaires due to the incompleteness and insincerity of the answers. After the data collection process, 182 usable data were obtained and used for data analysis. Fifty four usable data were obtained from the university in one city and 49 from the university in

the other city. Forty two usable questionnaires were collected from the local mall. Additional 37 questionnaires were obtained from the public library.

A majority of the respondents were females (66.5%). The respondents tended to be younger (mean age=24, 68.5% of the sample was younger than 25) and well-educated (56.2% had a college degree and/or an advanced degree). In order to assess the representiveness of the sample, we compared the respondents' demographic data with those reported in a research project at shop.org (2004). In the current report of shop.org, women consist of about 60% of total online transactions made. The 18-24 year-old student group proved to be the most adept at shopping online (shop.org, 2004). Thus, our comparison presented a close match between our sample and the reported the demographic trend of the US online shoppers.

For online purchasing behavior assessment, apparel item was found to be the most frequently bought item in our sample (47.3%). About 80% of the respondents answered that they visit the particular online retailer more than once a month, nearly 30% responded six or more visits per month. Approximately 40% of our respondents spent more than one hour browsing or purchasing on the particular website per visit, and 55.4% spent more than $100 purchasing products on the particular website during the past year. Table 2 presents the demographic characteristics and online shopping behavior of the respondents.

Table 2. Demographic Characteristics and Online Shopping Behavior of the Sample

n=182

		Frequency	%
Gender	Male	60	33.1
	Female	121	66.9
Age	18-20	28	15.7
	21-25	94	52.8
	26-30	44	24.7
	31+	12	6.7
Education	High school graduate	14	7.8
	Some college, no degree	65	36.1
	Associate degree, occupational	1	0.6
	Associate degree, academic	6	3.3
	Bachelor's degree	46	25.6
	Master's degree	37	20.6
	Professional degree	4	2.2
	Doctorate degree	7	3.9
Most frequently bought item from the online retailer	Apparel	86	47.3
	Electronic goods	37	20.3
	Groceries	4	2.2
	Household goods	6	3.3
	Sports equipment	4	2.2
	Books and Cds	21	11.5
	etc	24	13.2
Number of visits in a month	Less than 1 time	36	19.8
	1-5 times	92	50.5
	6-10 times	30	16.5
	11-20 times	13	7.1
	21-30 times	6	3.3
	More than 30 times	5	2.7
Hours spent for each visit	Less than 1 hour	111	61.0
	1-2 hours	60	33.0
	3-4 hours	10	5.5
	5-6 hours	1	0.5
Dollar amount spent the past year	$1-50	38	20.9
	$51-100	45	24.7
	$101-200	29	15.9
	$201-300	30	16.5
	$301-400	13	7.1
	$401-500	6	3.3
	$501-1000	7	3.8
	$1001+	14	7.7

Data Analysis

This section describes the data analysis procedures that were used to test the proposed model in the study. Before the analysis of the hypotheses, we employed confirmatory factor analysis to confirm the validity of each construct. For the proposed hypotheses, the analysis was performed in two phases.

Phase I

In the first phase, structural equation modeling using LISREL 8.5 (Jöreskog & Sörbom, 2000) was employed to test the relationship among the market response outcomes (hypotheses 1 and 2) and the link between etail quality and e-satisfaction/ e-trust (hypotheses 3, 4, 5 and 6). Structural equation modeling (SEM) estimates multiple and interrelated dependence relationships (Hair, Andersonm, Tatham, & Black, 1998), thus being an ideal technique to test the hypotheses given the complex relationships among the constructs.

The model fit can be judged based on a number of fit indices including chi-square tests, goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), the normed fit index (NFI), the comparative fit index (CFI), the root mean square residual (RMR), and the root mean square error of approximation (RMSEA). The p-value for chi-square should be larger than .05 to test the goodness of fit for this data. However, reliance on chi-square test as the sole measure of a model fit is not recommended because the test is sensitive to sample size. Small deviations from a true model can reject the hypothesized model in large samples, and large deviations of the hypothesized model from a true

model may not be detected (Bagozzi & Edwards, 1998). Other indices such as GFI, AGFI, NFI, CFI, RMR and RMSEA were used to measure model fit.

The GFI represents the overall degree of fit, the squared residuals from prediction compared with actual data, but is not adjusted for degrees of freedom (Hair et al., 1998). A GFI value higher than .90 indicates better fit of the model. AGFI is an extension of GFI, adjusted by the ratio of degrees of freedom for the proposed model to the degrees of freedom for the null model (Hair et al., 1998). The recommended acceptance level is a value greater than .90. NFI is a relative comparison of the proposed model to the null model (Hair et al., 1998). The commonly recommended value for NFI is .90 or greater. CFI represents the relative improvement in fit of the hypothesized model over the null model (Hair et al., 1998). CFI provides an unbiased estimate of its corresponding population value, and is less sensitive to the sample size. The CFI value lies between 0 and 1.0, and the larger value of CFI indicates higher levels of goodness-of-fit. RMR is an average of the residuals between observed and estimated input metrics (Hair et al., 1998). No threshold level can be established for RMR, but the researcher can asses the practical significance of the RMR considering the research objectives and the observed/actual covariance/correlations. RMSEA, similar to RMR, is the discrepancy per degree of freedom, yet measures discrepancy in terms of the population, not just the sample used for estimation (Hair et al., 1998). The RMSEA value ranging from .05 to .08 is considered acceptable. However, it is the researcher's responsibility to select the appropriate measures and assess the fit by admittedly subjective standards to decide whether the model is acceptable (Hair et al., 1998).

Phase II

In the second phase, the moderating effects of the situational variables (i.e., time poverty, geographic distance, physical immobility, and lack of transportation) on the relationship between e-satisfaction→ e-loyalty (Hypotheses 7a,7b,7c, and 7d), and e-trust→ e-loyalty (hypotheses 8a,8b,8c, and 8d) were tested by a moderated multiple regression analysis. This type of regression looks for an interaction between moderator variables and other independent variables in predicting levels of dependent variables by using ordinary least squares regression (Hair et al., 1998).

A concern regarding the use of the moderated multiple regression analysis is the possible multicollinearity between the interaction terms and other factors. Multicollinearity occurs when any single independent variable is highly correlated with a set of other independent variables. Multicollinearity results in a larger portion of shared variance and lower levels of shared variance from which the effects of the individual independents variables can be determined. In addition, high degrees of multicollinearity can result in regression coefficients being incorrectly estimated and even having wrong signs (Hair et al., 1998). Two of the more common measures for assessing multicollinearity are the tolerance value and the variance inflation factor (VIF) (Hair et al., 1998). These measures indicate the degree to which each independent variable is explained by the other independent variables. Tolerance is the amount of variability of the selected independent variable not explained by the other independent variables. Therefore, a very small tolerance value denotes high collinearity. VIF is the inverse of the tolerance value (1/tolerance), thus a large value means high collinearity. A common cutoff threshold is a tolerance value of .10 which corresponds to a VIF value above 10.

The initial variables showed VIF values much higher than 10, thus indicating the existence of multicollinearity. To resolve the problem of multicollinearity, the researcher has several options that require judgment of the variables included in the regression variate. In this study, each scale substituting an interaction term was mean-centered in order to reduce multicollinearity (Cohen, Cohen, West & Aiken, 2003). Mean-centering is a linear transformation procedure by which the mean of the independent variable is subtracted from each score on the independent variable, reducing nonessential multicollinearity in a regression model containing interactions (Cohen et al., 2003). After the mean-centering method was employed for data transformation, all of the VIF values were below 10 (see Appendix D for the VIF values).

Measurement Validation

A confirmatory factor analysis (CFA) was performed for the constructs of market response outcomes and etail quality using Lisrel 8.5 (Jöreskog & Sörbom, 2000). Confirmatory factor analysis was suggested as a more precise method to test the unidimensionality and validity of the measurements than an exploratory factor analysis and item-total correlations (Gerbing & Anderson, 1988). CFA measures whether each factor exhibits convergent and discriminant validity. Convergent validity is defined as the agreement among measures of the same factor. Convergent validity is established when a CFA model fits satisfactorily and all factor loadings are significantly and preferably high (Bagozzi, Yi, & Phillips, 1991). Discriminant validity is the distinctiveness of the two conceptually similar constructs (Hair et al., 1998). A perfect correlation between factors

would indicate that the factors are not discriminable. Discriminant validity among factors exists when the construct correlation is less than 1.00 (perfect).

We refined the scales by deleting items that did not load meaningfully on the underlying constructs and those that did not highly correlate with other items measuring the same construct. Three of these deleted items are related to e-loyalty, and one to e-trust (see Appendix A for the items deleted after CFA).

Through a series of scale purification processes, final acceptable CFA results were achieved (for market response outcomes: χ^2= 75.08, *df*= 32 (p-value<.0001), GFI= 0.92, AGFI= 0.87, NFI= 0.95, CFI= 0.97, RMR= 0.04, RMSEA= 0.09, for etail quality: χ^2= 65.50, *df*= 38 (p-value<.0001), GFI= 0.94, AGFI= 0.89, NFI= 0.93, CFI= 0.97, RMR= 0.04, RMSEA= 0.06) (See Appendix E for correlation matrix used for analysis). All indicators loaded to a respective construct, providing unidimensionality and validity of the measurement. Instrument reliability was tested using Cronbach's alpha technique and all values ranged from .58-.86 for the etailQ items and .85-.93 for market response outcomes, providing internal consistency. Through CFA, we could confirm the three constructs of market response outcomes (see Table 3), and the four dimensions (i.e., website design, customer service, fulfillment/reliability, and security/privacy) suggested by Wolfinbarger and Gilly (2003) (see Table 4).

