

CONSUMER TRUST IN AN E-RETAILER: AN INTEGRATIVE MODEL  
DIRECTED TOWARD CUSTOMER RETENTION

By  
Cuiping Chen

---

Copyright © Cuiping Chen 2007

A Dissertation Submitted to the Faculty of the  
SCHOOL OF FAMILY AND CONSUMER SCIENCES

In Partial Fulfillment of the Requirements  
For the Degree of

DOCTOR OF PHILOSOPHY

In the Graduate College  
THE UNIVERSITY OF ARIZONA

2007

THE UNIVERSITY OF ARIZONA  
GRADUATE COLLEGE

As members of the Dissertation Committee, we certify that we have read the dissertation prepared by Cuiping Chen

entitled Consumer Trust in An E-Retailer: An Integrative Model Directed toward Customer Retention

and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy

\_\_\_\_\_  
Soyeon Shim, Ph.D. Date: 05/31/2007

\_\_\_\_\_  
Matthew O'Brien, Ph.D. Date: 05/31/2007

\_\_\_\_\_  
Mary Ann Eastlick, Ph.D. Date: 05/31/2007

\_\_\_\_\_  
Paul Wilson, Ph.D. Date: 05/31/2007

Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copies of the dissertation to the Graduate College.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

\_\_\_\_\_  
Dissertation Director: Soyeon Shim, Ph.D. Date: 05/31/2007

\_\_\_\_\_  
Dissertation Director: Matthew O'Brien, Ph.D. Date: 05/31/2007

**STATEMENT BY AUTHOR**

This dissertation has been submitted in partial fulfillment of requirements for an advanced degree at the University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the library.

Brief quotations from this dissertation are allowable without special permission, provided that accurate acknowledgement of the source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the copyright holder.

SIGNED: Cuiping Chen

## ACKNOWLEDGEMENTS

There are many people to thank for their help in preparing this dissertation. The first is Dr. Matthew O'Brien, my dissertation co-chair, who had planted some CRM (Customer Relationship Management) and TCA (Transaction Costs Analysis) seeds in my mind the first semester of my doctoral study and helped grow those seeds into this dissertation. Without the innumerable discussions with him, his generous tutoring and continuous encouragement and support, this dissertation could not have been completed. I thank Dr. Soyeon Shim, my dissertation chair, for her guidance every step of the way despite her extremely tight schedule. I also thank Dr. Mary Ann Eastlick and Dr. Paul Wilson, my dissertation committee members, for the invaluable comments they provided.

This endeavor would not have been possible without the assistance of a very special member of the staff of the Family and Consumer Sciences, Robert Lanza, who helped me design the online survey and collect the data successfully. My fellow graduate students and dear friends, Lin Guo and Jiaqi Xu, deserve thanks for their friendship and support along the journey. I would also like to acknowledge the research funding I received from the Division of Retailing and Consumer Sciences at The University of Arizona.

I am deeply grateful to my big sister, Cuizhi Chen, who loved me and supported me at my worst. But most importantly, I am forever indebted to my husband, Xiufu Zhang, for the incredible sacrifices he endured during the past several years. I deeply thank him for providing love, patience, and support throughout this long, difficult, and sometimes unbearable journey.

**DEDICATION**

To the memory of my beloved mother,

Yunying HAN

You fill me with the passion to pursue the beauty of life.

## TABLE OF CONTENTS

<b>LIST OF FIGURES .....</b>	<b>10</b>
<b>LIST OF TABLES .....</b>	<b>11</b>
<b>ABSTRACT.....</b>	<b>13</b>
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>15</b>
BACKGROUND.....	15
GAPS IN KNOWLEDGE .....	19
PURPOSE OF THE STUDY.....	22
ORGANIZATION OF THE STUDY .....	23
<b>CHAPTER TWO: LITERATURE REVIEW .....</b>	<b>25</b>
TRUST .....	26
<i>Definition of Trust.....</i>	27
<i>Conditions for Trust to Exist.....</i>	29
<i>Dynamic Nature of Trust .....</i>	29
<i>Trust and Risk-taking in Relationships (RTR) .....</i>	30
<i>Levels of Analysis.....</i>	31
<i>Basic Forms of Trust.....</i>	32
GLOBAL EVALUATIONS THEORY .....	36
TRANSACTION COSTS .....	41
<i>Transaction Costs Analysis (TCA).....</i>	41
The Framework of TCA.....	42
The Logic Underlying TCA.....	46
<i>Consumer Transaction Costs.....</i>	48
CUSTOMER LOYALTY .....	51
CHAPTER SUMMARY .....	54
<b>CHAPTER THREE: THEORETICAL FRAMEWORK AND HYPOTHESES .....</b>	<b>55</b>
CONCEPTUALIZATION OF CONSUMER TRUST IN AN E-RETAILER .....	56
<i>Need for Consumer Trust in an E-Retailer.....</i>	57
<i>Definition of Consumer Trust in an E-Retailer.....</i>	60
<i>Dynamic Nature of Consumer Trust in an E-Retailer .....</i>	60
<i>Forms of Consumer Trust in an E-Retailer .....</i>	61
CONCEPTUAL MODEL OF CONSUMER TRUST IN AN E-RETAILER .....	62
RESEARCH HYPOTHESES.....	71
<i>Antecedents of Consumer Trust in an E-Retailer .....</i>	71
Trust and Experience .....	71
Trust and Component Attitudes.....	72
Control Variable: Offline Experience Satisfaction.....	74

## TABLE OF CONTENTS - *Continued*

<i>Consequences of Consumer Trust in an E-Retailer</i> .....	74
Role of Trust in Future Intentions .....	75
Role of Trust in Loyalty .....	76
<i>Consumer Transaction Costs as Mediating Variable</i> .....	77
Trust Affects Consumer Transaction Costs .....	78
CTC Affect Future Intentions (Loyalty) .....	80
Partially Mediating Role of CTC .....	82
<i>Consumer Dependence and Environmental Uncertainty as Moderating Variables</i> .....	85
<b>CHAPTER FOUR: RESEARCH METHODOLOGY</b> .....	<b>89</b>
RESEARCH DESIGN .....	89
QUESTIONNAIRE DEVELOPMENT .....	90
OPERATIONALIZATIONS OF THE VARIABLES .....	92
<i>Consumer Transaction Costs</i> .....	93
<i>Component Attitudes</i> .....	95
<i>Consumer Trust in An E-Retailer</i> .....	97
<i>Future Intentions</i> .....	97
<i>Consumer Loyalty</i> .....	98
<i>Environmental Uncertainty</i> .....	99
<i>Consumer Dependence</i> .....	99
<i>Offline Experience Satisfaction</i> .....	100
<i>Demographic Variables</i> .....	101
EXPLORATORY FACTOR ANALYSIS .....	102
<i>Consumer Transaction Costs (CTC)</i> .....	106
<i>Website Design Attitudes</i> .....	107
<i>Fulfillment/Reliability Satisfaction</i> .....	108
<i>Security/Privacy Attitudes</i> .....	108
<i>Customer Service Satisfaction</i> .....	108
<i>Trust in an E-Retailer</i> .....	109
<i>Future Intentions</i> .....	109
<i>Consumer Loyalty</i> .....	110
<i>Environmental Uncertainty</i> .....	110
<i>Consumer Dependence</i> .....	111
SAMPLING AND DATA COLLECTION .....	111
CHAPTER SUMMARY .....	112
<b>CHAPTER FIVE: DATA ANALYSIS AND RESULTS</b> .....	<b>113</b>
RESPONDENT CHARACTERISTICS .....	114
NON-RESPONSE .....	117
PRELIMINARY DATA ANALYSES .....	118
<i>Sample Outliers</i> .....	118

**TABLE OF CONTENTS - Continued**

<i>Normality</i> .....	118
<i>Correlation Analysis</i> .....	119
DISCRIMINANT VALIDITY BETWEEN FUTURE INTENTIONS AND CONSUMER LOYALTY	121
CONFIRMATORY FACTOR ANALYSIS: SCALE BY SCALE .....	123
<i>Website Design Attitudes</i> .....	128
Overall Model Fit.....	128
Convergent Validity.....	129
<i>Fulfillment/Reliability Satisfaction</i> .....	129
Overall Model Fit.....	129
Convergent Validity.....	129
<i>Security/Privacy Attitudes</i> .....	130
<i>Customer Service Satisfaction</i> .....	130
<i>Trust in an E-Retailer</i> .....	131
Overall Model Fit.....	131
Convergent Validity.....	131
<i>Consumer Transaction Costs (CTC)</i> .....	132
<i>Future Intentions</i> .....	132
<i>Consumer Loyalty</i> .....	133
Overall Model Fit.....	133
Convergent Validity.....	134
<i>Environmental Uncertainty</i> .....	134
Overall Model Fit.....	134
Convergent Validity.....	134
<i>Consumer Dependence</i> .....	135
Overall Model Fit.....	135
Convergent Validity.....	135
CONFIRMATORY FACTOR ANALYSIS: OVERALL MEASUREMENT MODEL .....	136
<i>Overall Model Fit</i> .....	140
<i>Construct Validity</i> .....	141
Convergent Validity.....	141
Discriminant Validity.....	143
Nomological Validity.....	143
BASIC STRUCTURAL MODEL.....	144
<i>Validity of the Basic Structural Model</i> .....	145
<i>Test of Causal Research Hypotheses</i> .....	150
Antecedents of Consumer Trust in an E-Retailer: Component Attitudes.....	150
Consequences of Consumer Trust in an E-Retailer .....	150
Consumer Transaction Costs as Mediating Variable.....	151
<i>Variances in Latent Constructs Explained</i> .....	151
<i>Direct, Indirect, and Total Effects</i> .....	152

## TABLE OF CONTENTS - *Continued*

STRUCTURAL MODEL FOR MULTI-CHANNEL STORE SAMPLE: TEST OF CONTROL	
VARIABLE .....	154
<i>Validity of the Structural Model</i> .....	154
<i>Test of Causal Research Hypotheses</i> .....	160
<i>Variances in Latent Constructs Explained</i> .....	161
<i>Direct, Indirect, and Total Effects</i> .....	162
TEST OF CONTROL VARIABLE: MULTIPLE REGRESSION ANALYSIS.....	164
MULTIPLE GROUP ANALYSES: TEST OF MODERATORS .....	166
<i>Consumer Dependence as Moderating Variable</i> .....	167
Moderating Effect of Consumer Dependence on Trust → Future intentions .....	167
Moderating Effect of Consumer Dependence on Trust → Loyalty.....	168
<i>Environmental Uncertainty as Moderating Variable</i> .....	170
Moderating Effect of Environmental Uncertainty on Trust → Future intentions	
.....	170
Moderating Effect of Environmental Uncertainty on Trust → Loyalty .....	171
CHAPTER SUMMARY .....	172
<b>CHAPTER SIX: DISCUSSION AND CONTRIBUTIONS.....</b>	<b>173</b>
DISCUSSION .....	174
<i>Trust Mechanisms in the Relationship between Consumer and E-Retailer (Pure and Multi-Channel)</i> .....	174
Antecedents of Consumer Trust in an E-Retailer: Component Attitudes.....	174
Consequences of Consumer Trust in an E-Retailer: Future Intentions and Loyalty	
.....	177
The Mediating Role of Consumer Transaction Costs.....	178
The Moderating Roles of Consumer Dependence and Environmental Uncertainty	
.....	182
<i>Antecedents of Consumer Trust in a Multi-Channel E-Retailer</i> .....	184
CONTRIBUTIONS .....	186
<i>Theoretical Contributions</i> .....	186
<i>Managerial Contributions</i> .....	189
LIMITATIONS.....	192
FUTURE RESEARCH.....	193
<b>APPENDIX A: QUESTIONNAIRE.....</b>	<b>197</b>
<b>REFERENCES.....</b>	<b>211</b>

## LIST OF FIGURES

Figure 3.1. An Integrative Model of Consumer Trust in an E-Retailer .....	63
Figure 3.2. The Antecedents of Consumer Trust in an E-Retailer.....	65
Figure 3.3. The Consequences of Consumer Trust in an E-Retailer .....	67
Figure 3.4. The Partially Mediating Role of Consumer Transaction Costs.....	68
Figure 3.5. The Moderating Role of Consumer Dependence .....	69
Figure 3.6. The Moderating Role of Environmental Uncertainty.....	70
Figure 5.1. The Research Model for Analysis for the Entire Sample (Used for Testing of H1a-4b) .....	146
Figure 5.2. The Basic Structural Model Estimated (standardized estimates, <i>t</i> -values in brackets).....	148
Figure 5.3. The Research Model for Analysis for Multi-Channel Store Sample (Used for Testing of Control Variable).....	155
Figure 5.4. The Research Model with Control Variable Estimated (standardized coefficients, <i>t</i> -values in brackets) .....	158

## LIST OF TABLES

Table 2.1. Sources and Types of Transaction Costs .....	45
Table 3.1. Summary of Hypotheses.....	88
Table 4.1. <i>Pre-Transaction Costs</i> Measurement Items .....	94
Table 4.2. <i>Contemporaneous Transaction Costs</i> Measurement Items .....	94
Table 4.3. <i>Post-Transaction Costs</i> Measurement Items .....	94
Table 4.4. Website Design Attitudes Measurement Items.....	96
Table 4.5. Fulfillment/Reliability Satisfaction Measurement Items.....	96
Table 4.6. Security/Privacy Attitudes Measurement Items .....	96
Table 4.7. Customer Service Satisfaction Measurement Items .....	96
Table 4.8. Trust Measurement Items .....	97
Table 4.9. Future Intentions Measurement Items .....	98
Table 4.10. Loyalty Measurement Items .....	98
Table 4.11. Environmental Uncertainty Measurement Items .....	99
Table 4.12. Consumer Dependence Measurement Items.....	100
Table 4.13. Offline Experience Satisfaction Measurement Items .....	100
Table 4.14. Exploratory Factor Analysis for the Pilot Study Sample ( $N = 184$ ).....	103
Table 5.1. Demographic Profile of the Respondents ( $N = 908$ ) .....	115
Table 5.2. Construct Correlation Matrix for the Entire Sample ( $N = 908$ ).....	120
Table 5.3. Exploratory Factor Analysis on Future Intentions and Consumer Loyalty for the Entire Sample ( $N = 908$ ) .....	122
Table 5.4. Results of Scale by Scale CFAs for the Entire Sample ( $N = 908$ ).....	124
Table 5.5. Results of the Measurement Model of Latent Variables for the Entire Sample ( $N = 908$ ).....	137

### LIST OF TABLES - *Continued*

Table 5.6. Results of Basic Structural Model ( $N = 908$ ) – Structural Path Estimates, Standard Errors, and $t$ -Values .....	149
Table 5.7. Results of Basic Structural Model – Squared Multiple Correlations.....	152
Table 5.8. Direct Effects, Indirect Effects, and Total Effects – the Basic Structural Model ( $N = 908$ ).....	153
Table 5.9. Results of the Structural Model for Multi-Channel Store Sample ( $N = 249$ ) – Structural Path Estimates .....	159
Table 5.10. Results of the Structural Model for Multi-Channel Store Sample – Squared Multiple Correlations .....	162
Table 5.11. Direct, Indirect, and Total Effects – the Structural Model for Multi-Channel Store Sample ( $N = 249$ ) .....	163
Table 5.12. Summary of Multiple Regression Analysis for Predictors of Consumer Trust in A Multi-Channel E-Retailer.....	165
Table 5.13. Multigroup SEM Results of Testing the Effect of Consumer Dependence on Trust → Future Intentions.....	167
Table 5.14. Multigroup SEM Results of Testing the Effect of Consumer Dependence on Trust → Loyalty.....	169
Table 5.15. Multigroup SEM Results of Testing the Effect of Environmental Uncertainty on Trust → Future Intentions.....	170
Table 5.16. Multigroup SEM Results of Testing the Effect of Environmental Uncertainty on Trust → Loyalty.....	171

## ABSTRACT

Trust is advocated as the single most important factor for consumers choosing an online supplier. To study trust mechanisms underlying consumer-e-retailer exchange relationship, this research takes a new perspective, a perspective directed toward customer retention. By bringing together three diverse approaches – trust literature, global evaluations theory, and transaction costs analysis, this study develops an integrative model of consumer trust in an e-retailer. Data for the study was collected using an online survey distributed via email to a national sample of 4,156 online consumers who were randomly drawn from a panel containing about 3 million people. Hypotheses were tested using structural equation modeling, multiple regression analysis, and multiple group analysis. Findings of the study imply that consumer trust in an e-retailer derives not only from a consumer's web experience but also from his/her experience outside the web. Specifically, a consumer's attitudes toward the key components of his/her entire online purchase experience (i.e., website design, fulfillment/reliability, privacy/security, and customer service) constitute the key drivers of consumer trust. Findings also indicate that trust is intrinsically beneficial. If a consumer trusts an e-retailer, he/she will come back in the future or even become loyal to the e-retailer. Further, findings suggest that though trust has a direct effect on future intentions and loyalty, part of its effect is conditional on its ability to reduce transaction costs. Additionally, findings of the study imply that as contextual factors, consumer dependence on an e-retailer confounds the effects of trust on future intentions and loyalty, and uncertainty surrounding online transacting environments moderates the effect of trust

on future intentions. However, environmental uncertainty was not found to confound the effect of trust on loyalty. Finally, findings suggest that trust mechanisms underlying consumer-*multi-channel* e-retailer exchange relationship might be different from those underlying consumer-*pure* e-retailer relationship. Future research into this area is warranted.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **Background**

In the early days of e-commerce, it was generally accepted that customer retention and Internet shopping were mutually exclusive (Bain & Company/Mainspring 2000; Reichheld, Markey, and Hopton 2000). The Internet seemed to make customer retention irrelevant. At the click of a mouse, online shoppers could easily cover the globe in search of the best price. There was little to hold them at one website. Therefore, the conventional battleground for online retailers is mainly concerned with transactions and scale, and most e-commerce metrics such as hits, click-throughs, eyeballs, number of visitors, number of shoppers, pure purchase volume, and so forth reflect this business mentality. While it is true that online shoppers can switch effortlessly from one website to another, with the growing popularity of e-commerce, a highly loyal segment of online shoppers has emerged, and tools such as Internet bookmarks have led to site usage patterns that show these customers are loyal, almost addicted. Today, loyal online shoppers visit their favorite websites far more frequently than they would any traditional brick-and-mortar store.

This surprisingly high degree of online customer loyalty can have a significant influence on the profitability of online retailers (Bain & Company/Mainspring 2000; Reichheld, Markey, and Hopton 2000; Vatanasombut, Stylianou, and Igarria 2004).

Research conducted by Bain & Company simulated the long-term economics of websites in different industries and found that customer loyalty is the most important factor impacting profitability, even more so than for traditional offline companies: “Small changes in loyalty alone, especially among the most profitable customers, can account for the long-term divergence of initially comparable online companies, with some rising to exceptional returns and others sinking to lasting unprofitability” (Bain & Company/Mainspring 2000, p. 1). Therefore, the golden rule – customer loyalty is the key to long-term profitability – still applies for online business (Reichheld, Markey, and Hopton 2000). In fact, successful e-companies place the pursuit of loyal, profitable customers at the core of their marketing strategies. For example, Dell and eBay, two e-commerce leaders, do not compromise their prices but focus instead on the delivery of a superior customer experience that will make customers come back: “Their business models are driven by one factor above all others: customer retention” (Reichheld, Markey, and Hopton 2000, p. 175).

Interestingly, in e-commerce settings, profitable customers tend to be loyal (Reichheld, Markey, and Hopton 2000). Although there are many bargain-hunters who search the Internet for the best deal, these are not the customers who generate profits for online retailers. These are the same people who cut coupons and hunt for discounts at shopping malls or stores. Profitable customers are those who value time and speed, seek the convenience of Internet shopping, and appreciate the functionality websites can provide, but who tend to consolidate their purchases in a sector with one online supplier and consider trust, not price, as the most crucial factor for supplier selection. They

bookmark their favorite websites, return to them often, and use them for information, entertainment, and transactions. These loyal, profitable online customers are the ones who make e-commerce, particularly e-tailing, survive and proliferate. Nowadays, online retailers are beginning to understand that this group of customers represents their profits and growth; thus, they must find ways of targeting them and, even more importantly, retaining them.

However, it is a tremendous challenge for businesses operating on the Web to maintain customers (Bain & Company/Mainspring 2000; Reichheld, Markey, and Hopton 2000; Vatanasombut, Stylianou, and Igarria 2004). In fact, the Internet has had a detrimental impact on building and maintaining customer relationships. First, the Internet dramatically reduces consumers' search costs (Vatanasombut, Stylianou, and Igarria 2004). In the Internet age, consumer choice is no longer bound by the constraints of place or access to information (Urban, Sultan, and Qualls 2000). Consumers can effortlessly access the full spectrum of potential suppliers and are informed by a wealth of data on price, product, and suppliers – from companies, competitors, commentators, and peers – all available at a mouse click. Indeed, the Internet puts so much power in the hands of consumers that a new term was created to describe the paradigm shift: “consumer to business” marketing (in contrast to the traditional “business to consumer” marketing paradigm). Second, the Internet has lowered entry costs and thus has widely opened doors to new entrants in the e-retailing industry (Vatanasombut, Stylianou, and Igarria 2004). As a result, retailers and pure-play e-tailers have flooded the electronic retail market in competing for customers. Third, the Internet reduces the distinctiveness of

firms. Since the web is based on an open technology, websites can be easily imitated, duplicated, and even copied. It is also difficult for an online retailer to create differentiation in their products and pricing in the same segments because they can also be quickly mimicked. Actually, a new competitor can enter the arena by learning from existing online retailers and then using new technology to leapfrog over them. As a result, the Internet significantly undermines the distinctiveness of a company.

When there is a frictionless worldwide marketplace available at customers' fingertips, how does an online retailer differentiate itself from others to make its customers remain with it or even stay loyal to it (Bain & Company/Mainspring 2000; Reichheld, Markey, and Hopton 2000; Vatanasombut, Stylianou, and Igbaria 2004)? Consistently, trust is advocated as the single most important factor in online supplier choice (Bain & Company/Mainspring 2000; Reichheld, Markey, and Hopton 2000; Urban, Sultan, and Qualls 2000; Vatanasombut, Stylianou, and Igbaria 2004). With trust, consumers will choose an online retailer for transactions; with trust, consumers will remain with an online retailer after their first transaction; with trust, consumers will give their loyalty to an online retailer, spend more, generate large transactions, buy other products, pay a premium price, and refer more people and bring in more business. Accordingly, trust is regarded as the currency of the web (Urban, Sultan, and Qualls 2000). With the Internet significantly undermining the distinctiveness of firms (Reichheld, Markey, and Hopton 2000; Vatanasombut, Stylianou, and Igbaria 2004), it is possible for online retailers to make trustworthiness a differentiating factor (Reichheld, Markey, and Hopton 2000; Urban, Sultan, and Qualls 2000; Vatanasombut, Stylianou,

and Igarria 2004). By investing in trust, online retailers can attract people to their sites, convert visitors into purchasers, create barriers to switching for customers, build long-term relationships with customers in ways that cannot easily be replicated by competitors, and ultimately, increase market share and earn real profits in the rough-and-tumble world of Internet marketing. Therefore, trust is positioned as perhaps the single most powerful marketing tool available to an online company.

### **Gaps in Knowledge**

Although current online B2C (business to consumer) trust studies have emphasized the significance of trust in Internet strategies and have suggested potential antecedents and consequences of online trust (for a literature review, see Sultan, Urban, Shankar, and Bart 2002; Shankar, Urban, and Sultan 2002; Yoon 2002; Grabner-Krauter and Kaluscha 2003), some critical gaps remain.

First, although trust is always advocated as the single most important factor for consumers choosing an online supplier (Bain & Company/Mainspring 2000; Reichheld, Markey, and Hopton 2000; Urban, Sultan, and Qualls 2000; Vatanasombut, Stylianou, and Igarria 2004), few studies have examined why. At its foundation, the consumer-e-retailer relationship is based on economic exchange (whether discrete transactions or relational exchanges), which is characterized by rational choice. Assuming rational decision-making when engaging in transactions with an e-retailer, a consumer would attempt to minimize the overall costs and maximize the overall benefits, and hence maximize the value of a transaction (Strader and Shaw 2003). Not surprisingly,

Sirdeshmukh, Singh, and Sabol (2002) and Sirdeshmukh, Brei, and Singh (2003) hypothesize that value is the partially-mediating variable between trust and loyalty in the consumer-service provider relationship. However, their empirical tests did not support all the hypotheses regarding the partially mediating role of value in the relationship between trust and loyalty. What, then, are the underlying mechanisms linking trust and consumer's choice of an online supplier? Additionally, the online business environment has moved far beyond the traditional. In the Internet age, speed has become the measurement standard and time has become even more scarce of a resource. The Internet makes it easy for consumers to have access to full information on price and product, but it is difficult for online retailers to create differentiation on both their product and pricing in the same segments, since they can be quickly mimicked (Reichheld, Markey, and Hopton 2000; Urban, Sultan, and Qualls 2000; Vatanasombut, Stylianou, and Igarria 2004)). In such a business environment, what are the underlying criteria for consumers choosing an online supplier for a transaction or a relational exchange?

Second, current online B2C trust studies still reflect the early mentality of doing business online which, in essence, is driven by discrete transactions. More specifically, most of those studies focus on studying how visitors form their initial trust in a commercial website based on web characteristics and how trust impacts their behavior toward a website (Sultan, Urban, Shankar, and Bart 2002; Shankar, Urban, and Sultan 2002; Yoon 2002; Grabner-Krauter and Kaluscha 2003). Such studies have provided important insights into *mechanisms of initial formation of trust in a website* and have helped e-retailers build website trust by improving a visitor's web experience and

ultimately catch eyeballs, encourage click-throughs, turn visits into purchases, and increase sales volumes. However, with marketing strategies for e-retailers switching to retaining customers, researchers need to take a new perspective on the study of trust – a perspective directed toward customer retention. Specifically, studies are needed to investigate the drivers of consumer trust in an “e-retailer” (instead of its website) after a consumer has had some purchase experience with the e-retailer (instead of an initial encounter with its website) and how trust in an e-retailer impacts the consumer’s decision to stay with or be loyal to the e-retailer (constructs closely related to customer retention).

Third, current online trust studies, particularly those in the IS (Information System) literature, lack theoretically driven attempts (for a literature review, see Grabner-Krauter and Kaluscha 2003). And the limited online B2C trust research that exists in marketing (e.g., Sultan, Urban, Shankar, and Bart 2003) has tended to focus largely on the psychological approach. Although this approach has provided interesting insights, little attention has been directed at how a psychological approach and other approaches, such as an economic approach, might work together to examine trust mechanisms in the consumer-e-retailer exchanges. A theoretically-driven effort that brings together diverse approaches is needed for online B2C trust research.

Fourth, in the trust literature (both online and offline), few studies have examined the factors that moderate the effect of trust on its outcome variables. Among those few, Mayer, Davis, and Schoorman (1995) conceptually model perceived risk (i.e., situational factors) as the moderating variable between trust and risk-taking behaviors in a

relationship in the organizational behavior settings. To the researcher's knowledge, no study has yet empirically tested the moderators of the effect of trust on its outcomes.

Fifth, conceptualizations of the trust construct are not consistent across studies. In fact, online B2C trust research is beset by conflicting conceptualizations of trust (Grabner-Krauter and Kaluscha 2003).

Finally, gaps exist in the empirical online B2C trust studies. Although there are some empirical studies regarding online B2C trust, most of them are based on student samples and the sample sizes are small (Shankar, Urban, and Sultan 2002; Yoon 2002; Grabner-Krauter and Kaluscha 2003). The only exception is a large-scale empirical study by Sultan, Urban, Shankar, and Bart (2002). Even so, large-scale samples randomly selected from real-world online consumers need to be employed to provide more robust empirical evidence to online B2C trust literature.

### **Purpose of the Study**

This research aims to fill the preceding gaps in the literature. The ultimate purpose is to further explain the important phenomenon of consumer trust in an e-retailer; that is, to answer many key questions regarding consumer trust in an e-retailer: Does trust matter in consumer-e-retailer exchanges? What is consumer trust in an e-retailer? What causes it? What does it affect? What factors mediate the effect of trust on its outcome variables? And what factors moderate the effect of trust? To this end, this research aims to develop an integrative theoretical framework of consumer trust in an e-retailer directed

toward customer retention by bringing together diverse approaches and empirically test it using a large-scale sample randomly selected from real-world online consumers. As such, this research aims to achieve the following four specific objectives:

- To identify the key drivers of consumer trust in an e-retailer after a consumer has had a transactional experience with the e-retailer.
- To examine the key factors that are impacted by consumer trust in an e-retailer but are related to customer retention.
- To investigate why trust is advocated as the single most important factor for consumers choosing an online supplier; that is, what are the underlying mechanisms linking trust and online consumers' decision-making regarding a transaction or relational exchanges?
- To examine the key factors that confound the effect of trust on its outcomes.

### **Organization of the Study**

This chapter set forth the introduction of the present study, which included the historical background of the study, the gaps present in the current literature, and the purpose of the study. Chapter two is dedicated to reviewing the foundational literature and theories, including a literature review of trust, global evaluation theory, transaction costs, and customer loyalty. Chapter three builds on the foundations presented in chapter two and develops the theoretical framework of the study. It also provides additional logical and theoretical support for the hypotheses that are to be tested. Chapter four

describes the research methodology that was employed to test the proposed hypotheses, including research design, questionnaire development, operationalizations of the variables, exploratory factor analysis of the pilot study data, and sampling and data collection. Chapter five presents the results of the statistical analyses. The final chapter in this study, chapter six, provides a discussion of the results presented in chapter five. Following that, the discussion centers on the contributions of the study, the limitations associated with the study presented, and some potential avenues of future research.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

The purpose of this chapter is to provide a review of the relevant literature and to introduce the fundamental theories utilized to build the hypotheses developed in chapter three. Primarily, this chapter is structured around four sections. In the first section, a thorough review of trust literature is presented. Specifically, a cross-disciplinary framework of the conceptualization of trust is presented. It serves as the basis for conceptualizing consumer trust in an e-retailer, the central construct of this study, and provides the major rationale for hypothesizing direct experience comprising the actual sources of trust, trust impacting future intentions/loyalty toward the e-retailer, and consumer dependence on an e-retailer and environmental uncertainty moderating the effect of trust on future intentions/loyalty. In the second section, global evaluations theory is reviewed. Coupled with the framework of trust, this theory provides a theoretical foundation for the hypothesis that consumers' attitudes toward the key components of direct experience are the actual sources of trust. In the third major section of this chapter, literature pertaining to transaction costs, including transaction costs analysis (TCA) and the concept of consumer transaction costs, is reviewed in detail. TCA provides a rationale for the developments of the hypothesis that consumer transaction costs are the underlying criterion for consumers choosing to remain with or to be loyal to an e-retailer and the partially mediating role of consumer transaction costs in trust – future intention/loyalty relationships. The final section of this chapter briefly reviews the

development of customer loyalty as a construct, which serves as the basis for defining and measuring customer loyalty, a dependent variable of interest in this study.

### **Trust**

The study of the concept of trust has been rooted in economics, social psychology, and sociology (Rousseau, Sitkin, Burt, and Camerer 1998). It has been extended to other disciplines such as marketing, management, accounting, information systems, e-business, etc. (Shankar, Urban, and Sultan 2002). Traditionally, various disciplines have diverse assumptions about trust and thus treat it differently. For example, in economics, trust is viewed mainly as either calculative (Williamson 1983) or institutional (North 1990). In psychology, personal attributes of trustors and trustees are commonly used to frame evaluations of trust (Rotter 1967; Tyler 1990). In sociology, trust is often found in socially embedded properties of relationships among people (Granovetter 1985) or institutions (Zuker 1986). In marketing, trust has been studied primarily in the context of relational exchanges (i.e., relationship marketing) either between a buyer and a seller (Doney and Cannon 1997; Ganesan 1994; Ganesan and Hess 1997; Moorman, Deshpande, and Zaltman 1992, 1993; Lusch, O'Brien, and Sindhav 2004; Morgan and Hunt 1994) or between a customer and a provider (Garbarino and Johnson 1999; Singh and Sirdeshmukh 2000; Sirdeshmukh, Singh, and Sabol 2002). This research stream emphasizes the influence of trust on constructs central to building long-term relationships with customers, such as commitment (Dwyer, Schurr, and Oh 1987; Garbarino and Johnson 1999; Lusch, O'Brien, and Sindhav 2004; Morgan and Hunt

1994), long-term orientation (Ganesan 1994), propensity to stay in a relationship (Anderson and Weitz 1989), and loyalty (Berry 1993; Sirdeshmukh, Singh, and Sabol 2002; Sirdeshmukh and Brei 2003), and focuses on identifying the factors that engender trust in interorganizational relational exchanges or consumer relational exchanges (Atuahene-Gima and Li 2002) using either the psychological approach, the economic approach, or the two combined (Singh and Sirdeshmukh 2000).

In an effort to synthesize and cumulate insights into trust across disciplines, Rousseau, Sitkin, Burt, and Camerer (1998) identified the common elements underlying trust as it is viewed across disciplines and developed a multidisciplinary framework of trust within and between organizations. This creative synthesis creates a more cumulative body of knowledge on trust within and between organizations and adds considerably to contemporary scholarship on trust.

In this section, the cross-disciplinary framework of the conceptualization of trust is presented. Specifically, the definition of trust, the conditions for trust to exist, the dynamic nature of trust, trust and risk-taking in a relationship, levels of analysis of trust, and various forms of trust are depicted, in that order.

### **Definition of Trust**

Trust has been defined in various ways across disciplines. Differences in the definition of trust lie in disciplinary traditions and assumptions used by different scholars (Williamson 1993; Rotter 1967; Zuker 1986). Trust has been defined using a variety of

terms, ranging from the belief by one party that another party will act in a predictable way (Luhmann 1979) to “the willingness to be vulnerable to the actions of another party” (Mayer, Davis, and Schoorman 1995) to a willingness to depend on another party in whom one has confidence (Garbarino and Johnson 1999; Morgan and Hunt 1994; Moorman, Deshpande, and Zaltman 1992, 1993; Sirdeshmukh, Singh, and Sabol 2002) regarding its credibility and benevolence (Doney and Cannon 1997; Ganesan 1994; Ganesan and Hess 1997; Singh and Sirdeshmukh 2000). However, when examining the issue of trust from a cross-disciplinary perspective, Rousseau et al. (1998) found that scholars from different disciplines actually agree fundamentally on the definition of trust. “Confident expectations” and “a willingness to be vulnerable” are identified as the fundamental elements of definitions of trust, regardless of the underlying discipline. By integrating common dimensions from various disciplines, Rousseau et al. (1998) developed a widely held definition of trust: “trust is a psychological state comprising the intention to accept vulnerability based on positive expectations of the intentions or behavior of another” (p. 395). In essence, trust is psychological, which is the root assumption about trust across disciplines. Trust is not a choice or a behavior (Mayer, Davis, and Schoorman 1995; Rousseau et al. 1998), but a psychological state that can cause, or result from, particular human choices or behaviors. Trust implies a willingness to be vulnerable, but with an expectation or a feeling of confidence that one can depend on the other party (Rousseau et al. 1998). There is an expectation that the other party will act not opportunistically but with goodwill.

### **Conditions for Trust to Exist**

Across disciplines, there is agreement on the necessary conditions for trust to emerge: risk and interdependence (Rousseau et al. 1998). Risk, defined as “the perceived probability of loss” (p. 395), is one condition regarded as essential in economic, psychological, and sociological conceptualizations of trust. Risk is requisite to trust (Mayer, Davis, and Schoorman 1995). Trust only emerges in a risky situation, and would not exist in a situation where actions could be undertaken with complete certainty and no risk. There are two sources of risk (Mayer et al. 1995). One is environmental uncertainty; that is, the uncertainty caused by contextual and situational factors outside the relationship between the trusting party (trustor) and the party to be trusted (trustee) (Mayer et al. 1995). The other is behavioral uncertainty; that is, the uncertainty regarding whether the trustee intends to and will act appropriately (Rousseau et al. 1998). Behavioral uncertainty is under the control of the trustee, while environmental uncertainty is beyond the control of the trustee (Mayer et al. 1995).

Interdependence, the second condition needed for trust to arise, means that “the interests of one party cannot be achieved without reliance upon another” (Rousseau et al. 1998). For trust to arise, the parties involved need to depend on each other to realize their respective interests.

### **Dynamic Nature of Trust**

Although scholars often have treated trust as a static phenomenon, it is actually

dynamic (Rousseau et al 1998). Trust evolves over time. Instead of staying at a single point, trust builds, develops, declines, and even resurfaces in a long-standing relationship. Trust has three phases: building (where trust is formed or reformed), stability (where trust already exists), and dissolution (where trust declines). Although the tendency of trust research is to focus on either the building, stability, or dissolution phase and specify conceptual frameworks within a particular phase, scholars do, at times, focus on multiple phases of trust. For example, Jones and George (1998) and Bigley and Pearce (1998) examine the processes of trust building and decline; Bhattacharya and his colleagues (1998) examine how inter-firm relationships start and how they achieve stability; and Lewicki and his colleagues (1998) investigate simultaneously the antecedents of trust and distrust and the conditions that achieve equilibrium in each. The multiple phases of trust reflect the dynamic nature of trust and characterize the ebb and flow of relationships.

### **Trust and Risk-taking in Relationships (RTR)**

As discussed above, risk creates an opportunity for trust to arise, which in turn will lead to risk-taking behaviors (Mayer et al. 1995; Rousseau et al. 1998), which “can occur only in the context of a specific, identifiable relationship with another party” (Mayer et al. 1995, p. 725). In other words, the level of trust will influence the amount of risk that a party is willing to take in its relationship with another party. Additionally, the specific form of the risk-taking depends upon the situation in which two parties are involved (Mayer et al. 1995). For example, in customer-company relational exchanges, a customer’s trust in a company affects the customer’s commitment to his/her relationship

with the company (Garbarino and Johnson 1999), the customer's loyalty toward the company (Berry 1993; Singh and Sirdeshmukh 2000; Sirdeshmukh, Singh, and Sabol 2002; Sirdeshmukh, Brei, and Singh 2003), and the customer's future intentions toward the company (Garbarino and Johnson 1999). In buyer-seller relational exchanges, a buyer firm's trust of a supplier firm influences the buyer's commitment to its relationship with the supplier (Dwyer, Schurr, and Oh 1987; Morgan and Hunt 1994; Lusch, O'Brien, and Sindhav 2004), the buyer's choice of supplier for a purchase (Doney and Cannon 1997), the buyer's anticipated future interaction with the supplier, and the buyer's long-term orientation toward the supplier (Ganesan 1994). Even though the form of risk-taking depends upon the situation, in both situations, the amount of trust for the other party will affect how much risk a party will venture in the relationship. Further, the outcomes of risk-taking in a relationship will update the level of trust. Therefore, the relationship between trust and risk-taking is reciprocal, which reflects the dynamic nature of trust.