Table 3. The Results for Confirmatory Factor Analysis on Market Response Outcomes

Item description	coefficient (t-value)	Cronbach's α
E-loyalty		0.85
When I need to make a purchase, this website is my first choice.	.76(11.52) [a]	
I believe this is my favorite website to buy the same kind of product	.83(13.10) [a]	
To me, this website is the best retail website to do business with.	.81(12.56) [a]	
As long as the present service continues, I doubt that I would switch to another website.	.66(9.55) [a]	
E-satisfaction		0.93
I am satisfied with the product of this online retailer.	.86(14.33) [a]	
I am overall satisfied with this online retailer.	.91(15.73) [a]	
I am satisfied with the purchase experience at this online retailer.	.93(16.21) [a]	
E-trust		0.86
I trust what this online retailer says about its products.	.81(12.78) [a]	
This online retailer is reliable.	.83(13.28) [a]	
I trust the claims and promises this website makes about a product.	.81(12.89) [a]	

* χ^2= 75.08, *df*= 32, (p-value<.0001), GFI= .92, AGFI= .87, NFI= .95, CFI= .97, RMR= .04, RMSEA= .09

a: p< .01

Table 4. The Results for Confirmatory Factor Analysis on etailQ Items

Item Description	coefficient (t-value)	Cronbach's α
Website Design		0.78
This website is well designed in order not to waste my time.	.74(10.89)[a]	
This website provides in-depth information.	.70(10.13) [a]	
It is quick and easy to complete a transaction on this website.	.77(11.45) [a]	
Customer Service		0.81
This website is willing and ready to respond to customers' needs.	.76(11.13) [a]	
Inquiries are answered promptly.	.75(10.87) [a]	
When you have a problem, this website shows a sincere interest in solving it.	.80(11.99) [a]	
Fulfillment/Reliability		0.58
The product was represented accurately by the website.	.66(8.13) [a]	
The product is delivered on time as promised by the company.	.63(7.80) [a]	
Security/Privacy		0.86
This website has adequate security features.	.73(11.04) [a]	
I feel safe in my transactions with this website.	.85(13.78) [a]	
I feel my privacy is protected on this website.	.90(14.83) [a]	

* χ^2= 65.50, *df*= 38, (p-value<.0001), GFI= 0.94, AGFI= 0.89, NFI= 0.93, CFI= 0.97, RMR=0.04, RMSEA= 0.06

a: p< .01

CHAPTER 4

FINDINGS

This chapter presents the results of testing the hypotheses. The data were analyzed through two different phases. In phase I, the structural path model was tested using LISREL 8.5 (Jöreskog & Sörbom, 2000) for hypotheses 1, 2, 3, 4, 5 and 6. In phase II, moderated multiple regression analysis was performed for hypotheses 7 and 8.

Phase I

The hypothesized structural model was tested; however, the fit for the initial conceptual model was not acceptable (χ^2 = 137.09, *df* = 9, *p*-value = .00, GFI = .88, AGFI= .62, NFI= .83, CFI = .84, RMSEA = .22, RMR = .07). When the fit of the model is not suitable, modification indices are suggested as the most useful way of deciding how to change the model. Modification indices are measures of the predicted decrease in χ^2 if a single fixed parameter or equality constraint is relaxed and the model is re-estimated (Jöreskog & Sörbom, 2000). Through examining modification indices, appropriate measures were taken to improve the fit, and an alternative model with two additional paths was developed. Figure 2 presents the modified model with the initial paths and two additional paths.

The overall fit of the modified model is excellent (χ^2 = 9.41, *df* = 7, p-value = .22, GFI = .99, AGFI= .94, NFI= .99, CFI = 1.00, RMSEA = .044, RMR = .017). For this

alternative model, the modification indices and the residuals signify that no additional paths are called for. Two additional paths suggested by the modification indices were included in the model; fulfillment/reliability→ e-satisfaction, and e-trust→ e-satisfaction. All the hypothesized paths were supported in the structural path model except one: the customer's evaluation of the customer service factor was not found to be significantly related to the level of e-satisfaction. Thus, H4 was rejected.

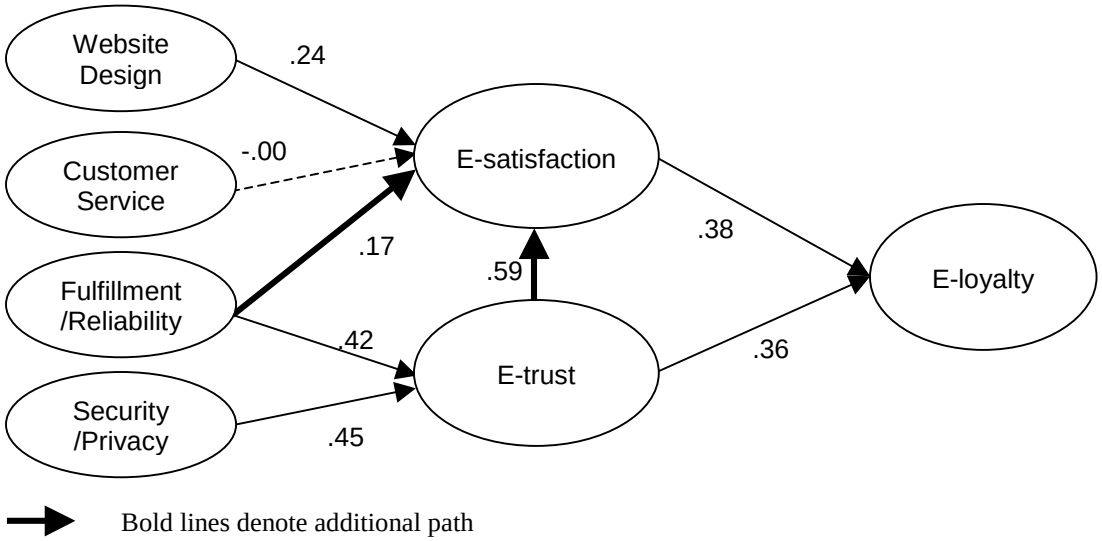

Figure 2. The Modified Model of E-loyalty Development Process

Relationship among Market Response Outcomes

As shown in Table 5, both e-satisfaction (coefficient= .38) and e-trust (coefficient= .36) had a significant influence on e-loyalty, supporting H1 and H2. The coefficient of e-satisfaction→ e-loyalty (coefficient= .38) and e-trust→ e-loyalty (coefficient= .36) were similar, thus supporting our assumption that both e-satisfaction and e-trust would have an independent influence on e-loyalty. An additional path of e-trust→ e-satisfaction

(coefficient= .59) was found to be significant. This finding supports the study of Gummerus et al. (2004) who indicated the link e-trust→ e-satisfaction→ e-loyalty.

Etail Quality and the Market Response Outcomes

Among the paths from etail quality to e-satisfaction, website design had the highest coefficient, supporting the argument of Shankar et al. (2003) that information content is the paramount factor in determining e-satisfaction than any other component. Website design had a significant impact on e-satisfaction (coefficient= .24) supporting H3. This result is consistent with the study of Montoya-Weiss et al. (2003) who indicated a significant effect of website design factors on e-satisfaction. Customer service did not have a significant effect on the level of e-satisfaction (coefficient=.00) opposing the result of Coughlan et al. (2001), and many other researchers who indicated that sincere customer service have a significant impact on e-satisfaction. However, our result is consistent with the study of Shankar et al. (2003), where they have indicated that interactivity of the website does not affect e-satisfaction, whereas information content, a component of website design positively impacts e-satisfaction. The additional path between fulfillment/reliability and e-satisfaction was found to be significant as well (coefficient=.17), which is consistent with the result of Wolfinbarger and Gilly (2003).

For the determinants of e-trust, fulfillment/reliability was suggested to have a positive influence on e-trust (coefficient= .42), thus H5 was supported. This result is consistent with the study of Urban et al. (2000) that suggested delivery of the right product at the time promised had a significant impact on e-trust level. Security/privacy also had a positive influence on the e-trust level (coefficient= .45), supporting H6. This

result corresponds to the literature that maintained privacy protection and information security as critical in developing e-trust (Gummerus et al., 2004; Hoffman et al., 1999; Jarvenpaa & Todd, 1997; McKnight & Chervany, 2002; Ratnashingham, 1998; Schoder & Yin, 2000; Urban et al., 2000).

Table 5. Standardized Parameter Estimates of the Hypothesized and Suggested Paths of the Structural Path Model

Hypotheses	Path	Coefficient (*t*-Value)	Result
	E-loyalty, E-satisfaction and E-trust		
H 1	E-satisfaction → E-loyalty	.38(4.10) [a]	Supported
H 2	E-trust → E-loyalty	.36(3.83) [a]	Supported
Additional path	E-trust → E-satisfaction	.59(11.67) [a]	Supported
	Etail Quality and E-satisfaction		
H3	Website Design → E-satisfaction	.24(4.63) [a]	Supported
H4	Customer Service → E-satisfaction	.00(-0.04)	Rejected
Additional path	Fulfillment/Reliability → E-satisfaction	.17(3.17) [a]	Supported
	Etail Quality and E-trust		
H5	Fulfillment/Reliability → E-trust	.42(7.53) [a]	Supported
H6	Security/Privacy → E-trust	.45(7.95) [a]	Supported

a: $p < .01$

Phase II

Situational Factors as Moderator of the Relationships among Market Response Outcomes

Moderated multiple regression analysis was used to test the hypotheses regarding the moderating effect of the situational variables on e-satisfaction→ e-loyalty and e-trust→ e-loyalty. The proposed moderator variable (situational factors) was entered into the

regression equation to determine whether or not a significant main effect existed. Following this, the interaction term between the moderator variable and independent variable was entered into the regression equation to determine if a significant moderator effect existed. The moderated relationship is represented in the following equations:

Model 1: $y=b_0 + b_1 X_1$

Model 2: $y=b_0 + b_1 X_1 + b_2 X_2$

Model 3: $y=b_0 + b_1 X_1 + b_2 X_2 + b_3 X_1 X_2$

Where:

y = Dependent variables (i.e., e-loyalty)

X_1 = Independent (predictor) variable (i.e., e-satisfaction and e-trust)

X_2 = Second independent (moderator) variable (i.e., distance, time, physical immobility, and transportation)

$X_1 X_2$ = Moderator effect of X_1 and X_2

b_0 = Intercept

b_1= Regression coefficient for independent variables

b_2 = Regression coefficient for second independent variable

b_3 = Regression coefficient for moderator effect

To test moderating effects, above Model 1, 2 and 3 were analyzed and summary statistics are presented in Table 6 and 7. As recommended by Sharma, Durand and Gur-Arie (1981), Model 2 and 3 were compared to determine if the interaction terms representing the moderating effect were significant Moderating effects are determined based on the significance of F change.

Table 6. Moderating Effect of Situational Factors and E-satisfaction on E-loyalty

			R^2	Adjusted R^2	F value	F change	Significant F change
E-satisfaction	Time Poverty	Model 1	.46	.46	152.61[a]		<.0001
		Model 2	.45	.45	74.03[a]	.14	.71
		Model 3	.46	.46	49.27[a]	.31	.58
	Geographic Distance	Model 1	.46	.46	152.6[a]		<.0001
		Model 2	.46	.46	77.61[a]	.28	.60
		Model 3	.47	.46	51.54[a]	.14	.70
	Physical Immobility	Model 1	.46	.46	152.61[a]		<.0001
		Model 2	.45	.45	73.21[a]	.05	.81
		Model 3	.45	.44	48.53[a]	.01	.94
	Lack of Transportation	Model 1	.46	.46	152.61[a]		<.0001
		Model 2	.46	.45	74.11[a]	.66	.42
		Model 3	.46	.45	49.84[a]	1.17	.28

a: $p < .01$

Table 7. Moderating Effect of Situational Factors and E-trust on E-loyalty

			R^2	Adjusted R^2	F value	F change	Significant F change
E-trust	Time Poverty	Model 1	.45	.45	148.52[a]		<.0001
		Model 2	.45	.44	71.47[a]	.01	.71
		Model 3	.45	.44	47.38[a]	.00	.58
	Geographic Distance	Model 1	.45	.45	148.52[a]		<.0001
		Model 2	.45	.45	72.97[a]	.02	.60
		Model 3	.46	.45	49.57[a]	1.96	.70
	Physical Immobility	Model 1	.45	.45	148.52[a]		<.0001
		Model 2	.45	.44	70.86[a]	.06	.81
		Model 3	.45	.44	47.81[a]	1.39	.94
	Lack of Transportation	Model 1	.45	.45	148.52[a]		<.0001
		Model 2	.45	.44	71.12[a]	.00	.42
		Model 3	.46	.45	49.09[a]	3.24	.28

a: $p < .01$

F change for all equations was not significant, indicating that there were no moderator effects for the situational factors on the relationship between e-satisfaction→ e-loyalty and e-trust→ e-loyalty. Therefore, hypotheses 7 and 8 were rejected, contrary to the previous study of Monsuwé et al. (2004), who suggested the moderating effect of the situational variables on the relationship between customer attitude toward online shopping and the online shopping intention.

Tendency of Sample Responses on Situational Variables

After analyzing the moderator effect of the situational factors, we examined the frequency of sample responses on each variable. The result showed that majority of our sample perceived geographical constraint to be high and physical and transportation constraint to be low. It can be assumed that the result of examining the moderator effect of situational factors was not significant, because the responses of our sample on situational variables were skewed and did not represent the diverse situation online shoppers might face. The response trend on the situational variables is presented in Table 8. 'Low constraint' here denotes the respondents who answered 'strongly disagree or disagree' to the items asking if they have situational constraints. 'Neutral' is the one who answered neutral. 'High constraint' denotes the respondents who answered 'strongly agree or agree' to the situational constraint items.

Table 8. Sample Response Trends on Situational Variables

n= 182

Situational Factors		%
Geographic Distance	Low constraint	30.6
	Neutral	18.9
	High constraint	50.5
Time Poverty	Low constraint	40.4
	Neutral	18.8
	High constraint	40.9
Physical Immobility	Low constraint	82.6
	Neutral	11.7
	High constraint	5.6
Lack of Transportation	Low constraint	64.4
	Neutral	12.2
	High constraint	23.3

CHAPTER 5

DISCUSSION AND IMPLICATIONS

The current study was designed to determine the e-loyalty development process incorporating various constructs. The results indicate that e-satisfaction, e-trust, and etail quality influence the development of e-loyalty, whereas the situational variables did not have a significant moderating effect on the e-satisfaction/e-trust and e-loyalty link. This chapter discusses the findings and academic and managerial implications of the study. The limitations and implications of these issues for future research are also discussed.

Discussion of Findings

E-loyalty brings a high rate of customer retention and long-term profitability to the online retailer, thus reducing the cost for recruiting new customers (Reichheld et al., 2000b). Noting this importance of e-loyalty, this study attempts to offer important implications for the e-loyalty development process, including e-satisfaction, e-trust and etail quality as determinants. Through examining the effect of e-satisfaction and e-trust on e-loyalty, it was found that both constructs simultaneously have a positive impact on e-loyalty. This result confirms our initial assumption that e-trust, as a relational construct, and e-satisfaction, as a transaction specific construct, have a positive direct relationship upon e-loyalty. Further, the relative importance of e-satisfaction and e-trust on e-loyalty was

almost equal, supporting our hypothesis of the concurrent and individual influence of e-satisfaction and e-trust on e-loyalty.

In addition, the results suggest that e-trust not only had a direct impact on e-loyalty but also had an indirect influence through e-satisfaction. The result confirms the study of Singh and Sirdeshmukh (2000), who proposed that consumers' trust evaluations before a specific exchange episode will have a direct influence on their post purchase satisfaction. Further, in defining the satisfaction-trust link, Churchill and Superment (1982) emphasized the close relationship between expectations (i.e., trust) and their disconfirmation based on service performance in a specific episode (i.e., satisfaction). In the online retailing context, trust might be the fundamental component for initiating the transaction, since customers perceive a higher level of risk with online retailers than traditional retailers in terms of delivery, payment, information disclosure, etc. Customers may prefer to transact with online retailers they can trust and with whom they have shared understandings about implied and unspecified obligations that govern their relationship (Singh & Sirdeshmukh, 2000). In line with the previous arguments, our results indicated that to be satisfied with the online retailer, trust might need to be established before the specific transaction takes place.

In determining the antecedent role of etail quality on e-satisfaction, it is worthy to note that website design was the most significant determinant of e-satisfaction, providing additional evidence to the previous etail quality e-satisfaction studies (e.g., Montoya-Weiss et al., 2003). This finding suggests that well -designed user interface systems may reduce the customers' cost of searching and the time required for information processing, thus leading to a higher level of e-satisfaction.

Contrary to this study's prediction and those of prior research, our results indicated that customer service did not have any influence on either e-satisfaction or e-trust. In our study, customer service indicated prompt and helpful response on customers inquiries. Customers' motivation to inquire of the online retailer and seek customer service might come from doubtful or dissatisfied feelings towards the product or service. Therefore, even before online retailers can offer customer service, customers might already have doubt or complaints towards the product and service that retailers provide. These doubtful or even dissatisfied thought of the customer might be hard to recover from even after the retailer's customer service is highly evaluated. Another assumption would be that customers do not need customer service in each transaction and might feel indifferent to the level of customer service. Thus, customers might not consider customer service critical in establishing satisfaction and trust towards the online retailer.

In addition to our initial assumption, the results suggested that fulfillment/ reliability acts as a determinant for e-satisfaction, as well as e-trust. Fulfillment/reliability, including the issue of on time delivery of the expected product, might be the primary risk factor for online retailing. Therefore, in order to establish e-satisfaction, customers might need to be assured that the product will be delivered as promised, not wasting their time and money.

The analysis also indicated fulfillment/reliability as a determinant of e-trust. This result can be supported by Morgan and Hunt (1994) who conceptualized trust as the reliability of the business party. The relationship between fulfillment/reliability and e-trust has been suggested by Urban et al. (2000), as they insisted that the critical factor forming customer e-trust is to provide the right product in the promised time frame.

The important role of assurance of security/privacy suggested in our study supports the previous studies on e-trust development (Jarvenpaa & Todd, 1997; Ratnashingham, 1998). Extant literature has argued that the guarantee of security on the personal information reduces the customers' concerns about the illegal disclosure of personal data and exposureof transaction data, thus leading to an increased level of e-trust.

To our surprise, the situational variables did not moderate the relationship between e-satisfaction/ e-trust and e-loyalty, opposing our initial assumption and the findings of previous research (Belk, 1974, 1975; Gehrt & Yan, 2004; Lim & Razzaque, 1997; Monsuwé et al., 2004). Explanations are suggested for this finding. Situational variables, especially the factors included in this study might be more influential on the customers' initial transaction opening with the online retailer, and the customers' attribute importance (Gehrt & Yan, 2004), but not on the loyalty level of the customers. For example, customers who have geographical constraint might be motivated to start online shopping because of his/her situation, but may not necessarily possesses a higher level of loyalty compared to the customers who do not have such a constraint.

In addition, a majority of our sample presented high constraint on geographic factor, yet low constraint on physical and transportation factors. This lack of situational diversity of our sample might have hindered examining the moderator effect of situational factors. The factor inhibited sample variety on situational factors can be lack of diversity on demographic background. Since majority of the data was collected in universities and at the public library, most of the sample was relatively young with higher educational background. This data collection process might result in skewed distribution

of sample responses on situational variables. For example, since the mean age of our sample was relatively young (24), the respondents might not have many physical constraints compared to an older population. Therefore, different results may be obtained if the moderator effect is tested with the sample exhibiting diversity in situational factors.

Academic Implications

These findings evoke several important avenues for the e-loyalty studies considering e-loyalty development as a multi-faceted and complex process. First, the proposed model provides an integrative view of the e-loyalty development process that relates the concepts of e-loyalty, e-satisfaction and e-trust with controllable components of online retailing such as etail quality dimensions and external factors such as customer situations.

Second, the framework gives new theoretical insight into how e-satisfaction and e-trust differs in determining e-loyalty. By considering the link e-satisfaction→ e-loyalty, and e-trust→ e-loyalty simultaneously, the proposed model allows a dynamic representation of the three constructs as well.

The third significance of this study emerges from the inclusion of etail quality dimensions as antecedents of e-satisfaction and e-trust in a comprehensive model of e-loyalty development. In previous studies, the influence of etail quality on each individual construct (e.g., e-satisfaction and e-trust) was separately determined. Etail quality was even considered as uni-dimensional (Taylor & Baker, 1994) instead of being examined regarding the effect of diverse aspects of etail quality dimensions. Thus, our study contributed to the extant literature in that it found the relative importance of each dimension of etail quality on the market response outcomes.

Lastly, the results provide empirical evidence of the moderating effect of situational variables on determining the level of e-loyalty. While a number of existing studies proposed situational variables to strengthen the relationship between attitude and behavioral intention in an online retailing context (Monsuwé et al., 2004), there was limited empirical support for the argument. Through the analysis, this study indicates that there is no interaction between certain situational factors (i.e., geographical, time, physical, and transportation constarints), and e-satisfaction/e-trust in influencing e-loyalty. Therefore, our research contributed to the existing literature in terms of empirically testing several aspects of situational variables in relation to customer market response outcomes.

Managerial Implications

The process of e-loyalty development provides valuable insights for online retailers. With these results, retailers can better understand the process of establishing and directing their resources toward improving or creating e-loyalty.