### **Levels of Analysis**

Scholars conceptualize trust at different levels of analysis because trust plays a role in an array of entities—individuals, dyads, groups, networks, firms, and interfirm alliances (Rousseau et al. 1998). It is generally assumed that psychologists study trust at the individual and occasionally the group level, economists at the individual or the firm level, and sociologists at the group and society level. However, Rousseau et al. (1998) found that scholars from various backgrounds often address trust at any given level. For instance, marketing scholars study trust primarily for dyads but also examine trust at

different levels. They study trust at the firm-firm level (e.g., a buyer-seller relationship) (Doney and Cannon 1997, Ganesan 1994, and Morgan and Hunt 1994), the individual-firm level (e.g., a consumer trust in a firm) (Garbarino and Johnson 1999), and the individual-individual level (e.g., a salesperson-supervisor interpersonal relationship) (Atuahene-Gima and Li 1999). Further, Rousseau et al. (1998) observed that some scholars adopt multiple levels of analysis in a single study. For example, Doney and Cannon (1997) address trust at both the firm-firm level (i.e., a buyer firm's trust in the supplier firm) and the firm-individual level (i.e., a buyer firm's trust in a salesperson representing the supplier firm).

### **Basic Forms of Trust**

Trust takes different forms in different types of relationships (Rousseau et al. 1998). For instance, trust in one-time transactions typically derives from weighted calculations of gains and losses, whereas trust in ongoing relationships may mainly derive from reliability and credibility recognized from previous interactions.

There are three basic forms of trust: calculus-based trust, relation-based trust, and institution-based trust (Rousseau et al. 1998). Calculus-based trust is based upon rational choice, which is characteristic of economic exchanges (Williamson 1993). Trust arises when a party perceives that the other party intends to and will be able to perform an action that is beneficial to the party (Rousseau et al. 1998). The perceived positive intentions in calculative trust may derive from the existence of deterrence or from credible information about the intentions of the other party, such as reputation or

certification. Such proof sources signal that the other party's claims of trustworthiness are likely to be true (Doney, Cannon, and Mullen 1998). Calculus-based trust is relatively limited. It is often circumscribed to discrete transactions or to situations where evidence of failure to perform can be obtained in the short-term (Rousseau et al. 1998). Risk involved in calculus-based trust may entail short-term performance losses but not threaten a party's long-term or broader interests. Once failure occurs, exchanges based upon calculus-based trust will probably be terminated.

Relational trust is based upon experience derived from repeated interactions over time between two parties (Rousseau et al. 1998). In other words, information from within the relationship itself serves as the basis of relational trust. Credibility and reliability in past interactions give rise to a party's positive expectations about the other party's intentions and ability. When frequent interactions leads to the formation of emotional attachments based on interpersonal care and concern, affect enters into the relationship (McAllister 1995). Thus, relational trust is often referred to as "affective trust" (McAllister 1995) with "identity-based trust" at its broadest scope.

The scope of relational trust varies depending upon the resources brought into the exchange by two parties (such resources as assets, shared information, concern, status, and even socio-emotional support) and the degree of interdependence between the parties (Rousseau et al. 1998). Repeated exchanges and successful fulfillment of expectations increase the willingness of the trusting parties to rely on each other and enlarge the resources exchanged. Therefore "an exchange can evolve from an arm's length

transaction into a relationship” (Rousseau et al. 1998, p. 399). Compared with calculus-based trust, exchange based upon relational trust involves a broader array of resources, including socio-emotional support, as well as concrete resources such as information and assets. Also, relational trust entails a higher level of faith of one party in the intentions of the other as compared to calculus-based trust. Unlike exchanges based on calculus-based trust, those based upon relational trust may not be terminated when a violation occurs. So relational-trust-based exchanges often are more elastic. Even when expectations are not met, relational-trust-based exchanges can survive, particularly if both parties attempt to restore good faith in each other and fair dealing to their exchanges.

Identity-based trust is at the broadest scope of relational trust (Rousseau et al. 1998). Two parties involved in repeated interactions tend to create expanded resources, including assets, shared information, concern, status, and even emotional support. To the degree that they believe that the other party is “us” instead of “them,” a shared identity (that is, a psychological identity) emerges. Trust resulting from a shared identity is relational trust at its broadest.

Institution-based trust is based upon the existence of institutions that creates a context for interpersonal, interorganizational, or person-organization trust (Rousseau et al. 1998). That is, institution-based trust is the result of institutional arrangements (e.g., Zucker 1986; Rousseau et al. 1998). Institutional arrangements exist at the organizational level, in the form of corporate culture or teamwork culture, and at the societal level, in the forms of legal systems, social norms, social networks, or third party relations. These

institutional arrangements (i.e., rules and regulations) promote trust in the way that they shape both the behaviors that parties engage in and their beliefs regarding the motives of others. Because of that, “institution-based trust can ease the way to formulating both calculus-based trust and relational trust” (p.400). For calculus-based trust, the existence of institutional deterrents may help trust relationships form in the first place because, for instance, one is confident that reputation matters. Additionally, institutional arrangements can act as broad supports for relational trust that sustains further risk-taking and trust behavior.

As reviewed above, trust takes various forms. It is quite possible that trust in a particular relationship can be a mixture of several of the forms of trust together (Rousseau et al. 1998). Therefore, Rousseau and his colleagues conclude that “conceptualizing trust in only one form in a given relationship risks missing the rich diversity of trust in the organizational setting” (Rousseau et al. 1998, p. 401).

This section deals with the multidisciplinary framework of the conceptualization of trust. In sum, trust, as the willingness to be vulnerable based on “positive expectations of the intentions or behavior of another,” is a psychological state that can affect a party’s risk-taking behavior in its relationship to another party (Rousseau et al. 1998, p. 395). Trust must exist in a risky situation where parties are dependent on each other. Trust is conceptualized at different levels of analysis but the basic definition of trust applies across trust’s levels of analysis. Trust is dynamic in its nature, but scholars tend to focus on specific phases of trust when developing their conceptual frameworks. Trust takes

various forms: calculus-based trust, relation-based trust, or institution-based trust. But in a particular relationship, it is possible that trust can mix several forms together, although the sources of the three forms of trust are different. For calculus-based trust, the sources are the existence of deterrence or credible information about the trustworthiness of the trustee. For relation-based trust, the sources are the trustor's direct experiences derived from interactions with the trustee. For institution-based trust, the sources are institutional arrangements.

This framework is the theoretical foundation for conceptualizing consumer trust in an e-retailer and hypothesizing direct experience comprising the actual sources of trust, trust impacting future intentions/loyalty toward the e-retailer, and consumer dependence on an e-retailer and environmental uncertainty moderating the effect of trust on future intentions/loyalty. Coupled with this framework, global evaluations theory plays an important role in identifying consumer's attitudes toward the key components of direct experience as the actual sources of trust and providing arguments for trust impacting future intentions/loyalty. Accordingly, it is imperative to understand the tenets of global evaluations theory.

### **Global Evaluations Theory**

Recently there has been "a continuous interest in the development and refinement of survey-based measurements of summary judgment and feelings that reflect a customer's evaluation of a marketing organization" (Garbarino and Johnson 1999). These summary evaluation constructs include customer satisfaction with the firm (Czepiel,

Rosenberg, and Akerele 1974; Fornell 1992), perceptions of service quality of the firm (Parasuraman, Zeithaml, and Berry 1994), trust of the firm (Morgan and Hunt 1994; Garbarino and Johnson 1999), commitment toward the firm, perceived value of the firm (Ostrom and Iacobucci 1995), and likelihood of purchase. As higher-order mental constructs, these global evaluations are believed to synthesize consumers' knowledge and experiences with a particular firm (Garbarino and Johnson 1999). Evaluative memory research also suggests that global evaluations summarize many experiences and perceptions (Carlston 1980). According to this stream of research, global evaluations are higher-order syntheses of information; that is, ideas constructed from other ideas or inferences built from other inferences. Accordingly, Garbarino and Johnson (1999) propose that global evaluations comprise evaluations of component attributes or processes, which are termed "component attitudes." In a word, global evaluations are influenced by component attitudes.

In the customer satisfaction literature, there are many empirical precedents for the influences of component attitudes on overall satisfaction. For example, Czepiel, Rosenberg, and Akerele (1974) and Westbrook (1981) propose that customer satisfaction with an organization is a cumulative, attitude-like construct that comprises satisfaction with specific components, such as the people and the products. Specifically, Westbrook (1981) shows that customer satisfaction with a retail establishment is the result of accumulated instances of satisfaction with the store salespeople, special store sales, products/services purchased at the store, the store environment, and value-price relationships offered by the store. Additionally, Crosby and Stephens (1987) find that

overall satisfaction with life insurance comprises separate component satisfaction evaluations—satisfaction with the agent (service provider), satisfaction with the core service, and satisfaction with the organization. More recently, Oliver (1993), Rust, Zahorik, and Keiningham (1995), Spreng, MacKenzie, and Olshavsky (1996), and Mittal, Ross, and Baldasare (1998) have studied how satisfaction/dissatisfaction with product or service attributes and processes influences overall satisfaction.

In the research literature on global evaluations, several empirical studies describe how component attitudes influence not only overall satisfaction but also other global evaluations. For example, Ostrom and Iacobucci (1995) demonstrate that component attitudes toward price, quality, friendliness, and customization were influential in the formation of overall satisfaction, perceived value, and likelihood of purchase. Bhattacharya, Rao, and Glynn (1995) show the influence of component satisfaction evaluations of a museum's permanent collection, traveling exhibits, special events, and gift shop on museum members' commitment toward the museum organization. Most recently, Garbarino and Johnson (1999) find that component attitudes toward actor satisfaction, actor familiarity, play satisfaction, and theater facility satisfaction were influential on the formation of customers' overall satisfaction with, trust of, and commitment toward a New York off-Broadway repertory theater company.

Further, global evaluations research shows that global evaluations are influenced by the same component attitudes and differences in the global evaluations reflect different weightings of these component attitudes for that particular evaluation (Ostrom

and Iacobucci 1995; Garbarino and Johnson 1999). For example, to eliminate halo effects among global evaluations of overall satisfaction, perceived value, and purchase likelihood, Ostrom and Iacobucci (1995) employed a between-subjects experimental design in which each subject was requested to make only one global evaluation. They manipulated the service attribute levels of price, quality, friendliness, and customization. They found that every attribute was influential on the formation of a global evaluation, but the weightings of the attributes varied with satisfaction, perceived value, and likelihood of purchase. Additionally, Garbarino and Johnson (1999) demonstrate that customers' overall satisfaction with, trust of, and commitment toward a New York off-Broadway repertory theater company were influenced by the same intermediate attitudes (i.e., actor satisfaction, actor familiarity attitudes, play attitudes, and theater facility attitudes), but the utilities of the intermediate attitudes varied with overall satisfaction, trust, and commitment. In other words, the component attitudes that were the key drivers of trust or commitment were different than the key drivers of overall satisfaction. For example, satisfaction with the theater facility was less influential on commitment than on overall satisfaction.

Finally, global evaluations research indicates that global evaluations guide consumer decision-making with respect to a marketing organization (Garbarino and Johnson 1999). A critical issue in the research of global evaluations is to identify which global evaluation construct is the most predictive of future behavioral intentions of customers. For example, Parasuraman, Zeithamal, and Berry (1994) defend perceived service quality against charges by Cronin and Taylor (1992) that overall customer

satisfaction is more predictive of customers' future intentions. By reviewing this literature, Zeithamal, Berry, and Parasuraman (1996) emphasize the importance of measuring future intentions of customers to evaluate their potential to stay with or defect from an organization.

Global evaluations theory plays an important role in this study in identifying the key drivers of trust by breaking consumer's direct experiences with an e-retailer into key components. This theory also provides additional support for the hypotheses that trust affects future intentions/loyalty. How global evaluations theory is utilized to develop the hypotheses shall be seen in chapter three.

The concept of consumer transaction costs impacts the relationship between consumer trust in an e-retailer and his/her decision to stay with (future intentions) or be loyal to the e-retailer. As such, the following section reviews the literature pertaining to transaction costs, and specifically the framework of Transaction Costs Analysis (TCA) and the concept of consumer transaction costs. TCA provides the major rationale for the hypothesis that consumer transaction costs are the underlying criterion for consumer's supplier selection in the online transacting environments and the partially mediating role of consumer transaction costs between trust and future intentions/loyalty.

## **Transaction Costs**

### **Transaction Costs Analysis (TCA)**

Transaction cost analysis (TCA) is under the umbrella of the paradigm of “New Institutional Economics.” Traditionally, the firm is viewed as a production function (by neoclassical economics). In contrast, TCA treats the firm as a governance structure. Coase (1937) first identified the critical dichotomy between markets and firms by pointing out that firms and markets are alternative governance structures. They differ in transaction costs. Under certain conditions, the costs of doing an economic transaction in a market may be higher the costs of organizing the transaction within a firm. Williamson (1975, 1985, 1996) has added considerable precision to Coase’s general argument and developed the well-known TCA approach.

In essence, Williamson (1975, 1985, 1996) proposed that if theorists can ascertain the level of asset specificity for a transaction, the degree of uncertainty surrounding a transaction, and the frequency with which a transaction recurs, they can predict the governance structure that will be adopted by the parties to the transaction. Underlying this rationale is the central premise of TCA that firms choose a governance structure that minimizes transaction costs. TCA’s contribution lies in the ability the user has to predict the governance structure (market, hybrid, or hierarchy) for a transaction as a function of the dimensions (asset specificity, uncertainty, and frequency) of the transaction. The basic framework of TCA is described in detail as follows.

## ***The Framework of TCA***

### *The Unit of Analysis of TCA*

The basic unit of analysis of TCA is the individual transaction (Williamson 1985). TCA is an approach to analyzing exchange. TCA attempts to explain governance choice for a transaction on the basis of certain dimensions of a transaction.

### *The Assumptions of TCA*

The behavioral assumptions on which TCA relies are (a) bounded rationality, (b) opportunism, and (c) risk neutrality (Rindfleisch and Heide 1997). Bounded rationality is the recognition that human agents have constraints on their cognitive capabilities and limits on rationality (Williamson 1981). Although human agents often intend to act rationally, this intention may be circumscribed by their limited information processing and communication abilities.

Opportunism is the assumption that at least some human agents, given the opportunity, may unscrupulously seek to serve their self-interests (Williamson 1981). Williamson (1985, p. 47) defines opportunism as “self-interest seeking with guile” and suggests that it includes such behaviors as lying and cheating as well as violating agreements.

Risk neutrality is the assumption that all transactors are neutral in their attitudes toward risk (Williamson 1985). Compared with bounded rationality and opportunism,

risk neutrality has received limited attention in the TCA literature (Rindfleisch and Heide 1997).

### *The Dimensions of the Transaction*

The critical dimensions for describing transactions are (a) asset specificity, (b) uncertainty, and (c) frequency (Williamson 1981). Of the three, asset specificity is the most important dimension for describing transactions. It refers to the degree to which assets are specified to a specific transaction (Rindfleisch and Heide 1997). Assets with high levels of specificity involve sunk costs that have little or no value outside of a particular exchange relationship. According to Williamson (1991), there are six main types of asset specificity: site specificity, physical asset specificity, human asset specificity, brand name capital, dedicated assets, and temporal specificity.

Uncertainty refers to the uncertain environments in which the circumstances surrounding a transaction cannot be specified *ex ante* (i.e., environmental uncertainty) and performance cannot be easily evaluated *ex post* (i.e., behavioral uncertainty) (Rindfleisch and Heide 1997). Therefore, the dimension of uncertainty includes two sub-dimensions: environmental uncertainty and behavioral uncertainty. Specifically, environmental uncertainty is unpredicted changes in circumstances surrounding a transaction (Rindfleisch and Heide 1997); behavioral uncertainty arises from the difficulties associated with monitoring and evaluating the contractual performance of exchange partners.

Frequency refers to the frequency with which transactions recur (Williamson 1985, p.60). Compared with the dimensions of asset specificity and uncertainty, the TCA literature has paid limited attention to the dimension of transaction frequency.

### *Concept of Transaction Costs*

Rindfleisch and Heide (1997) provide a clear articulation of the concept of transaction costs by summarizing the source and nature of the most common forms of transaction costs. As shown in Table 2.1, transaction costs may arise in the form of direct or opportunity costs (1975, 1985, 1996). These costs are directly related to the dimensions of a transaction; that is, asset specificity, environmental uncertainty, and behavioral uncertainty.

Specifically, asset specificity creates a safeguarding problem. When a firm deploys specific assets and fears its exchange partner may opportunistically exploit these investments, a safeguarding problem is created. Without appropriate safeguards, the firm faces the risks of expropriation (*ex post*) or productivity losses resulting from the failure to invest in specialized assets (*ex ante*). Therefore, the transaction costs associated with safeguarding specific assets invested include the direct costs of crafting safeguards and the opportunity cost of failure to invest in productive assets.

Environmental uncertainty creates an adaptation problem. An adaptation problem arises when a firm, whose decision makers are limited by bounded rationality, has difficulty altering contractual terms to changes in the external environment. The

transaction costs associated with adapting to the uncertain external environments include the direct costs of communicating new information, renegotiating agreements, or coordinating activities to reflect new circumstances and the opportunity costs resulting from a failure to adapt to the environmental changes.

**Table 2.1. Sources and Types of Transaction Costs**

	<b>Asset Specificity</b>	<b>Environmental Uncertainty</b>	<b>Behavioral Uncertainty</b>
<b>A. Source of Transaction Costs</b>			
Nature of Governance Problem	Safeguarding	Adaptation	Performance evaluation
<b>B. Type of Transaction Costs</b>			
Direct Costs	Crafting safeguards	Communication, renegotiation, and coordination costs	Screening and selection costs ( <i>ex ante</i> )  Measurements costs ( <i>ex post</i> )
Opportunity Costs	Failure to invest in productive assets	Failure to adapt	Failure to identify appropriate partners ( <i>ex ante</i> )  Failure to measure partners' performance ( <i>ex post</i> )

\* Adapted from Rindfleisch and Heide (1997).

Behavioral uncertainty creates a performance evaluation problem. A performance evaluation problem is created when a firm, whose decision makers are limited by bounded rationality, has difficulty assessing the contractual performance of its exchange

partners. The transaction costs associated with evaluating the partners' performance include the direct costs and the opportunity costs. The direct transaction costs include the performance measurement costs and the selection and screening costs associated with identifying appropriate exchange partners *a priori*, while the opportunity transaction costs include the costs of failure to identify appropriate partners *ex ante* and the costs of failure to measure partners' performance *ex post*.

### ***The Logic Underlying TCA***

#### *The Basic Premise of the Original TCA Framework*

The basic premise of the original TCA is that transaction cost economizing determines the efficient boundaries between firms and markets (Rindfleisch and Heide 1997). If the transaction costs associated with safeguarding, adaptation, and performance evaluation are absent or low, economic actors will choose to conduct an exchange in a market. If the transaction costs are higher than the production cost advantages of the market, a firm will choose internal organization (i.e., hierarchy). The logic behind this argument is based on assumptions about the properties of internal organization and its ability to minimize transaction costs. Three specific aspects of organizations are relevant in this respect. First, organizations have more powerful control and monitoring mechanisms available than do markets because of their ability to evaluate behavior as well as output. As a result, the firm's ability to detect opportunism and facilitate adaptation is high. Second, organizations are able to provide rewards that are long-term in nature, such as promotion opportunities. Such rewards reduce the payoff from

opportunistic behavior. Third, organizational culture and socialization processes may create convergent goals between parties and reduce opportunism *ex ante*.

### *The Basic Propositions of the Original TCA Framework*

The key dependent construct of the TCA framework is governance structure, which is utilized to organize a transaction. TCA researchers have conceptualized three types of governance structures: market, hierarchy (i.e., firm or internal organization or vertical integration), and various hybrid mechanisms. Hybrid mechanisms refer to those intermediate forms that lie on the continuum between market and hierarchy. The key independent constructs of TCA are the dimensions of the transaction. They are asset specificity, environmental uncertainty, behavioral uncertainty, and frequency.

The general proposition of TCA is that governance structure (market, hybrid, and hierarchy) is the function of the dimensions of the transaction (asset specificity, environmental uncertainty, behavioral uncertainty, and frequency). Specifically, the original TCA framework contains four basic propositions, each proposition linking the dependent construct and one of the independent constructs.

The first proposition is that high levels of asset specificity induce firms to employ vertical integration to conduct a transaction. The argument is that because of the opportunistic behavior of exchange partners, a high amount of asset specificity increases the costs of safeguarding contractual agreements; when faced with the need to safeguard specific assets invested in an exchange relationship, a firm will seek to minimize its

transaction costs through vertical integration.

The second proposition is that high levels of environmental uncertainty make firms employ vertical integration to conduct a transaction. The argument is that a high amount of environmental uncertainty increases the costs of adapting contractual agreements; when faced with the need to adapt to an uncertain circumstance, a firm will seek to minimize its transaction costs through vertical integration.

The third basic proposition is that high levels of behavioral uncertainty push firms to employ vertical integration to conduct a transaction. The argument is that high levels of behavioral uncertainty increase the costs of measuring the performance of exchange partners; when faced with difficulties in assessing the performance of its exchange partners, a firm will seek to minimize its transaction costs through vertical integration.

The fourth basic proposition is that high levels of transaction frequency encourage firms to employ vertical integration to conduct a transaction. The argument is that higher levels of transaction frequency provides an incentive for firms to employ vertical integration because large transactions of a recurring kind make it easier for a firm to recover the cost of specific assets invested.

### **Consumer Transaction Costs**

“Everything you buy costs you twice, once for the good itself, and once for the transaction.” — “The Economics of Waiting” (*Forbes* 1996)

As reviewed above, traditionally TCA is used to determine whether a transaction is conducted within a firm, in a market, or in a hybrid governance structure (Rindfleisch and Heide 1997). That is, TCA is mainly applied at the firm level of decision-making regarding a transaction. However, that does not mean that transaction costs only exist in firm level transactions. In fact, transaction costs exist everywhere except in completely Communist societies (Coase 1992) or in one-man Robinson Crusoe economies (Cheung 1992). Transaction costs are described as the “costs of running the economic system” (Arrow 1969). They are the “economic counterpart of friction” in a machine (Williamson 1975). It is estimated that interactions – the searching, coordinating, and monitoring that people and firms do when they exchange goods, services, or ideas – may account for as much as 35-40 % of the economic activity (GDP) of an economy (North 1990). Similarly, a study by McKinsey & Company (Bulter, Hall, Hanna, Mendonca, Auguste, Manyika, and Sahay 1997) found that transaction costs represent over a third of the costs associated with the economic activity in the United States. Therefore, not only do firm-firm interactions involve transaction costs, but human-firm interactions (even human-human interactions) also involve transaction costs. Inevitably, then, transaction costs are a part of consumer exchanges (Tyagi 2004). Quoting Tyagi (2004):

For almost all of the products we consume, we have to incur the monetary, time, and hassle costs of going to a store, waiting in line, making a payment, sometimes customizing the product to our own requirements before using it, sometimes learning how to use the product properly, and finally using the product itself (p.1).

Williamson (1985) defines transaction costs for firm level transactions. Such a definition is too narrow for consumer level transactions. A policy paper from the Ministry

of Consumer Affairs (1999) provides a more valid definition of consumer transaction costs by using Williamson's method of categorization and example. In particular, the policy paper identifies three subtypes of consumer transaction costs: pre-transaction costs, contemporaneous transaction costs, and post-transaction costs. Specifically, pre-transaction costs include search and information costs; contemporaneous transaction costs correspond largely to Williamson's *ex ante* transaction costs; and post-transaction costs correspond largely to Williamson's *ex post* transaction costs. According to Williamson (1985), *ex ante* transaction costs refer to "the costs of drafting, negotiating, and safeguarding an agreement," while *ex post* transaction costs are "the costs associated with monitoring the agreement and then taking the actions necessary to ensure that each party fulfills the predetermined set of obligations" (Dyer and Chu 2003). In other words, consumer transaction costs include the "costs of obtaining the information necessary for the transaction, the immediate costs involved in the transaction and the costs which arise as a consequence of the transaction, including monitoring, redress and enforcement" if the transaction subsequently goes wrong (Ministry of Consumer Affairs 1999, p.1).

Provided with the discussion above, this study will introduce the concept of transaction costs to online consumer exchange and apply TCA to online consumer decision-making regarding whether to stay with or be loyal to an online retailer. How TCA is coupled with the unique characteristics that e-commerce carries to support the hypothesis that consumer transaction costs are the underlying criterion for consumer decision-making in the online transaction environment shall be seen in chapter three. Also, how TCA is applied to provide the major arguments for trust impacting future

intentions/loyalty by reducing consumer transaction costs shall be seen in the following chapter.

In the first three sections of this chapter, the foundational theories—trust theory, global evaluations theory, and TCA—that are utilized in the construction of this study were reviewed. In the last section of this chapter, customer loyalty, a dependent variable of interest here, is briefly reviewed. Future intentions, the other dependent variable under inspection, does not need a section for review, as it will be discussed when developing the hypotheses in chapter three.

### **Customer Loyalty**

Early views of brand loyalty focused on repeat purchase behavior (Jacoby and Chestnut 1978). Those early research focused heavily developing probabilistic models used to predict repeat purchase behavior. For example, Lipstein (1959) and Kuehn (1962) measured loyalty by the probability of product repurchase. Some scholars (e.g., Day 1969; Jacoby and Chestnut 1978) have argued that a behavioral definition is insufficient because it does not distinguish between true loyalty and spurious loyalty that may result, for example, from social influence or situational effects such as a lack of available alternatives for the consumer. In response to these criticisms, researchers have proposed conceptualizing and measuring loyalty from both a behavioral and an attitudinal perspective. Jacoby (1971) and Jacoby and Chestnut (1978) expressed the view that brand loyalty is a biased purchase behavior expressed over time that results from psychological processes. Engle and Blackwell (1982) proposed that brand loyalty is “the

preferential, attitudinal and behavioral response toward one or more brands in a product category expressed over a period of time by a consumer.” Assael (1992, p. 87) defined brand loyalty as “a favorable attitude toward a brand resulting in consistent purchase of the brand over time.” This definition is supported by Keller (1993), who indicated that brand loyalty is present when favorable attitudes toward a brand are manifested in repeat purchase behavior. Gremler (1995) suggested that any measurement of loyalty needs to incorporate both the attitudinal and behavioral dimensions.

Additionally, drawing upon an information-processing perspective, Jacoby and Chestnut (1978) developed an attitude-based theoretical framework for the development of brand loyalty. They proposed that three types of information “structures”—beliefs, states of affect, and behavioral intentions—underlie the development of brand loyalty. Hierarchical in nature, a consumer’s beliefs about a brand may evolve into positive feelings toward the brand, which may eventually lead to an explicit intention to be committed to the brand (Jacoby and Chestnut 1978; Warrington 2002). Consumers’ beliefs about a brand are based on their positive experience with the brand over time. For beliefs to move to a state of affect, more positive experiences with the brand are required. Even after beliefs evolve into positive feelings, brand switching may not be prevented due to impulse buying or in the interest of price savings or variety. It is at the stage of behavioral intentions that customers become most committed to the brand. Accordingly, for true loyalty to occur, all three conditions—beliefs, affect, and intention—must exist. Consistent with Jacoby and Chestnut (1978), Dick and Basu (1994) posit that loyalty is determined by three factors: cognitive (beliefs), affective, and conative (intentions)

determinants.

Oliver (1997) extends the theoretical framework of the development of brand loyalty initially proposed by Jacoby and Chestnut (1978) by positing that each element of the attitudinal “structures” underlying the development of loyalty—beliefs, affect, and intention—corresponds to a particular loyalty phase. Four loyalty phases are proposed by Oliver (1997): cognitive loyalty, affective loyalty, conative loyalty, and action loyalty. Each phase precedes the next in that order. To be specific, cognitive loyalty, the first phase of loyalty, refers to a shallow level of loyalty based upon evaluations of attribute performance; affective loyalty, the second phase, refers to a higher level of loyalty comprising both the cognitive and the affective determinants; conative loyalty, the third phase, refers to a commitment to the repurchase intentions; and action loyalty, the last phase, refers to a readiness to take action and a willingness to overcome barriers that may deter action (Oliver 1997; Warrington 2002). In a word, customer loyalty develops through the four phases, with one phase preceding the next.

This section delineates the development of customer loyalty as a construct, which is a dependent variable of interest for this study. Provided with the discussion above, this study will incorporate both the attitudinal and behavioral dimensions when defining customer loyalty in chapter three and measuring it in chapter four.

## **Chapter Summary**

This chapter reviewed the relevant literature and introduced the fundamental theories that are utilized in the construction of this study. Specifically, in the first three sections of this chapter, the foundational theories – the framework of trust, global evaluations theory, and TCA – were reviewed, in that order. In the fourth section, a brief review of customer loyalty was provided.

## CHAPTER THREE

### THEORETICAL FRAMEWORK AND HYPOTHESES

Based upon the theoretical foundations outlined in chapter two, this chapter will integrate these foundations and develop a theoretical framework of consumer trust in an e-retailer. The purpose is to further explain the phenomenon of consumer trust in an e-retailer; that is, it will attempt to answer the questions surrounding consumer trust in an e-retailer, including: Does trust matter in consumer-e-retailer exchanges? What is consumer trust in an e-retailer? What causes it? What does it affect? What are the key mediator(s)? and what are the key moderator(s)? To this end, this chapter first comprehensively conceptualizes consumer trust in an e-retailer using the framework of conceptualization of trust developed by Rousseau, Sitkin, Burt, and Camerer (1998). Next, the proposed integrative model of consumer trust in an e-retailer is presented in Figure 3.1 and then discussed generally. Following this, a set of empirically testable hypotheses was developed.

The first hypothesis developed in this chapter links a consumer's attitudes toward the key components of his/her online purchase experience with an e-retailer (i.e., website design attitudes, fulfillment/reliability satisfaction, security/privacy attitudes, and customer service satisfaction) to his/her trust in the e-retailer. Following that, hypotheses are generated which directly link trust to the key outcome variables (future intentions and consumer loyalty) under inspection. Next, hypotheses are developed depicting how

consumer transaction costs impacts the hypothesized relationship between trust and future intentions/loyalty, which posits an alternative mechanism for the trust-future intentions/loyalty relationship. The last hypotheses developed in this chapter delineate how environmental uncertainty and consumer dependence on an e-retailer impact the hypothesized relationship between trust and future intentions/loyalty. Finally, all of the hypotheses will be presented as a review at the end of this chapter.

### **Conceptualization of Consumer Trust in an E-Retailer**

Consumer trust in an e-retailer, the central construct of this study, is analyzed based upon the framework of conceptualization of trust as developed by Rousseau et al. (1998). In the exchange relationship between a consumer and an e-retailer, trust can exist. A consumer's trust in an e-retailer is specified as the unit of analysis for this study and it is termed "consumer trust in an e-retailer." In the following sections, the researcher first justifies that trust is relevant in the consumer-e-retailer exchanges. The reason is that "trust is not a necessary ingredient for consummating consumer-firm exchanges" (Singh and Sirdeshmukh 2000, p. 154). It is the contextual and situational factors that determine the relevance of trust in consumer exchanges. Those factors will vary by the degree to which they evoke the relevance of trust and trigger the mechanisms that are impacted by the level of trust.

### **Need for Consumer Trust in an E-Retailer**

In the consumer-e-retailer exchange relationship, there is a definite need for consumer trust (Urban, Sultan, and Qualls 2000). There are two reasons. First, for the consumer, there are high risks involved in transactions with an e-retailer. Second, an online consumer is dependent on the e-retailer to secure the goods or services he/she needs *in the way* he/she wants.

The high risks involved in transactions with an e-retailer for a consumer come from two sources. First, there is the uncertainty involved in the online transaction environment; secondly, there is the uncertainty regarding whether the e-retailer intends to and will be able to perform appropriately.

The online transaction environment is highly uncertain because it carries the following characteristics: (1) it uses an open technological infrastructure (i.e., the Internet) for transactions (Pavlou 2002); (2) the technological structures it relies on are unstable because the Internet and Internet-related technologies are still new (McKnight, Choudhury, and Kacmar 2002); (3) the protective institutional (i.e., legal, governmental, contractual, and regulatory) structures supporting it are still slowly arriving; and (4) it is impersonal in nature, as opposed to the face-to-face transactions that consumers are familiar with (Pavlou 2002). Specifically, when information is transmitted on the Internet, it could be intercepted by unintended parties or lost due to the instability of the technological structures. When those problems occur for a consumer, there are no strong institutional systems in place to protect his/her interests. Additionally, the impersonal

nature of the online environment creates many other disadvantages for online shopping, such as the fact that consumers cannot try the merchandise prior to purchase, and delays in delivery for physical products. These disadvantages create even more risks for consumers to shop and purchase online. For the above reasons, it is perceived as risky for a consumer to conduct personal business in an online environment.

As discussed above, high risks involved in transacting with an e-retailer derive not only from environmental uncertainty but also from the e-retailer's potential behavioral uncertainty. Behavioral uncertainty comes from two sources: an e-retailer's opportunistic behavior and the e-retailer's inconsistent ability. Given the opportunity, an e-retailer may unscrupulously seek to serve its self-interests by taking advantage of its customers (Williamson 1981). For example, an e-retailer may misuse a customer's personal information in its own interests (e.g., it may sell customer information for a profit); it may purposely manipulate information on the web (in order to attract customers) so that the information inaccurately reflects reality; and it may bill a customer for items that are out of stock. An e-retailer's potentially opportunistic behavior adds even more risks to the consumer in the transaction.

The potential of an e-retailer's inability to consistently manage its business online comprises the other source of an e-retailer's behavioral uncertainty. An e-retailer may not be capable of consistently managing its business online well, despite its intentions. For example, an e-retailer may lack the technological ability to manage its system consistently to the extent that the system may "crash" when a consumer is doing business

with it; an e-retailer may not have the management ability to fulfill all promises made to customers, such as the promise of on-time delivery of physical products. Like the potential for opportunistic behavior, the potential of an e-retailer's inconsistent ability makes the consumer's transacting with it even more risky.

Although there are risks involved in transacting with an e-retailer, consumer trust would not arise if online consumers did not rely on e-retailers to secure the goods or services they need *in the ways* they want. Online consumers could avoid transacting with e-retailers by resorting to non-Internet retailers, but they do not. In fact, online consumers rely upon e-retailers to get what they want. Why? The answer is that e-retailers offer many unique advantages that are not provided by other types of retailers, including lower prices, unique products, easy access to rich information and, particularly, no location barriers or time limits for transacting (Silverhart 2002; Wind and Mahajan 2002). In fact, online consumers can reach e-retailers 24 hours a day, 7 days a week. They can transact with e-retailers wherever and whenever they want without confronting salespeople. By eliminating the barriers of time and distance for transactions, e-retailers greatly reduce transaction costs for consumers.

Online consumers' dependence on e-retailers, together with the risks involved in consumer-e-retailer relationships, creates the need for trust for consumers to engage in transactions with e-retailers. Accordingly, consumer trust is relevant in consumer-e-retailer exchanges.

### **Definition of Consumer Trust in an E-Retailer**

By adapting the widely-held definition of trust developed by Rousseau, Sitkin, Burt, and Camerer (1998) to the consumer-e-retailer relationship, in the current study, the researcher defines “consumer trust in an e-retailer” as a consumer’s psychological state comprising the consumer’s intention to accept vulnerability based upon his/her positive expectations of the intentions or behavior of an e-retailer. As an underlying psychological state, consumer trust in an e-retailer can affect consumer’s risk-taking behavior in his/her relationship to an e-retailer (Mayer et al. 1995; Rousseau et al. 1998). In other words, the level of consumer trust will influence the amount of risk a consumer is willing to take in his/her relationship with an e-retailer.

### **Dynamic Nature of Consumer Trust in an E-Retailer**

Consumer trust in an e-retailer in the present study is dynamic (Rousseau et al. 1998). It does not stay at a single level at a single point. Instead, it forms, develops, dissolves, and even reforms as a consumer continues transacting with an e-retailer, which reflects the ebb and flow of the customer-e-retailer relationship. However, this study, as do many other trust studies, treats consumer trust in an e-retailer as static and specifies a conceptual framework of it within a particular phase of trust: trust-building. Specifically, this study is interested in investigating the stage of consumer trust in an e-retailer where a consumer has had some interaction(s) with an e-retailer. In other words, this study examines the reforming of trust after a consumer has had some experience with an e-retailer, rather than the consumer’s initial formation of trust when the consumer has never

had previous interactions with the e-retailer.

### **Forms of Consumer Trust in an E-Retailer**

Consumer trust in an e-retailer mixes the three basic forms of trust together: calculus-based trust, relation-based trust and institution-based trust. Firstly, calculus-based trust is involved in consumer trust in an e-retailer. The consumer-e-retailer relationship is by its nature an economic exchange relationship, which is characterized by rational choice. Because calculus-based trust is based on rational choice (Rousseau et al. 1998), consumer trust in an e-retailer involves calculus-based trust. Calculative consumer trust in an e-retailer may derive from the existence of deterrence, such as the protective institutional structures supporting online consumers, or from credible information about the intentions and ability of an e-retailer, such as a retailer's reputation or its third-party certification. Because the protective institutional structures supporting online transacting are still slowly arriving (Mcknight et al. 2002), calculative consumer trust mainly derives from an e-retailer's reputation and third-party certification, which reflect other consumers' experiences with the e-retailer.

Likewise, relation-based trust is also involved in consumer trust in an e-retailer. As presented above, this study is interested in the stage of consumer trust in an e-retailer where a consumer has had at least one interaction with an e-retailer. Thus, consumer trust in an e-retailer specified for this study involves relation-based trust, which is based upon a consumer's experience(s) derived from his/her interaction(s) with an e-retailer. More specifically, information from within the consumer-e-retailer relationship itself serves as

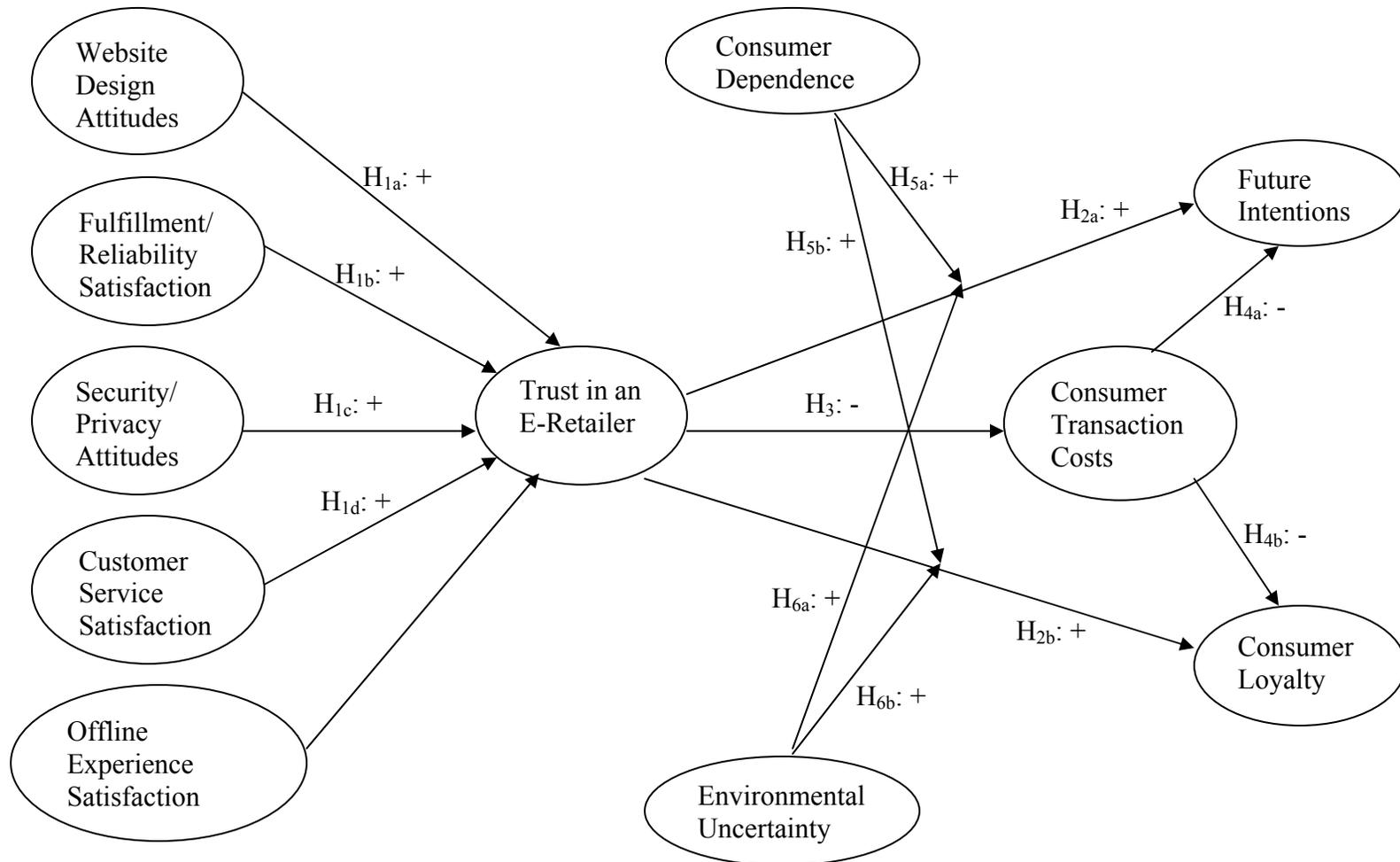
the basis of relation-based consumer trust. A consumer's positive attitudes toward his/her past experience(s) with an e-retailer give rise to the consumer's positive expectations about the e-retailer's intentions and ability, hence the consumer's trust in the e-retailer. Therefore, relational consumer trust in an e-retailer is the result of a consumer's experience with an e-retailer. If a consumer has experienced personalized care or concern from an e-retailer (e.g., a personalized service or product or customized marketing messages) in his/her past interaction(s) with the e-retailer, the consumer may form emotional attachments with the e-retailer; that is, the consumer's affect may enter into his/her relationship with the e-retailer. When a consumer's relational trust in an e-retailer involves affective elements, the level of relational trust must be high.

Lastly, consumer trust in an e-retailer also involves institution-based trust. Although the protective institutional arrangements supporting online transactions are still slowly developing (Mcknight et al. 2002), they do help create a context for consumer trust in an e-retailer (Rousseau et al. 1998). Based upon the existence of various institutions (e.g., legal systems, third party relations, or social networks), institutional trust help ease the way to formulating both calculative consumer trust in an e-retailer and relational consumer trust in an e-retailer.

### **Conceptual Model of Consumer Trust in an E-Retailer**

This study draws upon diverse approaches (i.e., framework of trust, global evaluations theory, and TCA) and develops an integrative model of consumer trust in an e-retailer that is presented in Figure 3.1. The proposed conceptual model includes

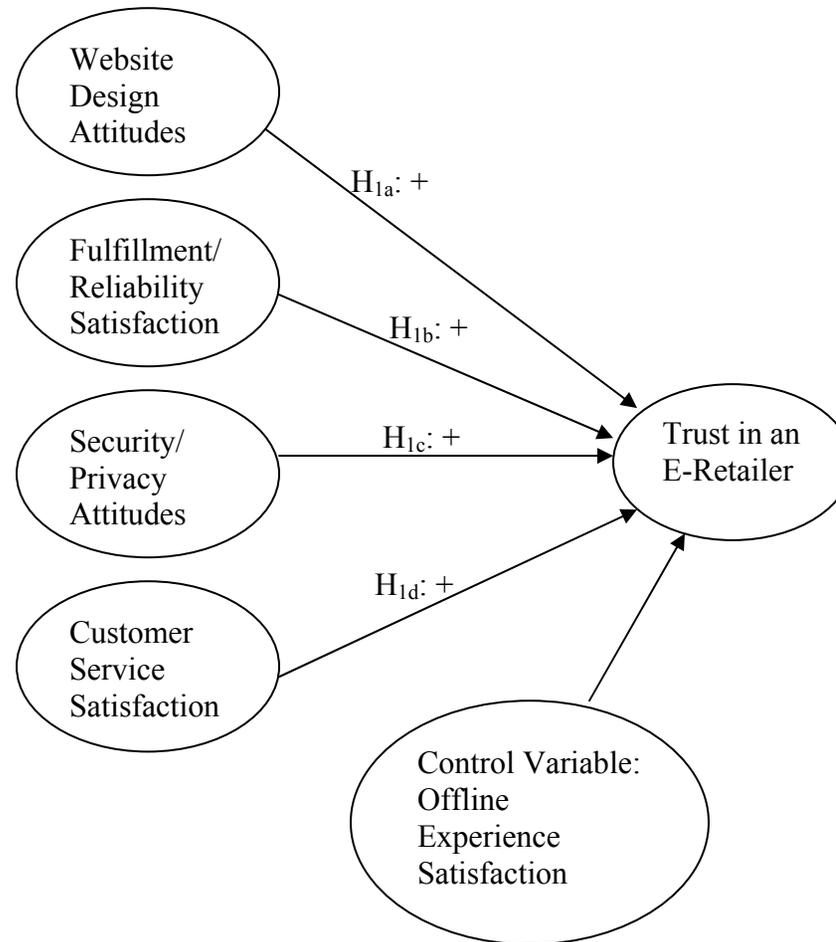
**Figure 3.1. An Integrative Model of Consumer Trust in an E-Retailer**



the antecedents of consumer trust in an e-retailer, the central variable in the model, the outcomes of trust, and the mediator and moderators of the influence of trust on its outcomes.

Specifically, a consumer's attitudes toward the four key components of his/her direct transactional experience with an e-retailer (i.e., website design attitudes, fulfillment/reliability satisfaction, security/privacy attitudes, and customer service satisfaction) are viewed as the major antecedents of consumer trust in an e-retailer (see Figure 3.2). Consumer trust in an e-retailer is defined as a consumer's psychological state comprising the consumer's intention to accept vulnerability based upon his/her positive expectations of the intentions or behavior of an e-retailer. Of the four component attitudes, website design attitudes assess a consumer's satisfaction with all elements of his/her experience with an e-retailer's website (except for customer service), including navigation, information search, order processing, level of personalization, and merchandise selection (Wolfenbarger and Gilly 2003). Fulfillment/reliability satisfaction assesses how a consumer feels about the accuracy of the display and description of the product, the accuracy of the delivery of the product, and the accuracy of billing information. Security/privacy attitudes examine a consumer's satisfaction with the security for credit card payments and the privacy of shared information. Customer service satisfaction assesses a consumer's satisfaction with the service provided by an e-retailer in responding to customer inquiries.

**Figure 3.2. The Antecedents of Consumer Trust in an E-Retailer**

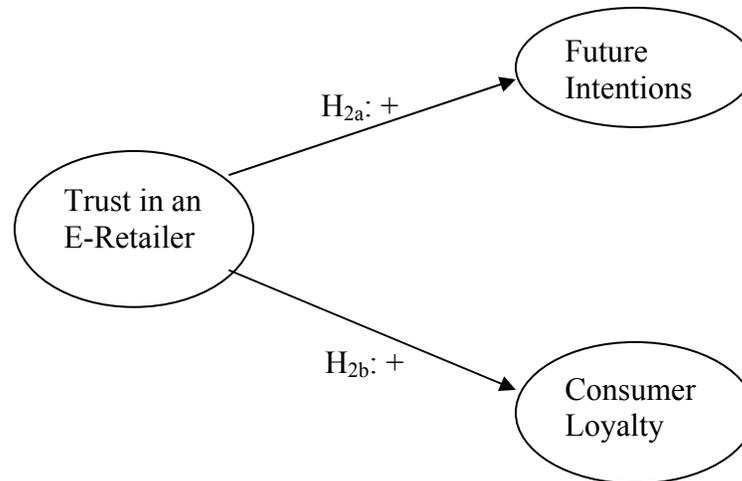


Next, consumer trust in an e-retailer, the central variable in the model, is proposed as a factor which has influence on a consumer's future intentions and loyalty toward the e-retailer (see Figure 3.3). Future intentions examine a consumer's willingness to engage in future interactions with an e-retailer while consumer loyalty represents a consumer's favorable attitude toward an e-retailer that results in repeat purchase intentions toward the e-retailer. These two variables are used to capture a consumer's relational continuance with an e-retailer, with loyalty involving a deeper relationship as well as more risks.

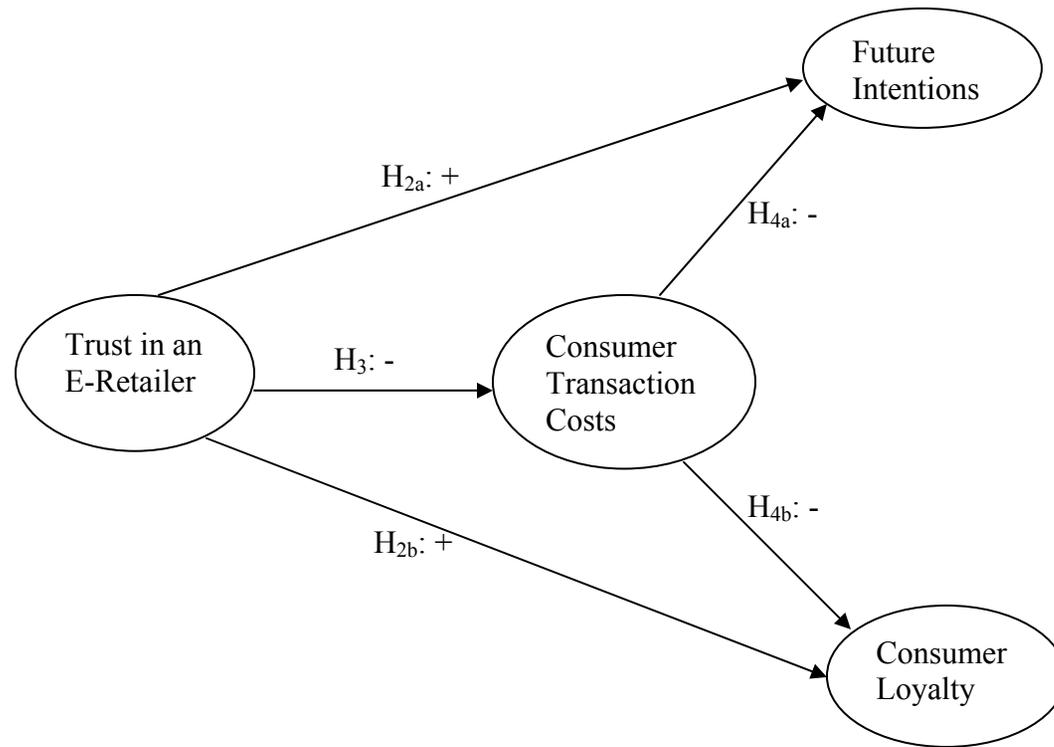
Following that, an alternative mechanism for the trust-future intentions (loyalty) relationship is proposed whereby consumer transaction costs mediate the effect of trust on future intentions (loyalty) (see Figure 3.4). Consumer transaction costs are the transaction costs associated with a consumer's online purchase, which include the costs of obtaining the information necessary for making a purchase (*pre-transaction costs*), the immediate costs involved in transacting with an specific e-retailer for making that purchase (*contemporaneous transaction costs*), and the costs which arise as a consequence of transacting with the e-retailer, including monitoring, redress, and enforcement, if the transaction should subsequently go wrong (*post-transaction costs*).

Finally, contextual factors are proposed to moderate the direct relationship between consumer trust and future intentions (loyalty) (see Figures 3.5 and 3.6). Specifically, consumer dependence (i.e., a consumer's dependence on an e-retailer for securing what he/she needs in the way he/she wants) and environmental uncertainty (i.e., the uncertainty involved in online transacting environments) are proposed to exert

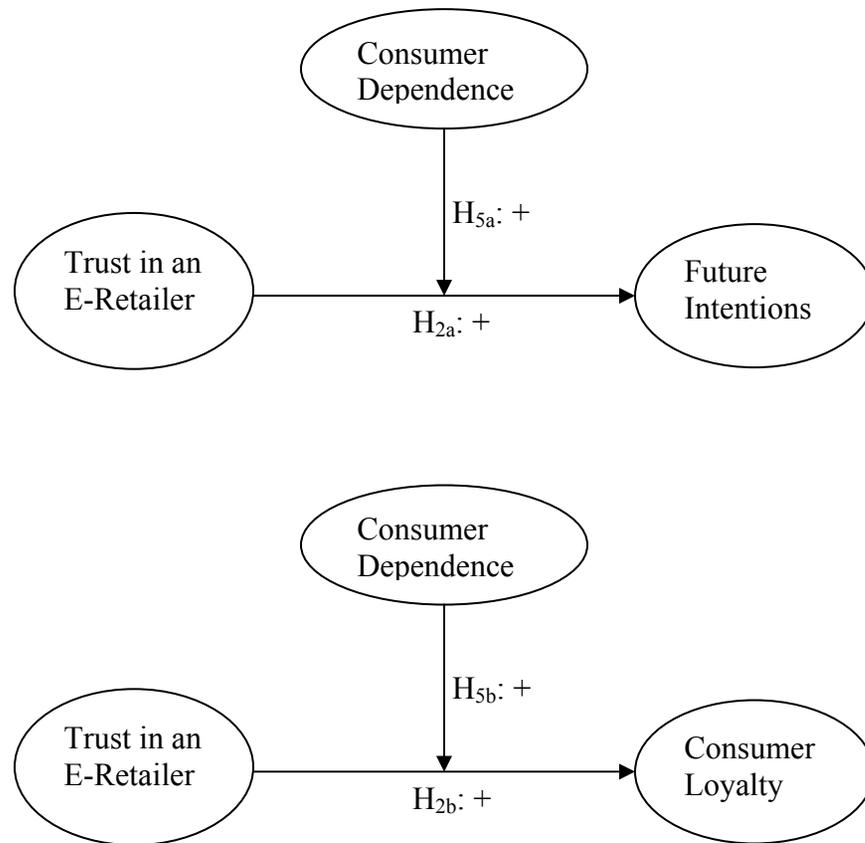
**Figure 3.3. The Consequences of Consumer Trust in an E-Retailer**



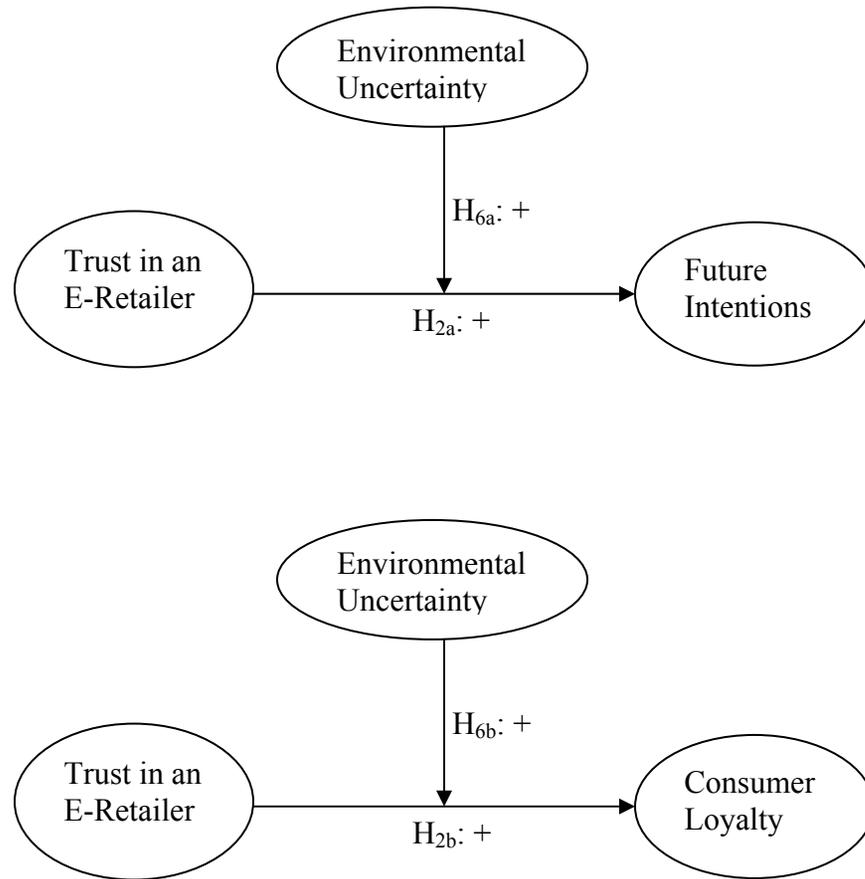
**Figure 3.4. The Partially Mediating Role of Consumer Transaction Costs**



**Figure 3.5. The Moderating Role of Consumer Dependence**



**Figure 3.6. The Moderating Role of Environmental Uncertainty**



interaction effects with trust on future intentions and loyalty.

In summary, the proposed conceptual model specifies website design attitudes, fulfillment/reliability satisfaction, security/privacy attitudes, and customer service satisfaction as the antecedents of consumer trust in the e-retailer, future intentions and loyalty as the consequences of trust, consumer transaction costs as the mediating variable between trust and future intentions (loyalty), and consumer dependence as well as environmental uncertainty as the moderating variables between trust and future intentions (loyalty). The logic underlying the proposed model is detailed in the following section.

## **Research Hypotheses**

### **Antecedents of Consumer Trust in an E-Retailer**

#### ***Trust and Experience***

According to global evaluations theory, consumer trust in an e-retailer is a global evaluation or judgment that summarizes a consumer's knowledge and experiences with an e-retailer. Such knowledge and experiences comprise a consumer's own experiences with an e-retailer and others' experiences with an e-retailer. Accordingly, the sources of consumer trust in an e-retailer should be a consumer's own experiences with an e-retailer and others' experiences with an e-retailer. However, one trusts one's own experiences the most, since direct personal information is more costly to obtain, which is a fundamental principle of social psychology (Deutsch 1962; Campbell 1997). Thus, when a consumer has direct experiences with an e-retailer, he/she will rely on those experiences rather than

others' experiences to make a global evaluation. Therefore, a consumer's own experiences with an e-retailer are the actual sources of consumer trust in the e-retailer. Corroborating this proposition, Dwyer, Schurr, and Oh (1987), Ganesan (1994), and Scanzoni (1979) all argue that experience with a channel partner breeds trust. In online trust studies, experience has also been conceptualized as the antecedent of trust. For example, Yoon (2002) states that one of the factors that form online trust is the experience of web visitors. Walczuch and Lundgren (2004) conceptualize "experience over time" as the antecedent of trust in e-retailing.

### ***Trust and Component Attitudes***

Although a consumer's direct experience with an e-retailer is a good predictor of consumer trust in an e-retailer, the global measures of a consumer's experience do not identify specific aspects of the e-retailer's offerings that might require improvements in quality. E-managers are also frequently interested in knowing which component evaluations are the key drivers of consumer trust in an e-retailer. What is more, according to global evaluations theory, consumer trust in an e-retailer is a cumulative construct, summing up a consumer's attitude or satisfaction with various facets of the e-retailer. Therefore, the researcher emphasizes the importance of regarding consumer trust in an e-retailer as an attitude that is cumulative of a consumer's attitudes toward the key components of a consumer's experience with an e-retailer. A recent study conducted by Wolfinbarger and Gilly (2003) examined a consumer's entire experience (including experience on the web and outside the web) of purchasing a physical product online using

online and offline focus groups, a sorting task, and an online survey of a customer panel. Their research found that a consumer's entire online purchase experience comprises four components: website design, fulfillment/reliability, privacy/security and customer service.

Accordingly, in the present study, the researcher proposes that consumer's attitudes toward the four components are the actual sources of consumer trust in an e-retailer. The proposition is further supported by the findings of Wolfinbarger and Gilly (2003) that the four component attitudes were strongly predictive of customer evaluations of service quality, satisfaction, and customer loyalty. Like perceived service quality, satisfaction, and customer loyalty, trust is also a global evaluation or judgment. According to global evaluations theory, consumer trust in an e-retailer should be influenced by the same component attitudes, but the weightings of these component attitudes are different for trust than for perceived quality, satisfaction, and customer loyalty. Of the four component attitudes, website design attitudes assess a consumer's satisfaction with all elements of his/her experience at an e-retailer's website (except for customer service), including navigation, information search, order processing, level of personalization, and merchandise selection (Wolfinbarger and Gilly 2003). Fulfillment/reliability satisfaction assesses how a consumer feels about the accuracy of the display and description of the product on the web site, the accuracy of the delivery of the product, and the accuracy of the billing information. Security/privacy attitudes examine a consumer's satisfaction with the security of credit card payments and the privacy of shared information. Customer service satisfaction assesses a consumer's

satisfaction with the service provided by an e-retailer in terms of responding to customer inquiries. Based upon the above discussion, the researcher advances the following hypothesis:

**H<sub>1</sub>**: Component attitudes positively influence consumer trust in an e-retailer.

**H<sub>1a</sub>**: Website design attitudes positively influence consumer trust in an e-retailer.

**H<sub>1b</sub>**: Fulfillment/reliability satisfaction positively influences consumer trust in an e-retailer.

**H<sub>1c</sub>**: Security/privacy attitudes positively influence consumer trust in an e-retailer.

**H<sub>1d</sub>**: Customer service satisfaction positively influences consumer trust in an e-retailer.

### ***Control Variable: Offline Experience Satisfaction***

Although the researcher focuses on the influences of a consumer's attitudes toward the key components of an online purchase experience on consumer trust in an e-retailer, it is recognized that a consumer's evaluations of his/her offline purchase experience with an e-retailer also affect trust if the e-retailer has other distribution channels (e.g., brick-and-mortar stores, catalog, or telephone) and the consumer has ever had encounters with the e-retailer through the offline channel(s). Controlling for this variable provides a stronger test of the theory developed in the model.

### **Consequences of Consumer Trust in an E-Retailer**

Trust leads to risk-taking behavior in a relationship (Mayer et al. 1995; Rousseau

et al. 1998), and the specific form of the risk-taking depends on the situation. In the consumer-e-retailer exchange relationship, *after a consumer has some transactional experience with an e-retailer*, from the consumer's perspective, the risk-taking action in his/her relationship with the e-retailer is to continue the exchange relationship with it; in other words, to continue doing business with it. In this study, two variables are used to capture a consumer's relational continuance with an e-retailer: future behavioral intentions toward an e-retailer and loyalty toward an e-retailer, with loyalty involving a deeper relationship and more risks.

### ***Role of Trust in Future Intentions***

The proposed link between trust and consumers' future intentions is also supported by global evaluations theory. According to this theory, global evaluations guide consumer decision-making with respect to a marketing organization (Garbarino and Johnson 1999). As a global evaluation, consumer trust in an e-retailer guides consumer decision-making with respect to the e-retailer. In terms of consumer decision-making, the most frequently studied construct in the research of global evaluations is a consumer's future behavioral intentions (e.g., Cronin and Taylor 1992; Garbarino and Johnson 1999; Ostrom and Iacobucci 1995; Parasuraman, Zeithamal, and Berry 1994). Zeithamal, Berry, and Parasuraman (1996) emphasize the importance of measuring future intentions of customers to evaluate their potential to remain with, or defect from, an organization. Therefore, it is posited that consumer trust in an e-retailer influences a consumer's future intentions toward the e-retailer. In this study, future intentions are defined as a

consumer's willingness to engage in future interactions with an e-retailer. Empirical evidence supports the link between trust and future intentions. Doney and Cannon (1997) show that a buyer firm's trust of a supplier firm affected the buyer's anticipated future interactions with the supplier. Garbarino and Johnson (1999) demonstrate that customers' trust of a theater company affected their future intentions (including future attendance, subscriptions, and donations) toward the company. Empirical evidence supporting this link also comes from online trust studies. Sultan, Urban, Shankar, and Bart (2002) find that a consumer's trust in a web site significantly affected consumer behavioral intentions. Yoon (2002) demonstrate that trust in a website influenced purchase intention. Therefore, the researcher proposes the following:

**H<sub>2a</sub>:** Consumer trust in an e-retailer positively influences a consumer's future intentions toward the e-retailer.

### ***Role of Trust in Loyalty***

Consistent with prior research (Berry 1993; Singh and Sirdeshmukh 2000; Sirdeshmukh, Singh, and Sabol 2002; Sirdeshmukh, Brei, and Singh 2003), consumer trust in an e-retailer is posited to influence consumer loyalty toward the e-retailer. Consumer loyalty toward an e-retailer is defined as a consumer's favorable attitude toward an e-retailer that results in repeat purchase intentions toward the e-retailer (Assael 1992; Keller 1993; Jacoby and Chestnut 1978; Oliver 1997; Srinivasan, Anderson, and Ponnnavolu 2002).

The proposed relationship between consumer trust and loyalty is also supported by social exchange theory. According to this theory, both parties to the exchange are motivated to provide value to the other party commensurate with the value gained (Sirdeshmukh, Brei, and Singh 2003). Therefore, consumers are likely to reciprocate an e-retailer delivering social relational benefits: trust (intrinsic value) with friendship (non-instrumental value) or repeat purchase (instrumental value). Increments in consumer trust increase the social embeddedness of the consumer-e-retailer relationship, thereby enhancing the consumer's loyalty to the relationship (Singh and Sirdeshmukh 2000). Corroborating this relationship, Sirdeshmukh, Singh, and Sabol (2002) find that consumer trust had a significant effect on consumer loyalty in the contexts of both retail clothing and non-business airline travel. Sirdeshmukh, Brei, and Singh (2003) demonstrate that online trust significantly influenced consumer loyalty toward the service provider in the context of consumer banking. On the basis of the above arguments and findings, the researcher advances the following hypothesis:

**H<sub>2b</sub>:** Consumer trust in an e-retailer positively influences a consumer's loyalty toward the e-retailer.

### **Consumer Transaction Costs as Mediating Variable**

The researcher posits an alternative mechanism for the trust – future intentions/loyalty relationship whereby consumer transaction costs mediates the effect of trust on future intentions/loyalty. In the present study, “consumer transaction costs” is defined as the transaction costs associated with a consumer's online purchase.

Specifically, consumer transaction costs include the costs of obtaining the information necessary for making a purchase (*pre-transaction costs*), the immediate costs involved in transacting with an specific e-retailer for making that purchase (*contemporaneous transaction costs*), and the costs which emerge as a consequence of transacting with the e-retailer, including monitoring, redress, and enforcement if the transaction go wrong subsequently (*post-transaction costs*).

### ***Trust Affects Consumer Transaction Costs***

Consumer trust in an e-retailer is hypothesized to negatively affect consumer transaction costs. According to prior research, trust is believed to reduce the transaction costs in an exchange relationship (Williamson 1975; Ganesan 1994; Ganesan and Hess 1997; Dyer and Chu 2003; Teo and Yu 2005). Trust is of greatest economic value for non-contractual mechanisms. The rationale for the economic value of “non-contractual” trust is straightforward: trust makes formal contracts unnecessary, which are costly to write, monitor, and enforce (Hill 1995; Barney and Hansen 1994). Even in contractual exchange relationships, trust is of economic value because trust reduces (although does not eliminate) the time and resources that the transactors spend on *ex ante* search, contracting, and *ex post* monitoring and enforcing (Dyer and Chu 2003). In the consumer-e-retailer exchange relationship, consumer trust in an e-retailer reduces the transaction costs on the consumer side by reducing *pre-transaction costs*, *contemporaneous transaction costs*, and *post-transaction costs*. Specifically, if a consumer trusts an e-retailer when buying a product that the e-retailer carries, he/she will

not spend much time, effort, or money to search an appropriate supplier but will simply select the e-retailer. He/she would believe that the e-retailer he/she trusts would have the ability and intention to provide a competitive offer. If a consumer trusts an e-retailer, during the transaction with the e-retailer, he/she will not spend much time and effort in placing the order. He/she will not check the contractual obligations regarding the purchase and the security and privacy policies in detail. He/she will choose the easiest way to make a payment, such as paying by credit or debit card instead of taking the time, money, and effort to send a check or a money order. He/she would believe that the e-retailer he/she trusts would be honest and act in his/her best interests. If a consumer trusts an e-retailer, if things do not go right after the order is placed, he/she will not spend much time and effort on hassling with the e-retailer. He/she would believe that the e-retailer would be fair with a resolution.

Empirical evidence supports the relationship between trust and consumer transaction costs. Direct empirical evidence comes from Teo and Yu (2005) who find that the dependability of online stores, one component of trust, is negatively related to perceived transaction costs. Indirect empirical evidences also support the relationship. For example, Dyer and Chu (2003) demonstrate that perceived trustworthiness reduced transaction costs in buyer-supplier relationships. In the contexts of both retail clothing and non-business airline travel, Sirdeshmukh, Singh, and Sabol (2002) find that consumer trust in both frontline employee and management policies and practices significantly affected perceived value. Sirdeshmukh, Brei, and Singh (2003) demonstrate that a consumer's online trust influenced perceived value in the context of consumer banking.

Although the authors had their own explanations for why trust increases value, the researcher believes the rationale is that trust increases value by reducing transaction costs. On the basis of the above arguments and findings, the researcher advances the following hypothesis:

**H<sub>3</sub>:** Consumer trust in an e-retailer negatively influences consumer transaction costs.

### ***CTC Affect Future Intentions (Loyalty)***

As discussed in chapter two in the review of transaction costs, although TCA is mainly used at the firm level decision-making regarding a transaction, consumer transaction costs do exist. What, then, is the role of consumer transaction costs in consumer decision-making regarding a consumer exchange? To answer this question, the researcher attempts to adapt TCA to consumer exchange. By so doing, the researcher posits that transaction cost economizing determines a consumer's choice of a supplier with which the consumer will conduct a transaction. That is, the consumer will choose to transact with the most efficient supplier, with the efficiency criterion being transaction cost minimizing. Assuming rational decision-making, all else being equal, a consumer will choose to transact with a supplier with whom the consumer perceives low transactions costs with the assumption that a consumer would attempt to minimize the overall costs of the transaction (and thus economize on transaction costs) and maximize the transaction value (Strader and Shaw 2003).

Formal surveys and empirical research do show that consumer transaction costs can be large enough to influence consumer behavior (Tyagi 2004). For example, Bell, Ho, and Tang (1998) show that a consumer's driving distance to stores affected which stores they visited. Crafton (1979) demonstrates that the amount of time needed to shop once inside a store affected a consumer's choice of store. Currim, Weinberg, and Wittink (1981) find that consumers' distance to performing-art centers affected their demand for performing-art events. Kim and Park (1997) show that the opportunity cost of household time, based upon family members' income and employment status, affected household patterns and frequency of grocery shopping trips. Teo and Yu (2005) find that perceived transaction costs are negatively related to consumer's willingness to shop and purchase online.

Further, the researcher argues that transaction costs economizing is particularly important for an online consumer's choice of supplier. The reasons are twofold. First, in online transaction environments, it is easy for a consumer to have access to price and product information and make comparisons across competitive suppliers (Urban, Sultan, and Qualls 2000). As a result, the importance of price and product in minimizing the overall costs of the transaction and maximizing transaction value, thus determining the consumer's choice of supplier, is lessened. In contrast, the role of transaction costs becomes more salient (Bain & Company/Mainspring 2000; Reichheld, Markey, and Hopton 2000). Second, in the Internet age, speed becomes the measurement standard and time becomes a more scarce resource. As a result, transaction costs become more salient in an online consumer's decision-making. There is empirical evidence supporting this

notion. For example, according to a *Greenfield Online* survey (2000), consumers chose online shopping to traditional off-line shopping in order to “save time” (60%) and “avoid crowds” (47%) (Tyagi 2004). According to a *Forrester Research* survey (1998), consumers chose some websites over others because of their “ease of use” (66%) and “speed of downloading” (58%) (Tyagi 2004). Teo and Yu (2005) demonstrate that consumers are willing to buy online if online shopping economizes on transaction costs. Based on the above arguments and findings, the researcher posits that in online consumer exchanges, consumer transaction costs play a significant role in a consumer’s choice of supplier. After a consumer already has purchase experience with an e-retailer, the “choice of supplier” means to choose to continue the exchange relationship with the e-retailer, which is captured by the consumer’s future intentions and loyalty toward the e-retailer, with loyalty involving a deeper and longer exchange relationship. Hence,

**H<sub>4a</sub>:** Consumer transaction costs negatively influence a consumer’s future intentions toward the e-retailer.

**H<sub>4b</sub>:** Consumer transaction costs negatively influence a consumer’s loyalty toward the e-retailer.

### ***Partially Mediating Role of CTC***

Because future intentions (loyalty) are influenced by consumer transaction costs, the researcher posits that consumer trust will affect future intentions (loyalty) through its influence in reducing consumer transaction costs. To support this proposition, the

researcher employs TCA to find the rationale. As reviewed in chapter two, the general proposition of TCA is that governance structure (market, hybrid, and hierarchy) is the function of the dimensions of the transaction (asset specificity, environmental uncertainty, behavioral uncertainty, and frequency) (Rindfleisch and Heide 1997). That is, *the dimensions of the transaction affect a firm's choice of governance structure regarding a transaction*. Moreover, although not explicitly, the TCA framework suggests that the dimensions of the transaction influence the choice of governance structure via transaction costs. That is, *transaction costs mediate the relationship between the dimensions of the transaction and choice of governance structure*. For example, to support the proposition that high levels of behavioral uncertainty will make firms to employ vertical integration to conduct a transaction, TCA argues that high levels of behavioral uncertainty increase the costs of measuring the contractual performance of exchange partners (i.e., increase transaction costs); when faced with difficulties in assessing the performance of its exchange partners (i.e., high transaction costs), a firm will seek to minimize its transaction costs through vertical integration. In summary, the dimensions of the transaction have direct effects on a firm's choice of governance structure, in addition to the mediated effect through transaction costs. Therefore, TCA supports the proposition that transaction costs partially mediate the relationship between the dimensions of the transaction and a firm's choice of governance structure.

By adapting this proposition to consumer exchange, the researcher posits that consumer transaction costs partially mediate the relationship between the dimensions of the transaction and a consumer's choice of supplier regarding the transaction. Of the four

dimensions of the transaction, behavioral uncertainty is of particular interest to the present study because it is closely related to consumer trust in an e-retailer, the central construct of this study. Then, what is the relationship between consumer trust in an e-retailer and behavioral uncertainty regarding the e-retailer?

As defined above, consumer trust in an e-retailer is based upon a consumer's positive expectations of the intentions or behavior of an e-retailer. In other words, consumer trust in an e-retailer encompasses a consumer's expectations of an e-retailer's behavioral certainty. Thus, consumer expectations of an e-retailer's behavioral certainty overlap with the construct of consumer trust in the e-retailer. Based on this logic, the researcher proposes this equation: "consumer trust in an e-retailer" is equal to "consumer expectations of behavioral *certainty* of an e-retailer," which can be expressed as negative "consumer expectations of behavioral uncertainty of an e-retailer." Accordingly, "consumer trust in an e-retailer" is the functional opposite of "consumer expectations of behavioral uncertainty." Based on these arguments, the researcher posits that consumer trust in an e-retailer could replace the role of consumer expectations of behavioral uncertainty; hence, it has a direct effect on a consumer's choice of supplier in addition to the mediated effect through consumer transaction costs. The directions of these effects are negative.

Besides the rationale that the researcher derives from TCA, Ganesan (1994) proposes that a retailer's trust in a vendor affects the long-term orientation of a retailer by reducing the transaction costs on the retailer side. Ganesan and Hess (1997) additionally

propose that trust enhances commitment to a relationship by reducing the transaction costs in an exchange relationship.

What is more, the partially mediating role of consumer transaction costs parallels the partially mediating role of value hypothesized and tested in trust–loyalty relationships in prior research. For example, Sirdeshmukh, Singh, and Sabol (2002) find that perceived value partially mediated the effect of consumer trust in frontline employee on loyalty in the retailing context. They also find that value partially mediated the effect of consumer trust in management policies and practices on loyalty in the airline context. Sirdeshmukh, Brei, and Singh (2003) demonstrate that perceived value partially mediated the impact of a consumer's online trust on loyalty in the context of consumer banking. Again, although the authors had their own explanations for why trust increases value and value in turn increases loyalty, the researcher believes that the rationale lies in this concept: it is consumer transaction costs that influence value in the first place.