It is noteworthy that e-loyalty has to be based on both e-satisfaction and e-trust, and the determinants of those two constructs are distinct. In managing customer e-loyalty, online retailers must consider e-satisfaction, a transactional construct, and e-trust, a relational construct, concurrently in their marketing effort. In other words, e-satisfaction is not enough to yield e-loyalty, but requires the partnership of e-trust, and vice versa. Thus, a retailer may need to pursue both transactional and relational marketing simultaneously. In addition, the results indicate that to build e-satisfaction, there has to be a prior development of e-trust.

One of the key findings in this research is the close relationship among the etail quality and the market response outcomes. This association implies that online retailers should realize the role etail quality plays on building e-satisfaction, e-trust and further e-loyalty. For example, since the fulfillment/reliability factor is such a powerful evaluative criterion that influences both e-satisfaction and e-trust, retailers might need to enhance their service in terms of delivering the right product in a timely manner and presenting the correct information on their website. Also, since customer service does not significantly influence the level of e-satisfaction and e-trust, retailers might focus on preventing the events that result in a need for customer service.

In addition, it is important to note that among a sample of online shoppers included in this study, situational factors did not significantly impact the relationship between e-satisfaction/ e-trust and e-loyalty. This result indicates that online retailers might not need to target customers in specific situations to enhance the e-satisfaction/e-trust and e-loyalty link. For example, customers who do not have enough time to shop need not be specifically targeted for loyalty programs, since when satisfaction and trust are established, intention to be loyal toward the online retailer would not be any stronger than with customers who are not in that situation. Therefore, it can be suggested that once online retailers have gained a higher level of satisfaction and trust, they need not target the customers in a certain situation in order to obtain a higher level of loyalty.

Limitation and Further Studies

The choice of the research design forced certain trade-offs that could limit the findings. First, since the sample was collected in one particular state, and represented a certain

demographic group, the results may vary in different states and with subjects of different demographic backgrounds. Further research is suggested toward expanding the study to focus on different populations.

The second limitation of the study is that it did not distinguish different industries in testing the model. For a future study, the retail industry might be categorized since customers may have different purchase motivations for different products, thus leading to various evaluative perceptions in different retail settings. For example, online apparel shoppers might go through a different e-loyalty development process, compared to online grocery shoppers.

Third, since website design has a strong effect on e-satisfaction, it is suggested to study the more diverse aspects of website design (e.g., ease of use, graphic style, information, etc.) in influencing e-satisfaction for future studies. In this study, the website design factor mainly included the navigation and information related items. However, since online shoppers are seeking more entertainment and visual attractiveness at the website (Kim & Stoel, 2004), it might be necessary to include various facets of website design into the comprehensive model of market response outcomes and etail quality.

Fourth, the situational variables included in this study only consist of four factors related to certain aspects of the customer situation. Since customer "situation" can include more than those factors, such as a gift giving situation (Gehrt, Ingram, & Howe, 1991), need for special items (Wolfinbarger & Gilly, 2001), shopping task (Gehrt & Yan, 2004), alternative attractiveness (Monsuwé et at. 2004), etc., we suggest that additional benefits could be derived from further exploring the moderating effect of diverse situational factors on the market response outcomes.

Lastly, our sample did not represent the diverse situations online customers may be in. The majority of the respondents perceived high constraints on the geographical factor, but felt they have little constraint on physical and transportation factors. In a future study, researchers might consider including respondents in various situations in order to reflect the situational diversity of the customers.

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APPENDICES

APPENDIX A

ITEMS USED FOR THE SURVEY AND DATA ANALYSIS

Appendix A-1 Items Used for the Actual Survey

Shaded items were omitted from the survey questionnaire after the investigation of pre-test results.

etailQ	*Website Design*
	This website is well designed in order not to waste my time.
	This website provides in-depth information.
	It is quick and easy to complete a transaction on this website.
	The level of personalization at this site is about right, not too much or not too little
	This website has good selection
	Customer Service
	This website is willing and ready to respond to customers' needs.
	Inquiries are answered promptly.
	When you have a problem, this website shows a sincere interest in solving it.
	Fulfillment/Reliability
	The product was represented accurately by the website.
	The product is delivered on time as promised by the company.
	You get what you ordered from the website
	Security/Privacy
	This website has adequate security features.
	I feel safe in my transactions with this website.
	I feel my privacy is protected on this website.
E-loyalty	When I need to make a purchase, this website is my first choice.
	I believe this is my favorite website to buy the same kind of product
	To me, this website is the best retail website to do business with.
	As long as the present service continues, I doubt that I would switch to another website.
	I seldom consider switching to another online retailer
	I try to purchase at this online retailer whenever I need to make a purchase
	I like shopping at this online retailer.
E-satisfaction	I am satisfied with the product of this online retailer.
	I am overall satisfied with this online retailer.
	I am satisfied with the purchase experience at this online retailer.
E-trust	I trust what this online retailer says about its products.
	This online retailer is reliable.
	I trust the claims and promises this website makes about a product.
	I think some of this online retailer's claims about its service are exaggerated.
Situational Factors	Geographic distance prevents me from shopping at a retail store
	I cannot shop at a retail store due to lack of time
	I cannot shop freely at a retail store due to lack of time
	Transportation is not available for me to get to a retail store

Appendix A-2 Items Used for Data Analysis

Shaded items are not used for data analysis after the confirmatory factor analysis.

etailQ	*Website Design* This website is well designed in order not to waste my time. This website provides in-depth information. It is quick and easy to complete a transaction on this website. *Customer Service* This website is willing and ready to respond to customers' needs. Inquiries are answered promptly. When you have a problem, this website shows a sincere interest in solving it. *Fulfillment/Reliability* The product was represented accurately by the website. The product is delivered on time as promised by the company. *Security/Privacy* This website has adequate security features. I feel safe in my transactions with this website. I feel my privacy is protected on this website.
E-loyalty	When I need to make a purchase, this website is my first choice. I believe this is my favorite website to buy the same lkind of product To me, this website is the best retail website to do business with. As long as the present service continues, I doubt that I would switch to another website. I seldom consider switching to another online retailer I try to purchase at this online retailer whenever I need to make a purchase I like shopping at this online retailer.
E-satisfaction	I am satisfied with the product of this online retailer. I am overall satisfied with this online retailer. I am satisfied with the purchase experience at this online retailer.
E-trust	I trust what this online retailer says about its products. This online retailer is reliable. I trust the claims and promises this website makes about a product. I think some of this online retailer's claims about its service are exaggerated.
Situational Factors	Geographic distance prevents me fron shopping at a retail store I cannot shop at a retail store due to lack of time I cannot shop freely at a retail store due to lack of time Transportation is not available for me to get to a retail store

APPENDIX B

COVER LETTER

Dear Participants,

We are conducting a research study of online apparel shoppers. The title of the study is "The Interaction Effect of E-satisfaction and E-trust on E-loyalty: Antecedents, Moderator, and the Interrelationship". The purpose of this study is to examine how customers form attitudes and behave toward online apparel retailers.

Your participation is absolutely voluntary. During the survey you may choose to stop participating at any time.

Your responses will be anonymous; data will be combined and analyzed as a whole unit. Your individual responses will be totally unidentifiable in this combined format. We request general demographic information to help with our analysis but it will not be used to identify the source of responses.

You will be receiving a small gift as a token of our appreciation.

The questionnaire can be completed in approximately 15 minutes. The questionnaire consists of four sections. In the first section, you will be asked to give the online apparel retailer that you have purchased product most often in past one year. Then in the second and third section, you will be asked to evaluate the website attributes of the website, and determine your level of satisfaction, trust and loyalty toward the website. In the fourth section, you will be asked questions regarding situational factors. Lastly, your values and beliefs toward various cultural dimensions will be assessed. Also, the demographic information will be requested.

If you have any questions, please contact Jiyoung Kim (Tel: 405-269-6701, E-mail: jiyoung.kim@okstate.edu), or Dr. Byoungho Jin (Tel: 405-744-9255, E-mail: jbyoung@okstate.edu). If you have questions regarding your rights as a participant, you may contact Dr. Sue Jacobs, the Institutional Review Board (IRB) Chair at Oklahoma State University at 405-744-1676.

Your participation in the study will be greatly appreciated.

Sincerely,

Jiyoung Kim.
Graduate student
Department of Design, Housing and Merchandising
Oklahoma State University

Byoungho. Jin, Ph. D
Associate Professor
Department of Design, Housing and Merchandising
Oklahoma State University

APPENDIX C

QUESTIONNAIRE

Dear Participants,

We are conducting a research study of online shoppers. The purpose of this study is to examine how customers form attitudes and behave toward online retailers.
Your participation is absolutely voluntary. During the survey you may choose to stop participating at any time.
Your responses will be anonymous; data will be combined and analyzed as a whole unit. Your individual responses will be totally unidentifiable in this combined format.
If you have any questions, please contact Jiyoung Kim (405-269-6701, jiyoung.kim@okstate.edu), or Dr. Byoungho Jin (405-744-9522, jbyoung@okstate.edu). If you have questions regarding your rights as a participant, you may contact Dr. Sue Jacobs, the Institutional Review Board (IRB) Chair at Oklahoma State University at 405-744-1676.
Your participation in the study will be greatly appreciated.

Oklahoma State Univ. Dept. Design, Housing & Merchandising — Graduate student, Jiyoung Kim
Oklahoma State Univ. Dept. Design, Housing & Merchandising — Associate Professor, Byoungho Jin

Please write down below one online retailer you purchased the most often from in the past year.
'Online retailer' here means retailers that sell their products to consumers using Internet.

This study excludes Ebay.com and Amazon.com because they mainly connect individual sellers to buyers. If your most frequently purchased online retailer is either Ebay or Amazon, please write down below the second most purchased online retailer!

Name of the online retailer: _____

For the first and second page, you will be answering questions regarding the online retailer you have written down above.

What are the most frequently bought items **at the online retailer you stated above**?

- o Apparel (clothing, shoes, accessories)
- o Electronic goods
- o Groceries
- o Household goods
- o Sports equipment
- o Books and CDs
- o Etc. _____

How often do you **visit this online retailer** per month on average?

- o Less than 1 time
- o 1 -5 times
- o 6-10 times
- o 11-20 times
- o 21-30 times
- o More than 30 times

How many hours **per visit** do you spend browsing or purchasing on this website on average?

- o Less than an hour
- o 1-2 hrs
- o 3-4 hrs
- o 5-6 hrs
- o 7-8 hrs
- o 9 hrs and more

What is the best estimate of the dollar amount spent on products purchased via this website the past year?