Based on the above arguments and findings, it is hypothesized that consumer transaction costs partially mediate the relationship between trust and future intentions (loyalty). Direct effect of trust on future intentions (loyalty) may achieve significance, consistent with **H<sub>2a</sub>** (**H<sub>2b</sub>**), in addition to the mediated effect through consumer transaction costs, consistent with **H<sub>3</sub>** and **H<sub>4a</sub>** (**H<sub>4b</sub>**).

### **Consumer Dependence and Environmental Uncertainty as Moderating Variables**

Mayer, Davis, and Schoorman (1995) argue that, in order to understand how trust

actually affects a person's risk-taking action, one must separate trust from other contextual factors that necessitate trust. The context in which risk is to be taken is very important. Even though the level of trust may be constant, "the specific consequences of trust will be determined by contextual factors such as the stakes involved, the balance of power in the relationship, the perception of the level of risk, and the alternatives available to the trustor" (Mayer et al. 1995, p.726-727). In the consumer-e-retailer exchange relationship, a consumer's dependence on an e-retailer and the uncertainty involved in the online transaction environments are the contextual factors that exist for consumer trust to arise (Rousseau, Sitkin, Burt, and Camerer 1998). As contextual factors, consumer dependence and environmental uncertainty will influence a consumer's future intentions and loyalty along with trust (Mayer et al. 1995). Specifically, if a consumer's dependence on an e-retailer is low (e.g., the consumer has many competitive alternatives available, such as offline stores or other e-retailers), even if the consumer highly trusts the e-retailer, he/she may not intend to stay with or be loyal to the e-retailer. In contrast, if a consumer is moderately or highly dependent on an e-retailer (e.g., not many competitive alternatives available to secure what he/she needs in the way he/she wants), high levels of trust will make a consumer stay with or even be loyal to the e-retailer. Hence,

**H<sub>5a</sub>:** Consumer dependence on an e-retailer moderates the effect of consumer trust on a consumer's future intentions toward the e-retailer.

**H<sub>5b</sub>:** Consumer dependence on an e-retailer moderates the effect of consumer trust on a consumer's loyalty toward the e-retailer.

In terms of environmental uncertainty, if a consumer perceives high uncertainty surrounding the online transacting environments, even if he/she highly trusts an e-retailer, he/she may not continue doing business with the e-retailer. In contrast, under the conditions that a consumer perceives low-to-moderate risks involved in the online business environments, high levels of trust will make a consumer continue his/her exchange relationship with the e-retailer. Hence, the following hypotheses are advanced:

**H<sub>6a</sub>:** Environmental uncertainty moderates the effect of consumer trust in an e-retailer on a consumer's future intentions toward the e-retailer.

**H<sub>6b</sub>:** Environmental uncertainty moderates the effect of consumer trust in an e-retailer on a consumer's loyalty toward the e-retailer.

This chapter of the study presented the developed theoretical framework of consumer trust in an e-retailer, which includes the conceptualization of consumer trust in an e-retailer, the integrative model of consumer trust in an e-retailer, and the set of empirically testable hypotheses accompanied by arguments each hypothesis. A summary of all hypotheses generated can be seen in Table 3.1.

### Table 3.1. Summary of Hypotheses

#### Hypotheses About Antecedents

- H<sub>1</sub>**: Component attitudes positively influence consumer trust in an e-retailer.  
**H<sub>1a</sub>**: Website design attitudes positively influence consumer trust in an e-retailer.  
**H<sub>1b</sub>**: Fulfillment/reliability satisfaction positively influences consumer trust in an e-retailer.  
**H<sub>1c</sub>**: Security/privacy attitudes positively influence consumer trust in an e-retailer.  
**H<sub>1d</sub>**: Customer service satisfaction positively influences consumer trust in an e-retailer.

#### Hypotheses About Consequences

- H<sub>2a</sub>**: Consumer trust in an e-retailer positively influences a consumer's future intentions toward the e-retailer.  
**H<sub>2b</sub>**: Consumer trust in an e-retailer positively influences a consumer's loyalty toward the e-retailer.

#### Hypotheses About Mediators

- H<sub>3</sub>**: Consumer trust in an e-retailer negatively influences consumer transaction costs.  
**H<sub>4a</sub>**: Consumer transaction costs negatively influence a consumer's future intentions toward the e-retailer.  
**H<sub>4b</sub>**: Consumer transaction costs negatively influence a consumer's loyalty toward the e-retailer.

#### Hypotheses About Moderators

- H<sub>5a</sub>**: Consumer dependence on an e-retailer moderates the effect of consumer trust on a consumer's future intentions toward the e-retailer.  
**H<sub>5b</sub>**: Consumer dependence on an e-retailer moderates the effect of consumer trust on a consumer's loyalty toward the e-retailer.  
**H<sub>6a</sub>**: Environmental uncertainty moderates the effect of consumer trust in an e-retailer on a consumer's future intentions toward the e-retailer.  
**H<sub>6b</sub>**: Environmental uncertainty moderates the effect of consumer trust in an e-retailer on a consumer's loyalty toward the e-retailer.

## CHAPTER FOUR

### RESEARCH METHODOLOGY

In five sections, this chapter presents the major aspects of the research methodology utilized in this study. Specifically, the first section consists of an overview of the research design. The second section depicts the process of questionnaire development. Operational definitions of the variables included in this study are detailed in the third section. The fourth section presents results of the exploratory factor analysis of the pilot study data. In the final section, sampling and data collection procedures are delineated.

#### Research Design

This study utilized cross-sectional survey research via an online questionnaire emailed to a random sample of online shoppers in the United States. An *online* survey format was chosen because filling out a survey on the web was deemed appropriate for our sample, that is, online shoppers. Respondents were asked to provide frank assessments of the e-retailer from which they made their most recent online purchase of a physical product.

A survey research methodology was selected for this study for the following reasons. First, this study intends to describe the current status of national online shoppers regarding their level of trust in e-retailers, website design attitudes, fulfillment/reliability satisfaction, security/privacy attitudes, customer service satisfaction, future intentions

toward e-retailers, loyalty toward e-retailers, transaction costs perceptions, dependence on e-retailers, and environmental uncertainty perceptions; and to explicate the nature of the relationships among all the variables. As a reliable method for gathering a wide range of information from a large population, a survey can accomplish this goal of the study. Second, a survey allows for standardization of the data collected across individuals and provides a rapid turnaround time for data collection, particularly when using a cross-sectional online survey.

### **Questionnaire Development**

A multi-stage process was employed for the development of the questionnaire that was used in the online survey. First, preliminary measures of the variables included in the study were adapted from previous research. The preliminary questionnaire contains measures of the following variables: website design attitudes, fulfillment/reliability satisfaction, security/privacy attitudes, customer service satisfaction, consumer trust in an e-retailer, consumer transaction costs, future intentions toward e-retailers, loyalty toward e-retailers, offline experience satisfaction, consumer dependence on an e-retailer, environmental uncertainty, and demographic variables (including gender, age, marital status, education, ethnicity, employment status, occupation, household income, and state of residency). Operationalizations of the variables included in this study and their measures will be delineated in detail in the next section.

The next stage of questionnaire development involved two pre-tests, whose purpose was to test the suitability of the instrument, hence reducing measurement error

and increasing the internal validity of the study. The first pre-test consisted of a convenience sample of 20 undergraduate students and 2 graduate students majoring in Retailing and Consumer Sciences at the University of Arizona (UA). In the pre-test, the participants were asked to circle words or phrases in the questionnaire which they found confusing, to reword statements in their own words, and to make any other general comments about the statements. When necessary, one-on-one, in-depth, face-to-face interviews were conducted on some of the participants. Input from these participants was used to refine and modify the instrument. The revised version of the questionnaire was then administered in a one-on-one interview setting to 7 undergraduate students majoring in Retailing and Consumer Sciences at UA to obtain consistent feedback regarding the wording of the questionnaire.

In the final stage of questionnaire development, a pilot study was conducted using the revised questionnaire. Specifically, using the questionnaire, 27 undergraduate students taking a marketing research course in the Retailing and Consumer Sciences Department at UA in Fall 2005 were required to collect data from online shoppers outside UA. The students were advised to ask their relatives or friends who have had online purchasing experience with a physical product to fill out the survey either using paper and pencil or on computer using Microsoft Word. When employing computer format, the students sent the questionnaire via email as a Microsoft Word file attachment to each of the potential respondents. The respondents then opened and completed the survey digitally and sent it back to the students via email. This data collection resulted in 184 usable responses. An exploratory factor analysis was then performed using this sample on

each multiple-item scale to determine whether the scale items loaded as expected. Cronbach's coefficient alphas were obtained for scale items to ensure they exhibited satisfactory levels of internal reliability. The scales were refined by deleting items that did not load meaningfully on the underlying constructs. Results of the exploratory factor analyses are provided in the section after operationalizations of the variables, which are detailed in the following section.

### **Operationalizations of the Variables**

As described in the above section, exploratory factor analysis was used to purify the scales used in the final data collection, that is, the online survey. Before delineating the sampling and data collection procedure of the online survey, the scales are first depicted in detail in this section.

The scales used in the online survey were primarily adapted from previous marketing studies. One notable exception, however, is the measure of consumer transaction costs, which is discussed first in this section. Following this discussion, the next portion focuses on the measurements of component attitudes, trust, future intentions, consumer loyalty, environmental uncertainty, consumer dependence, and the control variable – offline experience satisfaction. Finally, the operationalizations of the demographic variables not central to the hypotheses are presented in this section.

## Consumer Transaction Costs

Consumer transaction costs are defined as a respondent's expected transaction costs associated with his/her next online purchase of the same physical product that he/she most recently purchased online. Specifically, consumer transaction costs are operationalized as expected direct costs associated with the respondent's next online purchase of the physical product (Rindfleisch and Heide 1997). Such expected direct costs constitute three parts: expected costs of obtaining the information necessary for purchasing the physical product prior to transaction (*pre-transaction costs*), expected immediate costs involved in transacting with an specific e-retailer for the product (*contemporaneous transaction costs*), and expected costs which arise as a consequence of transacting with the e-retailer for the product, including monitoring, redress, and enforcement should the transaction subsequently go wrong (*post-transaction costs*). Simply put, consumer transaction costs are a composite of *pre-transaction costs*, *contemporaneous transaction costs*, and *post-transaction costs*. The items for measuring the three kinds of consumer transaction costs are shown in Table 4.1, Table 4.2, and Table 4.3, respectively. Some of the items (C1-C4, D7-D9) were adapted from Teo and Yu (2005), while the others (D1-D6) were developed by the author. All the items were measured using a seven-point Likert scale where (1) indicates strongly disagree and (7) indicates strongly agree.

**Table 4.1. Pre-Transaction Costs Measurement Items****The next time I purchase the same product,**

PRE1. I will spend a lot of time looking for information before deciding where to buy.

PRE2. I will spend a lot of effort getting information that would be helpful in decision-making of where to buy.

PRE3. Usually there is so much to do that I wish I had more time to look for information before purchasing.

PRE4. I usually find myself pressed for time when searching for information before purchasing.

**Table 4.2. Contemporaneous Transaction Costs Measurement Items****If I choose this on-line store to buy the same product the next time,**

CONT1. I will spend a lot of time placing an order with this on-line store.

CONT2. I will spend a lot of effort placing an order with this on-line store.

CONT3. I will spend a lot of time and effort monitoring the processing of my order.

CONT4. I will spend a lot of time and effort checking the status of my order.

**Table 4.3. Post-Transaction Costs Measurement Items****If I choose this on-line store to buy the same product the next time,**

POST1. I will spend a lot of time and effort hassling with this on-line store if things go wrong.

POST2. I will spend a lot of time and effort resolving post-purchase problems.

POST3. It will take time and effort to deal with any unexpected changes.

POST4. It will take time and effort to make changes to the order placed with this on-line store.

POST5. It will take time and effort to arrange another time to receive the products ordered if they are not physically delivered on time as promised.

## **Component Attitudes**

Component attitudes are intended to capture a respondent's attitudes toward the key components of his/her entire online purchase experience(s) with a specific e-retailer for buying a physical product. The measures of the four component attitudes were all drawn from Wolfinbarger and Gilly (2003). Specifically, website design attitudes assess a respondent's satisfaction with all elements (except for customer service) of his/her experience(s) on the website of the e-retailer from which he/she made his/her last online purchase of a physical product. Elements considered include such factors as navigation, information search, order processing, level of personalization, and merchandise organization. Fulfillment/reliability satisfaction assesses how a respondent feels about the accuracy of the display and description of the product on the web site, the accuracy of the delivery of the product, the performance of the product, and the accuracy of the billing information.

Security/privacy attitudes examine a respondent's satisfaction with the security of credit card payments and privacy of shared information. Customer service satisfaction assesses a respondent's satisfaction with the service provided by an e-retailer in terms of responding to customer inquiries. To measure the four constructs of component attitudes, respondents were asked to indicate their level of agreement with the following items in Table 4.4 – 4.7 using a seven-point Likert scale where (1) indicates strongly disagree and (7) indicates strongly agree. Specifically, Table 4.4 lists the items for measuring website design attitudes; Table 4.5 lists the items for measuring fulfillment/reliability satisfaction;

Table 4.6 contains the items for measuring security/privacy attitudes; and Table 4.7 contains the items for measuring customer service satisfaction.

**Table 4.4. Website Design Attitudes Measurement Items**

WD1. This on-line store's website provides in-depth information.  
 WD2. This on-line store's website does NOT waste my time.  
 WD3. It is quick and easy to complete a transaction at this on-line store's website.  
 WD4. The level of personalization at this on-line store's website is about right, not too much or too little.  
 WD5. This on-line store's selection is well organized on the website.

**Table 4.5. Fulfillment/Reliability Satisfaction Measurement Items**

FR1. The product received was represented accurately by this on-line store's website.  
 FR2. You get exactly what you ordered from this on-line store.  
 FR3. The product is delivered by the time promised by the company.  
 FR4. The performance of the product(s) I purchased from this on-line store lives up to what was promised.  
 FR5. The billing information is accurate.

**Table 4.6. Security/Privacy Attitudes Measurement Items**

SP1. I feel like my privacy is protected by this on-line store.  
 SP2. I feel safe in my transactions with this on-line store.  
 SP3. This on-line store's website has adequate security features.

**Table 4.7. Customer Service Satisfaction Measurement Items**

CS1. This on-line store is willing and ready to respond to customer needs.  
 CS2. When you have a problem, this on-line store shows a sincere interest in solving it.  
 CS3. This on-line store answers inquiries promptly.

## Consumer Trust in An E-Retailer

Consumer trust in an e-retailer is operationalized as the amount that a consumer has in the reliability and integrity of an e-retailer. To measure this construct, respondents were asked to indicate their level of agreement with the items shown in Table 4.8. These items use a seven-point Likert scale where (1) indicates strongly disagree and (7) indicates strongly agree. These items were adapted from Morgan and Hunt (1994) and have been widely used in measuring trust in the field of marketing.

**Table 4.8. Trust Measurement Items**

**This on-line store:**

TRUST1. Operates with integrity.

TRUST2. Is always faithful.

TRUST3. Can be counted on to do what is right.

TRUST4. Can be trusted.

TRUST5. Is honest and truthful.

TRUST6. Is an organization I have great confidence in.

TRUST7. Cannot be trusted at times (reverse coded).

## Future Intentions

The future intentions construct measures a consumer's willingness to engage in future interactions with an e-retailer. The items for measuring future intentions are shown in Table 4.9. INT1 and INT2 are adapted from Sultan, Urban, Shankar, and Bart (2002); INT3 and INT4 are adapted from Zeithaml, Berry, and Parasuraman (1996). Here, respondents were asked to indicate their level of agreement with the following items using a seven-point Likert scale where (1) indicates strongly disagree and (7) indicates strongly agree.

**Table 4.9. Future Intentions Measurement Items**

<p>INT1. I will shop at this on-line store in the future.</p> <p>INT2. I will purchase from this on-line store in the future.</p> <p>INT3. I will do more business with this on-line store in the next few years.</p> <p>INT4. I will do less business with this on-line store in the next few years.</p>
---

**Consumer Loyalty**

Consumer loyalty toward an e-retailer is defined as a consumer's favorable attitude toward an e-retailer that results in repeat purchase intentions toward the e-retailer (Assael 1992; Keller 1993; Jacoby and Chestnut 1978; Oliver 1997; Srinivasan, Anderson, and Ponnnavolu 2002). The items for measuring loyalty (see Table 4.10) are adapted from a scale used by Srinivasan, Anderson, and Ponnnavolu (2002), which was adapted from Gremler (1995) and Zeithaml, Berry, and Parasuraman (1996). Respondents were asked to indicate their level of agreement with the following items using a seven-point Likert scale where (1) indicates strongly disagree and (7) indicates strongly agree.

**Table 4.10. Loyalty Measurement Items**

<p>LOY1. I try to use this on-line store whenever I need to buy this kind of products.</p> <p>LOY2. When I need to buy this kind of products, this on-line store is my first choice.</p> <p>LOY3. I seldom consider switching to another on-line store in terms of buying this kind of products.</p> <p>LOY4. I doubt that I would switch on-line stores in terms of buying this kind of products.</p> <p>LOY5. I like doing business with this on-line store.</p> <p>LOY6. To me, this on-line store is the best one to do business with.</p> <p>LOY7. I believe that this is my favorite on-line store.</p>
---

## Environmental Uncertainty

To measure the risks surrounding the online transacting environments, respondents were asked to indicate their level of agreement with the items shown in Table 4.11. These items use a seven-point Likert scale where (1) indicates strongly disagree and (7) indicates strongly agree. These items were adapted from a scale developed by McKnight, Choudhury, and Kacmar (2002).

**Table 4.11. Environmental Uncertainty Measurement Items**

<p>EU1. The Internet is secure enough to make me feel comfortable when I shop on-line. (Reverse coded)</p> <p>EU2. I feel assured that the laws adequately protect me from problems on the Internet. (Reverse coded)</p> <p>EU3. I feel assured that technologies adequately protect me from problems on the Internet. (Reverse coded)</p> <p>EU4. I feel confident that security technology on the Internet makes it safe for me to do business on-line. (Reverse coded)</p> <p>EU5. In general, the Internet is now a secure form of doing business. (Reverse coded)</p>
--

## Consumer Dependence

Consumer dependence is operationalized as the availability of competitive alternative retailers (both online and offline) for respondents to purchase the same physical product the next time he/she purchases it. To measure this construct, respondents were asked to indicate their level of agreement with the following items in Table 4.12 using a seven-point Likert scale where (1) indicates strongly disagree and (7) indicates strongly agree. These items are adapted from Ganesan (1994) and Sriram, Krapfel, and Spekman (1992).

**Table 4.12. Consumer Dependence Measurement Items**

<p>DEP1. I do NOT have a good alternative to this on-line store for buying this kind of products.</p> <p>DEP2. It would be difficult for me to find a competitive <b>ON-LINE</b> store alternative to this one to buy this kind of products.</p> <p>DEP3. It would be difficult for me to find a competitive <b>OFF-LINE</b> retailer alternative (e.g., retail store or catalog) to this on-line store to buy this kind of products.</p> <p>DEP4. It would be easy for me to find a good alternative to this <b>ON-LINE</b> store to buy this kind of products. (Reverse coded)</p>
--

**Offline Experience Satisfaction**

Offline experience satisfaction assesses how a respondent feels about his/her shopping or purchasing experience with an e-retailer through its other channels such as brick-and-mortar stores, or catalogs. One item is used to measure offline experience satisfaction, which is listed in Table 4.13. Here, participants were asked to respond to the item using a semantic differential scale where (-3) indicates very dissatisfied and (+3) indicates very satisfied. The item is adapted from Garbarino and Johnson (1999).

**Table 4.13. Offline Experience Satisfaction Measurement Items**

<p><b><u>If you have had shopping or purchasing experience with this company through its off-line businesses (e.g., retail stores, catalogs),</u></b></p> <p>OFF1. How would you rate your overall satisfaction with your <b>OFF-LINE</b> experience with this company?</p>
---

## Demographic Variables

Demographic variables, including gender, age, marital status, education, ethnicity, employment status, occupation, income, and state of residency were measured using a categorical format. Specifically, the demographic variables were operationalized and measured as follows:

- Gender: Female, male (nominal data).
- Age: Age in years is indicated by selecting the appropriate age range (ordinal data).
- Marital Status: Married, single (never married, separated, divorced, widowed) (nominal data).
- Education: Highest level of formal education completed (nominal data).
- Ethnicity: Indicate by selecting the appropriate ethnic group (nominal data).
- Employment Status: Indicated by selecting the appropriate employment status (nominal data).
- Occupation: Indicate by selecting the most appropriate occupation (nominal data).
- Income: Indicate by selecting the appropriate household income range (ordinal data).
- State of Residency: State in which the respondent maintains permanent residency (nominal data).

### **Exploratory Factor Analysis**

It is important to assess the adequacy of the measures used in the pilot study before utilizing them in the online survey. To this end, exploratory factor analysis using principal component analysis with varimax rotation was conducted on each multiple-item scale. The Cronbach's coefficient alpha was also obtained to test the internal reliability for each factor extracted.

To determine the number of factors retained for a scale, several elements were considered: (1) factors with eigenvalues greater than 1.0; (2) a predetermined number of factors based upon the research objective of this study and prior research; (3) enough factors to meet a certain percentage of the variance explained, and usually 60% or higher is the recommended criterion; and (4) factors before inflection point shown in the scree plot to have substantial amounts of common variance (Hair, Joseph F., Jr., William C. Black, Barry J. Babin, Rolph E. Anderson, and Ronald L. Tatham 2006). Additionally, Cronbach's coefficient alpha for each factor extracted should be 0.70 or greater for multiple-item scale (Nunnally 1978), and each factor is interpretable. In judging whether an item was retained for a factor, two criteria were used: (1) factor loading of the item for the factor should be 0.50 or greater, which is considered practically significant, and ideally 0.70, which is considered indicative of well-defined structure; and (2) the item does not have a cross-loading problem, that is, factor loading of the item on other factors does not exceed 0.40 (Hair et al. 2006).

**Table 4.14. Exploratory Factor Analysis for the Pilot Study Sample (N = 184)**

Variable/Item	Factor Loading	Reliability	Variance Explained
<b>Website Design Attitudes</b>		<b>0.81</b>	<b>57%</b>
Provides in-depth information.	0.73		
Does NOT waste my time.	0.84		
It is quick and easy to complete a transaction.	0.80		
The level of personalization is about right.	0.73		
Selection is well organized on the website.	0.68		
<b>Fulfillment/Reliability Satisfaction</b>		<b>0.86</b>	<b>64%</b>
The product received was represented accurately.	0.82		
You get exactly what you ordered.	0.88		
The product is delivered by the time promised.	0.70		
The performance of the product(s) lives up to.	0.79		
The billing information is accurate.	0.81		
<b>Security/Privacy Attitudes</b>		<b>0.93</b>	<b>87%</b>
I feel like my privacy is protected by.	0.93		
I feel safe in my transactions with this on-line store.	0.95		
This on-line store's website has adequate security features.	0.92		
<b>Customer Service Satisfaction</b>		<b>0.89</b>	<b>82%</b>
Is willing and ready to respond to customer needs.	0.88		
When have a problem, shows a sincere interest in solving.	0.92		
Answers inquiries promptly.	0.92		
<b>Trust in an E-Retailer</b>		<b>0.91</b>	<b>74%</b>
Operates with integrity.	0.91		
Is always faithful.	0.92		
Can be counted on to do what is right.	0.90		
Can be trusted.	0.94		
Is honest and truthful.	0.95		
Is an organization I have great confidence in.	0.87		
Cannot be trusted at times.	0.39		

<b>Consumer Transaction Costs (CTC)</b>		<b>75%</b>
<b>Factor 3 (Pre-Transaction Costs)</b>	<b>0.84</b>	<b>20%</b>
I will spend a lot of time looking for information.	0.80	
I will spend a lot of effort getting information.	0.76	
I wish I had more time to look for information.	0.84	
I usually find myself pressed for time.	0.74	
<b>Factor 2 (Contemporaneous Transaction Costs)</b>	<b>0.92</b>	<b>27%</b>
Spend a lot of time placing an order.	0.85	
Spend a lot of effort placing an order.	0.83	
Monitoring the processing of my order.	0.78	
Checking the status of my order.	0.77	
<b>Factor 1 (Post-Transaction Costs)</b>	<b>0.93</b>	<b>28%</b>
Hassling with this on-line store if things go wrong.	0.81	
Resolving post-purchase problems.	0.89	
Deal with any unexpected changes.	0.88	
Make changes to the order placed.	0.84	
Arrange another time to receive the products.	0.76	
<b>Consumer Transaction Costs (CTC)</b>	<b>0.69</b>	<b>62%</b>
<i>Pre-CTC</i>	0.71	
<i>Contemporaneous CTC</i>	0.85	
<i>Post-CTC</i>	0.80	
<b>Future Intentions</b>	<b>0.87</b>	<b>75%</b>
I will shop at this on-line store in the future.	0.94	
I will purchase from this on-line store.	0.95	
I will do more business in the next few years.	0.92	
I will do less business in the next few years.	0.60	
<b>Consumer Loyalty</b>	<b>0.88</b>	<b>59%</b>
I try to use this on-line store whenever I need to buy.	0.66	
This on-line store is my first choice.	0.85	
I seldom consider switching to another on-line store.	0.77	
I doubt that I would switch on-line stores.	0.70	
I like doing business with this on-line store.	0.80	
This on-line store is the best one to do business.	0.88	
I believe that this is my favorite on-line store.	0.69	

<b>Environmental Uncertainty</b>		<b>0.94</b>	<b>80%</b>
Internet is secure enough to make me feel comfortable.	0.90		
I feel assured that the laws adequately protect me.	0.83		
I feel assured that technologies adequately protect me.	0.90		
Security technology on the Internet makes it safe.	0.93		
The Internet is now a secure form of doing business.	0.91		
<b>Consumer Dependence</b>		<b>0.76</b>	<b>59%</b>
Do NOT have a good alternative to this on-line store.	0.86		
Difficult to find a competitive <b>ON-LINE</b> store.	0.84		
Difficult to find a competitive <b>OFF-LINE</b> retailer.	0.66		
Easy for me to find a good alternative.	0.70		

Notes: a. *Pre-CTC*, *Contemporaneous CTC*, and *Post-CTC* were measured using the mean of its corresponding items.

b. All other items are measured on a seven-point Likert scale from 1=strongly disagree to 7=strongly agree.

Results of the exploratory factor analyses are displayed in Table 4.14, which includes factor loadings, internal reliabilities, and percentages of variance explained. Eigenvalues for each factor extracted shown in Table 4.14 were greater than one, indicating unidimensionality of the constructs. The scree plots produced in the exploratory factor analyses also supported all the findings regarding the number of factors extracted for a scale. Next, the results of the exploratory factor analyses are described in detail for each variable.

### **Consumer Transaction Costs (CTC)**

An exploratory factor analysis was first performed for all the items related to CTC to determine whether three factors (*pre-transaction costs*, *contemporaneous transaction costs*, and *post-transaction costs*) were drawn as expected. After eliminating 3 items loading on two factors, exploratory factor analysis produced a three-factor solution for the 13 remaining items used to measure CTC. The cumulative variance explained by the three factors was 75%, exceeding the recommended criterion of 60% (Hair et al. 2006). The first factor, composed of five items, accounted for 28% of the variance explained. The five items loading on this factor reflected *post-transaction costs*. Factor loadings of these five items ranged from 0.76 to 0.89, all exceeding the criterion of 0.70. Internal reliability for Factor 1, based on Cronbach's coefficient alpha, was 0.93, exceeding the threshold value of 0.70 (Nunnally 1978). Accounting for 27% of the variance explained, Factor 2 included four items related to *contemporaneous transaction costs*. Factor loadings of these four items ranged from 0.77 to 0.85, all exceeding the preferable criterion of 0.70. Cronbach's coefficient alpha indicated an internal reliability of 0.92, exceeding the threshold of 0.70 (Nunnally 1978). The four items loading on Factor 3 were related to *pre-transaction costs*. The variance explained by the factor was 20% with factor loadings ranging from 0.74 to 0.84. Internal reliability for the factor, based on Cronbach's coefficient alpha, was 0.84, exceeding the threshold of 0.70 (Nunnally 1978).

Based on the results of the above analysis, the mean of the items retained for measuring *pre-transaction costs*, the mean of the items retained for measuring

*contemporaneous transaction costs*, and the mean of the items retained for measuring *post-transaction costs* were computed to create three new items – *pre-CTC*, *contemporaneous CTC*, and *post-CTC*, respectively. Here the mean was calculated by summing and averaging the corresponding items for each construct. An exploratory factor analysis was then performed for the three newly computed items, which were used to measure CTC. This analysis produced a one-factor solution consisting of all the three items. Factor loadings of these three items ranged from 0.71 to 0.85, all exceeding the preferable criterion of 0.70. The variance explained by the factor was 62%, exceeding the recommended criterion of 60%. Internal reliability for the factor, based on Cronbach's coefficient alpha, was 0.69. Although reliability fell slightly below the threshold of 0.70 (Nunnally 1978), this factor is considered acceptable and was retained given its adequate factor loadings and the variance explained.

### **Website Design Attitudes**

Exploratory factor analysis produced a one-factor solution for website design attitudes consisting of all five items in the scale. Factor loadings of these five items ranged from 0.68 to 0.84 with three of them exceeding the preferable criterion of 0.70 and one just below the 0.70. Internal reliability for the factor, based on Cronbach's coefficient alpha, was 0.81, exceeding the threshold value of 0.70 (Nunnally 1978). The variance explained by the factor was 57%. Although the variance explained fell slightly below the recommended criterion of 60%, this factor is considered acceptable and was retained based on its adequate factor loadings and reliability.

**Fulfillment/Reliability Satisfaction**

Exploratory factor analysis resulted in a one-factor solution for fulfillment/reliability satisfaction consisting of all five items in the scale. Factor loadings of these five items ranged from 0.70 to 0.88, all exceeding the preferable criterion of 0.70. Internal reliability for the factor, based on Cronbach's coefficient alpha, was 0.86, exceeding the threshold value of 0.70 (Nunnally 1978). The variance explained by the factor was 64%, exceeding the recommended criterion of 60%.

**Security/Privacy Attitudes**

Exploratory factor analysis produced a one-factor solution for security/privacy attitudes consisting of all three items in the scale. Factor loadings of these three items ranged from 0.92 to 0.95, all exceeding the preferable criterion of 0.70. Internal reliability for the factor, based on Cronbach's coefficient alpha, was 0.93, exceeding the threshold value of 0.70 (Nunnally 1978). The variance explained by the factor was 87%, exceeding the recommended criterion of 60%.

**Customer Service Satisfaction**

Exploratory factor analysis revealed a one-factor solution for customer service satisfaction consisting of all three items in the scale. Factor loadings of these three items ranged from 0.88 to 0.92, all exceeding the preferable criterion of 0.70 (Nunnally 1978). Internal reliability for the factor, based on Cronbach's coefficient alpha, was 0.89,

exceeding the threshold value of 0.70 (Nunnally 1978). The variance explained by the factor was 82%, exceeding the recommended criterion of 60% (Hair et al. 2006).

### **Trust in an E-Retailer**

Exploratory factor analysis produced a one-factor solution for trust consisting of all seven items in the scale. Internal reliability for the factor, based on Cronbach's coefficient alpha, was 0.91, exceeding the threshold value of 0.70 (Nunnally 1978). The variance explained by the factor was 74%, exceeding the recommended criterion of 60% (Hair et al. 2006). Except for the reverse coding item, the other six items' factor loadings exceeded the preferable criterion of 0.70 (Hair et al. 2006), ranging from 0.87 to 0.95. Although the reverse coding item's factor loading of 0.39 fell below the practical significant factor loading of 0.50 (Hair et al. 2006), the item was retained given the factor's adequate reliability and variance extracted. Moreover, this trust scale is believed to be a good measure to tap the major facets of trust (Morgan and Hunt 1994).

### **Future Intentions**

Exploratory factor analysis resulted in a one-factor solution for future intentions consisting of all four items in the scale. The reverse coding item's factor loading was 0.60, exceeding the practical factor loading of 0.50; the factor loadings of the other three items ranged from 0.92 to 0.95, all exceeding the preferable criterion of 0.70 (Nunnally 1978). Internal reliability for the factor, based on Cronbach's coefficient alpha, was 0.87,

exceeding the threshold value of 0.70 (Nunnally 1978). The variance explained by the factor was 75%, exceeding the recommended criterion of 60% (Hair et al. 2006).

### **Consumer Loyalty**

Exploratory factor analysis produced a one-factor solution for consumer loyalty consisting of all seven items in the scale. Factor loadings of these seven items ranged from 0.66 to 0.88 with five of them exceeding the preferable criterion of 0.70 and two just below the 0.70. Internal reliability for the factor, based on Cronbach's coefficient alpha, was 0.88, exceeding the threshold value of 0.70 (Nunnally 1978). The variance explained by the factor was 59%. Although the variance explained fell slightly below the recommended criterion of 60%, this factor is considered acceptable and retained given its adequate factor loadings and reliability.

### **Environmental Uncertainty**

Exploratory factor analysis revealed a one-factor solution for environmental uncertainty consisting of all five items in the scale. Factor loadings of these five items ranged from 0.83 to 0.93, all exceeding the preferable criterion of 0.70 (Nunnally 1978). Internal reliability for the factor, based on Cronbach's coefficient alpha, was 0.94, exceeding the threshold value of 0.70. The variance explained by the factor was 80%, exceeding the recommended criterion of 60% (Hair et al. 2006).

### **Consumer Dependence**

Exploratory factor analysis resulted in a one-factor solution for consumer dependence consisting of all four items in the scale. Factor loadings of these four items ranged from 0.66 to 0.86 with three of them exceeding the preferable criterion of 0.70 and one just below the 0.70. Internal reliability for the factor, based on Cronbach's coefficient alpha, was 0.76, exceeding the threshold value of 0.70 (Nunnally 1978). The variance explained by the factor was 59%. Although the variance explained fell slightly below the recommended criterion of 60%, this factor is considered acceptable and retained based on its adequate factor loadings and reliability.

### **Sampling and Data Collection**

The instrument finalized by the exploratory factor analysis of the pilot study data was evaluated by the University of Arizona's Human Subjects Protection Program, and it received approval for distribution. The instrument is included in Appendix A.

An online questionnaire was carefully designed and an online survey was conducted using Zoom Panel. Specifically, Zoomerang zSample team (under MarketTools, Inc.) randomly drew a national sample of 4,156 members age 18 and older out of its panel (which was close to 3 million people). An e-mail invitation containing an embedded URL link to the website hosting the questionnaire was sent to each of the 4,156 potential respondents. Potential respondents were informed that if they completed the survey and entered their email addresses at the end of the survey, they would be

entered into the Zoom Panel 2006 Monthly Sweepstakes for a chance to win one of twenty-five cash prizes totaling \$5,000 (one Grand Prize of \$1,000, four First Prizes of \$500 each, and twenty Second Prizes of \$100 each) as compensation for their participation. The purpose of the drawing for a prize was to encourage responses. Additionally, to increase responses, two reminder invitations were emailed to those respondents who had not yet participated in the survey. The first reminder invitations were emailed at a one-day interval while the second reminder invitations were emailed at a five-day interval. Moreover, to increase the response rate, a summary of the survey results was also offered to those who requested it. This e-mail campaign produced 937 usable responses, representing an overall response rate of 23%.

### **Chapter Summary**

In this chapter, the research methodology employed by this study was addressed. Specifically, the research design, questionnaire development, operationalizations of the variables, exploratory factor analysis of the pilot study data, and sampling and data collection were discussed at length.

## **CHAPTER FIVE**

### **DATA ANALYSIS AND RESULTS**

Chapter five addresses the analysis of the data collected from the online survey and presents the results of the data analysis. As described in chapter four, the online survey produced 937 usable responses, representing an overall response rate of 23%. In analyzing outliers of the sample of the 937 usable responses, 29 observations were identified as outliers and were eliminated from the sample. As a result, the effective sample size of the online survey became 908. Of the 908 observations, 249 were multi-channel store observations. Except for the analysis of sample outliers, which was detailed in the section on preliminary data analysis, all the other analyses in this chapter were based either on the entire sample of 908 or on the multi-channel store sub-sample of 249.

Chapter five consists of ten sections and is structured as follows. The chapter begins with an overview of the respondent profile, followed by an assessment of non-response bias and preliminary data analysis. Following such, results of the exploratory factor analysis of the items measuring future intentions and consumer loyalty and of the scale by scale confirmatory factor analyses were presented. The purpose of the exploratory factor analysis and scale by scale confirmatory factor analyses is to identify a set of indicators that represents each multi-item constructs in the overall measurement model. Using the two-stage approach recommended by Anderson and Gerbing (1988),

the overall measurement model was first confirmed and then the basic structural model for the entire sample (n = 908) and the structural model for controlling for offline experience satisfaction for the multi-channel store sub-sample (n = 249) were assessed, respectively. The basic structural model for the entire sample was to test the causal research hypotheses of this study (i.e., **H<sub>1a</sub>**, **H<sub>1b</sub>**, **H<sub>1c</sub>**, **H<sub>1d</sub>**, **H<sub>2a</sub>**, **H<sub>2b</sub>**, **H<sub>3</sub>**, **H<sub>4a</sub>**, and **H<sub>4b</sub>**) while the structural model for the multi-channel store sub-sample was to test the control variable – offline experience satisfaction in predicting consumer trust in an e-retailer. Following such, multiple regression analysis was conducted to further test the control variable. Lastly, the moderating effects of consumer dependence and environmental uncertainty (i.e., **H<sub>5a</sub>**, **H<sub>5b</sub>**, **H<sub>6a</sub>**, and **H<sub>6b</sub>**) were tested using multiple group analysis via structural equation modeling. The chapter concludes with a summary of the findings associated with the tested hypotheses.