- o $1-$50
- o $51-$100
- o $101-$200
- o $201-$300
- o $301-$400
- o $401-$500
- o $501-$1,000
- o Over $1,000

We would like to know your evaluation of the **online retailer you specified above**. Please indicate the extent to which you agree or disagree with each of the following

	Strongly Disagree	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*
The product was represented accurately by the website.	❍	❍	❍	❍	❍
The product is delivered on time as promised by the company.	❍	❍	❍	❍	❍
This website is a large company that everyone recognizes	❍	❍	❍	❍	❍
This website is well-known.	❍	❍	❍	❍	❍
This website has a good reputation.	❍	❍	❍	❍	❍
This website is willing and ready to respond to customers' needs.	❍	❍	❍	❍	❍
Inquiries are answered promptly.	❍	❍	❍	❍	❍
When you have a problem, this website shows a sincere interest in solving it.	❍	❍	❍	❍	❍
This website is well designed in order not to waste my time.	❍	❍	❍	❍	❍
This website provides in-depth information.	❍	❍	❍	❍	❍
It is quick and easy to complete a transaction on this website.	❍	❍	❍	❍	❍
This website has adequate security features.	❍	❍	❍	❍	❍
I feel safe in my transactions with this website.	❍	❍	❍	❍	❍
I feel my privacy is protected on this website.	❍	❍	❍	❍	❍

We would like to know about your attitudes and behaviors toward **the online retailer you have specified above**. Please indicate the extent to which you agree or disagree with each of the following

	Strongly Disagree	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*
I am satisfied with the product of this online retailer.	❍	❍	❍	❍	❍
I am overall satisfied with this online retailer.	❍	❍	❍	❍	❍
I am satisfied with the purchase experience at this online retailer.	❍	❍	❍	❍	❍
I seldom consider switching to another online retailer.	❍	❍	❍	❍	❍
When I need to make a purchase, this website is my first choice.	❍	❍	❍	❍	❍
I believe this is my favorite website to buy the same kind of product.	❍	❍	❍	❍	❍
I try to purchase at this online retailer whenever I need to make a	❍	❍	❍	❍	❍
I like shopping at this online retailer.	❍	❍	❍	❍	❍
To me, this website is the best retail website to do business with.	❍	❍	❍	❍	❍
As long as the present service continues, I doubt that I would switch to	❍	❍	❍	❍	❍
I trust what this online retailer says about its products.	❍	❍	❍	❍	❍
I think some of this online retailer's claims about its service are	❍	❍	❍	❍	❍
This online retailer is reliable.	❍	❍	❍	❍	❍
I trust the claims and promises this website makes about a product.	❍	❍	❍	❍	❍

We would like to know about your **personal situation** that can impact your online shopping behavior. Please indicate the extent to which you agree or disagree with each of the following:

	Strongly Disagree	*Disagree*	*Neutral*	*Agree*	*Strongly Agree*
Geographic distance prevents me from shopping at a retail store.	❍	❍	❍	❍	❍
I cannot shop at a retail store due to lack of time.	❍	❍	❍	❍	❍
I cannot shop freely at stores due to my physical condition such as illness or disability.	❍	❍	❍	❍	❍
Transportation is not available for me to get to a retail store.	❍	❍	❍	❍	❍

We request general demographic information to help with our analysis but it NOT be used to identify the source of responses.

What is your gender?
- o Male
- o Female

What is your age? _____

What is your occupation? _____

What is your nationality? _____
ex) Korean, French, Mexican, US citizen...

What is your Marital Status?
- o Married
- o Single
- o Etc:_____

What is your highest level of education completed?

- o 1st - 4th grade
- o 5th - 6th grade
- o 7th - 8th grade
- o 9th grade
- o 10th grade
- o 11th grade
- o High school graduate
- o Some college, no degree
- o Associate degree, occupational
- o Associate degree, academic
- o Bachelor's degree
- o Master's degree
- o Professional degree
- o Doctorate degree

What is your annual income range?

- o Less than $10,000
- o $10,000 to $14,999
- o $15,000 to $19,999
- o $20,000 to $24,999
- o $25,000 to $29,999
- o $30,000 to $34,999
- o $35,000 to $39,999
- o $40,000 to $44,999
- o $45,000 to $49,999
- o $50,000 to $54,999
- o $55,000 to $59,999
- o $60,000 to $64,999
- o $65,000 to $69,999
- o $70,000 to $74,999
- o $75,000 to $99,999
- o $100,000 to $124,000
- o $125,000 to $149,999
- o $150,000 to $199,999
- o $200,000 or more

APPENDIX D

VARIANCE INFLATION FACTOR VALUE

FOR INDEPENDENT VARIABLES

VARIANCE INFLATION FACTOR VALUE FOR INDEPENDENT VARIABLES

Appendix C-1 VIF value before Mean-centering

Dependent Variable	Independent Variables	VIF
E-loyalty	E-satisfaction, Distance, Moderator effect	31.25818
	E-satisfaction, Time, Moderator effect	21.92623
	E-satisfaction, Physical immobility, Moderator effect	18.55637
	E-satisfaction, Transportation, Moderator effect	24.96692
E-loyalty	E-trust, Distance, Moderator effect	28.69191
	E-trust, Time, Moderator effect	22.76464
	E-trust, Physical immobility, Moderator effect	24.87122
	E-trust, Transportation, Moderator effect	24.93045

Appendix C-2 VIF value after Mean-centering

Dependent Variable	Independent Variables	VIF
E-loyalty	E-satisfaction, Distance, Moderator effect	1.32058
	E-satisfaction, Time, Moderator effect	1.00666
	E-satisfaction, Physical immobility, Moderator effect	1.17765
	E-satisfaction, Transportation, Moderator effect	1.00414
E-loyalty	E-trust, Distance, Moderator effect	1.18926
	E-trust, Time, Moderator effect	1.02009
	E-trust, Physical immobility, Moderator effect	1.14303
	E-trust, Transportation, Moderator effect	1.00938

APPENDIX E

CORRELATION MATRIX FOR THE VARIABLES

CORRELATION MATRIX FOR THE VARIABLES

Appendix D-1 Correlation among the Etail Quality Items.

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11
X1	1.000										
X2	0.412	1.000									
X3	0.429	0.442	1.000								
X4	0.338	0.312	0.531	1.000							
X5	0.397	0.341	0.604	0.636	1.000						
X6	0.417	0.336	0.393	0.390	0.402	1.000					
X7	0.400	0.362	0.411	0.418	0.431	0.531	1.000				
X8	0.347	0.423	0.397	0.364	0.347	0.597	0.488	1.000			
X9	0.352	0.183	0.435	0.397	0.400	0.426	0.488	0.554	1.000		
X10	0.278	0.266	0.374	0.367	0.351	0.479	0.460	0.609	0.634	1.000	
X11	0.436	0.384	0.478	0.446	0.415	0.558	0.554	0.575	0.629	0.775	1.000

X1-X2= Fulfillment/Reliability, X3-X5=Customer Service, X6-X8= Website Design, X9-X11= Security/Privacy

Appendix D-2 Correlation among the Market Response Outcomes

	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
X1	1.000									
X2	0.815	1.000								
X3	0.803	0.878	1.000							
X4	0.406	0.526	0.562	1.00 0						
X5	0.545	0.585	0.676	0.653	1.000					
X6	0.55	0.595	0.663	0.66	0.671	1.000				
X7	0.462	0.489	0.521	0.566	0.531	0.596	1.000			
X8	0.692	0.658	0.726	0.431	0.623	0.565	0.508	1.000		
X9	0.659	0.731	0.803	0.46	0.622	0.576	0.498	0.664	1.000	
X10	0.704	0.712	0.788	0.449	0.579	0.571	0.442	0.764	0.706	1.000

X1-X3= E-satisfaction, X4-X7= E-loyalty, X8-X10=E-trust

APPENDIX F

LISREL OUTPUT FOR CONFIRMATORY FACTOR ANALYSIS

Appendix F-1 CFA for Market Response Outcomes

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Part2 - A Confirmatory Factor Analysis
Observed Variables: x1-x10

Correlation matrix

1.000
0.822 1.000
0.770 0.837 1.000
0.404 0.505 0.571 1.000
0.563 0.585 0.679 0.637 1.000
0.490 0.520 0.622 0.637 0.646 1.000
0.413 0.448 0.527 0.539 0.503 0.562 1.000
0.671 0.630 0.698 0.446 0.639 0.568 0.457 1.000
0.643 0.715 0.757 0.433 0.617 0.521 0.419 0.633 1.000
0.662 0.677 0.692 0.392 0.535 0.514 0.384 0.693 0.670 1.000

Sample Size: 182

Latent Variables: SA LO TR
Relationships:

x1-x3 = SA
x4-x7 = LO
x8-x10 = TR

number of decimals =3
wide print
print residuals
path diagram
End of problem

Sample Size = 182

Part2 - A Confirmatory Factor Analysis

Correlation Matrix

	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
x1	1.000									
x2	0.822	1.000								
x3	0.770	0.837	1.000							

x4	0.404	0.505	0.571	1.000						
x5	0.563	0.585	0.679	0.637	1.000					
x6	0.490	0.520	0.622	0.637	0.646	1.000				
x7	0.413	0.448	0.527	0.539	0.503	0.562	1.000			
x8	0.671	0.630	0.698	0.446	0.639	0.568	0.457	1.000		
x9	0.643	0.715	0.757	0.433	0.617	0.521	0.419	0.633	1.000	
x10	0.662	0.677	0.692	0.392	0.535	0.514	0.384	0.693	0.670	1.000

Part2 - A Confirmatory Factor Analysis

Number of Iterations = 8

LISREL Estimates (Maximum Likelihood)

Measurement Equations

x1 = 0.860*SA, Errorvar.= 0.261 , R?= 0.739
(0.0600) (0.0331)
14.325 7.880

x2 = 0.910*SA, Errorvar.= 0.173 , R?= 0.827
(0.0578) (0.0259)
15.733 6.675

x3 = 0.925*SA, Errorvar.= 0.144 , R?= 0.856
(0.0571) (0.0240)
16.206 6.000

x4 = 0.760*LO, Errorvar.= 0.423 , R?= 0.577
(0.0659) (0.0542)
11.520 7.805

x5 = 0.830*LO, Errorvar.= 0.311 , R?= 0.689
(0.0633) (0.0463)
13.102 6.715

x6 = 0.807*LO, Errorvar.= 0.349 , R?= 0.651
(0.0642) (0.0488)
12.560 7.162

x7 = 0.661*LO, Errorvar.= 0.563 , R?= 0.437
(0.0692) (0.0658)
9.552 8.552

x8 = 0.806*TR, Errorvar.= 0.350 , R?= 0.650
(0.0631) (0.0448)
12.782 7.800

x9 = 0.827*TR, Errorvar.= 0.315 , R?= 0.685
(0.0623) (0.0421)
13.281 7.485

x10 = 0.811*TR, Errorvar.= 0.342 , R?= 0.658
(0.0629) (0.0442)
12.887 7.740

Correlation Matrix of Independent Variables

	SA	LO	TR

SA 1.000

LO 0.785 1.000
(0.038)
20.562

TR 0.934 0.805 1.000
(0.021) (0.040)
43.969 20.006

Goodness of Fit Statistics

Degrees of Freedom = 32
Minimum Fit Function Chi-Square = 76.585 (P = 0.000)
Normal Theory Weighted Least Squares Chi-Square = 75.076 (P = 0.000)
Estimated Non-centrality Parameter (NCP) = 43.076
90 Percent Confidence Interval for NCP = (21.554 ; 72.306)

Minimum Fit Function Value = 0.423
Population Discrepancy Function Value (F0) = 0.238
90 Percent Confidence Interval for F0 = (0.119 ; 0.399)
Root Mean Square Error of Approximation (RMSEA) = 0.0862
90 Percent Confidence Interval for RMSEA = (0.0610 ; 0.112)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.0112

Expected Cross-Validation Index (ECVI) = 0.669
90 Percent Confidence Interval for ECVI = (0.550 ; 0.830)
ECVI for Saturated Model = 0.608
ECVI for Independence Model = 7.854

Chi-Square for Independence Model with 45 Degrees of Freedom = 1401.555
Independence AIC = 1421.555
Model AIC = 121.076
Saturated AIC = 110.000
Independence CAIC = 1463.595
Model CAIC = 217.768
Saturated CAIC = 341.220

Normed Fit Index (NFI) = 0.945
Non-Normed Fit Index (NNFI) = 0.954
Parsimony Normed Fit Index (PNFI) = 0.672
Comparative Fit Index (CFI) = 0.967
Incremental Fit Index (IFI) = 0.967
Relative Fit Index (RFI) = 0.923

Critical N (CN) = 127.417

Root Mean Square Residual (RMR) = 0.0395
Standardized RMR = 0.0395
Goodness of Fit Index (GFI) = 0.923
Adjusted Goodness of Fit Index (AGFI) = 0.868
Parsimony Goodness of Fit Index (PGFI) = 0.537

Part2 - A Confirmatory Factor Analysis
Fitted Covariance Matrix

	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
x1	1.000									
x2	0.782	1.000								

x3	0.795	0.842	1.000							
x4	0.512	0.542	0.552	1.000						
x5	0.560	0.592	0.603	0.630	1.000					
x6	0.544	0.576	0.586	0.613	0.669	1.000				
x7	0.446	0.472	0.480	0.502	0.549	0.533	1.000			
x8	0.648	0.685	0.697	0.493	0.539	0.523	0.429	1.000		
x9	0.664	0.703	0.715	0.506	0.553	0.537	0.440	0.667	1.000	
x10	0.651	0.689	0.701	0.496	0.542	0.526	0.431	0.654	0.671	1.000

Fitted Residuals

	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
x1	0.000									
x2	0.040	0.000								
x3	-0.025	-0.005	0.000							
x4	-0.108	-0.037	0.019	0.000						
x5	0.003	-0.007	0.076	0.007	0.000					
x6	-0.054	-0.056	0.036	0.024	-0.023	0.000				
x7	-0.033	-0.024	0.047	0.037	-0.046	0.029	0.000			
x8	0.023	-0.055	0.001	-0.047	0.100	0.045	0.028	0.000		
x9	-0.021	0.012	0.042	-0.073	0.064	-0.016	-0.021	-0.034	0.000	
x10	0.011	-0.012	-0.009	-0.104	-0.007	-0.012	-0.047	0.039	-0.001	0.000

Summary Statistics for Fitted Residuals

Smallest Fitted Residual = -0.108
Median Fitted Residual = 0.000
Largest Fitted Residual = 0.100

Stemleaf Plot

```
-10|84
- 8|
- 6|3
- 4|654776
- 2|74354311
- 0|622977510000000000
  0|137129
  2|3489679
  4|0257
  6|46
  8|
 10|0
```

Standardized Residuals

	x1	x2	x3	x4	x5	x6	x7	x8	x9	x10
x1	- -									
x2	4.020	- -								
x3	-3.090	-0.938	- -							
x4	-3.208	-1.262	0.697	- -						
x5	0.109	-0.303	3.384	0.378	- -					
x6	-1.756	-2.135	1.486	1.237	-1.662	- -				
x7	-0.848	-0.684	1.393	1.232	-1.999	1.127	- -			
x8	1.036	-3.157	0.051	-1.343	3.333	1.401	0.691	- -		
x9	-1.004	0.734	2.876	-2.176	2.266	-0.531	-0.546	-2.023	- -	
x10	0.485	-0.698	-0.585	-2.993	-0.221	-0.392	-1.186	2.110	-0.056	- -

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -3.208
Median Standardized Residual = 0.000
Largest Standardized Residual = 4.020

Stemleaf Plot

- 3|2210
- 2|2100
- 1|873320
- 0|987765543210000000000
  0|1145777
  1|0122445
  2|139
  3|34
  4|0

Largest Negative Standardized Residuals

Residual for	x3 and	x1	-3.090
Residual for	x4 and	x1	-3.208
Residual for	x8 and	x2	-3.157
Residual for	x10 and	x4	-2.993

Largest Positive Standardized Residuals

Residual for	x2 and	x1	4.020
Residual for	x5 and	x3	3.384
Residual for	x8 and	x5	3.333
Residual for	x9 and	x3	2.876

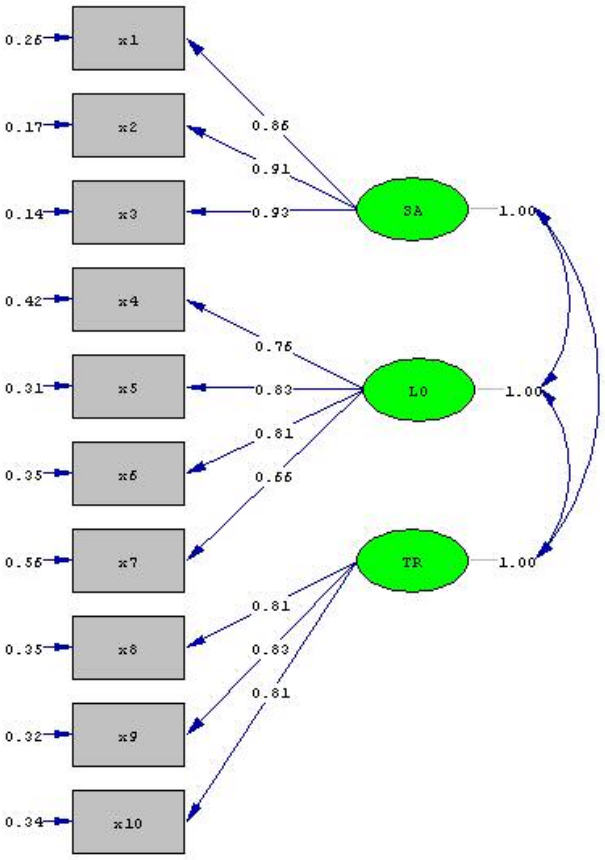
The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
x3	LO	19.6	0.36
x3	TR	9.7	0.70
x4	TR	8.8	-0.38
x5	TR	10.2	0.41

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
x2	x1	16.2	0.10
x3	x1	9.5	-0.08

Time used: 0.047 Seconds



Chi-Square=75.08, df=32, P-value=0.00003, RMSEA=0.086

Appendix F-2 CFA for etailQ Dimensions

L I S R E L 8.51

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Part2 - A Confirmatory Factor Analysis
Observed Variables: pt1 pt2 pt6-pt14
Correlation matrix
1.0000
0.4118 1.0000
0.4289 0.4420 1.0000
0.3379 0.3122 0.5309 1.0000
0.3971 0.3406 0.6038 0.6359 1.0000
0.4168 0.3362 0.3933 0.3898 0.4021 1.0000
0.4003 0.3618 0.4111 0.4182 0.4306 0.5310 1.0000
0.3470 0.4228 0.3970 0.3635 0.3469 0.5966 0.4883 1.0000
0.3516 0.1825 0.4346 0.3973 0.3995 0.4260 0.4875 0.5544 1.0000
0.2780 0.2663 0.3741 0.3672 0.3511 0.4791 0.4598 0.6087 0.6342 1.0000
0.4360 0.3839 0.4775 0.4462 0.4154 0.5578 0.5537 0.5749 0.6285 0.7745 1.0000
Sample Size: 182
Latent Variables: FR CS WD SP
Relationships:
pt1 pt2 = FR
pt6-pt8 = CS
pt9-pt11 = WD
pt12-pt14 = SP

path diagram

End of problem

Sample Size = 182

Part2 - A Confirmatory Factor Analysis

Correlation Matrix

	pt1	pt2	pt6	pt7	pt8	pt9
pt1	1.00					
pt2	0.41	1.00				

pt6	0.43	0.44	1.00			
pt7	0.34	0.31	0.53	1.00		
pt8	0.40	0.34	0.60	0.64	1.00	
pt9	0.42	0.34	0.39	0.39	0.40	1.00
pt10	0.40	0.36	0.41	0.42	0.43	0.53
pt11	0.35	0.42	0.40	0.36	0.35	0.60
pt12	0.35	0.18	0.43	0.40	0.40	0.43
pt13	0.28	0.27	0.37	0.37	0.35	0.48
pt14	0.44	0.38	0.48	0.45	0.42	0.56

Correlation Matrix

	pt10	pt11	pt12	pt13	pt14
pt10	1.00				
pt11	0.49	1.00			
pt12	0.49	0.55	1.00		
pt13	0.46	0.61	0.63	1.00	
pt14	0.55	0.57	0.63	0.77	1.00

Part2 - A Confirmatory Factor Analysis

Number of Iterations = 8

LISREL Estimates (Maximum Likelihood)