### **Respondent Characteristics**

The entire sample (n = 908) characteristics are reported in Table 5.1. A majority of respondents had some college education or higher (88.6%), were white (87.4%), and were married (60.9%). In the entire sample, 47.6% of respondents were men and 52.4% were women. Of the 92.5% reporting an age 25 and over, 64.6% were middle-aged (i.e., 25 – 54). The occupational composition of the respondents was primarily professional (31.3%), managerial (14.1%), administrative (13%), or clerical/sales (10.4%). The household incomes of respondents ranged from middle to high levels with 24.3% reporting annual incomes of \$30,000-\$49,999, 25.8% reporting annual incomes

**Table 5.1. Demographic Profile of the Respondents (N = 908)**

<b>Characteristics</b>	<b>Sample Percentage</b>
<b>Gender</b>	
Male	47.6
Female	52.4
<b>Age (in Years)</b>	
18 - 24	7.5
25 - 34	21.3
35 - 44	23.9
45 - 54	19.4
55 - 64	12.1
65 and over	15.9
<b>Level of Education</b>	
No formal education	
Some grade school	
Completed grade school	0.4
Some high school	0.9
Completed high school	10.0
Some college	33.0
Graduated college	29.5
Some graduate school	7.3
Completed graduate school	18.8
<b>Ethnicity</b>	
Caucasian or white	87.4
Hispanic or Spanish origin	4.0
African-American	2.6
Asian-American	2.6
Native American	0.9
Other	2.4

---

**Marital Status**

Married	60.9
Single (Never married, separated, divorced, widowed)	39.1

**Occupation**

Laborer	2.2
Machine operator	1.3
Service worker	5.9
Craftsman	1.4
Clerical/sales	10.4
Administrative	13.0
Manager/Executive	14.1
Professional	31.3
Other	20.4

**Annual Household Income**

Less than \$10,000	3.9
\$10,000-\$19,999	4.7
\$20,000-\$29,999	8.7
\$30,000-\$49,999	24.3
\$50,000-\$74,999	25.8
\$75,000-\$99,999	15.4
\$100,000-\$149,999	12.8
More than \$150,000	4.4

---

of \$50,000-\$74,999, and 32.6% reporting annual incomes of \$75,000 and over. In order to assess the representativeness of the sample, the researcher compared the demographic profile of the 908 respondents with the online user demographics (2004-2005) reported by Greenfield Online. The comparison revealed a close match between the two samples. Therefore, the sample (908 observations) of this study was representative of American online users.

### **Non-response**

It is important to assess non-response bias since it influences the generalizability of the statistical analysis that is performed on those who respond. To evaluate the non-response bias of this study, a wave analysis was conducted to examine the profile difference of early and late respondents in the entire sample ( $n = 908$ ). This method is widely used in examining non-response bias (Armstrong and Overton 1977). The underlying assumption is that those who respond late are more similar to non-respondents than those who respond early. Therefore, if it can be ascertained that early respondents of this study are similar to late respondents, an absence of non-response bias can be ascertained for this study. Here, tests were conducted to compare the demographic characteristics of early respondents to those of late respondents. Results indicated no significant demographic differences ( $\alpha = 0.05$ ) between the two waves except that the education level of early respondents was significantly higher than that of late respondents.

Additionally, the response rate obtained for this online survey is relatively high. Taken together, it is believed that non-response bias is minimal in this survey.

## **Preliminary Data Analyses**

The preliminary data analyses included an analysis of: the presence of outliers, the assumption of normality, and the correlations among the key constructs of this study. Each of these topics is discussed briefly below.

### **Sample Outliers**

Outliers of the sample of the 937 usable responses collected from the online survey were detected by examining standard scores (i.e., Z score) of each metric scale item. According to Hair, Joseph F., Jr., William C. Black, Barry J. Babin, Rolph E. Anderson, and Ronald L. Tatham (2006), for larger sample sizes (80 or more observations), outliers are defined as cases with standard scores of 4.0 or greater. Using this criterion, 29 observations were identified as outliers and were eliminated from the overall sample. As a result, 908 observations were retained.

### **Normality**

To assess the normality of each metric scale item, both empirical measures of a distribution's shape characteristics and the normal probability plots were obtained. The empirical measures included skewness and kurtosis measures reflecting the shape of a distribution and an overall statistical test for normality – Kolmogorov-Smirnov test. They together provided a guide as to the items with significant deviations from normality. The normal probability plots provided a visual portrayal of the shape of the distribution.

In conducting these tests, many of the scale items were found to be slightly skewed to the right, indicating higher scores on the measured items. To alleviate the skewness, appropriate transformations of those items were performed based on the information combined from the empirical and graphical methods (Hair et al. 2006). Then, the distributions were re-checked for the problematic items and they appeared to be closer to normality than before. Additionally, according to Hair et al. (2006), “large sample sizes tend to diminish the detrimental effect of nonnormality” (p. 80). Given the large sample size of 908, normality was deemed adequate.

### **Correlation Analysis**

A correlation analysis was performed on the eight key constructs of this study in order to assess the overall correlation of the constructs. The results are provided in Table 5.2. Clearly, all correlations were significant at  $p < 0.001$  level with the greatest correlation coefficient of 0.80 and the smallest of - 0.23. The correlation analysis provided at least some evidence of convergent validity, discriminant validity, and nomological validity of the key constructs under investigation. The results also did not signal a possible multicollinearity problem among the constructs. Therefore, multicollinearity was not a large concern for this study. The subsequent sections of this chapter explain diagnostic tests that were conducted to further assess the reliability and validity of the key constructs.

**Table 5.2. Construct Correlation Matrix for the Entire Sample (N = 908)**

	Mean	S.D.	1	2	3	4	5	6	7	8
1. Website Design Attitudes ( $\xi_1$ )	5.70	.92	1.00 <i>14.58*</i>	.64	.50	.50	.50	.07	.35	.20
2. Fulfillment/Reliability Satisfaction ( $\xi_2$ )	6.14	.89	.80 <i>15.73*</i>	1.00 <i>15.52*</i>	.51	.39	.46	.08	.38	.13
3. Security/Privacy Attitudes ( $\xi_3$ )	5.88	1.00	.71 <i>15.26*</i>	.72 <i>15.71*</i>	1.00 <i>18.33*</i>	.45	.52	.11	.35	.14
4. Customer Service Satisfaction ( $\xi_4$ )	5.69	1.10	.71 <i>14.96*</i>	.62 <i>14.11*</i>	.67 <i>15.37*</i>	1.00 <i>16.77*</i>	.59	.10	.30	.20
5. Trust in an E-Retailer ( $\eta_1$ )	5.83	.94	.71 <i>15.31*</i>	.68 <i>15.21*</i>	.72 <i>16.42*</i>	.77 <i>16.68*</i>	1.00 <i>18.12*</i>	.10	.43	.21
6. Consumer Transaction Costs ( $\eta_2$ )	3.27	1.12	-.26 <i>-5.83*</i>	-.28 <i>-6.20*</i>	-.33 <i>-7.00*</i>	-.32 <i>-6.78*</i>	-.32 <i>-6.89*</i>	1.00 <i>6.62*</i>	.09	.05
7. Future Intentions ( $\eta_3$ )	6.02	.99	.59 <i>13.71*</i>	.62 <i>14.44*</i>	.60 <i>14.57*</i>	.55 <i>13.54*</i>	.65 <i>15.57*</i>	-.30 <i>-6.54*</i>	1.00 <i>19.12*</i>	.27
8. Consumer Loyalty ( $\eta_4$ )	4.92	1.42	.45 <i>10.84*</i>	.36 <i>9.19*</i>	.37 <i>9.68*</i>	.45 <i>11.05*</i>	.45 <i>11.43*</i>	-.23 <i>-5.28*</i>	.52 <i>12.62*</i>	1.00 <i>15.32*</i>

Notes: a. Mean is calculated by summing and averaging the corresponding items for each construct.

b. Values below the diagonal are correlation coefficients with  $t$ -values shown in italics on the line below. The  $t$ -values for the diagonal elements are those for the construct variance terms. Values above the diagonal are squared correlations.

c. \*  $p < .001$

### **Discriminant Validity between Future Intentions and Consumer Loyalty**

It is suspected that future intentions and consumer loyalty may lack discriminant validity when in the same measurement model. The reason is that future intentions and loyalty are used to capture the same underlying theme – a consumer’s relational continuance with an e-retailer, although loyalty involves a deeper degree of relationship than does future intentions. Accordingly, before the two constructs were put into the overall measurement model, discriminant validity between them was assessed.

According to Hair et al. (2006), discriminant validity means not only that constructs are distinct, but also that each item should represent only one latent construct. The existence of cross-loadings implies a discriminant validity problem and will jeopardize the measurement model fit. Therefore, an exploratory factor analysis using principal component analysis with varimax rotation was first conducted for the 11 items used to measure the two constructs with the final study sample (n = 908). The purpose was to examine whether the items loaded as expected.

The exploratory factor analysis produced a two-factor solution with one item (i.e., “I like doing business with this on-line store.”) highly loading on both factors. Except for this cross-loading item, all others loaded as expected. After eliminating this cross-loading item, exploratory factor analysis again revealed a two-factor solution for the 10 remaining items. The results are provided in Table 5.3. As shown in the table, the cumulative variance explained by the two factors was 71%, exceeding the recommended

criterion of 60% (Hair et al. 2006). The first factor, composed of six items, accounted for 42% of variance explained. The six items loading on this factor reflected consumer loyalty. Factor loadings of these six items ranged from 0.69 to 0.89 with five of them exceeding the preferable criterion of 0.70, and one just below the 0.70. Internal reliability for Factor 1, based on Cronbach's coefficient alpha, was 0.92, exceeding the threshold value of 0.70 (Nunnally 1978). Accounting for 29% of the variance explained, Factor 2 included four items related to future intentions. Factor loadings of these four items ranged from 0.69 to 0.87 with three of them exceeding the preferable criterion of 0.70 and one just below the 0.70. Cronbach's coefficient alpha indicated an internal reliability of 0.80, exceeding the threshold of 0.70 (Nunnally 1978).

**Table 5.3. Exploratory Factor Analysis on Future Intentions and Consumer Loyalty for the Entire Sample (N = 908)**

Variable/Item	Factor Loading	Reliability	Variance Explained
<b>Future Intentions and Consumer Loyalty</b>			<b>71%</b>
<b>Factor 1 (Consumer Loyalty)</b>		<b>0.92</b>	<b>42%</b>
I try to use this on-line store whenever I need to buy.	0.79		
This on-line store is my first choice.	0.84		
I seldom consider switching to another on-line store.	0.87		
I doubt that I would switch on-line stores.	0.89		
This on-line store is the best one to do business.	0.79		
I believe that this is my favorite on-line store.	0.69		
<b>Factor 2 (Future Intentions)</b>		<b>0.80</b>	<b>29%</b>
I will shop at this on-line store in the future.	0.87		
I will purchase from this on-line store.	0.87		
I will do more business in the next few years.	0.72		
I will do less business in the next few years.	0.69		

Discriminant validity between future intentions and loyalty was then tested by examining whether the correlation between them was significantly different from 1.0. To calculate the correlation, a confirmatory factor analysis was performed via AMOS 6.0 using the maximum likelihood method (Jöreskog and Sörbom 1996) on the two constructs with their corresponding items retained from the exploratory factor analyses just discussed. The standardized correlation coefficient between future intentions and loyalty was 0.52, which was significantly different from 1.0 ( $p < 0.001$ ). This provided evidence that future intentions and loyalty possessed adequate discriminant validity.

### **Confirmatory Factor Analysis: Scale by Scale**

To identify a set of items that represent each construct in the overall measurement theory model, confirmatory factor analysis (CFA) via AMOS 6.0 using the maximum likelihood method (Jöreskog and Sörbom 1996) was performed on each scale respectively for the entire sample ( $n = 908$ ). Except for future intentions and consumer loyalty, the hypothesized measurement model for each construct was constructed based on the results of the exploratory factor analysis using the pilot study sample, which were described in detail in chapter 4. For future intentions and loyalty, their respective measurement model was constructed based on the results of the above exploratory factor analysis using the sample of the online survey.

Results of the scale by scale CFAs are displayed in Table 5.4, which includes the standardized factor loadings, their associated standard errors and  $t$ -values, construct reliabilities, and proportions of variance extracted for each construct. Construct

**Table 5.4. Results of Scale by Scale CFAs for the Entire Sample (N = 908)**

Construct/ Indicator	Standardized Factor Loading	Standard Error	t-Value	Construct Reliability <sup>b</sup>	Proportion of Variance Extracted <sup>c</sup>
<b>Website Design Attitudes</b>				<b>0.90</b>	<b>65%</b>
Provides in-depth information	0.75 <sup>a</sup>	--	--		
NOT waste my time	0.86	0.04	26.17*		
Is quick and easy to complete a	0.84	0.04	25.56*		
Level of personalization is right	0.78	0.04	23.54*		
Selection is well organized	0.80	0.04	24.42*		
<b>Fulfillment/Reliability Satisfaction</b>				<b>0.92</b>	<b>71%</b>
Product received was represented	0.88 <sup>a</sup>	--	--		
Get exactly what you ordered	0.86	0.03	35.42*		
Product is delivered by the time	0.74	0.04	26.90*		
Performance of product lives up to	0.89	0.03	37.95*		
Billing information is accurate	0.84	0.03	33.46*		
<b>Security/Privacy Attitudes</b>				<b>0.96</b>	<b>88%</b>
My privacy is protected	0.93 <sup>a</sup>	--	--		
Feel safe in my transactions	0.97	0.02	56.67*		
Has adequate security features	0.92	0.02	49.34*		

<b>Customer Service Satisfaction</b>			<b>0.94</b>	<b>84%</b>
Respond to customer needs	0.87 <sup>a</sup>	--	--	
Shows a sincere interest in solving	0.94	0.03	40.65*	
Answer inquiries promptly	0.93	0.03	39.81*	
<b>Trust in an E-Retailer</b>			<b>0.96</b>	<b>76%</b>
Operates with integrity	0.92 <sup>a</sup>	--	--	
Is always faithful	0.92	0.02	48.77*	
Can be counted on	0.94	0.02	52.48*	
Can be trusted	0.95	0.02	54.96*	
Is honest and truthful	0.95	0.02	53.92*	
I Have great confidence in	0.90	0.02	44.88*	
Cannot be trusted at times	0.38	0.06	12.05*	
<b>Consumer Transaction Costs (CTC)</b>			<b>0.72</b>	<b>47%</b>
<i>Pre-CTC</i>	0.50 <sup>a</sup>	--	--	
<i>Contemporaneous CTC</i>	0.76	0.13	11.79*	
<i>Post-CTC</i>	0.76	0.15	11.79*	
<b>Future Intentions</b>			<b>0.90</b>	<b>75%</b>
Shop in the future	0.95 <sup>a</sup>	--	--	
Purchase in the future	0.99	0.02	48.22*	
Do more business	0.61	0.04	22.22*	

<b>Consumer Loyalty</b>				<b>0.92</b>	<b>69%</b>
Try to use whenever I need to buy	0.83 <sup>a</sup>	--	--		
Is my first choice	0.89	0.03	32.61*		
Seldom consider switching to	0.83	0.04	29.58*		
Doubt that I would switch	0.84	0.04	30.32*		
Is the best one to do business with	0.78	0.03	26.84*		
<b>Environmental Uncertainty</b>				<b>0.94</b>	<b>76%</b>
The Internet is secure enough	0.87 <sup>a</sup>	--	--		
Laws adequately protect me	0.72	0.04	26.35*		
Technologies adequately protect	0.89	0.03	38.72*		
Security technology makes it safe	0.94	0.03	43.74*		
Is a secure form of doing business	0.92	0.03	41.29*		
<b>Consumer Dependence</b>				<b>0.82</b>	<b>54%</b>
Do NOT have a good alternative	0.79 <sup>a</sup>	--	--		
A competitive <b>ON-LINE</b> store	0.90	0.05	24.40*		
A competitive <b>OFF-LINE</b> retailer	0.65	0.05	19.60*		
Easy to find a good alternative	0.56	0.05	16.45*		

Notes: a. The first  $\lambda$  path for each construct was set to 1; therefore, no SEs or  $t$ -values are provided.

b. 
$$\frac{(\sum \text{Std. Loadings})^2}{(\sum \text{Std. Loadings})^2 + \sum \varepsilon_j}$$

c. 
$$\frac{\sum (\text{Std. Loadings})^2}{\sum (\text{Std. Loadings})^2 + \sum \varepsilon_j}$$

d. \*  $p < 0.001$

reliabilities and variance-extracted estimates were calculated using the formulas shown in the notes of Table 5.4 (Hair et al. 2006). When examining the results of the CFA for each construct, the researcher focused on assessing overall model fit statistics and convergent validity.

Notably, overall model fits were not assessed for: the security/privacy attitudes CFA model, the customer service satisfaction CFA model, the consumer transaction costs CFA model, and the future intentions CFA model because they are three-item indicator models. A three-item indicator model is just-identified (Hair et al. 2006): “Just-identified models do not test a theory; their fit is determined by the circumstance” (p. 784). Accordingly, only convergent validity was assessed for these four CFA models.

Convergent validity refers to the degree to which indicators of a specific construct converge or have in common a high proportion of variance (Hair et al. 2006). In assessing convergent validity, the researcher examined unstandardized factor loadings, standardized factor loadings, construct reliability, and variance-extracted estimates related to each construct. As shown in Table 5.4, all the estimated unstandardized factor loadings are highly significant ( $p < 0.001$  by examining the  $t$ -values) as required for convergent validity. Individual standardized factor loadings, reliability of a construct, and variance-extracted measures were examined when the CFA results were described in detail for each construct below. The guidelines used for assessing them are that: all standardized loadings for a construct should be at least 0.50, and preferably 0.70; the threshold for construct reliability is considered to be 0.70; and variance-extracted

estimates should equal or exceed 50 % (Hair et al. 2006).

## **Website Design Attitudes**

### ***Overall Model Fit***

The key overall model fit statistics of the CFA model of website design attitudes are:  $\chi^2 = 51.68$  with 5 degrees of freedom ( $p = 0.000$ ), Goodness-of-Fit Index (GFI) = 0.98, Adjusted Goodness-of-Fit Index (AGFI) = 0.93, Comparative Fit Index (CFI) = 0.98, and Normed Fit Index (NFI) = 0.98. The  $\chi^2$  result did not indicate that the observed covariance matrix matched the estimated covariance matrix within the sampling variance. However, given the problems associated with using the  $\chi^2$  goodness-of-fit test alone, and the effective sample size of 908, the researcher examined other overall model fit statistics closely as well.

Hair et al. (2006) suggest relying on at least one absolute fit index and one incremental fit index, in addition to the  $\chi^2$  goodness-of-fit test statistic. GFI, an absolute fit index, was 0.98. This value indicated an excellent model fit as it was very close to 1.0 (perfect fit) (Hair, Joseph F., Jr., Rolph E. Anderson, Ronald L. Tatham, and William C. Black 1995). CFI, an incremental fit index, was 0.98. This value exceeded the CFI guideline of 0.90 (Hair et al. 1995). Additionally, the AGFI was 0.93 and the NFI was 0.98. Like the CFI, both the AGFI and the NFI exceeded the fit guideline of 0.90 (Hair et al. 1995). Thus, the CFA results indicated that this measurement model provided a very good fit to the data.

### ***Convergent Validity***

Table 5.4 shows that the standardized factor loadings of the five items used to measure website design attitudes ranged from 0.75 to 0.86, all exceeding the preferable criterion of 0.70 (Hair et al. 1995). The reliability for this construct was 0.90, exceeding the threshold of 0.70 (Nunnally 1978). The variance-extracted estimate was 65%, which exceeded the recommended criterion of 50% (Hair et al. 1995).

Taken together, adequate evidence of convergent validity was provided for this construct. In addition, the model fit the data very well. Thus, all five items were retained for the overall measurement theory model.

### **Fulfillment/Reliability Satisfaction**

#### ***Overall Model Fit***

The results of the CFA indicated that the measurement model of fulfillment/reliability satisfaction provided a very good fit to the data:  $\chi^2 = 21.16$  with 5 degrees of freedom ( $p = 0.001$ ), Goodness-of-Fit Index (GFI) = 0.99, Adjusted Goodness-of-Fit Index (AGFI) = 0.97, Comparative Fit Index (CFI) = 0.995, and Root Mean Square Error of Approximation (RMSEA) = 0.060. The acceptable value range for RMSEA is from 0.05 to 0.08 (Hair et al. 1995).

### ***Convergent Validity***

As shown in Table 5.4, standardized loadings of the five items used to measure

fulfillment/reliability satisfaction ranged from 0.74 to 0.89, all exceeding the preferable criterion of 0.70 (Hair et al. 1995). Construct reliability was 0.92, exceeding the threshold of 0.70 (Nunnally 1978). The variance-extracted measure was 71%, exceeding the recommended criterion of 50% (Hair et al. 1995). Thus, the results of the CFA supported convergent validity for this construct. Moreover, this measurement model fit the data very well. Therefore, all five items were retained for constructing the overall measurement theory model.

### **Security/Privacy Attitudes**

As displayed in Table 5.4, standardized loadings of the three items used to measure security/privacy attitudes ranged from 0.92 to 0.97, all exceeding the preferable criterion of 0.70 (Hair et al. 1995). Construct reliability was 0.96, exceeding the threshold of 0.70 (Nunnally 1978). Variance-extracted measure was 88%, exceeding the recommended criterion of 50 % (Hair et al. 1995). Thus, the CFA results provided adequate evidence of convergent validity for this construct. All three items were retained for the overall measurement theory model.

### **Customer Service Satisfaction**

Standardized loadings of the three items used to measure customer service satisfaction exceeded the ideal criterion of 0.70 (Hair et al. 1995) ranging from 0.87 to 0.94, as presented in Table 5.4. Composite reliability for this construct was 0.94, exceeding the threshold of 0.70 (Nunnally 1978). The variance-extracted estimate was

84%, exceeding the recommended criterion of 50 % (Hair et al. 1995). Taken together, adequate evidence of convergent validity was provided for this construct. Therefore, all three items were retained for constructing the overall measurement theory model.

### **Trust in an E-Retailer**

#### ***Overall Model Fit***

The key overall model fit statistics of the trust CFA model are:  $\chi^2 = 75.87$  with 14 degrees of freedom ( $p = 0.000$ ), Goodness-of-Fit Index (GFI) = 0.98, Adjusted Goodness-of-Fit Index (AGFI) = 0.96, Comparative Fit Index (CFI) = 0.99, and Root Mean Square Error of Approximation (RMSEA) = 0.070. The results indicated that the trust measurement model fit the data very well.

#### ***Convergent Validity***

As shown in Table 5.4, composite reliability for the trust construct was 0.96, exceeding the threshold of 0.70 (Nunnally 1978). The variance-extracted estimate was 76%, exceeding the recommended criterion of 50% (Hair et al. 1995). Except for the reverse coded item, all other six items' standardized loadings exceeded the preferable criterion of 0.70 (Hair et al. 2006), ranging from 0.90 to 0.95. Although the reverse coding item's standardized loading of 0.38 fell below the minimum standardized loading of 0.50 (Hair et al. 2006), this item was retained given the construct's adequate reliability and the variance extracted. In addition, this trust scale is believed to be a good measure to examine the major facets of the construct of trust (Morgan and Hunt 1994).

Taken together, the CFA results supported convergent validity for this construct. In addition, the model provided a very good fit to the data. Therefore, all seven items were retained for the overall measurement theory model.

### **Consumer Transaction Costs (CTC)**

Table 5.4 shows the composite reliability for CTC was 0.72, exceeding the threshold value of 0.70 (Nunnally 1978). Standardized loadings of the three items used to measure CTC ranged from 0.50 to 0.76. All exceeded the minimum standardized loading (0.50) with two of them above the preferable cutoff of 0.70 (Hair et al. 1995). The variance-extracted estimate was 47%. Although it fell slightly below the recommended criterion of 50%, it is considered acceptable given adequate construct reliability and acceptable factor loadings. Taken together, convergent validity of CTC was supported by the CFA results. Therefore, all three items were retained for the overall measurement theory model.

### **Future Intentions**

The results of the initial CFA with four items used to measure future intentions revealed that one item, "I will do less business with this on-line store in the next few years," poorly loaded on future intentions with standardized factor loading of 0.43. This item was eliminated in order to improve internal reliability of the scale.

The results of the final CFA with the remaining three items were shown in Table 5.4. The standardized factor loadings of the three items ranged from 0.61 to 0.99. All

exceeded the minimum standardized loading 0.50 with two of them above the ideal criterion of 0.70 (Hair et al. 1995). Construct reliability was 0.90, exceeding the threshold of 0.70 (Nunnally 1978). The variance-extracted estimate was 75%, exceeding the recommended criterion of 50% (Hair et al. 1995). Thus, adequate evidence of convergent validity was provided for this construct and all three items were retained for the overall measurement theory model.

### **Consumer Loyalty**

The results of the initial CFA with the six items retained from the above exploratory factor analysis to measure loyalty revealed that one item, “I believe that this is my favorite on-line store,” should be eliminated in order to improve the overall model fit of the measurement model. The results of the final CFA with the remaining five items were provided in Table 5.4 and assessed in detail.

### ***Overall Model Fit***

The key overall model fit statistics of the final CFA model are:  $\chi^2 = 322.23$  with 5 degrees of freedom ( $p = 0.000$ ), Goodness-of-Fit Index (GFI) = 0.87, Comparative Fit Index (CFI) = 0.91, Normed Fit Index (NFI) = 0.91, and Incremental Fit Index (IFI) = 0.91. The results indicated that the revised measurement model provided an acceptable fit to the data.

### ***Convergent Validity***

The standardized factor loadings of the remaining five items ranged from 0.78 to 0.89, all exceeding the preferable criterion of 0.70 (Hair et al. 1995). The reliability for this construct was 0.92, exceeding the threshold of 0.70 (Nunnally 1978). The variance-extracted estimate was 69%, exceeding the recommended criterion of 50% (Hair et al. 1995).

Taken together, adequate evidence of convergent validity was provided for this construct. In addition, the model fit the data very well. Therefore, all five items were retained for constructing the overall measurement theory model.

### **Environmental Uncertainty**

#### ***Overall Model Fit***

The key overall model fit statistics of the CFA model of environmental uncertainty are:  $\chi^2 = 87.24$  with 5 degrees of freedom ( $p = 0.000$ ), Goodness-of-Fit Index (GFI) = 0.96, Adjusted Goodness-of-Fit Index (AGFI) = 0.88, Comparative Fit Index (CFI) = 0.98, and Normed Fit Index (NFI) = 0.98. The results indicated that this measurement model fit the data very well.

### ***Convergent Validity***

As shown in Table 5.4, the standardized loadings of the five items used to measure environmental uncertainty ranged from 0.72 to 0.94, all exceeding the preferable

criterion of 0.70 (Hair et al. 1995). The reliability for this construct was 0.94, exceeding the threshold of 0.70 (Nunnally 1978). The variance-extracted estimate was 76%, exceeding the recommended criterion of 50% (Hair et al. 1995).

Taken together, the CFA results supported the convergent validity of this construct. In addition, the model provided a very good fit to the data. Thus, all five items were retained for the overall measurement theory model.

## **Consumer Dependence**

### ***Overall Model Fit***

The key overall model fit statistics of the CFA model of consumer dependence are:  $\chi^2 = 9.64$  with 2 degrees of freedom ( $p = 0.008$ ), Goodness-of-Fit Index (GFI) = 0.995, Adjusted Goodness-of-Fit Index (AGFI) = 0.97, Comparative Fit Index (CFI) = 0.99, and Root Mean Square Error of Approximation (RMSEA) = 0.065. The CFA results indicated that the measurement model fit the data very well.

### ***Convergent Validity***

Table 5.4 shows that reliability for the construct of consumer dependence was 0.82, exceeding the threshold of 0.70 (Nunnally 1978). The variance-extracted estimate was 54%, exceeding the recommended criterion of 50% (Hair et al. 1995). Standardized loadings of the four items ranged from 0.56 to 0.90. All exceeded the minimum standardized loading of 0.50, with two of them exceeding the ideal criterion of 0.70 (Hair

et al. 2006). Although standardized loadings of two items fell below the preferable cutoff of 0.70, they were all retained given the construct's adequate reliability, the variance extracted, and the model's very good fit.

### **Confirmatory Factor Analysis: Overall Measurement Model**

Confirmatory factor analysis (CFA) was conducted on each scale using the online survey sample, as described above. In this section, the overall measurement model was established by performing a CFA via AMOS 6.0 using the maximum likelihood method (Jöreskog and Sörbom 1996).

The results of the scale by scale CFAs were used as the basis for constructing the overall measurement theory model. Specifically, the items retained from scale by scale CFAs in relation to four component attitudes (i.e., website design attitudes, fulfillment/reliability satisfaction, security/privacy attitudes, and customer service satisfaction), consumer trust in an e-retailer, consumer transaction costs, future intentions, and consumer loyalty were used to construct the overall measurement theory model. Notably, the two moderating constructs (i.e., consumer dependence and environmental uncertainty) were not included in the overall measurement theory model, the effects of which will be tested using multiple group analysis. The control variable – offline experience satisfaction also was not included in the overall measurement theory model since this construct was not applicable to the entire sample, but to the multi-channel store sub-sample.

**Table 5.5. Results of the Measurement Model of Latent Variables for the Entire Sample (N = 908)**

Construct/ Indicator	Standardized Factor Loading	Standard Error	t-Value	Construct Reliability <sup>b</sup>	Proportion of Variance Extracted <sup>c</sup>
<b>Website Design Attitudes</b>				<b>0.90</b>	<b>65%</b>
Selection is well organized	0.81 <sup>a</sup>	--	--		
Level of personalization is right	0.77	0.04	26.09*		
Is quick and easy to complete a transaction	0.85	0.03	29.89*		
NOT waste my time	0.84	0.04	29.46*		
Provides in-depth information	0.74	0.04	24.90*		
<b>Fulfillment/Reliability Satisfaction</b>				<b>0.92</b>	<b>71%</b>
Billing information is accurate	0.84 <sup>a</sup>	--	--		
Performance of product lives up to	0.88	0.04	34.37*		
Product is delivered by the time	0.74	0.04	25.98*		
Get exactly what you ordered	0.86	0.03	33.04*		
Product received was represented accurately	0.88	0.03	34.61*		

<b>Security/Privacy Attitudes</b>				<b>0.96</b>	<b>88%</b>
My privacy is protected	0.93 <sup>a</sup>	--	--		
Feel safe in my transactions	0.96	0.02	57.18*		
Has adequate security features	0.92	0.02	50.26*		
<b>Customer Service Satisfaction</b>				<b>0.94</b>	<b>83%</b>
Respond to customer needs	0.88 <sup>a</sup>	--	--		
Shows a sincere interest in solving	0.93	0.03	42.39*		
Answer inquiries promptly	0.92	0.03	42.20*		
<b>Trust in an E-Retailer</b>				<b>0.96</b>	<b>76%</b>
Operates with integrity	0.92 <sup>a</sup>	--	--		
Is always faithful	0.92	0.02	49.10*		
Can be counted on	0.94	0.02	52.98*		
Can be trusted	0.95	0.02	55.35*		
Is honest and truthful	0.95	0.02	54.12*		
I Have great confidence in	0.90	0.02	45.57*		
Cannot be trusted at times	0.38	0.06	12.15*		

<b>Consumer Transaction Costs (CTC)</b>			<b>0.71</b>	<b>47%</b>
<i>Pre-CTC</i>	0.48 <sup>a</sup>	--	--	
<i>Contemporaneous CTC</i>	0.68	0.12	12.01*	
<i>Post-CTC</i>	0.85	0.18	11.38*	
<b>Future Intentions</b>			<b>0.90</b>	<b>75%</b>
Shop in the future	0.95 <sup>a</sup>	--	--	
Purchase in the future	0.98	0.02	62.81*	
Do more business	0.62	0.04	22.64*	
<b>Consumer Loyalty</b>			<b>0.92</b>	<b>69%</b>
Try to use whenever I need to buy	0.84 <sup>a</sup>	--	--	
Is my first choice	0.89	0.03	34.20*	
Seldom consider switching to	0.81	0.04	29.34*	
Doubt that I would switch	0.82	0.04	30.10*	
Is the best one to do business with	0.79	0.03	28.10*	
$\chi^2 (499) = 1963.68$			p-value = 0.000	RMSEA = 0.057
			CFI = 0.95	GFI = 0.88
			NFI = 0.94	

Notes: a. The first  $\lambda$  path for each construct was set to 1; therefore, no SEs or *t*-values are provided.

$$b. \frac{(\sum \text{Std. Loadings})^2}{(\sum \text{Std. Loadings})^2 + \sum \varepsilon_j}$$

$$c. \frac{\sum (\text{Std. Loadings})^2}{\sum (\text{Std. Loadings})^2 + \sum \varepsilon_j}$$

d. \*  $p < 0.001$

The overall measurement theory model was estimated for the entire sample of this study ( $n = 908$ ). The statistical results of the overall measurement model are displayed in Table 5.5, which includes the standardized factor loadings, their associated standard errors and  $t$ -values, construct reliabilities, proportions of the variance extracted for each construct, and the key overall model fit statistics. Next, the results of testing the overall measurement model were examined. Both the overall model fit and the criteria for construct validity were examined.

### **Overall Model Fit**

The key overall model fit statistics are:  $\chi^2 = 1963.68$  with 499 degrees of freedom ( $p = 0.000$ ), Root Mean Square Error of Approximation (RMSEA) = 0.057, Comparative Fit Index (CFI) = 0.95, Goodness-of-Fit Index (GFI) = 0.88, Adjusted Goodness-of-Fit Index (AGFI) = 0.86, Normed Fit Index (NFI) = 0.94, and Non-normed Fit Index (NNFI) [i.e., Tucker-Lewis Index (TLI)] = 0.95. The  $\chi^2$  result did not indicate that the observed covariance matrix matched the estimated covariance matrix within the sampling variance. However, given the problems associated with using the  $\chi^2$  goodness-of-fit test alone, and the effective sample size of 908, the researcher examined other overall model fit statistics closely as well.

As mentioned in the above section, Hair et al. (2006) suggest relying on at least one absolute fit index and one incremental fit index, in addition to the  $\chi^2$  goodness-of-fit test statistic. The value for RMSEA, an absolute fit index, was 0.057. This value fell

into the acceptable value range for RMSEA (i.e., from 0.05 to 0.08) (Hair et al. 1995). CFI, an incremental fit index, was 0.95. Like the RMSEA, this value exceeded the CFI guideline of 0.90 for a model of this complexity and sample size (Hair et al. 1995). Thus, this result supported the overall measurement model as well.

As shown above, the CFA results indicated that the overall measurement model provided an adequate fit to the data. Further, using the RMSEA and CFI satisfied the “rule of thumb” of Hair et al. (2006) that both a badness-of-fit index and a goodness-of-fit index be evaluated. In addition, the other index values also were supportive. For example, the GFI was 0.88, the NFI was 0.94, and the NNFI (i.e., TLI) was 0.95. Like the CFI, both the NFI and the NNFI exceeded the fit guideline of 0.90 (Hair et al. 1995).

### **Construct Validity**

As shown below, in assessing construct validity, the researcher examined convergent, discriminant, and nomological validity. Face validity, as noted in chapter four, was established based upon the content of the corresponding items for each construct.

#### ***Convergent Validity***

In assessing convergent validity, the researcher examined unstandardized factor loadings, standardized factor loadings, construct reliability, and variance-extracted measures related to each construct. As shown in Table 5.5, all estimated unstandardized factor loadings were highly significant ( $p < 0.001$  by examining the  $t$ -values) as required

for convergent validity.

Individual standardized factor loadings, the reliability of a construct, and the variance-extracted measures were also assessed for each construct using the guidelines that: all standardized loadings for a construct should be at least 0.50, and preferably 0.70; the threshold for construct reliability is 0.70; and variance-extracted estimates should equal or exceed 50% (Hair et al. 2006). As displayed in Table 5.5, the lowest loading obtained was 0.38 linking trust to the reverse coded item of trust. Since this trust scale is believed to be a good measure to tap the major facets of trust (Morgan and Hunt 1994), the reverse coded item was retained and recoded to match the direction of the other items. The second lowest loading was 0.48 linking consumer transaction costs (CTC) to item *Pre-CTC*. Although this loading fell slightly below 0.50, it was retained for further analysis since it is believed to tap one of the three major facets of consumer transaction costs. Two other loading estimates fell below the 0.70 standard, but they were all above 0.60, and therefore kept. Construct reliabilities ranged from 0.71 for the construct of consumer transaction costs, to 0.96 for both security/privacy attitudes and consumer trust in an e-retailer. All exceeded 0.70 suggesting adequate reliability (Hair et al. 2006). The variance-extracted estimates ranged from 47% for consumer transaction costs to 88% for security/privacy attitudes. Although the variance extracted of 47% for consumer transaction costs fell slightly below the recommended criterion of 50 %, it was considered acceptable and retained for further analysis based upon its construct reliability of 0.71. The construct reliabilities and the variance-extracted estimates were calculated using the formulas shown in the notes of Table 5.5 (Hair et al. 2006).

Taken together, adequate evidence of convergent validity was provided for the overall measurement model. Although four loading estimates were below 0.70, one of these was just below the 0.70 and the other three did not appear to be significantly harming internal consistency or model fit. The reliability estimates all exceeded 0.70. Except for one (still very close to 50 %), all other variance-extracted measures exceeded 50 %. In addition, the model fit the data relatively well. Thus, all of the items were retained, and convergent validity of the overall measurement model was supported.

### ***Discriminant Validity***

Discriminant validity refers to the degree to which a construct differs from other constructs (Hair et al. 2006). A conservative approach for establishing discriminant validity is to compare the variance-extracted measures for each construct with the squared interconstruct correlations associated with that construct. The variance-extracted percentages should be greater than the squared correlation coefficients. All variance-extracted percentages from Table 5.5 are greater than the corresponding interconstruct squared correlation coefficients in Table 5.2 (above the diagonal). Therefore, this test provided good evidence of discriminant validity of the overall measurement model.

### ***Nomological Validity***

Nomological validity is the extent to which the scale for a construct accurately predicts other constructs in a theoretically based model (Hair et al. 2006). Nomological validity is tested by examining whether or not the constructs in a measurement model are

related to one another. Table 5.2 displays the correlations among the latent constructs in the overall measurement model. The results supported the prediction that all of these constructs were correlated. Specifically, website design attitudes, fulfillment/reliability satisfaction, security/privacy attitudes, customer service satisfaction, consumer trust in an e-retailer, future intentions, and consumer loyalty all had significant positive correlations with one another; and they all had significant negative correlations with consumer transaction costs as theoretically suggested. Therefore, the analysis of the correlations among the latent constructs supported nomological validity of the overall measurement model.

Additionally, according to Anderson and Gerbing (1988), the structural model offers an assessment of nomological validity should the measurement model provide an adequate fit to the data. As shown above, the overall measurement model provided a good fit to the data, so the basic structural model on which it was constructed would provide an assessment of nomological validity. The next section is dedicated to describing the basic structural model that was established upon the overall measurement model.