Measurement Equations

pt1 = 0.66*FR, Errorvar.= 0.57 , R?= 0.43
(0.081) (0.086)
8.13 6.60

pt2 = 0.63*FR, Errorvar.= 0.61 , R?= 0.39
(0.080) (0.085)
7.80 7.15

pt6 = 0.76*CS, Errorvar.= 0.42 , R?= 0.58
(0.068) (0.061)
11.13 6.98

pt7 = 0.75*CS, Errorvar.= 0.44 , R?= 0.56
(0.069) (0.062)
10.87 7.19

pt8 = 0.80*CS, Errorvar.= 0.35 , R?= 0.65
(0.067) (0.058)
11.99 6.14

pt9 = 0.74*WD, Errorvar.= 0.45 , R?= 0.55
(0.068) (0.060)
10.89 7.62

pt10 = 0.70*WD, Errorvar.= 0.51 , R?= 0.49
(0.069) (0.064)
10.13 8.03

pt11 = 0.77*WD, Errorvar.= 0.41 , R?= 0.59
(0.067) (0.057)
11.45 7.22

pt12 = 0.73*SP, Errorvar.= 0.46 , R?= 0.54
(0.066) (0.056)
11.04 8.29

pt13 = 0.85*SP, Errorvar.= 0.27 , R?= 0.73
(0.062) (0.042)
13.78 6.47

pt14 = 0.90*SP, Errorvar.= 0.20 , R?= 0.80
(0.060) (0.039)
14.83 5.10

Correlation Matrix of Independent Variables

	FR	CS	WD	SP
FR	1.00			
CS	0.76	1.00		
	(0.08)			
	9.96			
WD	0.80	0.69	1.00	
	(0.08)	(0.06)		
	10.58	11.41		
SP	0.62	0.62	0.85	1.00
	(0.08)	(0.06)	(0.04)	
	7.67	10.46	21.92	

Goodness of Fit Statistics

Degrees of Freedom = 38
Minimum Fit Function Chi-Square = 69.68 (P = 0.0013)
Normal Theory Weighted Least Squares Chi-Square = 65.50 (P = 0.0037)
Estimated Non-centrality Parameter (NCP) = 27.50
90 Percent Confidence Interval for NCP = (8.90 ; 53.95)

Minimum Fit Function Value = 0.38
Population Discrepancy Function Value (F0) = 0.15
90 Percent Confidence Interval for F0 = (0.049 ; 0.30)

Root Mean Square Error of Approximation (RMSEA) = 0.063
90 Percent Confidence Interval for RMSEA = (0.036 ; 0.089)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.19

Expected Cross-Validation Index (ECVI) = 0.67
90 Percent Confidence Interval for ECVI = (0.57 ; 0.82)
ECVI for Saturated Model = 0.73
ECVI for Independence Model = 5.62

Chi-Square for Independence Model with 55 Degrees of Freedom = 995.47
Independence AIC = 1017.47
Model AIC = 121.50
Saturated AIC = 132.00
Independence CAIC = 1063.71
Model CAIC = 239.21
Saturated CAIC = 409.46

Normed Fit Index (NFI) = 0.93
Non-Normed Fit Index (NNFI) = 0.95
Parsimony Normed Fit Index (PNFI) = 0.64
Comparative Fit Index (CFI) = 0.97
Incremental Fit Index (IFI) = 0.97
Relative Fit Index (RFI) = 0.90

Critical N (CN) = 159.88

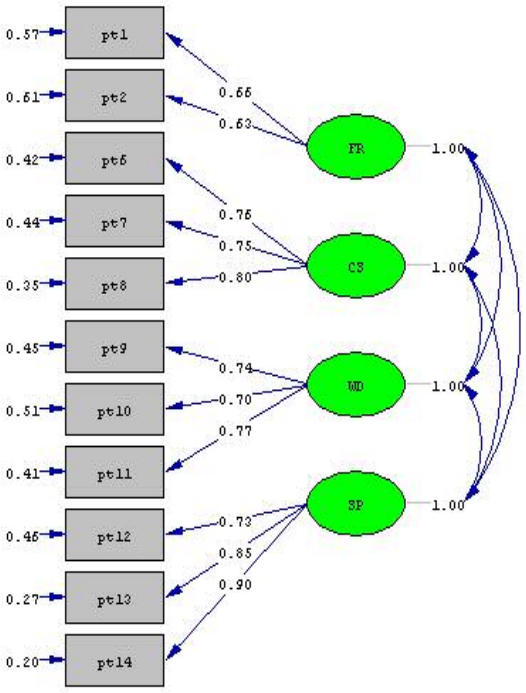
Root Mean Square Residual (RMR) = 0.042
Standardized RMR = 0.042
Goodness of Fit Index (GFI) = 0.94
Adjusted Goodness of Fit Index (AGFI) = 0.89
Parsimony Goodness of Fit Index (PGFI) = 0.54

The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
pt13	FR	12.3	-0.33
pt14	FR	8.1	0.27

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
pt12	pt2	8.6	-0.14
pt13	pt11	8.1	0.10



Chi-Square=65.50, df=38, P-value=0.00366, RMSEA=0.063

APPENDIX G

LISREL OUTPUT FOR PATH ANALYSIS

Appendix G-1 LISREL Output for the Alternative Model

L I S R E L 8.51

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PATHS
WB -> SA
CS -> SA
FR -> SA TR
SP -> TR
SA -> LO
TR -> SA LO

PATH DIAGRAM

END OF PROBLEM

Sample Size = 182

STL Path original

Covariance Matrix

	SA	LO	TR	FR	CS	WB	SP
SA	0.66						
LO	0.45	0.66					
TR	0.51	0.41	0.57				
FR	0.46	0.31	0.40	0.76			
CS	0.30	0.22	0.28	0.32	0.49		
WB	0.41	0.29	0.34	0.35	0.29	0.55	
SP	0.40	0.34	0.38	0.29	0.30	0.42	0.66

Covariance Matrix

STL Path original

Number of Iterations = 4

LISREL Estimates (Maximum Likelihood)

Structural Equations

SA = 0.63*TR + 0.15*FR - 0.0020*CS + 0.25*WB, Errorvar.= 0.17 , R?= 0.74

(0.054) (0.049) (0.056) (0.055) (0.018)
11.67 3.17 -0.035 4.63 9.41

LO = 0.38*SA + 0.38*TR, Errorvar.= 0.33 , R?= 0.50
(0.093) (0.100) (0.035)
4.10 3.83 9.41

TR = 0.37*FR + 0.41*SP, Errorvar.= 0.26 , R?= 0.54
(0.049) (0.052) (0.028)
7.53 7.95 9.41

Reduced Form Equations

SA = 0.39*FR - 0.0020*CS + 0.25*WB + 0.26*SP, Errorvar.= 0.27, R?= 0.58
(0.054) (0.056) (0.055) (0.040)
7.14 -0.035 4.63 6.57

LO = 0.29*FR - 0.00075*CS + 0.098*WB + 0.26*SP, Errorvar.= 0.46, R?= 0.30
(0.041) (0.021) (0.032) (0.042)
7.00 -0.035 3.07 6.13

TR = 0.37*FR + 0.0*CS + 0.0*WB + 0.41*SP, Errorvar.= 0.26, R?= 0.54
(0.049) (0.052)
7.53 7.95

Covariance Matrix of Independent Variables

	FR	CS	WB	SP
FR	0.76			
	(0.08)			
	9.41			
CS	0.32	0.49		
	(0.05)	(0.05)		
	6.21	9.41		
WB	0.35	0.29	0.55	
	(0.06)	(0.04)	(0.06)	
	6.37	6.45	9.41	
SP	0.29	0.30	0.42	0.66
	(0.06)	(0.05)	(0.06)	(0.07)
	5.09	6.14	7.54	9.41

Goodness of Fit Statistics

Degrees of Freedom = 7
Minimum Fit Function Chi-Square = 9.41 (P = 0.22)
Normal Theory Weighted Least Squares Chi-Square = 9.37 (P = 0.23)
Estimated Non-centrality Parameter (NCP) = 2.37
90 Percent Confidence Interval for NCP = (0.0 ; 14.57)

Minimum Fit Function Value = 0.052
Population Discrepancy Function Value (F0) = 0.013
90 Percent Confidence Interval for F0 = (0.0 ; 0.082)
Root Mean Square Error of Approximation (RMSEA) = 0.044
90 Percent Confidence Interval for RMSEA = (0.0 ; 0.11)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.49

Expected Cross-Validation Index (ECVI) = 0.29
90 Percent Confidence Interval for ECVI = (0.28 ; 0.36)
ECVI for Saturated Model = 0.32
ECVI for Independence Model = 4.60

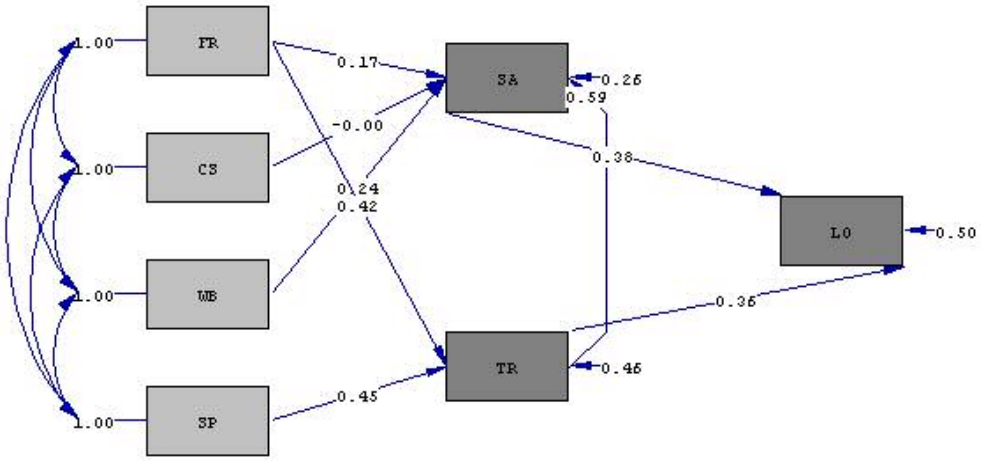
Chi-Square for Independence Model with 21 Degrees of Freedom = 799.41
Independence AIC = 813.41
Model AIC = 51.37
Saturated AIC = 56.00
Independence CAIC = 842.84
Model CAIC = 139.65
Saturated CAIC = 173.71

Normed Fit Index (NFI) = 0.99
Non-Normed Fit Index (NNFI) = 0.99
Parsimony Normed Fit Index (PNFI) = 0.33
Comparative Fit Index (CFI) = 1.00
Incremental Fit Index (IFI) = 1.00
Relative Fit Index (RFI) = 0.96

Critical N (CN) = 356.26

Root Mean Square Residual (RMR) = 0.017
Standardized RMR = 0.028
Goodness of Fit Index (GFI) = 0.99
Adjusted Goodness of Fit Index (AGFI) = 0.94
Parsimony Goodness of Fit Index (PGFI) = 0.25

Time used: 0.200 Seconds



Chi-Square=9.37, df=7, P-value=0.22715, RMSEA=0.044

Appendix G-2 LISREL Output for the Initial Model

L I S R E L 8.51

BY

Karl G. J 봣 eskog & Dag S 봣 bom

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The following lines were read from file C:\Documents and Settings\HYUNGTAE-KIM\My Documents\path38..spl:

```
PATHS
WB -> SA
CS -> SA
FR -> TR
SP -> TR
SA -> LO
TR -> LO

PATH DIAGRAM

END OF PROBLEM
```

Sample Size = 181

STL Path original

Covariance Matrix

	SA	LO	TR	FR	CS	WB	SP
SA	0.66						
LO	0.45	0.66					
TR	0.50	0.41	0.56				
FR	0.46	0.31	0.40	0.76			
CS	0.30	0.22	0.28	0.32	0.49		
WB	0.41	0.29	0.34	0.36	0.29	0.55	
SP	0.40	0.34	0.38	0.29	0.30	0.42	0.66

Covariance Matrix

STL Path original

Number of Iterations = 0

LISREL Estimates (Maximum Likelihood)

Structural Equations

SA = 0.25*CS + 0.61*WB, Errorvar.= 0.34 , R?= 0.49
(0.075) (0.071) (0.036)
3.31 8.60 9.38

LO = 0.38*SA + 0.39*TR, Errorvar.= 0.33 , R?= 0.43
(0.058) (0.063) (0.035)
6.56 6.11 9.38

TR = 0.37*FR + 0.41*SP, Errorvar.= 0.26 , R?= 0.54
(0.048) (0.052) (0.027)
7.64 8.01 9.38

Reduced Form Equations

SA = 0.0*FR + 0.25*CS + 0.61*WB + 0.0*SP, Errorvar.= 0.34, R?= 0.49
(0.075) (0.071)
3.31 8.60

LO = 0.14*FR + 0.095*CS + 0.23*WB + 0.16*SP, Errorvar.= 0.42, R?= 0.28
(0.030) (0.032) (0.045) (0.033)
4.77 2.95 5.21 4.86

TR = 0.37*FR + 0.0*CS + 0.0*WB + 0.41*SP, Errorvar.= 0.26, R?= 0.54
(0.048) (0.052)
7.64 8.01

Covariance Matrix of Independent Variables

	FR	CS	WB	SP
FR	0.76			
	(0.08)			
	9.38			
CS	0.32	0.49		
	(0.05)	(0.05)		
	6.21	9.38		
WB	0.36	0.29	0.55	
	(0.06)	(0.04)	(0.06)	
	6.37	6.41	9.38	
SP	0.29	0.30	0.42	0.66
	(0.06)	(0.05)	(0.06)	(0.07)
	5.07	6.13	7.53	9.38

Goodness of Fit Statistics

Degrees of Freedom = 9
Minimum Fit Function Chi-Square = 134.77 (P = 0.0)
Normal Theory Weighted Least Squares Chi-Square = 87.68 (P = 0.00)
Estimated Non-centrality Parameter (NCP) = 78.68
90 Percent Confidence Interval for NCP = (52.33 ; 112.51)

Minimum Fit Function Value = 0.75
Population Discrepancy Function Value (F0) = 0.45
90 Percent Confidence Interval for F0 = (0.30 ; 0.64)
Root Mean Square Error of Approximation (RMSEA) = 0.22
90 Percent Confidence Interval for RMSEA = (0.18 ; 0.27)
P-Value for Test of Close Fit (RMSEA < 0.05) = 0.00

Expected Cross-Validation Index (ECVI) = 0.71
90 Percent Confidence Interval for ECVI = (0.56 ; 0.91)
ECVI for Saturated Model = 0.32
ECVI for Independence Model = 4.60

Chi-Square for Independence Model with 21 Degrees of Freedom = 796.01
Independence AIC = 810.01
Model AIC = 125.68
Saturated AIC = 56.00
Independence CAIC = 839.39
Model CAIC = 205.46
Saturated CAIC = 173.56

Normed Fit Index (NFI) = 0.83
Non-Normed Fit Index (NNFI) = 0.62
Parsimony Normed Fit Index (PNFI) = 0.36
Comparative Fit Index (CFI) = 0.84
Incremental Fit Index (IFI) = 0.84
Relative Fit Index (RFI) = 0.60

Critical N (CN) = 29.94

Root Mean Square Residual (RMR) = 0.069
Standardized RMR = 0.11
Goodness of Fit Index (GFI) = 0.88
Adjusted Goodness of Fit Index (AGFI) = 0.62
Parsimony Goodness of Fit Index (PGFI) = 0.28

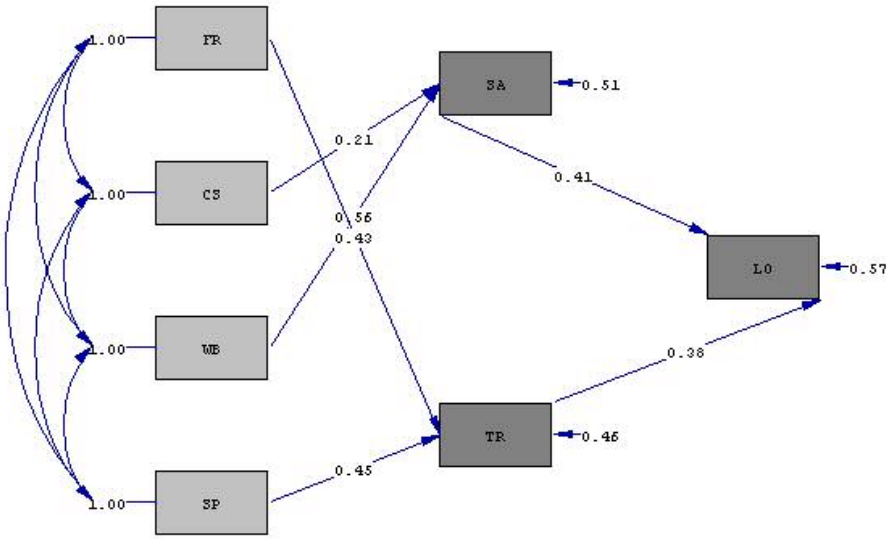
The Modification Indices Suggest to Add the

Path to	from	Decrease in Chi-Square	New Estimate
SA	LO	21.1	0.47
SA	TR	73.4	0.61
TR	SA	42.3	0.37
TR	LO	9.9	0.26
SA	FR	29.6	0.35

The Modification Indices Suggest to Add an Error Covariance

Between	and	Decrease in Chi-Square	New Estimate
TR	SA	40.1	0.14
TR	SA	36.2	0.12
CS	SA	16.8	-0.17
CS	CS	37.2	1.49
WB	SA	16.6	-0.11
WB	CS	34.2	0.35
WB	WB	26.8	0.29

Time used: 0.078 Seconds



Chi-Square=87.68, df=9, P-value=0.00000, RMSEA=0.223

APPENDIX H

OKLAHOMA STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD

Oklahoma State University Institutional Review Board

Date	Wednesday, February 23, 2005	**Protocol Expires:**	**1/17/2006**
IRB Application	HE0526		
Proposal Title:	Interaction Effect of E-satisfaction and E-trust on E-loyalty: Antecedents, Moderator and Interrelationships		
Reviewed and Processed as:	Exempt **Modification**		

Status Recommended by Reviewer(s) **Approved**

Principal Investigator(s) :

Jiyoung Kim
73-4 S. University Place
Stillwater, OK 74075

Byoungho Jin
431 HES
Stillwater, OK 74078

The requested modification to this IRB protocol has been approved. Please note that the original expiration date of the protocol has not changed. The IRB office MUST be notified in writing when a project is complete. All approved projects are subject to monitoring by the IRB

☑ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

Signature :

Sue C. Jacobs, Chair, OSU Institutional Review Board

Wednesday, February 23, 2005
Date

VITA

Jiyoung Kim

Candidate for the Degree of

Master of Science

Thesis: AN INTEGRATIVE MODEL OF E-LOYALTY DEVELOPMENT PROCESS: THE ROLE OF E-SATISFACION, E-TRUST, ETAIL QUALITY, AND SITUATIONAL FACTORS

Major Field: Merchandising

Biographical:

Personal Data: Born in Seoul, Korea, On May 12, 1980.

Education: Received Bachelor of Science degree in Clothing and Textiles from Yonsei University, Seoul, Korea, in February 2003. Studied as an exchange student at University of California, Davis, from September 2001 to August, 2002. Completed the requirements for the Master of Science degree with a major in Merchandising at Oklahoma State University in May, 2005.

Experience: Invited as a guest designer at the Annual Fashion Show at University of California, Davis; participated as a Leadership Member at Davis International Life; employed as Assistant Coordinator at the Arts and Craft Center at University of California, Davis; employed as Assistant Merchandiser at Gap Korea, Seoul, Korea; worked as Columnist for Biznettimes, Seoul, Korea; participated as Vice President for Korean Student Association at Oklahoma State University; employed by Oklahoma State University, Department of Design, Housing and Merchandising as a graduate research assistant from fall 2003 to present.

Professional Membership: International Textiles and Apparel Association.

Name: Jiyoung Kim Date of Degree: May, 2005

Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of the Study: AN INTEGRATIVE MODEL OF E-LOYALTY DEVELOPMENT PROCESS: THE ROLE OF E-SATISFACION, E-TRUST, ETAIL QUALITY AND SITUATIONAL FACTORS

Pages in Study: 104 Candidate for the Degree of Master of Science

Major Field: Design, Housing and Merchandising

Scope and Method of Study: The purpose of this study is to propose an integrative model of e-loyalty development process including e-satisfaction, e-trust, etail quality and situational factors, and to empirically test the model. Data was collected in public facilities and each participant was asked to complete the paper questionnaire. Total of 182 usable data were obtained. Structural equation modeling using Lisrel 8.5 and moderated multiple regression analysis were employed to test the hypotheses.

Findings and Conclusions: Both e-satisfaction and e-trust had influence on e-loyalty. The relationship between e-trust and e-satisfaction was found to be significant as well. Website design had impact on e-satisfaction; however, customer service did not have an effect e-satisfaction. Fulfillment/reliability influenced the e-satisfaction level as well as e-trust. Security/privacy had effect on e-trust. The situational variables did not moderate the relationship between e-satisfaction/ e-trust and e-loyalty.

ADVISER'S APPROVAL: _____