### **Basic Structural Model**

In the above section, the overall measurement model was tested by conducting a confirmatory factor analysis, and it was shown to have adequate fit and construct validity. The result was validation of a set of construct indicators that enables an examination of relationships among eight important constructs. Since the overall measurement model

was confirmed, the basic structural model of this study can now be tested using structural equation modeling (Anderson and Gerbing 1988).

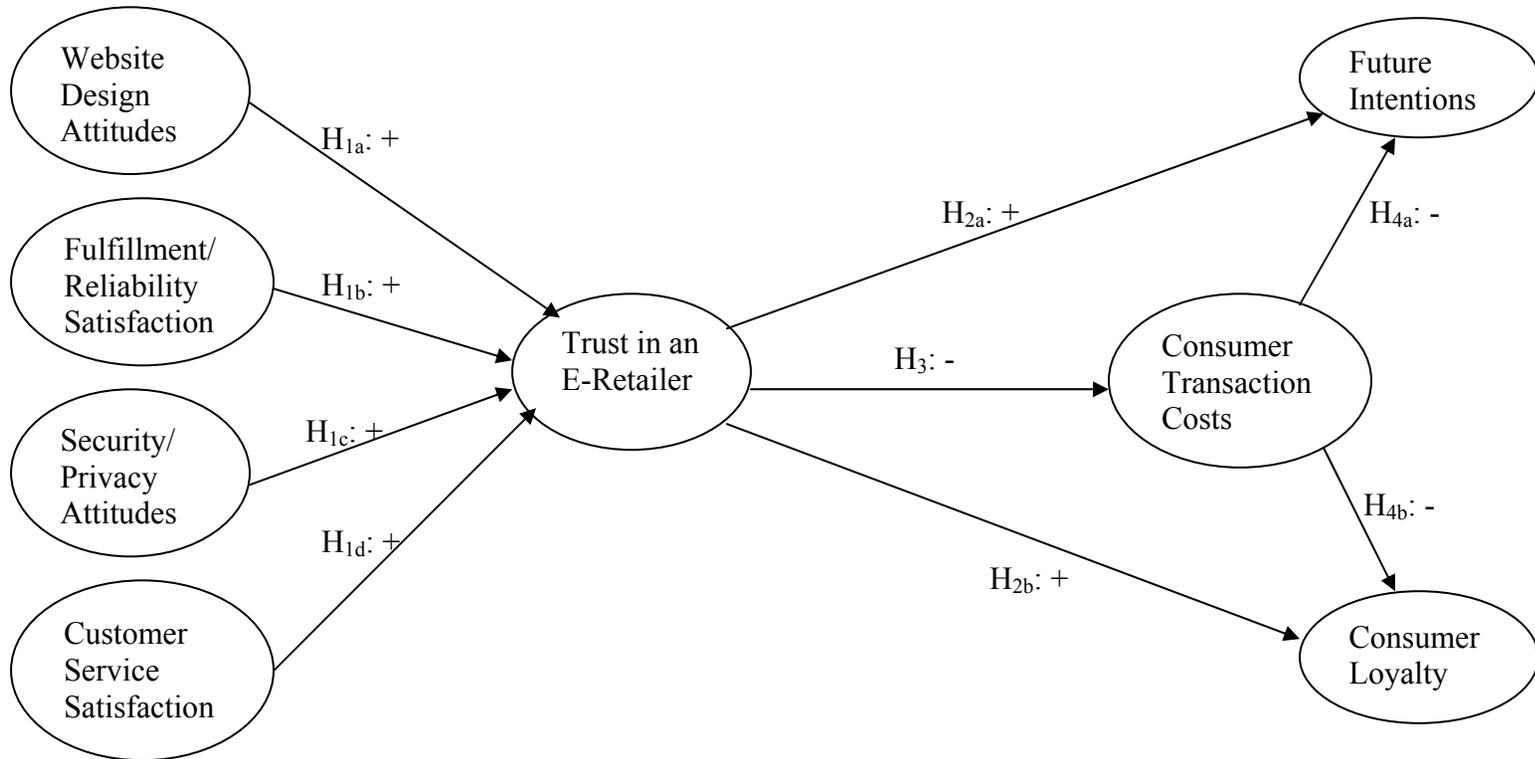
The basic structural model is represented by Figure 5.1, which includes the eight latent constructs of the overall measurement model. Compared to the Research Model shown in Figure 3.1, the basic structural model excludes the control variable (i.e., offline experience satisfaction) and the two moderators (i.e., consumer dependence and environmental uncertainty). The basic structural model is used to test the causal research hypotheses ( $H_1$ ,  $H_{2a}$ ,  $H_{2b}$ ,  $H_3$ ,  $H_{4a}$ , and  $H_{4b}$ ) of this study. Tests of the control variable and moderators will be discussed in the next sections.

The basic structural model was first constrained using the CFA results of testing the overall measurement model (Anderson and Gerbing 1988). Specifically, factor loadings, error terms, and error variance terms were constrained. The basic structural model was then estimated using structural equation modeling (SEM) via AMOS 6.0 for the entire sample ( $n = 908$ ).

### **Validity of the Basic Structural Model**

To assess the validity of the basic structural model, SEM model fit and structural parameter estimates were examined. The key overall model fit statistics, resulting from testing the basic structural model, are:  $\chi^2(572) = 2178.35$ ,  $p\text{-value} = 0.000$ , Root Mean Square Error of Approximation (RMSEA) = 0.056, Comparative Fit Index (CFI) = 0.95, Goodness-of-Fit Index (GFI) = 0.87, Adjusted Goodness-of-Fit Index (AGFI) = 0.87,

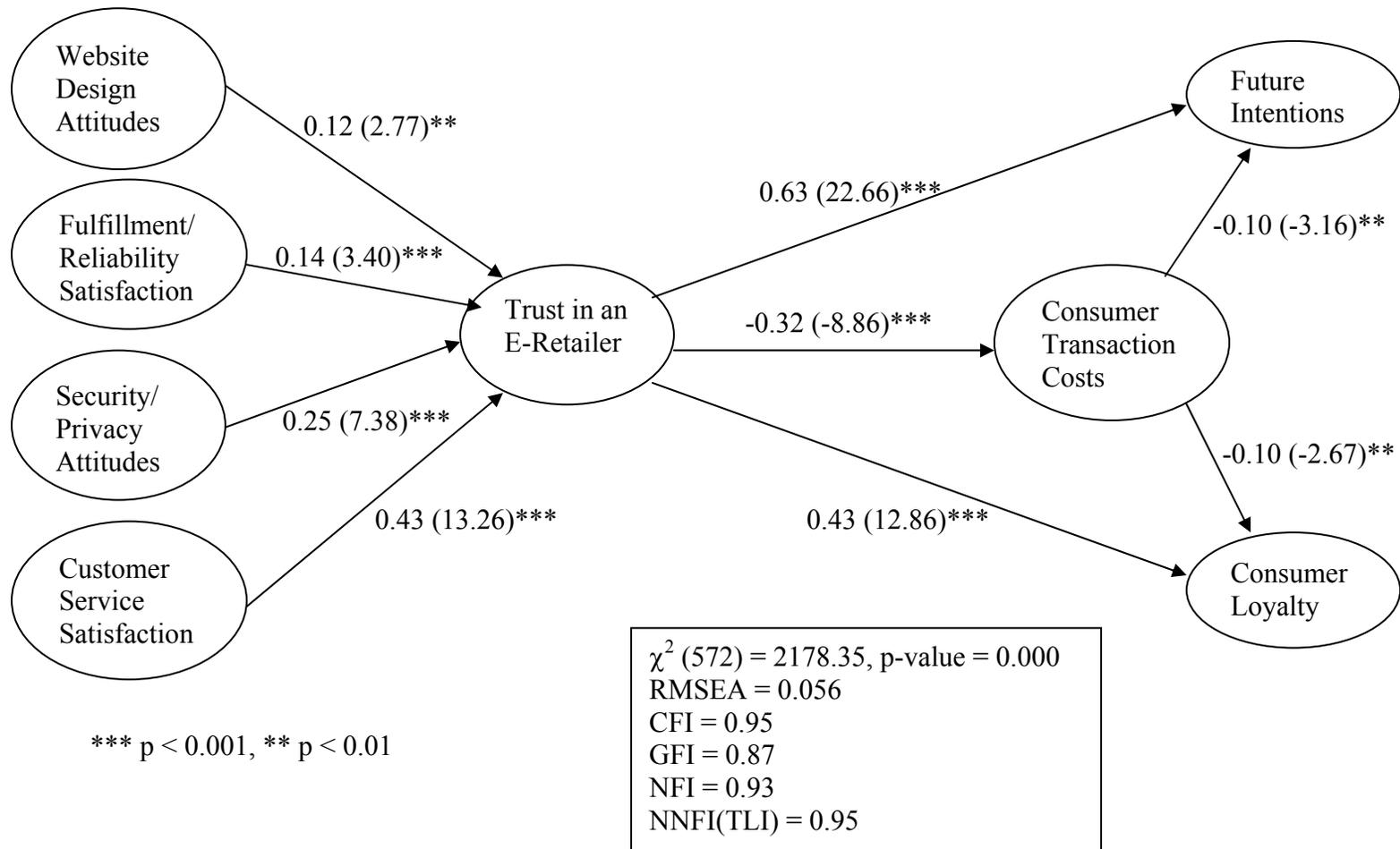
**Figure 5.1. The Research Model for Analysis for the Entire Sample (Used for Testing of H1a-4b)**



Normed Fit Index (NFI) = 0.93, and Non-normed Fit Index (NNFI) [i.e., Tucker-Lewis Index (TLI)] = 0.95. The  $\chi^2$  was 2178.35 with 572 degrees of freedom ( $p = 0.000$ ). The basic structural model CFI was the same as for the CFA at 0.95. The RMSEA was 0.056, which was 0.001 lower than in the CFA. The RMSEA was within a range (i.e., from 0.05 to 0.08) that would be associated with a good fit (Hair et al. 1995). These diagnostics suggested that the basic structural model provided a good overall fit. In addition, the other index values were also supportive: the model GFI was 0.87, which was only 0.01 lower than in the CFA; the model NFI was 0.93, which was also 0.01 lower than in the CFA; and the model NNFI was the same as for the CFA at 0.95. Modification indices were requested and checked. It was found that eight path related modification indices were approximately 4 or greater (Hair et al. 2006). Of the eight corresponding paths, two were not justified by theory. The other six paths, which were justified by theory, were freed one at a time. The changed models were then estimated using structural equation modeling (SEM) via AMOS 6.0 for the entire sample ( $n = 908$ ). However, no SEM results indicate that the model fit was improved significantly by freeing any path. Accordingly, no change is needed for the basic structural model.

Next, the size, direction, and significance of structural parameter estimates were examined to validate the basic structural model. Figure 5.2 shows the resulting completely standardized estimates with  $t$ -values in parentheses. In addition, Table 5.6 displays the structural maximum likelihood (ML) estimates, standardized estimates, standard errors, and  $t$ -values. All nine structural path estimates were significant in the expected direction. Specifically, six paths were significant at  $p < 0.001$  and three were

**Figure 5.2. The Basic Structural Model Estimated (standardized estimates, *t*-values in brackets)**



**Table 5.6. Results of Basic Structural Model ( $N = 908$ ) – Structural Path Estimates, Standard Errors, and  $t$ -Values**

Structural Paths		Unstandardized Estimates	Standardized Estimates	Standard Error	$t$ -Value
Trust in an E-Retailer	<--- Website Design Attitudes	0.13	0.12	0.05	2.77**
Trust in an E-Retailer	<--- Fulfillment/Reliability Satisfaction	0.17	0.14	0.05	3.40***
Trust in an E-Retailer	<--- Security/Privacy Attitudes	0.23	0.25	0.03	7.38***
Trust in an E-Retailer	<--- Customer Service Satisfaction	0.40	0.43	0.03	13.26***
Consumer Transaction Costs	<--- Trust in an E-Retailer	-0.22	-0.32	0.03	-8.86***
Future Intentions	<--- Trust in an E-Retailer	0.66	0.63	0.03	22.66***
Consumer Loyalty	<--- Trust in an E-Retailer	0.61	0.43	0.05	12.86***
Future Intentions	<--- Consumer Transaction Costs	-0.15	-0.10	0.05	-3.16**
Consumer Loyalty	<--- Consumer Transaction Costs	-0.20	-0.10	0.08	-2.67**

Notes: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$

significant at  $p < 0.01$ . These results supported the basic theoretical model of this study. In the next section, the causal research hypotheses (i.e.,  $H_{1a}$  to  $H_{4b}$ ) underlying the basic model were each examined in turn.

### **Test of Causal Research Hypotheses**

#### ***Antecedents of Consumer Trust in an E-Retailer: Component Attitudes***

Hypothesis 1, positing the positive relationships among consumer trust in an e-retailer and four component attitudes antecedents, was supported. Results, as shown in Figure 5.2 and Table 5.6, demonstrated a positive and significant path from website design attitudes to consumer trust in an e-retailer with a standardized path estimate of  $\gamma = 0.12$  ( $p < 0.01$ ), supporting  $H_{1a}$ ; the path from fulfillment/reliability satisfaction to trust was positive and significant with a standardized path estimate of  $\gamma = 0.14$  ( $p < 0.001$ ), supporting  $H_{1b}$ ; the path of security/privacy attitudes predicting trust was positive and significant with a standardized path estimate of  $\gamma = 0.25$  ( $p < 0.001$ ), supporting  $H_{1c}$ ; and the path from customer service satisfaction to trust was also significant in the predicted direction with a standardized path estimate of  $\gamma = 0.43$  ( $p < 0.001$ ), supporting  $H_{1d}$ .

#### ***Consequences of Consumer Trust in an E-Retailer***

As displayed in Figure 5.2 and Table 5.6, both relationships posited in Hypotheses 2 were supported by the results. Consumer trust in an e-retailer positively influenced a consumer's future intentions toward the e-retailer as indicated by the

significant path with a standardized path estimate of  $\beta = 0.63$  ( $p < 0.001$ ), supporting **H<sub>2a</sub>**. Similarly, the predicted positive and direct relationship between trust and a consumer's loyalty toward the e-retailer (**H<sub>2b</sub>**) was supported by the significant path with a standardized path estimate of  $\beta = 0.43$  ( $p < 0.001$ ).

### ***Consumer Transaction Costs as Mediating Variable***

The posited alternative mechanism for the trust – future intentions/loyalty (**H<sub>2</sub>**) relationship, whereby consumer transaction costs mediates the effect of trust on future intentions/loyalty, was supported by the results. **H<sub>3</sub>**, predicting a negative and direct effect of consumer trust in an e-retailer on consumer transaction costs, was supported as indicated by the significant path with a standardized path estimate of  $\beta = - 0.32$  ( $p < 0.001$ ). Both relationships posited in **H<sub>4</sub>** were supported in the predicted direction. Results demonstrated a direct, negative, and significant path from consumer transaction costs to future intentions with a standardized path estimate of  $\beta = - 0.10$  ( $p < 0.01$ ), supporting **H<sub>4a</sub>**. The path from consumer transaction costs to consumer loyalty was also negative and significant with a standardized path estimate of  $\beta = - 0.10$  ( $p < 0.01$ ), supporting **H<sub>4b</sub>**.

### **Variations in Latent Constructs Explained**

As shown in Table 5.7, the squared multiple correlation of trust was 69%, indicating that 69% of the variance in trust was explained by website design attitudes, fulfillment/reliability satisfaction, security/privacy attitudes, and customer service

satisfaction. The squared multiple correlation of consumer transaction costs was 10%, revealing that 10% of the variance in consumer transaction costs (CTC) was explained by trust. The squared multiple correlation of 45% for future intentions indicates that 45% of the variance in future intentions was explained by trust and CTC. And the squared multiple correlation of 22% for consumer loyalty indicates that 22% of the variance in loyalty was explained by trust and CTC.

**Table 5.7. Results of Basic Structural Model – Squared Multiple Correlations**

Latent Construct	Structural Equation Fit ( $R^2$ )
Trust in an E-Retailer ( $\eta_1$ )	0.69
Consumer Transaction Costs ( $\eta_2$ )	0.10
Future Intentions ( $\eta_3$ )	0.45
Consumer Loyalty ( $\eta_4$ )	0.22

### **Direct, Indirect, and Total Effects**

The standardized direct, indirect, and total effects demonstrated by the basic structural model are presented in Table 5.8. The strongest direct effect in the model was the influence of consumer trust in an e-retailer on future intentions. The size of this direct effect was 0.63, which was the standardized path estimate for the relationship. The strongest indirect effect in the model was the influence of customer service satisfaction on future intentions. The size of this indirect effect was 0.28, which was calculated by multiplying the estimated relationship from customer service satisfaction to trust by the estimated relationship from trust to future intentions. The strongest total effect in

**Table 5.8. Direct Effects, Indirect Effects, and Total Effects – the Basic Structural Model ( $N = 908$ )**

<i>Standardized Direct Effects</i>	Website Design Attitudes ( $\xi_1$ )	Fulfillment/Reliability Satisfaction ( $\xi_2$ )	Security/Privacy Attitudes ( $\xi_3$ )	Customer Service Satisfaction ( $\xi_4$ )	Trust in An E-Retailer ( $\eta_1$ )	Consumer Transaction Costs ( $\eta_2$ )
Trust in An E-Retailer ( $\eta_1$ )	0.12	0.14	0.25	0.43		
CTC ( $\eta_2$ )					-0.32	
Future Intentions ( $\eta_3$ )					0.63	-0.10
Consumer Loyalty ( $\eta_4$ )					0.43	-0.10
<i>Standardized Indirect Effects</i>						
Trust in an E-Retailer ( $\eta_1$ )						
CTC ( $\eta_2$ )	-0.04	-0.05	-0.08	-0.14		
Future Intentions ( $\eta_3$ )	0.08	0.09	0.16	0.28	0.03	
Consumer Loyalty ( $\eta_4$ )	0.06	0.06	0.12	0.20	0.03	
<i>Standardized Total Effects</i>						
Trust in an E-Retailer ( $\eta_1$ )	0.12	0.14	0.25	0.43		
CTC ( $\eta_2$ )	-0.04	-0.05	-0.08	-0.14	-0.32	
Future Intentions ( $\eta_3$ )	0.08	0.09	0.16	0.28	0.66	-0.10
Consumer Loyalty ( $\eta_4$ )	0.06	0.06	0.12	0.20	0.46	-0.10

the model was the total effect of trust on future intentions. The size of this total effect was 0.66, which was calculated by summing the indirect and direct effects of trust on future intentions.

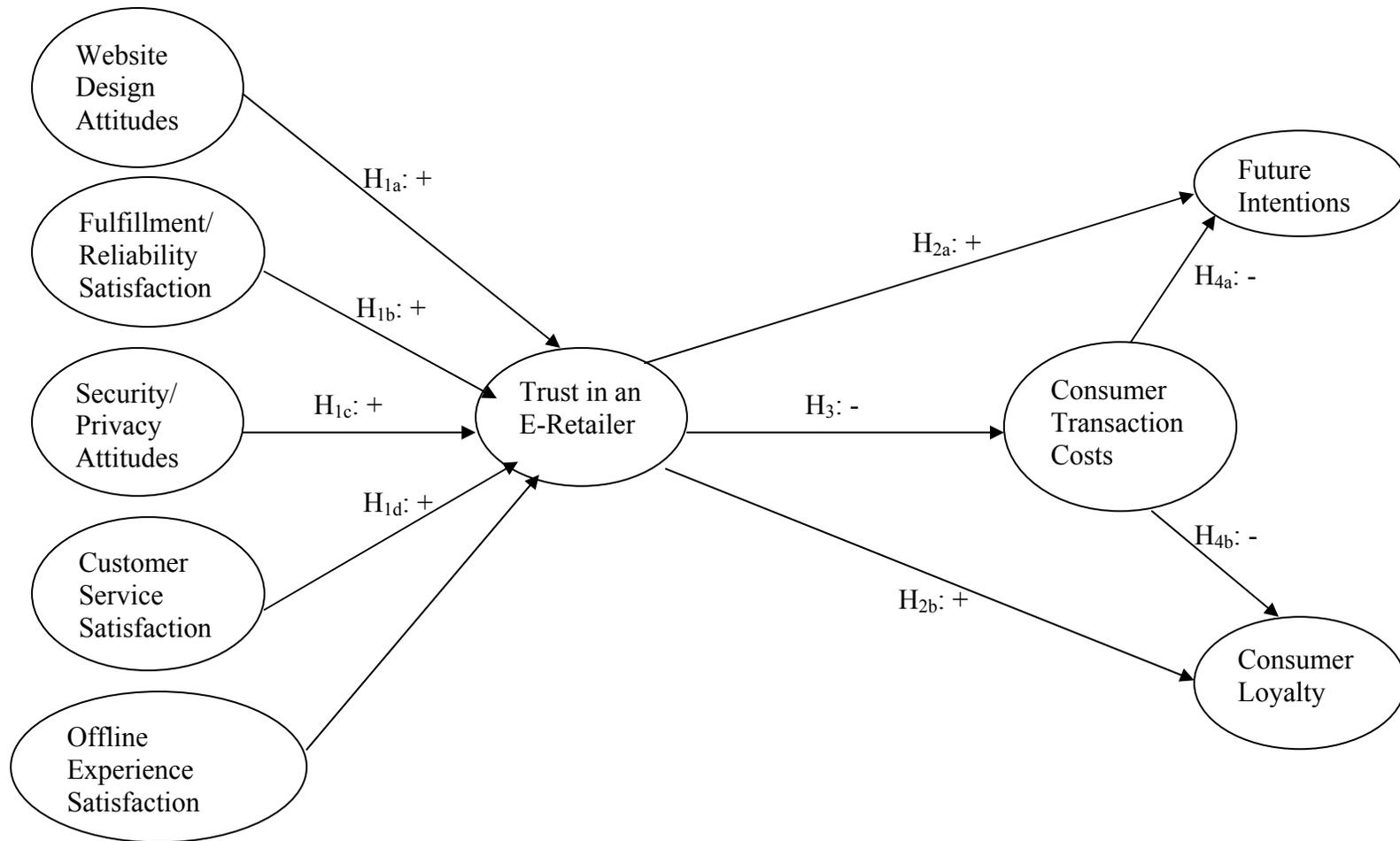
### **Structural Model for Multi-Channel Store Sample: Test of Control Variable**

To test the control variable – offline experience satisfaction in predicting consumer trust in a multi-channel e-retailer, structural equation modeling via AMOS 6.0 was conducted on the structural model shown in Figure 5.3 for the multi-channel store sample. Compared to the basic theoretical model (Figure 5.1) this model added the control variable. Before estimating the structural model for controlling for offline experience satisfaction, multiple-item measures involved in the structural model were constrained using the CFA results of testing the overall measurement model (Anderson and Gerbing 1988). The single-item measure, which was used to measure offline experience satisfaction, was constrained using the method recommended by Hair et al. (2006, p. 857). Specifically, the estimated reliability for this single-item measure was set to 0.7. Then, the relationship between the single-item measure to the latent construct was set to the square root of the estimated reliability, which was 0.7. The corresponding error term was then set to 1 minus the reliability estimate, which was 0.7.

### **Validity of the Structural Model**

In evaluating the validity of the structural model for controlling for offline experience satisfaction, SEM model fit and structural parameter estimates were

**Figure 5.3. The Research Model for Analysis for Multi-Channel Store Sample (Used for Testing of Control Variable)**



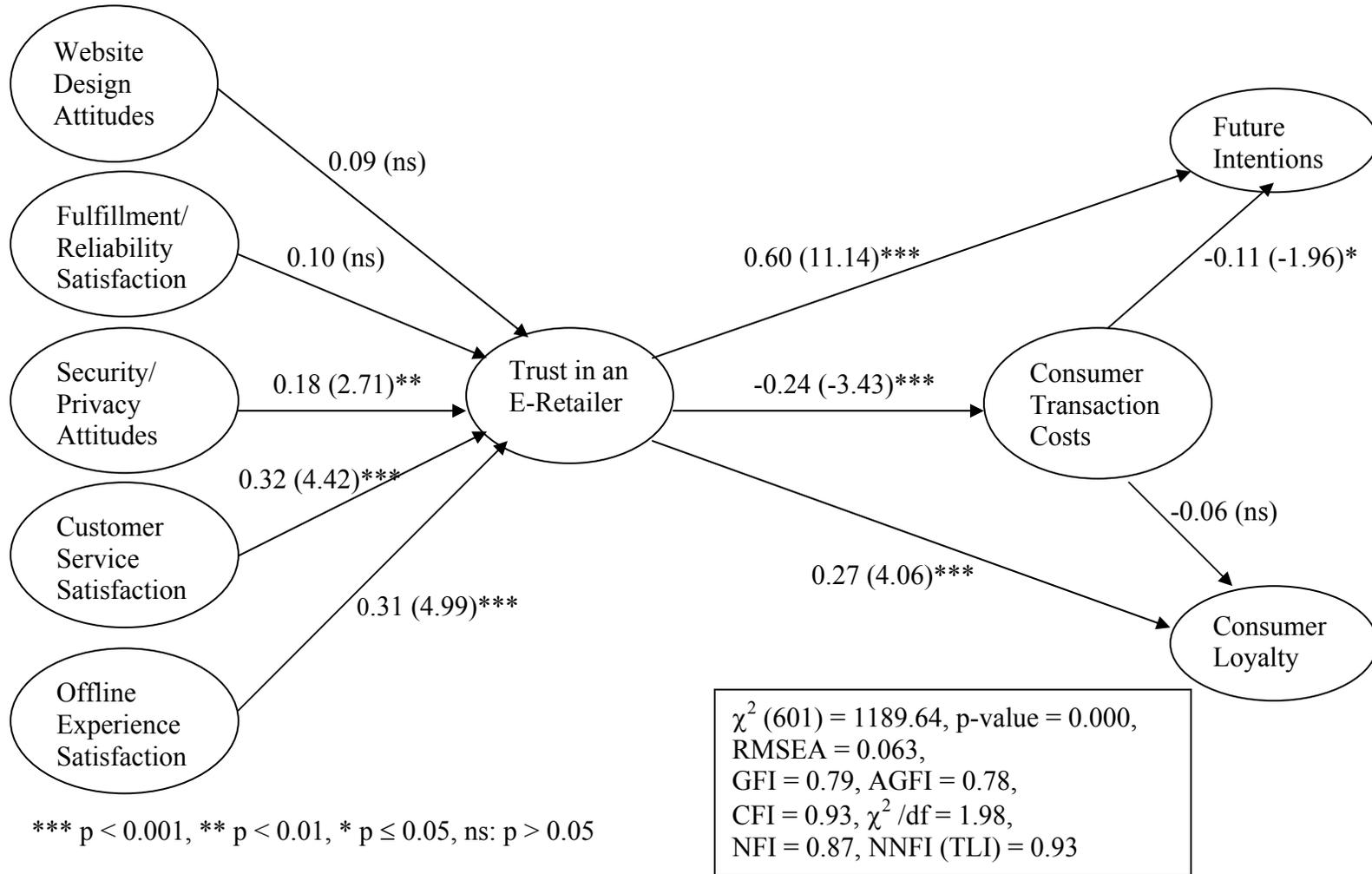
examined. The key overall model fit statistics resulting from testing this structural model are:  $\chi^2 (601) = 1189.64$  with  $p\text{-value} = 0.000$ ,  $\chi^2 / df = 1.98$ , Root Mean Square Error of Approximation (RMSEA) = 0.063, Goodness-of-Fit Index (GFI) = .79, Adjusted Goodness-of-Fit Index (AGFI) = .78, Comparative Fit Index (CFI) = .93, Normed Fit Index (NFI) = .87, and Non-normed Fit Index (NNFI) [i.e., Tucker-Lewis Index (TLI)] = .93.

The value for RMSEA, an absolute fit index, was 0.063. This value fell into the acceptable value range for RMSEA (i.e., from 0.05 to 0.08) (Hair et al. 1995). CFI, an incremental fit index, was 0.93. This value exceeded the CFI guideline of 0.90 for a model of this complexity (Hair et al. 1995). These diagnostics together indicate that the structural model for controlling for offline experience satisfaction fit the data adequately. Further, using the RMSEA and CFI satisfies the “rule of thumb” of Hair et al. (2006) that both a badness-of-fit index and a goodness-of-fit index be assessed. Additionally, other index values also were supportive. For example, the NNFI (i.e., TLI) was 0.93, exceeding the fit guideline of 0.90 (Hair et al. 1995). The value for  $\chi^2 / df$ , a parsimonious fit measure, was 1.98. This value fell into the acceptable value range for  $\chi^2 / df$ , that is, larger than 1.0 but less than 2.0 or 3.0 (Hair et al. 1995). Also, modification indices were requested and checked. It was found that five path related modification indices were approximately 4 or greater (Hair et al. 2006). Of the five corresponding paths, two were not justified by theory. The other three paths, which were justified by theory, were freed one at a time. The changed models were then estimated using

structural equation modeling (SEM) via AMOS 6.0 for the multi-channel store sample ( $n = 249$ ). However, no SEM results indicate that the model fit was improved significantly by freeing any path. Accordingly, no change is needed for the structural model including the control variable.

Next, structural parameter estimates were examined to validate the structural model. As shown in Figure 5.4 and Table 5.9, all but three structural path estimates were significant and in the expected direction. The exceptions were the estimates between website design attitudes and trust ( $H_{1a}$ ), fulfillment/reliability satisfaction and trust ( $H_{1b}$ ), and CTC and loyalty ( $H_{4b}$ ). The relationship between website design attitudes and trust had a maximum likelihood (ML) estimate of 0.08 and a  $t$ -value of 1.11; the relationship between fulfillment/reliability satisfaction and trust had a ML estimate of 0.13 and a  $t$ -value of 1.18; and the relationship between CTC and loyalty had a ML estimate of -0.11 and a  $t$ -value of -0.82. All three  $t$ -values fell below the critical  $t$ -value of 1.96 for a Type I error of 0.05. Therefore, although the three estimates were in the hypothesized direction, they were not significant. The three non-significant paths were then dropped from the original model, and the new model was estimated using structural equation modeling (SEM) via AMOS 6.0 for the multi-channel store sample ( $n = 249$ ). However, no SEM results indicate that the fit was improved significantly by dropping those non-significant paths. Accordingly, no change to the structural model with the control variable is suggested. Overall, given that seven out of ten estimates were consistent with the hypotheses, these results supported the theoretical model for controlling for offline experience satisfaction with a caveat for the three paths that were not supported.

**Figure 5.4. The Research Model with Control Variable Estimated (standardized coefficients, *t*-values in brackets)**



**Table 5.9. Results of the Structural Model for Multi-Channel Store Sample (N = 249) – Structural Path Estimates**

Structural Paths		Unstandardized Estimates	Standardized Estimates	Standard Error	t-Value
Trust in an E-Retailer	<--- Website Design Attitudes	0.08	0.09	0.08	1.11(ns)
Trust in an E-Retailer	<--- Fulfillment/Reliability Satisfaction	0.13	0.10	0.11	1.18(ns)
Trust in an E-Retailer	<--- Security/Privacy Attitudes	0.15	0.18	0.06	2.71**
Trust in an E-Retailer	<--- Customer Service Satisfaction	0.31	0.32	0.07	4.42***
Trust in an E-Retailer	<--- Offline Experience Satisfaction	0.36	0.31	0.07	4.99***
Consumer Transaction Costs	<--- Trust in an E-Retailer	-0.20	-0.24	0.06	-3.43***
Future Intentions	<--- Trust in an E-Retailer	0.63	0.60	0.06	11.14***
Consumer Loyalty	<--- Trust in an E-Retailer	0.43	0.27	0.11	4.06***
Future Intentions	<--- Consumer Transaction Costs	-0.14	-0.11	0.07	-1.96*
Consumer Loyalty	<--- Consumer Transaction Costs	-0.11	-0.06	0.14	-.82(ns)

Notes: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p \leq 0.05$ , ns:  $p > 0.05$

### Test of Causal Research Hypotheses

When controlling for offline experience satisfaction in predicting consumer trust in a multi-channel e-retailer, Hypothesis 1 received mixed support. As shown in Figure 5.4 and Table 5.9, the effects of security/privacy attitudes (**H<sub>1c</sub>**) and customer service satisfaction (**H<sub>1d</sub>**) on consumer trust in a multi-channel e-retailer were both supported with standardized path estimates of  $\gamma = 0.18$  ( $p < 0.01$ ) and  $\gamma = 0.32$  ( $p < 0.001$ ), respectively. The relationship between website design attitudes and trust (**H<sub>1a</sub>**) was in the predicted direction, as was the relationship between fulfillment/reliability satisfaction and trust (**H<sub>1b</sub>**); however, the structural model revealed nonsignificant paths ( $p > 0.05$ ) for both relationships. As for offline experience satisfaction, its effect on trust was supported as expected with standardized path estimate of  $\gamma = 0.31$  ( $p < 0.001$ ).

When controlling for offline experience satisfaction in predicting trust, Hypotheses 2 were supported by the results. Trust positively affected future intentions as indicated by the significant path with standardized path estimate of  $\beta = 0.60$  ( $p < 0.001$ ), supporting **H<sub>2a</sub>**. Similarly, the predicted positive and direct relationship between trust and loyalty (**H<sub>2b</sub>**) was supported by the significant path with standardized path estimate of  $\beta = 0.27$  ( $p < 0.001$ ).

When controlling for offline experience satisfaction in predicting trust, **H<sub>3</sub>** and **H<sub>4a</sub>** were supported while **H<sub>4b</sub>** was rejected. Specifically, **H<sub>3</sub>**, predicting a negative and direct effect of trust on CTC, was supported as indicated by the significant path with

standardized path estimate of  $\beta = -0.24$  ( $p < 0.001$ ). The effect of CTC on future intentions (**H<sub>4a</sub>**) was supported with the standardized path estimate of  $\beta = -0.11$  ( $p \leq 0.05$ ). Although the relationship between CTC and loyalty (**H<sub>4b</sub>**) was in the predicted direction, the structural model revealed a nonsignificant path ( $p > .05$ ) for this relationship. Accordingly, the posited alternative mechanism for the trust – future intentions relationship, whereby CTC mediates the effect of trust on future intentions, was supported by the results of the estimated structural model while the posited alternative mechanism for the trust – loyalty relationship was not supported.

#### **Variances in Latent Constructs Explained**

As shown in Table 5.10, the squared multiple correlation of trust was 0.67, indicating that 67% of the variance in trust was explained by website design attitudes, fulfillment/reliability satisfaction, security/privacy attitudes, customer service satisfaction, and offline experience satisfaction. Similarly, 6% of the variance in consumer transaction costs (CTC) was explained by trust; 40% of the variance in future intentions was explained by trust and CTC; and 8% of the variance in loyalty was explained by trust and CTC.

**Table 5.10. Results of the Structural Model for Multi-Channel Store Sample – Squared Multiple Correlations**

Latent Construct	Structural Equation Fit ( $R^2$ )
Trust in an E-Retailer ( $\eta_1$ )	0.67
Consumer Transaction Costs ( $\eta_2$ )	0.06
Future Intentions ( $\eta_3$ )	0.40
Consumer Loyalty ( $\eta_4$ )	0.08

### **Direct, Indirect, and Total Effects**

The standardized direct, indirect, and total effects demonstrated by the estimated structural model for controlling for offline experience satisfaction are presented in Table 5.11. The strongest direct effect in the model was the effect of trust on future intentions. The size of this direct effect was 0.60, which was the standardized path estimate for the relationship. The strongest indirect effect in the model was the effect of offline experience satisfaction on future intentions. The size of this indirect effect was 0.24, which was calculated by multiplying the estimated relationship from offline experience satisfaction to trust and the estimated relationship from trust to future intentions. The strongest total effect in the model was the total effect of trust on future intentions. The size of this total effect was 0.62, which was calculated by summing the indirect and direct effects of trust on future intentions.

**Table 5.11. Direct, Indirect, and Total Effects – the Structural Model for Multi-Channel Store Sample ( $N = 249$ )**

<i>Standardized Direct Effects</i>	Website Design Attitudes ( $\xi_1$ )	Fulfillment/Reliability Satisfaction ( $\xi_2$ )	Security/Privacy Attitudes ( $\xi_3$ )	Customer Service Satisfaction ( $\xi_4$ )	Offline Experience Satisfaction ( $\xi_5$ )	Trust in An E-Retailer ( $\eta_1$ )	Consumer Transaction Costs ( $\eta_2$ )
Trust in An E-Retailer ( $\eta_1$ )	0.09	0.10	0.18	0.32	0.31		
CTC ( $\eta_2$ )						-0.24	
Future Intentions ( $\eta_3$ )						0.60	-0.11
Consumer Loyalty ( $\eta_4$ )						0.27	-0.06
<i>Standardized Indirect Effects</i>							
Trust in an E-Retailer ( $\eta_1$ )							
CTC ( $\eta_2$ )	-0.02	-0.03	-0.03	-0.06	-0.07		
Future Intentions ( $\eta_3$ )	0.06	0.08	0.10	0.21	0.24	0.03	
Consumer Loyalty ( $\eta_4$ )	0.04	0.06	0.07	0.14	0.16	0.02	
<i>Standardized Total Effects</i>							
Trust in an E-Retailer ( $\eta_1$ )	0.09	0.10	0.18	0.32	0.31		
CTC ( $\eta_2$ )	-0.02	-0.02	-0.04	-0.08	-0.07	-0.24	
Future Intentions ( $\eta_3$ )	0.06	0.06	0.11	0.20	0.19	0.62	-0.11
Consumer Loyalty ( $\eta_4$ )	0.03	0.03	0.05	0.09	0.09	0.28	-0.06

### **Test of Control Variable: Multiple Regression Analysis**

The above section delineates how the control variable (offline experience satisfaction) was tested using SEM for the multi-channel store sample. Unfortunately, there was one limitation involved in using SEM to test the control variable. The limitation lies in the relatively small size of the multi-channel e-retailer sample ( $n = 249$ ). Actually, to adequately assess the structural model with the control variable (Figure 5.3), the minimum number of respondents required is 350 [Calculation:  $350 = 5 \text{ respondents} \times 70 \text{ parameters}$ ;  $70 \text{ parameters} = (3 \text{ consumer transaction costs items} + 16 \text{ component attitudes items} + 7 \text{ trust items} + 3 \text{ future intentions items} + 5 \text{ loyalty items} + 1 \text{ offline experience item}) \times 2$  (1 measurement error for each item)]. To address this limitation, multiple regression analysis was used to re-test the control variable.

Diagnostic statistics were first run to test for multicollinearity among: website design attitudes, fulfillment/reliability satisfaction, security/privacy attitudes, customer service satisfaction, and offline experience satisfaction using the multi-channel store sample ( $n = 249$ ). The variance inflation factor (VIF) for the relevant regression model ranged from 1.26 to 2.54 and the tolerance values ranged from 0.39 to 0.80. Because no VIF value exceeded 4 and the tolerance values all were greater than 0.10, it was concluded that multicollinearity was not problematic (Hair et al., 1995).

Since it is hypothesized that the four online component attitudes and offline experience satisfaction all are important in predicting consumer trust in a multi-channel e-retailer, simultaneous multiple regression was conducted. The results are reported in

Table 5.12.

**Table 5.12. Summary of Multiple Regression Analysis for Predictors of Consumer Trust in A Multi-Channel E-Retailer**

Predictor Variable	Proposed Effect	Standardized	
		Coefficient	t-value (p-level)
Website design attitudes	+	0.08	1.17 (> 0.05)
Fulfillment/reliability satisfaction	+	0.15	2.28 (< 0.05)
Security/privacy attitudes	+	0.18	2.84 (< 0.01)
Customer service satisfaction	+	0.33	5.05 (< 0.001)
Offline experience satisfaction	+	0.22	4.85 (< 0.001)
$F_{\text{model}}$ (p-level)			70.06 (< 0.001)
R ( $R^2$ adjusted)			0.77 (0.58)

The data in Table 5.12 show that the overall model was significant ( $F = 70.06$ ,  $p < 0.001$ ), which indicates that one or more of the five factors is a significant predictor of consumer trust in a multi-channel e-retailer when used in this combination. The table also shows that the multiple correlation coefficient, using all of the five predictors simultaneously, is 0.77 and the adjusted  $R^2$  is 0.58, meaning that 58% of the variance in trust can be predicted from the five variables (website design attitudes, fulfillment/reliability satisfaction, security/privacy attitudes, customer service satisfaction, and offline experience satisfaction) combined. Additionally, Table 5.12 shows that the standardized regression coefficient for website design attitudes is not statistically significant ( $\beta = 0.08$ ,  $t = 1.17$ ,  $p > 0.05$ ). However, the coefficients for

fulfillment/reliability satisfaction ( $\beta = 0.15$ ,  $t = 2.28$ ,  $p < 0.05$ ), security/privacy attitudes ( $\beta = 0.18$ ,  $t = 2.84$ ,  $p < 0.01$ ), customer service satisfaction ( $\beta = 0.33$ ,  $t = 5.05$ ,  $p < 0.001$ ) and offline experience satisfaction ( $\beta = 0.22$ ,  $t = 4.85$ ,  $p < 0.001$ ) all are statistically significant. Furthermore, their signs are also in the direction that was expected. Therefore, when controlling for offline experience satisfaction,  $H_{1b}$ ,  $H_{1c}$ , and  $H_{1d}$  were supported while  $H_{1a}$  was not.

### **Multiple Group Analyses: Test of Moderators**

Multigroup SEM was used to test the moderating effects of consumer dependence and environmental uncertainty (i.e.,  $H_{5a}$  to  $H_{6b}$ ). Specifically, the *basic* structural model (Figure 5.1) was used with both groups of consumer dependence and of environmental uncertainty for the entire sample ( $n = 908$ ). The two groups of consumer dependence represent two different levels of consumer dependence on a specific e-retailer for securing a specific physical product: low-dependence and high-dependence. To divide the entire sample into a low-dependence group and a high-dependence group, the sum of the four items used to measure consumer dependence was computed and then the mean of the sum was calculated. Observations with the sum of the four items lower than the mean were grouped into the low-dependence group while observations with the sum higher than the mean were grouped into the high-dependence group. The same method was employed to divide the entire sample into a low environmental uncertainty group and a high environmental uncertainty group, which represent two different levels of environmental uncertainty perceived by online shoppers. The multigroup SEM used to

test each moderating effect is described in detail below.

### **Consumer Dependence as Moderating Variable**

#### ***Moderating Effect of Consumer Dependence on Trust → Future intentions***

To test the moderating effect of consumer dependence on the relationship between trust and future intentions ( $H_{5a}$ ), a two-group *basic* structural model using the two groups of consumer dependence was established (Hair et al. 2006). Initially, the two-group basic structural model was tested allowing all of the hypothesized relationships, including the path of trust → future intentions, to be estimated freely in both groups. Next, a second model was tested adding a constraint fixing the path of trust → future intentions to be equal in both groups. The multigroup SEM fit results for each model are shown in Table 5.13.

**Table 5.13. Multigroup SEM Results of Testing the Effect of Consumer Dependence on Trust → Future Intentions**

	Totally Free (TF)	Trust → Intentions Is Equal	$\Delta\chi^2$
$\chi^2$	2930.20	2934.88	4.68
<i>df</i>	1024	1025	1
<b>CFI</b>	0.94	0.94	
<b>RMSEA</b>	0.045	0.045	

The CFI was unchanged to two decimal places. The RMSEA was the same for both models. The  $\Delta\chi^2 = 4.68$  with 1 *df* and was significant ( $p < 0.05$ ). Given the significant  $\Delta\chi^2$  value, the conclusion is that constraining the path of trust  $\rightarrow$  future intentions to be equal between the two dependence groups produced a worse fit. Therefore, the totally free (TF) model in which the trust  $\rightarrow$  future intentions relationship was freely estimated in both groups was supported. This result indicated that consumer dependence moderated the relationship between trust and future intentions. Thus, **H<sub>5a</sub>** was supported.

Looking at the unstandardized parameter estimates for the TF model results, it was found that the trust  $\rightarrow$  future intentions relationship was significant in both groups ( $p < 0.001$ ). Specifically, the relationship was greater for the high-dependence group with a completely standardized estimate of 0.69 as compared to a completely standardized estimate of 0.60 for the low-dependence group.

#### ***Moderating Effect of Consumer Dependence on Trust $\rightarrow$ Loyalty***

To test the moderating effect of consumer dependence on the relationship between trust and loyalty (**H<sub>5b</sub>**), the totally free (TF) basic structural model first estimated the identical structural model in both groups simultaneously. Next, a model was tested constraining the trust  $\rightarrow$  loyalty relationship to be equal in both groups. The fit results for each model are provided in Table 5.14.

**Table 5.14. Multigroup SEM Results of Testing the Effect of Consumer Dependence on Trust → Loyalty**

	Totally Free (TF)	Trust → Intentions Is Equal	$\Delta\chi^2$
$\chi^2$	2930.20	2936.22	6.02
<i>df</i>	1024	1025	1
<b>CFI</b>	0.94	0.94	
<b>RMSEA</b>	0.045	0.045	

Again, the CFI was unchanged to two decimal places and the RMSEA was the same for both models. The  $\Delta\chi^2 = 6.02$  with 1 *df* and was significant ( $p < 0.05$ ). Given the significant  $\Delta\chi^2$  value, the conclusion is that the model had a better fit when the trust → loyalty relationship was allowed to be different based on consumer dependence. This result indicated that consumer dependence moderated the relationship between trust and loyalty. Hence, **H<sub>5b</sub>** was supported.

By examining the unstandardized parameter estimates for the TF model results, it was found that the trust → loyalty relationship was significant in both groups ( $p < 0.001$ ). Specifically, the relationship was greater for the high-dependence group with a completely standardized estimate of 0.58 as compared to a completely standardized estimate of 0.35 for the low-dependence group.

## Environmental Uncertainty as Moderating Variable

### *Moderating Effect of Environmental Uncertainty on Trust → Future intentions*

To test the moderating effect of environmental uncertainty on the relationship between trust and future intentions ( $H_{6a}$ ), a two-group basic structural model was set up using the two groups of environmental uncertainty. Initially, the two-group basic structural model was tested allowing all the hypothesized relationships, including the path of trust → future intentions, to be estimated freely in both groups. Next, a second model was tested adding a constraint fixing the path of trust → future intentions to be equal in both groups. The fit results for each model are presented in Table 5.15.

**Table 5.15. Multigroup SEM Results of Testing the Effect of Environmental Uncertainty on Trust → Future Intentions**

	Totally Free (TF)	Trust → Intentions Is Equal	$\Delta\chi^2$
$\chi^2$	2987.55	2991.75	4.20
<i>df</i>	1024	1025	1
<b>CFI</b>	0.93	0.93	
<b>RMSEA</b>	0.046	0.046	

Both the CFI and the RMSEA were unchanged. The  $\Delta\chi^2 = 4.20$  with 1 *df* and was significant ( $p < 0.05$ ). Given the significant  $\Delta\chi^2$  value, the conclusion is that constraining the path of trust → future intentions to be equal between the two uncertainty groups produced a worse fit. Thus, the TF model in which the trust → future intentions

relationship was freely estimated in both groups was supported. This result indicated that environmental uncertainty moderated the relationship between trust and future intentions. Therefore,  $H_{6a}$  was supported.

The unstandardized parameter estimates for the TF model results were examined and it was found that the trust  $\rightarrow$  future intentions relationship was significant in both groups ( $p < 0.001$ ). Specifically, the relationship was greater for the low uncertainty group with a completely standardized estimate of 0.65 as compared to a completely standardized estimate of 0.59 for the high uncertainty group.

***Moderating Effect of Environmental Uncertainty on Trust  $\rightarrow$  Loyalty***

To test the moderating effect of environmental uncertainty on the relationship between trust and loyalty ( $H_{6b}$ ), the totally free (TF) basic structural model first estimated the identical structural model in both groups simultaneously. Next, a model was tested constraining the trust  $\rightarrow$  loyalty relationship to be equal in both groups. The fit results for each model are shown in Table 5.16.

**Table 5.16. Multigroup SEM Results of Testing the Effect of Environmental Uncertainty on Trust  $\rightarrow$  Loyalty**

	Totally Free (TF)	Trust $\rightarrow$ Intentions Is Equal	$\Delta\chi^2$
$\chi^2$	2987.55	2988.87	1.32
<i>df</i>	1024	1205	1
<b>CFI</b>	0.93	0.93	
<b>RMSEA</b>	0.046	0.046	

Again, both the CFI and the RMSEA were unchanged. However, the  $\Delta\chi^2$  was not significant with the  $\Delta\chi^2$  value of 1.32 ( $p > 0.10$ ). Since the  $\Delta\chi^2$  was insignificant, constraining the trust  $\rightarrow$  loyalty relationship to be equal between the two uncertainty groups did not hurt model fit. Therefore, the model with equality constraint was supported instead of the TF model. This result indicated that the moderating effect of environmental uncertainty on the relationship between trust and loyalty was not supported. Thus, **H<sub>6b</sub>** was rejected. The conclusion is that the trust  $\rightarrow$  loyalty relationship was the same among either low uncertainty perception or high uncertainty perception online shoppers.

### Chapter Summary

Except for one, all 12 research hypotheses proposed in this study were supported by the results of the data analysis. Specifically, the estimated basic structural model for the entire sample supported all 9 causal research hypotheses. The estimated structural model for controlling for offline experience satisfaction for the multi-channel store sample provided a stronger test of the basic theoretical model regarding the causal research hypotheses. Multigroup SEM supported three moderating hypotheses out of the four proposed. Accordingly, overall, the data collected from the online survey provided very good support for the proposed research model of consumer trust in an e-retailer with a caveat for the moderating effect of environmental uncertainty on the relationship between trust and loyalty. In the concluding chapter, the statistical results from chapter five will be interpreted in greater detail.

## CHAPTER SIX

### DISCUSSION AND CONTRIBUTIONS

This research aimed to develop an integrative model of consumer trust in an e-retailer for understanding post transaction trust mechanisms in consumer-e-retailer exchange relationships and to empirically test the model using a large-scale sample randomly selected from real-world online consumers. Prior research has not examined three important elements related to consumer trust: (1) trust mechanisms in consumer-e-retailer exchange relationships from a perspective directed toward retaining customers, which is the new mentality of doing business online, (2) the reason trust is always advocated as the single most important factor for consumers choosing an online supplier (Bain & Company/Mainspring 2000; Reichheld, Markey, and Hopton 2000; Urban, Sultan, and Qualls 2000; Vatanasombut, Stylianou, and Igarria 2004), and (3) the factors that confound the effects of trust on its outcome variables. Thus, this research can directly answer many of the questions that have remained largely unexplored but that hold significant interest for marketing scholars and managers: Does trust matter in consumer-e-retailer exchanges? What drives consumer trust in an e-retailer after a consumer has had some transactional experience(s) with the e-retailer? What are the key factors that are impacted by trust but are related to customer retention? What are the underlying mechanisms linking trust and online consumers' decision-making regarding a transaction or relational exchanges? And what factors moderate the effect of trust? This research provides clear and compelling answers to these questions.

In this concluding chapter, the findings and implications for marketing theory and practice will be provided. Specifically, this chapter will first provide a further discussion of the statistical results presented in chapter five. The contributions of the study to marketing theory and practice are presented next. Finally, the limitations of this research, as well as potential areas for future research are discussed.

### **Discussion**

This section of the chapter further discusses the results of the empirical tests of the hypotheses presented in chapter five. First, the results of analyzing the overall sample (both pure and multi-channel e-retailers) regarding testing the thirteen hypotheses proposed by this study are discussed in detail. Following that, the discussion of the multiple regression analysis results of analyzing the multi-channel e-retailer sample regarding testing the control variable (i.e., offline experience satisfaction) is provided.

#### **Trust Mechanisms in the Relationship between Consumer and E-Retailer (*Pure and Multi-Channel*)**

##### ***Antecedents of Consumer Trust in an E-Retailer: Component Attitudes***

Unlike much online B2C trust research which focuses on mechanisms of *initial* formation of trust in a website, this study examined consumers' *entire* online purchase experience and proposes that a consumer's attitudes toward the key components of online purchase experience are the actual sources of consumer trust in an e-retailer (**H<sub>1</sub>**). Specifically, website design attitudes (**H<sub>1a</sub>**), fulfillment/reliability satisfaction (**H<sub>1b</sub>**),

security/privacy attitudes ( $H_{1c}$ ), and customer service satisfaction ( $H_{1d}$ ) positively influence consumer trust in an e-retailer.

The results of analyzing the overall sample (both pure and multi-channel e-retailers) support the hypotheses that consumer trust in an e-retailer is positively influenced by website design attitudes ( $\gamma = 0.12, p < 0.01$ ), fulfillment/reliability satisfaction ( $\gamma = 0.14, p < 0.001$ ), security/privacy attitudes ( $\gamma = 0.25, p < 0.001$ ), and customer service satisfaction ( $\gamma = 0.43, p < 0.001$ ). These results suggest that the four key components of a consumer's own online purchase experiences with an e-retailer – website design, fulfillment/reliability, security/privacy, and customer service – had played significant roles in driving consumer trust. These findings are consistent with Yoon (2002) and Walczuch and Lundgren (2004), which propose that a consumer's own experience is the antecedent of online trust. These findings are also consistent with global evaluations theory, which posits that global evaluations (e.g. trust) encapsulate a consumer's attitude or satisfaction with various facets of a marketing organization (Garbarino and Johnson 1999). The findings also cohere with Wolfinbarger and Gilly (2003) who find that the four key components are strongly predictive of such global evaluations as global service quality, customer satisfaction, and loyalty intentions.

Further, analyses of the relative strengths of the four component attitudes affecting trust indicate that customer service satisfaction was the strongest predictor of trust judgments ( $\gamma = 0.43, p < 0.001$ ). Security/privacy attitudes ( $\gamma = 0.25, p < 0.001$ ) and fulfillment/reliability satisfaction ( $\gamma = 0.14, p < 0.001$ ) were the second and third

strongest predictors of trust, respectively. Website design attitudes were the weakest predictor of trust with the magnitude of its effect ( $\gamma = 0.12, p < 0.01$ ) considerably less than that of the effect of any of the other three factors. Of the findings, perhaps the most surprising is the role of website design, which was least strongly related to consumer judgments concerning the trustworthiness of an online store. This finding suggests that the focus of online B2C trust studies – consumers' web experiences (Sultan, Urban, Shankar, and Bart 2002; Shankar, Urban, and Sultan 2002; Yoon 2002; Grabner-Krauter and Kaluscha 2003) – should be extended to consumers' entire online purchase experiences including not only consumers' web experience but also their experience outside the web.

Additionally, when comparing the results of this study regarding the impact of the four component attitudes on trust with their impact on global service quality, customer satisfaction, and loyalty intentions found by Wolfinbarger and Gilly (2003), the researcher finds that the four components differed in their impact on the various global evaluations. This finding is consistent with Garbarino and Johnson (1999) who find that the weightings of component attitudes were different for different global evaluations. Interestingly, in Wolfinbarger and Gilly's study (2003), website design and fulfillment/reliability were more salient to customers when judging global quality, satisfaction and loyalty intentions. In contrast, in this study, customer service and security/privacy were more salient to customers when judging trustworthiness. These findings suggest that today's online consumers weigh customer service and security/privacy more than website design and fulfillment/reliability when making overall

evaluations of an online store. As e-commerce expands and e-retailers' ability of doing business online develops, consumers are more confident in, and more comfortable with, using the Internet for transacting. Consumers do not appear to be concerned with website design and fulfillment/reliability, as they once were. They tend to trust the e-retailers who provide superior customer service and who can protect their privacy and security.

### ***Consequences of Consumer Trust in an E-Retailer: Future Intentions and Loyalty***

Unlike much prior online trust research, this study took a new perspective to examine trust mechanisms in consumer-e-retailer exchanges: a perspective directed toward relational exchanges instead of discrete transactions. Consequently, this study proposed future intentions and consumer loyalty (constructs closely related to customer retention) as the direct consequences of consumer trust in an e-retailer.

The results of analyzing the overall sample (both pure and multi-channel e-retailers) support the positive relationship between trust and consumers' future intentions toward an e-retailer ( $\beta = 0.63, p < 0.001$ ), which is **H<sub>2a</sub>**. The results suggest that trust is intrinsically beneficial. If a consumer trusts an e-retailer, it is very likely that he/she will continue to patronize the e-retailer. This finding is consistent with global evaluations theory, which posits that global evaluations (e.g., trust) guide consumer decision-making regarding remaining with or defecting from a marketing organization (Garbarino and Johnson 1999). It also coheres with the findings from past empirical research (Doney and Cannon 1997; Garbarino and Johnson 1999; Sultan, Urban, Shankar, and Bart 2002; Yoon 2002) which find that trust affects future intentions.

Likewise, the results support the positive relationship between trust and consumers' loyalty evaluations ( $\beta = 0.43, p < 0.001$ ), which is **H<sub>2b</sub>**. The results indicate that consumers are likely to reciprocate an e-retailer delivering trust benefits with positive attitude and repeat purchases. Increments in consumer trust increase the social embeddedness of the consumer-e-retailer relationship, thereby enhancing the consumer's loyalty to the relationship. The finding is consistent with not only social exchange theory but also prior empirical research (Berry 1994; Singh and Sirdeshmukh 2000; Sirdeshmukh, Singh, and Sabol 2002; Sirdeshmukh, Brei, and Singh 2003).

The findings regarding the direct consequences of consumer trust in an e-retailer also cohere with Mayer, Davis, and Schoorman (1995) and Rousseau, Sitkin, Burt, and Camerer (1998) who posit that trust leads to risk-taking behavior in a relationship. Consumer trust in an e-retailer leads to a consumer's future behavioral intentions and loyalty toward the e-retailer, with loyalty involving a stronger relationship and more risk taking.

### ***The Mediating Role of Consumer Transaction Costs***

To assess the reason trust is advocated as the single most important factor for consumer's choice of an online supplier, this study posited an alternative mechanism for the trust – future intentions/loyalty relationship whereby consumer transaction costs (CTC) mediates the effect of trust on future intentions/loyalty. Specifically, consumer trust in an e-retailer is hypothesized to negatively affect CTC (**H<sub>3</sub>**) and CTC is hypothesized to negatively influence future intentions (**H<sub>4a</sub>**) and loyalty (**H<sub>4b</sub>**).

The results of analyzing the overall sample (both pure and multi-channel e-retailers) support the hypothesis that trust reduces CTC ( $\beta = - 0.32, p < 0.001$ ). These results suggest that trust can literally reduce transaction costs incurred by a consumer in his/her transaction with an e-retailer. If a consumer trusts an e-retailer, he/she will spend less time and effort on pre-transaction activities (e.g., searching), contemporaneous transaction activities (e.g., making a payment), and post-transaction activities (e.g., monitoring or redress). This finding is consistent with prior research which posits that trust is believed to reduce transaction costs in an exchange relationship (Williamson 1975; Ganesan 1994; Ganesan and Hess 1997). It is also consistent with the finding from Dyer and Chu (2003) that “perceived trustworthiness” reduced transaction costs in buyer-supplier relationships. Additionally, this finding coheres with Teo and Yu (2005) who find that “the dependability of online stores is negatively related to perceived transaction costs” (p. 462).

The results also establish that CTC negatively influence consumers’ future intentions ( $\beta = - 0.10, p < 0.01$ ) and loyalty toward an e-retailer ( $\beta = - 0.10, p < 0.01$ ). These results suggest that transaction cost economizing determines a consumer’s choice of an e-retailer with which to conduct a transaction. A consumer will choose to transact with the most efficient e-retailer, with the efficiency criterion being transaction cost minimizing. In other words, a consumer will prefer to purchase from an e-retailer with whom the consumer perceives the lowest transactions costs among all the available e-retailers. When selecting an e-retailer, a consumer weighs costs and benefits and attempts to minimize the overall costs of the transaction (and thus economize transaction

costs) and maximize the transaction value (Strader and Shaw 2003). The role of the transaction costs in a consumer's decision-making is particularly salient in the online business environment because, in the Internet age, speed becomes the measurement standard, while time becomes a scarcer resource. This finding is consistent with Transaction Costs Analysis (TCA) theory (Williamson 1975, 1985, 1996). It also coheres with the findings from the empirical research (Bell, Ho, and Tang 1998; Crafton 1979; Currim, Weinberg, and Wittink 1981; Kim and Park 1997; Teo and Yu 2005), where Teo and Yu (2005) find that lower transaction costs influenced consumers to choose online channels to do shopping.

Further, this study proposed that CTC partially mediate the effect of trust on future intentions/loyalty. It was posited that though the direct effect of trust on future intentions/loyalty presumes that trust is intrinsically beneficial, the mediated effect assumes that trust benefits are conditional on reducing transaction costs for the consumer.

The results support the contention that CTC partially mediate the effect of trust on both future intentions and loyalty judgments. CTC appear to partially mediate the effect of trust on future intentions because the direct effect of trust on future intentions achieved significance ( $\beta = 0.63, p < 0.001$ ) consistent with **H<sub>2a</sub>**, in addition to the mediated effect through CTC consistent with **H<sub>3</sub>** ( $\beta = - 0.32, p < 0.001$ ) and **H<sub>4a</sub>** ( $\beta = - 0.10, p < 0.01$ ). Likewise, the partially mediating role of CTC in the effect of trust on consumer loyalty was confirmed due to the results that direct effect of trust on loyalty achieved significance consistent with **H<sub>2b</sub>** ( $\beta = 0.43, p < 0.001$ ), in addition to the mediated effect

through CTC consistent with  $H_3$  ( $\beta = -0.32, p < 0.001$ ) and  $H_{4b}$  ( $\beta = -0.10, p < 0.01$ ).

These results suggest that though trust has a direct effect on future intentions and consumer loyalty, part of its effect is conditional on its ability to reduce transaction costs for the consumer. Without net deductions in transaction costs, consumer trust is a benefit, but apparently does less good for the bottom line. This finding is consistent with Transaction Costs Analysis (TCA) theory (Williamson 1975, 1985, 1996). It is also consistent with Ganesan (1994) and Ganesan and Hess (1997), who propose that trust enhances long-term orientation or commitment to a relationship by reducing the transaction costs in an exchange relationship. This finding also coheres with Sirdeshmukh, Singh, and Sabol (2002) and Sirdeshmukh, Brei, and Singh (2003), who find that perceived value partially mediated the impact of consumers' trust on loyalty.

The results also reveal that trust is still the dominant determinant of both future intentions ( $\beta_{\text{Trust}} = 0.63$ ) and loyalty ( $\beta_{\text{Trust}} = 0.43$ ). Although CTC a significant effect on future intentions, this influence is relatively weak compared with the direct effect of trust ( $\beta_{\text{CTC}} = -0.10$  versus  $\beta_{\text{Trust}} = 0.63$ ). Likewise, although CTC have a significant effect on loyalty, this influence is relatively weak compared with the direct effect of trust ( $\beta_{\text{CTC}} = -0.10$  versus  $\beta_{\text{Trust}} = 0.43$ ). These results indicate that consumers' evaluations of trust of an e-retailer appear to carry greater weight in consumers' decisions to re-patronize it, though consumers find it preferable to maintain long-term relationships with an e-retailer who attempts to reduce transaction costs for them.

### *The Moderating Roles of Consumer Dependence and Environmental Uncertainty*

In the trust literature (both online and offline), little research has studied the factors that moderate the effect of trust on its outcome variables. To address this gap, this study proposed that consumers' dependence on an e-retailer and consumers' perceptions of the uncertainty surrounding the online transacting environments are the key moderators of the relationship between trust and future intentions/loyalty. Specifically, consumer dependence moderates the effect of trust on a consumer's future intentions toward an e-retailer (**H<sub>5a</sub>**) as well as a consumer's loyalty toward an e-retailer (**H<sub>5b</sub>**). Likewise, environmental uncertainty moderates the effects of trust on future intentions (**H<sub>6a</sub>**) and loyalty (**H<sub>6b</sub>**).

Except for the moderating effect of environmental uncertainty on the relationship between trust and loyalty (**H<sub>6b</sub>**), the other three moderating hypotheses were supported by the results of analyzing the overall sample (both pure and multi-channel e-retailers). Specifically, for the moderating effect of consumer dependence on the relationship between trust and future intentions (**H<sub>5a</sub>**), the results show that the trust → future intentions relationship was significant in both high- and low-dependence groups with the relationship being significantly greater for the high-dependence group ( $\beta = 0.69, p < 0.001$ ) than for the low-dependence group ( $\beta = 0.60, p < 0.001$ ). The finding suggests that consumers who depend on an e-retailer for securing a product/service in the way they want are more likely to come back if they trust the e-retailer. In contrast, consumers who do not depend on an e-retailer are less likely to come back even if they trust the e-retailer.

For the moderating effect of consumer dependence on the relationship between trust and loyalty ( $H_{5b}$ ), the results show that the trust  $\rightarrow$  loyalty relationship was also significant in both high- and low-dependence groups with the relationship being significantly greater for the high-dependence group ( $\beta = 0.58, p < 0.001$ ) than for the low-dependence group ( $\beta = 0.35, p < 0.001$ ). The finding indicates that consumers who depend on an e-retailer for securing a product/service in the way they want are more likely to be loyal if they trust the e-retailer than consumers who do not depend on the e-retailer, although they may trust the e-retailer.

The results of testing the moderating effect of environmental uncertainty on the relationship between trust and future intentions ( $H_{6a}$ ) show that the trust  $\rightarrow$  future intentions relationship was significant in both high- and low-uncertainty groups with the relationship being significantly greater for the high-uncertainty group ( $\beta = 0.65, p < 0.001$ ) than for the low-uncertainty group ( $\beta = 0.59, p < 0.001$ ). The finding suggests that consumers who perceive low uncertainty surrounding the online transacting environment are more likely to re-patronize in the future if they trust an e-retailer. In contrast, consumers who perceive high environmental uncertainty are less likely re-patronize even if they trust the e-retailer.

The results of testing the moderating effect of environmental uncertainty on the relationship between trust and loyalty ( $H_{6b}$ ) show that the trust  $\rightarrow$  loyalty relationship was the same among either low-uncertainty perception or high-uncertainty perception online shoppers although the relationship was significant in both groups ( $p < 0.001$ ). The

results suggest that the relationship between trust and loyalty was not affected by environmental uncertainty. This finding indicates that regardless of the degree of the online environmental uncertainty perceived by a consumer, trust in an e-retailer will make the consumer a repeated shopper. In other words, when consumer trust is so high that it creates loyal relationships with an e-retailer, environmental uncertainty cannot influence consumers' loyal behavior.

Overall, the data collected from the online survey provided good support for the proposed moderators of the relationship between trust and its outcome variables with a caveat for the moderating effect of environmental uncertainty on the relationship between trust and loyalty. Accordingly, the findings are consistent with Mayer, Davis, and Schoorman (1995) who argue that the consequences of trust will be determined by contextual factors such as the perception of the level of risk and the alternatives available to the trustor even though the level of trust may be constant.

### **Antecedents of Consumer Trust in a *Multi-Channel E-Retailer***

To provide a stronger test of the antecedents of trust, consumers' offline experience satisfaction with a multi-channel e-retailer is modeled as a control variable. Because the size of the multi-channel e-retailer sample is not large enough to adequately assess the structural model with the control variable (Figure 5.3), the researcher focuses on discussing the results of the multiple regression analysis used to test the control variable.

The multiple regression results of analyzing the multi-channel e-retailer sample show that customer service satisfaction, security/privacy attitudes, and fulfillment/reliability satisfaction still played important roles in consumer trust in a multi-channel e-retailer when controlling for offline experience satisfaction. However, website design attitudes no longer influenced trust after controlling for offline experience satisfaction. The results suggest the role of website design in affecting trust was eclipsed by offline experience satisfaction. This finding indicates that online consumers relied upon their offline experience with a multi-channel retailer in judging the trustworthiness of its online business, rather than such elements as the professional look and feel of the website or functionality of the website. This finding is contrary to the researcher's prediction. The problem could lie in the measurement scales used in this study. For example, offline experience satisfaction was measured using a single item. Future research should refine the measurement scales when replicating the study.

Of the four factors that affected consumer trust in a multi-channel e-retailer, it is found that customer service satisfaction had the greatest impact on trust levels ( $\beta = 0.33$ ,  $p < 0.001$ ). Offline experience satisfaction ( $\beta = 0.22$ ,  $p < 0.001$ ) and security/privacy attitudes ( $\beta = 0.18$ ,  $p < 0.01$ ) were the second and third strongest predictors of trust, respectively. Fulfillment/reliability satisfaction was the weakest predictor with the magnitude of its effect considerably less than that of the effect of any of the other three factors ( $\beta = 0.15$ ,  $p < 0.05$ ). Further, it is found that the sequence of the relative strengths of the four component attitudes in affecting consumer trust in a multi-channel e-retailer is

similar to the sequence of the relative strengths of the four components in affecting consumer trust in a pure e-retailer although website design was not significant in affecting trust in a multi-channel e-retailer. Therefore, the findings regarding the relative strengths of the four component attitudes in affecting consumer trust in a multi-channel e-retailer are not further discussed here.

In this section, the researcher discussed the statistical results presented in chapter five in detail. The next section addresses the theoretical and managerial contributions of the study.

## **Contributions**

### **Theoretical Contributions**

This study contributes to trust literature by developing an integrative theoretical framework of consumer trust in an e-retailer that is grounded in strong theories and was successfully tested using a large-scale sample randomly selected from national online consumers. By examining the sources of consumer trust in an e-retailer after a consumer has had some purchase experience(s) with the e-retailer, the direct consequences of trust directed toward customer retention, the key mediators and the key moderators of the effect of trust on its outcomes, this study directly addresses many questions that have remained largely unanswered by previous trust research. As a result, this study provides a deeper understanding of trust mechanisms in consumer-e-retailer exchange relationships.

Specifically, five aspects of this study are noteworthy in terms of its theoretical contributions. First, this study takes a new perspective on the study of trust mechanisms in consumer-e-retailer exchanges, that is, a perspective directed toward customer retention. This new perspective reflects the current mentality of conducting business online, which is driven by relational exchanges. By taking this new perspective, the current study goes beyond previous online B2C trust research (Sultan, Urban, Shankar, and Bart 2002; Shankar, Urban, and Sultan 2002; Yoon 2002; Grabner-Krauter and Kaluscha 2003), which reflects the early mentality of conducting business online, that is, online business is driven by discrete transactions.

Second, directed by this new perspective, this study identifies future intentions and consumer loyalty (constructs closely related to customer retention) as the direct consequences of consumer trust in an e-retailer. By drawing upon the framework of trust, global evaluations theory, and social exchange theory, this study provides strong arguments for the direct impact of consumer trust on a consumer's decision to remain with, or be loyal to, an e-retailer. The empirical results also indicate that consumer trust is intrinsically beneficial to an e-retailer because it helps retain customers.

Third, to identify the actual sources of consumer trust in an e-retailer, this study examines a consumer's entire online purchase experience with an e-retailer including not only a consumer's web experience – the focus of previous online B2C trust research (Sultan, Urban, Shankar, and Bart 2002; Shankar, Urban, and Sultan 2002; Yoon 2002; Grabner-Krauter and Kaluscha 2003) – but also his/her experience outside the web. The

theoretical development and the empirical results suggest that a consumer's attitude toward the four key components of his/her entire online purchase experience (i.e., website design, fulfillment/reliability, privacy/security and customer service) constitute the key drivers of consumer trust. Of the four components, the empirical results indicate that the consumer weighs most heavily customer service when making trust evaluations of an e-retailer. Security/privacy and fulfillment/reliability play the second and the third role, respectively. Consumers weigh website design the least when judging whether an e-retailer is trustworthy or not. This finding gives deeper insights into trust-building processes in consumer-e-retailer exchange relationships.

Fourth, to explain the mechanism underlying the impact of trust on a consumer's online supplier choice, this study attempts to apply transaction cost analysis (TCA) to online consumers' decision-making. In so doing, this study posits that consumer transaction costs economizing is the underlying criterion for an individual consumer's choice of an online supplier for a transaction or a relational exchange. In fact, trust partially impacts the consumer's decision to re-patronize, or be loyal to, an e-retailer by influencing consumer transaction costs. By introducing the concept of transaction costs to online consumer exchanges and applying TCA to consumer's online decision-making, this study identifies an alternative mechanism for the trust–future intentions/loyalty relationship whereby consumer transaction costs mediate the effect of trust on future intentions/loyalty. This finding not only extends the traditional application of TCA but also makes important theoretical contributions to trust literature.

Finally, this study examines the factors that moderate the impact of trust. This consideration has been largely ignored in past research. Based upon the framework of trust, this study identifies both a consumer's dependence on an e-retailer and a consumer's environmental uncertainty perceptions as the key moderators of the effect of trust on a consumer's decision to re-patronize, or be loyal to, an e-retailer. Although the empirical results failed to support the moderating role of environmental uncertainty in the relationship between trust and loyalty, they do indicate that consumer dependence is a key moderator between trust and its outcome variables, and that environmental uncertainty is a moderator between trust and future intentions.

### **Managerial Contributions**

The integrative model of consumer trust in an e-retailer proposed by this study was largely confirmed by the empirical test. Accordingly, this study makes important contributions to e-retailing practices. First of all, since trust was confirmed to impact a customer's decision to re-patronize, and be loyal to an e-retailer, managers are advised to position trust as an important marketing tool that can help retain customers.

Second, a consumer's attitudes toward the four key components (website design, fulfillment/reliability, privacy/security, and customer service) of his/her direct online purchase experience with an e-retailer were confirmed to be the antecedents of trust. However, when consumer's offline experience satisfaction was controlled, website design attitudes no longer influenced trust. Accordingly, pure online store managers are advised to focus on improving customer experience to build trust; specifically, they

should focus on those four areas. They should measure customer satisfaction along those four dimensions and identify the dimensions in which their online store performs poorly. By investing in the areas where they are weak, they will be able to improve the level of consumer trust. For multi-channel online stores, managers should realize that customers who have had purchase experiences with the company through its offline channels such as physical stores or catalog do not rely on the cues or performance of its website to infer whether the company's online business is trustworthy or not. Instead, they rely on their offline experience to make trust judgments of the company's online business. Therefore, it is very important for multi-channel retailers to provide good customer experience through all its channels if they want to generate consumer trust.

Third, since consumer transaction costs were confirmed to mediate the effect of trust on future intentions/loyalty, caution is suggested against the simplistic view that benefits will be generated from investments in building trust. The traditional belief that trust will bring customers back might be too simple or even wrong (Sirdeshmukh, Singh, and Sabol 2002). Therefore, managers are advised to be cautious when making investments in trust-building activities in the hopes that trust alone influences customers to re-patronize or that it produces loyalty. Instead, a careful assessment is needed, one that provides a full account of trust-conversion mechanisms. The conversion of trust to future intentions/loyalty involves complex processes that require an understanding of (1) how attitudes toward the key dimensions of customer experience can build greater trust in an e-retailer; (2) how increased consumer trust can reduce transaction costs for consumers; and (3) how lowered consumer transaction costs translate into future

intentions and loyalty. The third factor is particularly useful for management because it implies that an e-retailer can directly invest in lowering transaction costs for customers in order to induce them to return, thereby creating loyalty. By eliminating complexity from customers' lives, and hence saving them time and effort, an e-retailer can entice a customer to stay with them or even become loyal to them. Accordingly, reducing consumer transaction costs is a powerful marketing tool for online companies in customer retention.

Fourth, since consumer dependence on an e-retailer was confirmed to moderate the effect of trust on future intentions/loyalty, and environmental uncertainty to moderate the effect of trust on future intentions, e-retailers are advised to carefully assess these two factors before utilizing the trust marketing tool. If there are many competitive alternatives available to customers in the market, managers should be careful about investing in trust-building activities: Even if a consumer trusts an e-retailer, he/she may switch to its competitors. If the online transaction environments are highly uncertain, e-retailers are advised to delay heavy investments in trust-building since, even if a consumer trusts a bricks-and-mortar retailer, he/she may not choose its online channel to make purchases. Such retailers should wait to heavily invest in building online trust until online business environments are less risky.

Lastly, environmental uncertainty was not confirmed to moderate the relationship between consumer trust in an e-retailer and consumer loyalty. Further, consumer transaction costs were not confirmed to mediate the relationship between consumer trust

in a multi-channel e-retailer and loyalty. Therefore, managers are advised to heavily invest in loyalty programs. That is because loyal customers are not affected by many factors that actually would influence non-loyal customers.

### **Limitations**

While this study makes important theoretical and managerial contributions, as described in the above section, it is recognized that a single, cross-sectional study can offer only initial insights. Therefore, the limitations of this study will be discussed in this next section.

This study possesses five main limitations. First, because this study was cross-sectional in nature, the findings may be biased by spurious cause/effect inferences. Therefore, it is difficult to infer causality between research variables. Longitudinal studies can and should be designed to build the hypothesized sequence of the effects. Moreover, the cross-sectional survey research methodology employed by this study may introduce another bias, a bias caused by common method variance. Common method variance is known to inflate structural relationships, resulting in overestimations of the effect of hypothesized predictors. Future attempts are needed to examine the impact of common method variance on this study's results, or to control over common variance when replicating this study.

Second, the sampling method employed by this study will introduce frame error and sampling error, which will limit the generalizability of this study. Although a

national sample of 4,156 members age 18+ was randomly drew from a 3 million online shoppers panel and the overall response rate of 23% was relatively high, there remains the question of the representativeness and generalizability of the sample. Therefore, replication studies with varying sampling procedures are needed to provide more confidence in these findings.

Third, consumer transaction costs involve a measurement issue. Although several procedures were used to develop, refine, and adapt scales for *Pre-Transaction Costs*, *Contemporaneous Transaction Costs* and *Post-Transaction Costs* constructs, more work is needed to establish the reliability and validity of the construct of consumer transaction costs. Yet, given the fact that the reliability and convergent and discriminant validity were acceptable, it appears that procedures employed by this study were successful.

Fourth, the multi-channel e-retailer sample size is relatively small ( $N = 249$ ). To adequately assess the complex structural model with offline experience satisfaction (Figure 5.3), the minimum number of respondents required should be 350. Replication studies with a multi-channel e-retailer sample size larger than 350 are needed to re-assess the structural model with offline experience satisfaction as a control variable.

### **Future Research**

This study offers additional insight into the important phenomenon of consumer trust in an e-retailer. While this study made substantial contributions as outlined above, there are many other fruitful avenues for further research. In addition to the future

research opportunities suggested by the limitations set forth above, there are yet more avenues to explore, as follows.

First, the empirical test failed to support the moderating role of environmental uncertainty in the relationship between trust and loyalty. The problem might lie in the measurement scales used in the study. However, there is a possibility that environmental uncertainty actually is not a moderator of the trust – loyalty relationship. Loyal customers might patronize an e-retailer without considering the risks involved in the online transacting environment. Loyal customers might believe that the e-retailer would act in their interests and be fair in dealing with them if the transaction errs due to the environmental uncertainty. Future research is needed to further examine the role of environmental uncertainty in the relationship between trust and loyalty.

Second, the multi-channel store data failed to support three of the nine hypothesized relationships underlying the integrative model of consumer trust in an e-retailer as shown in Figure 5.4. Specifically, the structural path estimates between website design attitudes and trust, between fulfillment/reliability satisfaction and trust, and between CTC and loyalty were non-significant. One possible reason could be the relatively small size of the multi-channel store sample. However, it is quite possible that trust mechanisms underlying the consumer-*multi-channel* e-retailer relationship are different as evidenced by the fact that the role of website design attitudes in affecting trust was eclipsed by offline experience satisfaction when using multiple regression analysis to analyze the same data set. Future studies are needed to collect a large sample

to re-test the proposed model in the consumer-multi-channel e-retailer context. Studies are also needed to theoretically further examine the trust mechanisms underlying the consumer-multi-channel e-retailer exchange relationship.

Third, future research should examine the roles of the three subtypes of consumer transaction costs in greater detail. Questions remain. For instance, how does trust affect *Pre-Transaction Cost, Contemporaneous Transaction Costs, and Post-Transaction Costs*, respectively? How do the three types of consumer transaction costs affect consumer choice outcomes, respectively? Do the three types of consumer transaction costs mediate the relationships between trust and its outcome variables in the same way that CTC mediates those relationships?

Fourth, this study did not theoretically examine the relative importance of the four component attitudes although empirical results regarding that are provided and discussed. Future studies are needed to theoretically explain why customer service satisfaction is the strongest predictor of trust, security/privacy attitudes is the second strongest predictor, fulfillment/reliability satisfaction is third strongest, and website design attitudes is the weakest.

Fifth, it is recognized that the proposed model does not include consumer characteristics variables that are likely to moderate the hypothesized relationships. These consumer characteristics include demographics, psychographics (e.g., individual propensity to trust) and behavioral variables. Such consumer characteristics that are worth studying in the future research involve behavioral consumer characteristics such as

previous experience with the Internet in general, type of usage, the purpose of use (e.g., entertainment), and past experience with a particular web site (Sultan, Urban, Shankar, and Bart 2002). Those consumer Internet characteristics may moderate the specified relationships in the proposed model of this study.

Lastly, although the proposed integrative model was to understand trust mechanisms in consumer-e-retailer exchange relationship and to explain the phenomenon of consumer trust in an e-retailer, it is not limited to consumer-e-retailer relationships only. Although not explicitly stated, when constructing the integrative model, the researcher attempted to generate a general trust theory which includes the antecedents of trust, the consequences of trust, the key mediator(s) between trust and its outcome variables, and the key moderators between trust and its outcome variables. This general trust theory can be applied to other relationship contexts such as inter-organizational relationships, interpersonal relationships (e.g., consumer-consumer relationships), or other B2C relationships, although key components of past experience need to be re-identified for a particular relationship. Future research into these areas is warranted.

**APPENDIX A**

**QUESTIONNAIRE**

**National Online Shopper Survey: Evaluations of  
On-line Stores**  
*Your Opinion Counts!*

Dear Online Shopper,

As a graduate student in Retailing and Consumer Sciences at The University of Arizona, I am interested in your opinions about the **ON-LINE** store from which you made your most recent purchase of a **PHYSICAL PRODUCT** (i.e., tangible goods such as books, shoes, furniture, clothing, etc., not service goods such as airline tickets, hotel reservation). There are no risks associated with your participation, the results of which will benefit online shoppers such as yourself. Please take the next 10 minutes or so to complete this questionnaire.

Your participation in this study is entirely voluntary and the information you provide is completely confidential. By completing the questionnaire, you are giving us permission to use the information you provide. You may choose not to answer some or all of the questions. Also, you may stop at any time should you decide that you do not want to participate in the study.

If you have a question about this study or if you would like to request a copy of the final results, please do not hesitate to call me or my graduate advisor at (520) 621-1295. Additionally, if you have questions concerning your rights as a research subject, you may call the Human Subjects Committee Office at (520) 626-6721.

By clicking the "Continue" button below, it is assumed you give your consent for participation in this study. Thank you, in advance, for assisting me with my graduate research!

Sincerely,

Cuiping Chen, M.S.  
Doctoral Candidate

Soyeon Shim, Ph.D.  
Professor

Retailing and Consumer Sciences  
Tucson, AZ 85721-0033

**The University of Arizona**

**Part A. Your Perception about On-Line (i.e., Internet) Shopping Security**

**A1 – A5.** Think about on-line (i.e., Internet) shopping security. Please indicate how **strongly you agree or disagree** with the statements below.

	Strongly Disagree						Strongly Agree	
	1	2	3	4	5	6	7	
A1. The Internet is secure enough to make me feel comfortable when I shop on-line.	1	2	3	4	5	6	7	
A2. I feel assured that the laws adequately protect me from problems on the Internet.	1	2	3	4	5	6	7	
A3. I feel assured that technologies adequately protect me from problems on the Internet.	1	2	3	4	5	6	7	
A4. I feel confident that security technology on the Internet makes it safe for me to do business on-line.	1	2	3	4	5	6	7	
A5. In general, the Internet is now a secure form of doing business.	1	2	3	4	5	6	7	

**Part B. Your Most Recent On-line Purchase of *Tangible Goods***

B1. When was the last time you purchased **Tangible Goods** at an **On-Line Store**, NOT an auction site such as e-bay? (NOTE: tangible goods are physical products such as books, shoes, furniture, clothing, etc., NOT service goods such as airline tickets, hotel reservation)

Approximately, \_\_\_\_\_ month(s) ago

B2. What did you buy? \_\_\_\_\_

B3. Which **On-Line Store** did you buy from? \_\_\_\_\_

B4. Is this the first time you made a purchase from **this** on-line store?

\_\_\_\_\_ 1. Yes      \_\_\_\_\_ 2. No

B5. If **NO**, when did you make your first purchase from **this** on-line store?

Approximately, \_\_\_\_\_ year(s) \_\_\_\_\_ month(s) ago

B6. Altogether, how many times have you made purchases from **this** on-line store?

Approximately, \_\_\_\_\_ times

**Part C. Searching before Purchasing the Same Product In the Future**

**C1 – C4.** Think about the PRODUCT you mentioned above in Question B2. Please indicate how **strongly you agree or disagree** with the statements below.

<b>The next time I purchase the same product,</b>	Strongly Disagree					Strongly Agree	
C1. I will spend a lot of time looking for information before deciding where to buy.	1	2	3	4	5	6	7
C2. I will spend a lot of effort getting information that would be helpful in decision-making of where to buy.	1	2	3	4	5	6	7
C3. Usually there is so much to do that I wish I had more time to look for information before purchasing.	1	2	3	4	5	6	7
C4. I usually find myself pressed for time when searching for information before purchasing.	1	2	3	4	5	6	7

**Part D. If I Choose This On-Line Store to Buy the Same Product the Next Time,**

	Strongly Disagree						Strongly Agree	
	1	2	3	4	5	6	7	
D1. I will spend a lot of time placing an order with this on-line store.	1	2	3	4	5	6	7	
D2. I will spend a lot of effort placing an order with this on-line store.	1	2	3	4	5	6	7	
D3. I will spend a lot of time and effort monitoring the processing of my order.	1	2	3	4	5	6	7	
D4. I will spend a lot of time and effort checking the status of my order.	1	2	3	4	5	6	7	
D5. I will spend a lot of time and effort hassling with this on-line store if things go wrong.	1	2	3	4	5	6	7	
D6. I will spend a lot of time and effort resolving post-purchase problems.	1	2	3	4	5	6	7	
D7. It will take time and effort to deal with any unexpected changes.	1	2	3	4	5	6	7	
D8. It will take time and effort to make changes to the order placed with this on-line store.	1	2	3	4	5	6	7	
D9. It will take time and effort to arrange another time to receive the products ordered if they are not physically delivered on time as promised.	1	2	3	4	5	6	7	

**Part E. Your Perceptions About This On-Line Store**

**E1 – E16.** Think about the on-line store you mentioned above in Question B3. Based on all your past experiences with this on-line store, please indicate how **strongly you agree or disagree** with the statements below.

	Strongly Disagree						Strongly Agree	
	1	2	3	4	5	6	7	
E1. This on-line store's website provides in-depth information.	1	2	3	4	5	6	7	
E2. This on-line store's website does NOT waste my time.	1	2	3	4	5	6	7	
E3. It is quick and easy to complete a transaction at this on-line store's website.	1	2	3	4	5	6	7	
E4. The level of personalization at this on-line store's website is about right, not too much or too little.	1	2	3	4	5	6	7	
E5. This on-line store's selection is well organized on the website.	1	2	3	4	5	6	7	
E6. The product received was represented accurately by this on-line store's website.	1	2	3	4	5	6	7	
E7. You get exactly what you ordered from this on-line store.	1	2	3	4	5	6	7	
E8. The product is delivered by the time promised by the company.	1	2	3	4	5	6	7	
E9. The performance of the product(s) I purchased from this on-line store lives up to what was promised.	1	2	3	4	5	6	7	
E10. The billing information is accurate.	1	2	3	4	5	6	7	
E11. I feel like my privacy is protected by this on-line store.	1	2	3	4	5	6	7	

E12. I feel safe in my transactions with this on-line store.	1	2	3	4	5	6	7
E13. This on-line store's website has adequate security features.	1	2	3	4	5	6	7
E14. This on-line store is willing and ready to respond to customer needs.	1	2	3	4	5	6	7
E15. When you have a problem, this on-line store shows a sincere interest in solving it.	1	2	3	4	5	6	7
E16. This on-line store answers inquiries promptly.	1	2	3	4	5	6	7

**Part F. Your Opinions about This On-Line Store As Compared to Other Alternatives**

**F1 – F4.** Think about the on-line store you mentioned above in Question B3 and the product you mentioned in Question B2. Please indicate how **strongly you agree or disagree** with the statements below.

						Strongly Disagree						Strongly Agree
F1. I do NOT have a good alternative to this on-line store for buying this product.	1	2	3	4	5	6	7					
F2. It would be difficult for me to find a competitive <b>ON-LINE</b> store alternative to this one to buy this product.	1	2	3	4	5	6	7					
F3. It would be difficult for me to find a competitive <b>OFF-LINE</b> retailer alternative (e.g., retail store or catalog) to this on-line store to buy this product.	1	2	3	4	5	6	7					
F4. It would be easy for me to find a good alternative to this <b>ON-LINE</b> store to buy this product.	1	2	3	4	5	6	7					

**Part G. Your Overall Evaluations of This On-Line Store**

**G1 – G7.** Think about the on-line store you mentioned above in Question B3. Please indicate how **strongly you agree or disagree** with the statements below.

<b>This On-Line Store</b>	Strongly Disagree					Strongly Agree	
G1. Operates with integrity.	1	2	3	4	5	6	7
G2. Is always faithful.	1	2	3	4	5	6	7
G3. Can be counted on to do what is right.	1	2	3	4	5	6	7
G4. Can be trusted.	1	2	3	4	5	6	7
G5. Is honest and truthful.	1	2	3	4	5	6	7
G6. Is an organization I have great confidence in.	1	2	3	4	5	6	7
G7. Cannot be trusted at times.	1	2	3	4	5	6	7

**Part H. Your Future Intentions Toward This On-Line Store**

**H1 – H11.** Think about the on-line store you mentioned above in Question B3. Please indicate how **strongly you agree or disagree** with the statements below.

	Strongly Disagree					Strongly Agree	
	1	2	3	4	5	6	7
H1. I will shop at this on-line store in the future.							
H2. I will purchase from this on-line store in the future.							
H3. I will do more business with this on-line store in the next few years.							
H4. I will do less business with this on-line store in the next few years.							
H5. I try to use this on-line store whenever I need to buy this product.							
H6. When I need to buy this product, this on-line store is my first choice.							
H7. I seldom consider switching to another on-line store in terms of buying this product.							
H8. I doubt that I would switch on-line stores in terms of buying this product.							
H9. I like doing business with this on-line store.							
H10. To me, this on-line store is the best one to do business with.							
H11. I believe that this is my favorite on-line store.							

**Part I. Your *OFF-LINE* Experience with This Company**

**I1 – I3.** Think about the on-line store you mentioned above in Question B3 and answer the following questions.

**I1.** To your knowledge, does THIS company operate other off-line businesses (e.g., retail stores, catalogs)?

\_\_\_\_\_ 1. Yes

\_\_\_\_\_ 2. No (If no, go directly to next page)

\_\_\_\_\_ 3. I am not sure (If not sure, go directly to next page)

**I2.** Have you had shopping or purchasing experience with this company through its off-line businesses (e.g., retail stores, catalogs)?

\_\_\_\_\_ 1. Yes

\_\_\_\_\_ 2. No (If no, go directly to next page)

**I3.** How would you rate your overall satisfaction with your **OFF-LINE** experience with this company?

Very dissatisfied	-3	-2	-1	0	1	2	3	Very satisfied
----------------------	----	----	----	---	---	---	---	-------------------

**Part J. Information About You for Statistical Purposes**

J1. My gender is: \_\_\_\_\_ 1. Male  
\_\_\_\_\_ 2. Female

J2. My current age is:  
\_\_\_\_\_ 1. 18 - 24  
\_\_\_\_\_ 2. 25 - 34  
\_\_\_\_\_ 3. 35 - 44  
\_\_\_\_\_ 4. 45 - 54  
\_\_\_\_\_ 5. 55 - 64  
\_\_\_\_\_ 6. 65 and over

J3. My marital status is:  
\_\_\_\_\_ 1. Married  
\_\_\_\_\_ 2. Single (Never married, separated, divorced, windowed)

J4. The highest level of formal education that I have completed is:  
\_\_\_\_\_ 1. No formal education  
\_\_\_\_\_ 2. Some grade school  
\_\_\_\_\_ 3. Completed grade school  
\_\_\_\_\_ 4. Some high school  
\_\_\_\_\_ 5. Completed high school

- \_\_\_\_\_ 6. Some college
- \_\_\_\_\_ 7. Graduated college
- \_\_\_\_\_ 8. Some graduate school
- \_\_\_\_\_ 9. Completed graduate school

J5. My ethnicity is:

- \_\_\_\_\_ 1. Caucasian or white
- \_\_\_\_\_ 2. Hispanic or Spanish origin
- \_\_\_\_\_ 3. African-American
- \_\_\_\_\_ 4. Asian-American
- \_\_\_\_\_ 5. Native American
- \_\_\_\_\_ 6. Other (Please specify) \_\_\_\_\_

J6. My major activity during the last month was: (CHECK ALL THAT APPLY)

- \_\_\_\_\_ 1. Employed full time (30 hours or more)
- \_\_\_\_\_ 2. Employed part time (less than 30 hours)
- \_\_\_\_\_ 3. Looking for work, unemployed
- \_\_\_\_\_ 4. Attending school
- \_\_\_\_\_ 5. Retired
- \_\_\_\_\_ 6. Homemaker
- \_\_\_\_\_ 7. Other (Please describe) \_\_\_\_\_

J7. My **occupation** is: (*NOTE: If you are retired, check your occupation before retirement. If you are a student, check the occupation for which you are studying.*)

- \_\_\_\_\_ 1. Laborer
- \_\_\_\_\_ 2. Machine operator
- \_\_\_\_\_ 3. Service worker
- \_\_\_\_\_ 4. Craftsman
- \_\_\_\_\_ 5. Clerical/sales
- \_\_\_\_\_ 6. Administrative
- \_\_\_\_\_ 7. Manager/Executive
- \_\_\_\_\_ 8. Professional
- \_\_\_\_\_ 9. Other (Please describe) \_\_\_\_\_

J8. My total household income is:

- \_\_\_\_\_ 1. Less than \$10,000
- \_\_\_\_\_ 2. \$10,000-\$19,999
- \_\_\_\_\_ 3. \$20,000-\$29,999
- \_\_\_\_\_ 4. \$30,000-\$49,999
- \_\_\_\_\_ 5. \$50,000-\$74,999
- \_\_\_\_\_ 6. \$75,000-\$99,999
- \_\_\_\_\_ 7. \$100,000-\$149,999
- \_\_\_\_\_ 8. More than \$150,000

J9. I maintain permanent residency in the state of: \_\_\_\_\_

## REFERENCES

- Anderson, Erin and Barton Weitz (1989), "Determinants of Continuity in Conventional Industrial Channel Dyads," *Marketing Science*, 8 (Fall), 310-23.
- Anderson, James and David Gerbing (1988), "Structural Equation Modeling in Practice: A Review and Recommended Two Step Approach," *Psychological Bulletin*, 103 (May), 411-423.
- Arrow, Kenneth J. (1969), "The Organization of Economic Activity: Issues Pertinent to The Choice of Market Versus Nonmarket Allocation," in *The Analysis and Evaluation of Public Expenditures: the PBB system*, Joint Economic Committee Compendium, 91<sup>st</sup> Congress, 1<sup>st</sup> Section, Vol. 1. Government Printing Office: Washington D.C.
- Assael, Henry (1992), *Consumer Behavior and Marketing Action*. Boston, MA: PWS-KENT Publishing Company.
- Armstrong, J. Scott and Terry S. Overton (1977) "Estimating Nonresponse Bias in Mail Surveys," *Journal of Marketing Research*, 14 (3), 397-402.
- Atuahene-Gima, Kwaku and Haiyang Li (2002), "When Does Trust Matter? Antecedents and Contingent Effects of Supervisee Trust on Performance in Selling New Products in China and the United States," *Journal of Marketing*, 66 (3), 61-81.
- Bain & Company/Mainspring (2000), "The Value of Online Customer Loyalty," *eStrategy brief*. [One in a series of papers on e-commerce topics; published by Bain & Company and Mainspring.]
- Barney, J. B. and M. H. Hansen (1994), "Trustworthiness as a Source of Competitive Advantage," *Strategic Management Journal*, 15, 175-190.
- Baron, Reuben M. and David Kenny (1986), "The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations," *Journal of Personality and Social Psychology*, 51 (6), 1173-1182.
- Bell, D. R., T. Ho, and C. S. Tang (1998), "Determining Where to Shop: Fixed and Variable Costs of Shopping," *Journal of Marketing Research*, 35 (3), 352-369.
- Berry, Leonard L. (1993), "Playing Fair in Retailing," *Arthur Anderson Retailing Issues Newsletter* (March), 5, 2.

- Bhattacharya, Rajeev, Timothy M. Devinney, and Madan M. Pillutla (1998), "A Formal Model of Trust Based on Outcomes," *Academy of Management Review*, 23 (3), 459-472.
- Bhattacharya, C.B., Hayagreeva Rao, and Mary Ann Glynn (1995), "Understanding the Bond of Identification: An Investigation of Its Correlates Among Art Museum Members," *Journal of Marketing*, 59 (October), 46-57.
- Bigley, Gregory A. and Jone L. Pearce (1998), "Straining for Shared Meaning in Organization Science: Problems of Trust and Distrust," *Academy of Management Review*, 23 (3), 405-421.
- Bultler, P.T., W. Hall, A.M. Hanna, L. Mendonca, B. Auguste, J. Manyika, and A. Sahay (1997), "A Revolution in Interaction," *McKinsey Quarterly*, Number 1, P.5.
- Carlston, Donal E. (1980), "The Recall and Use of Traits and Events in Social Inference Processes," *Journal of Experimental Social Psychology*, 16 (2), 302-28.
- Cheung, Steven N. S. (1992), "On the New Institutional Economics," In *Contract Economics*, ed. Lars Werin and Hans Wijkander. Blackwell.
- Coase, Ronald H. (1937), "The Nature of The Firm," *Economica N. S.*, 4, 386-405.
- Coase, Ronald H. (1992), "Comments on Cheung," In *Contract Economics*, ed. Lars Werin and Hans Wijkander. Blackwell.
- Crafton, S. M. (1979), "Convenience Store Pricing and the Value of Time: A Note on the Becker-DeVany Full Price Model," *Southern Economic Journal*, 45 (4), 1254-1260.
- Cronin, J. Joseph, Jr. and Steven A. Taylor (1992), "Measuring Service Quality: A Reexamination and Extension," *Journal of Marketing*, 56 (July), 55-68.
- Crosby, Lawrence A. and Nancy Stephens (1987), "Effects of Relationship Marketing on Satisfaction, Retention, Prices in the Life Insurance Industry," *Journal of Marketing Research*, 24 (November), 404-11.
- Currim, I. S., C. B. Weinberg, and D. R. Wittink (1981), "Design of Subscription Programs for a Performing Arts Series," *Journal of Consumer Research*, 8(2), 67-75.
- Czepiel, John A., Larry J. Rosenberg, and Adebayo Akerele (1974), "Perspectives on Consumer Satisfaction," in *AMA Educators' Proceedings*. Chicago: American Marketing Association, 119-23.
- Day, George S. (1969), "A Two-Dimensional Concept of Brand Loyalty", *Journal of Marketing Research*, 9 (September), 29-36.

- Deutsch, M. (1962), "Cooperation and Trust: Some Theoretical Notes," in *Nebraska Symposium on Motivation*, M. R. Jones, ed., Lincoln, NE: University of Nebraska Press, 275-319.
- Dick, Alan S. and Kunal Basu (1994), "Customer Loyalty: Toward an Integrated Conceptual Framework," *Journal of the Academy of Marketing Science*, 22 (Spring), 99-113.
- Doney, Patricia M. and Joseph P. Cannon (1997), "An Examination of the Nature of Trust in Buyer-Seller Relationships," *Journal of Marketing*, 61 (April), 35-51.
- Doney, Patricia M., Joseph P. Cannon, and Michale Mullen (1998), "Understanding the Influence of National Culture on the Development of Trust," *Academy of Management Review*, 23 (3), 601-620.
- Dwyer, F. Robert, Paul H. Schurr, and Sejo Oh (1987), "Developing Buyer-Seller Relationships," *Journal of Marketing*, 51 (April), 11-27.
- Dyer, Jeffrey H. and Wujin Chu (2003), "The Role of Trustworthiness in Reducing Transaction Costs and Improving Performance: Empirical Evidence From The United States, Japan, and Korea," *Organization Science*, Jan-Feb Issue.
- Engel, James F. and Roger D. Blackwell (1982), *Consumer Behavior*. New York: The Dryden Press.
- Fornell, Claes (1992), "A National Customer Satisfaction Barometer: The Swedish Experience," *Journal of Marketing*, 56 (January), 6-21.
- Forrester Research, Inc. (1998), *Transaction Evolution*, research report, Forrester Research.
- Ganesan, Shankar (1994), "Determinants of Long-Term Orientation in Buyer-Seller Relationships," *Journal of Marketing*, 58 (April), 1-19.
- Ganesan, Shankar and Ron Hess (1997), "Dimensions and Levels of Trust: Implications for Commitment to Relationship," *Marketing Letters*, 8(4), 439-448.
- Garbarino, Ellen, and Mark S. Johnson (1999), "The Different Roles of Satisfaction, Trust, and Commitment in Customer Relationships," *Journal of Marketing*, 63 (April), 70-87.
- Grabner-Krauter Sonja and Ewald A. Kaluscha (2003), "Empirical Research in On-line Trust: a Review and Critical Assessment," *International Journal of Human-Computer Studies*, 58, 783-812.

- Granovetter (1985), "Economic Action and Social Structure," *American Journal of Sociology*, 91, 481-510.
- Greenfield On-line Survey (2000), in *Internet World*, January, 5-7.
- Gremler, David D. (1995), *The Effect of Satisfaction, Switching Costs, and Interpersonal Bonds on Service Loyalty*, Unpublished doctoral dissertation, Arizona State University.
- Hair, Jr. J.F., Rolph E. Anderson, Ronald L. Tatham, and William C. Black (1995), *Multivariate Data Analysis with Readings* (4<sup>th</sup> ed.). Upper Saddle River, NJ: Prentice Hall.
- Hair, Joseph F., Jr., William C. Black, Barry J. Babin, Rolph E. Anderson, and Ronald L. Tatham (2006), *Multivariate Data Analysis* (6<sup>th</sup> ed.). Upper Saddle River, NJ: Prentice Hall.
- Heide, Jan B. (1994), "Inter-Organizational Governance in Marketing Channels," *Journal of Marketing*, 58 (January), 71-85.
- Heide, Jan B. and George John (1988), "The Role of Dependence Balancing in Safeguarding Transaction-Specific Assets in Conventional Channels," *Journal of Marketing*, 52 (January), 20-35.
- Heide, Jan B. and George John (1992), "Do Norms Matter in Marketing Relationships?" *Journal of Marketing*, 56 (April), 32-44.
- Hill, Charles W. L. (1995), "National Institutional Structures, Transaction Cost Economizing, and Competitive Advantage: The Case of Japan." *Organization Science*, 6 (2).
- Huber, Peter (1996), "The Economics of Waiting," *Forbes*, 158 (15), 150.
- Jacoby, Jacob (1971), "Brand Loyalty: A Conceptual Definition," In *Proceedings of the American Psychological Association*, Volume 6, pp. 655-656. Washington, DC: American Psychological Association.
- Jacoby, Jacob and Robert W. Chestnut (1978), *Brand Loyalty: Measurement and Management*. New York: John Wiley and Sons, Inc.
- Jarvenpaa, Sirkka L., Noam Tractinsky, and Michael Vitale (2000), "Consumer Trust in an Internet Store," *Information Technology and Management*, 1, 45-71.
- Jones, Gareth R. and Jennifer M. George (1998), "The Experience and Evolution of Trust: Implications for Cooperation and Teamwork," *Academy of Management Review*, 23 (3), 531-546.

- Jöreskog, Karl G. and Dag Sörbom (1996), *LISREL 8: User's Reference Guide*, Scientific Software International, Inc: Lincolnwood, IL.
- Joshi, Ashwin W. and Rodney L. Stump (1999), "Transaction Cost Analysis: Integration of Recent Refinements and an Empirical Test," *Journal of Business-to-Business marketing*, 5 (4), 37-71.
- Kampbell, Alexandra J. (1997), "Relationship Marketing in Consumer Markets," *Journal of Direct Marketing*, 11 (3), 44-57.
- Keller, Kevin Lane (1993), "Conceptualizing, Measuring, & Managing Customer-Based Brand Equity," *Journal of Marketing*, 57 (January), 1-22.
- Kim, B. D. and K. Park (1997), "Studying Patterns of Consumer's Grocery Shopping Trip," *Journal of Retailing*, 73 (4), 501-517.
- Kuehn, Alfred (1962), "Consumer Brand Choice as a Learning Process," *Journal of Advertising Research*, 2 (March-April), 10-17.
- Larzelere, Robert E. and Ted L. Huston (1980), "The Dyadic Trust Scale: Toward Understanding Interpersonal Trust in Close Relationships," *Journal of Marriage and the Family*, 42 (August), 595-604.
- Lewicki, Roy J. and Daniel J. McAllister (1998), "Trust and Distrust: New Relationships and Realities," *Academy of Management Review*, 23 (3), 438-458.
- Lipstein, Benjamin (1959), "The Dynamics of Brand Loyalty and Brand Switching," in *Proceedings of the Fifth Annual Conference of the Advertising Research Foundation* (pp. 101-108), New York: Advertising Research Foundation.
- Luhmann N. (1979), *Trust and Power*, John Wiley and Sons, London.
- Lusch, Robert F., Matthew O'Brien, and Birud Sindhav (2004), "The Critical Role of Trust in Obtaining Retailer Support for a Supplier's Strategic Organizational Change," *Journal of Retailing*, 79, 249-258.
- Mayer, Roger C., James H. Davis, and F. David Schoorman (1995), "An Integrative Model of Organizational Trust," *Academy of Management Review*, 20 (3), 709-734.
- McAllister, D. J. (1995), "Affect- and Cognition-Based Trust as Foundations for Interpersonal Cooperation in Organizations," *Academy of Management Review*, 38, 24-59.
- McKnight, Harrison D., Vivek Choudhury, and Charles Kacmar (2002), "The Impact of Initial Consumer Trust on Intentions to Transact with A Web Site: A Trust Building Model," *Journal of Strategic Information Systems*, 11, 297-323.

- Ministry of Consumer Affairs (1999), "The Economic Context of the Ministry of Consumer Affairs: Number Four in a Series of Policy Papers," [www.google.com](http://www.google.com).
- Mittal, Vikas, William T. Ross Jr., and Patrick M. Baldasare (1998), "The Asymmetric Impact of Negative and Positive Attribute-Level Performance on Overall Satisfaction and Repurchase Intentions," *Journal of Marketing*, 62 (January), 33-47.
- Moorman, Christine, Rohit Deshpande, and Gerald Zaltman (1993), "Factors Affecting Trust in Market Research Relationships," *Journal of Marketing*, 57 (January), 81-101.
- Moorman, Christine, Gerald Zaltman, and Rohit Deshpande (1992), "Relationships Between Providers and Users of Marketing Research: They Dynamics of Trust Within and Between Organizations," *Journal of Marketing Research*, 29 (August), 314-29.
- Morgan, R. M. and S. D. Hunt (1994), "The Commitment-Trust Theory of Relationship Marketing," *Journal of Marketing*, 58 (July), 20-38.
- North, Douglas C. (1990), *Institutions, Institutional Change and Economic Performance*. Cambridge, UK: Cambridge University Press.
- Nunnally, J. C. (1978). *Psychometric Theory*, 2<sup>nd</sup> Ed. New York, NY: McGraw-Hill.
- Oliver, Richard L. (1993), "Cognitive, Affective, and Attribute Bases of the Satisfaction Response," *Journal of Consumer Behavior*, 20 (December), 418-30.
- Oliver, Richard L. (1997), *Satisfaction: A Behavioral Perspective on the Consumer*. New York: McGraw-Hill.
- Ostron, Amy and Dawn Iacobucci (1995), "Consumer Trade-Offs and the Evaluations of Services," *Journal of Marketing*, 59 (January), 17-28.
- Parasuraman, A., Valerie A. Zeithaml, and Leonard L. Berry (1994), "Reassessment of Expectations as a Comparison Standard in Measuring Service Quality: Implications for Future Research," *Journal of Marketing*, 58 (January), 111-24.
- Pavlou, Paul A. (2002), "Institution-Based Trust in Interorganizational Exchange Relationship: the role of online B2B Marketplaces on Trust Formation," *Journal of Strategic Information Systems*, 11, 215-243.
- Reichheld, Frederick F., Robert G. Markey Jr., and Christopher Hopton (2000), "E-Customer Loyalty-Applying the Traditional Rules of Business for Online Success," *European Business Journal*, 12(4), 173-179.

- Rindfleisch, Aric and Jan B. Heide (1997), "Transaction Costs Analysis: Past, Present, and Future Applications," *Journal of Marketing*, October, 30-54.
- Rotter, J. B. (1967), "A New Scale for the measurement of Interpersonal Trust," *Journal of personality*, 35, 615-665.
- Rousseau, Denise M., Sim B. Sitkin, Ronald S. Burt, and Colin Camerer (1998), "Not So Different After All: A Cross-Discipline View of Trust," *Academy of Management Review*, 23 (3), 393-404.
- Rust, Roland T., Anthony J. Zahorik, and Timothy L. Keiningham (1995), "Return on Quality (ROQ): Making Service Quality Financially Accountable," *Journal of Marketing*, 59 (April), 58-70.
- Scanzoni, John (1979), "Social Exchange and Behavioral Interdependence," in *Social Exchanges in Developing Relationships*, Robert L. Burgess and Ted L. Huston, eds. New York: Academic Press.
- Shankar, Venkatesh, Glen L. Urban, and Fareena Sultan (2002), "Online Trust: A Stakeholder Perspective, Concepts, Implications, and Future Directions," *Journal of Strategic Information Systems*, 11 (3-4), 325-344.
- Shim, Soyeon and Mary Ann Eastlick (1998), "The Hierarchical Influence of Personal Values on Mall Shopping Attitude and Behavior," *Journal of Retailing*, 74 (1): 139-160.
- Silverhart, Todd A (2002), "Win, Place, and Show," *LIMRA's MarketFacts Quarterly*, 21 (3), 34-39.
- Singh, Jagdip, Deepak Sirdeshmukh (2000), "Agency and Trust Mechanisms in Consumer Satisfaction and Loyalty Judgements," *Journal of the Academy of Marketing Science*, 28 (1), 150-167.
- Sirdeshmukh, Deepak, Vinicius A. Brei, Jagdip Singh (2003), "The Web of Trust: Joint Influence of Online, Frontline, and Company Policies on Consumer Trust, Value and Loyalty," in *AMA Winter Educators' Proceedings*. Phoenix, Tucson.
- Sirdeshmukh, Deepak, Jagdip Singh, and Barry Sabol (2002), "Consumer Trust, Value, and Loyalty in Relational Exchanges," *Journal of Marketing*, 66 (January), 15-37.
- Speng, Richard A., Scott B. MacKenzie and Richard W. Olshavsky. (1996). "A Reexamination of the Determinants of Consumer Satisfaction," *Journal of Marketing*, 60 (July): 15-32.

- Srinivasan, Srini, Rolph Anderson, and Kishore Ponnnavolu (2002), "Customer Loyalty in E-Commerce: an Exploration of Its Antecedents and Consequences," *Journal of Retailing*, 78, 41-50.
- Strader, Troy J. and Michael J. Shaw (2003), "Differentiating Between Traditional and Electronic Markets: Toward a Consumer Cost-Based Model," [www.google.com](http://www.google.com).
- Sultan, Fareena, Glen L. Urban, Venkatesh Shankar, and Iakov Y. Bart (2002), "Determinants and Role of Trust in E-Business: A Large Scale Empirical Study," *Working Paper*, Northeastern University: Boston, MA.
- Teo, Thompson S.H. and Yuanyou Yu (2005), "Online Buying Behavior: a Transaction Cost Economics Perspective," *Omega*, 33, 451-465.
- Tyler, T. R. (1990), *Why People Obey the Law*. New Haven, CT: Yale University Press.
- Tyagi, Rajeev K. (2004), "Technological Advances, Transaction Costs, and Consumer Welfare," *Marketing Science*, 23(3), 335-344.
- Urban, Glen L., Fareena Sultan, and William J. Qualls (2000), "Placing Trust at the Center of Your Internet Strategy," *Sloan Management Review*, Fall(1), 39-48.
- Vatanasombut, Banphot, Antonis C. Stylianou, and Magid Igbaria (2004), "How to Retain Online Customers," *Communications of the ACM*, 47(6), 65-69.
- Warrington, Patricia T. (2002), *Customer Evaluations of E-Shopping: The Effects of Quality-Value Perceptions and E-Shopping Satisfaction on E-Shopping Loyalty*, Unpublished doctoral dissertation, The University of Arizona.
- Westbrook, Robert A. (1981), "Sources of Satisfaction with Retail Outlets," *Journal of Retailing*, 57 (Fall), 68-85.
- Williamson, Oliver E. (1975), *Markets and Hierarchies, Analysis and Anti-trust Implications*. New York: The Free Press.
- Williamson, Oliver E. (1981), "The Economics of Organization: The Transaction Cost Approach," *American Journal of Sociology*, 87 (3), 548-577.
- Williamson, Oliver E. (1985). *The Economic Institutions of Capitalism: Firms, Markets, Rational Contracting*. New York: Free Press.
- Williamson, Oliver E. (1993), "Calculativeness, Trust, and Economic Organization," *Journal of Law and Economics*, 30, 131-145.
- Williamson, Oliver E. (1996), *The Mechanisms of Governance*. New York: The Free Press.

- Wind, Yoram and Vijay Mahajan (2002), "Convergence Marketing," *Journal of Interactive Marketing*, 16 (2), 64-79.
- Wolfenbarger, Mary and Mary C. Gilly (2003), "eTailQ: Dimensionalizing, measuring and predicting etail quality," *Journal of Retailing*, 79, 183-198.
- Yoon, Sung-Joon (2002), "The Antecedents and Consequences of Trust in Online Purchase Decisions," *Journal of Interactive Marketing*, 16(2), 47-63.
- Zeithaml, Valerie A., Leonard L. Berry, and Parasuraman, A. (1996), "The Behavioral Consequences of Service Quality," *Journal of Marketing*, 60 (April), 31-46.
- Zucker, Lynne G. (1986), "Production of Trust: Institutional Sources of Economic Structure, 1840-1920." In B. M. Straw & L. L. Cummings (Eds), *Research in Organizational Behavior*, Vol.8, 53-111, Greenwich, CT: JAI Press.