

The Effects of Visual and Written Fit Information on Plus-size Women's Perceived Fit Risk,
Purchase Intention, and Loyalty Intentions in Internet Apparel Shopping

By

Larinda Cole

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of

Master of Science

in

Apparel, Housing, and Resource Management

Jihyun Kim, Chair

LuAnn Gaskill

Alex White

February 6, 2009

Blacksburg, Virginia

Keywords: Internet shopping, Plus-size apparel, Fit information

Copyright © 2009, Larinda Cole. All rights reserved.

The Effects of Visual and Written Fit Information on Plus-size Women's Perceived Fit Risk,
Purchase Intention, and Loyalty Intentions in Internet Apparel Shopping

Larinda Cole

ABSTRACT

Within the last few years, retail sales have averaged an annual growth of about 4% with electronic commerce retail sales averaging an increase of over 20% per year (U.S Census Bureau, 2008). The e-commerce retail sector of apparel, accessories, and footwear reached \$18.3 billion in sales and ranked as a top selling category (Shop.org, 2007). A growing apparel market with strong buying power is the plus-size clothing industry with approximately \$32 billion in sales in 2005, and an average of about a 10% growth rate each year (Yadegaran, 2006). Despite the growth in the industry, little empirical research has been conducted regarding plus-size Internet apparel shoppers. Additionally the field lacks research that focuses on garment fit for the plus-size market.

The purpose of this study was to examine the effects of product presentation factors, visual fit information (size of model photographed) and written fit information (fit related product description), on plus-size women's perceived fit risk, purchase intention, and loyalty intentions in Internet apparel shopping. This study employed a 2 x 2 between subjects' factorial design: visual fit information (plus-size model vs. non plus-size model) by written fit information (more elaborate vs. less elaborate). Four mock web pages were created to closely mimic the design of a true plus-size Internet apparel retailer. Each web page presented a model wearing the same dress for plus-size women and a written product description. The stimuli consisted of an identical dress in color and style, presented on both a plus-size model and a non plus-size model, and similar written fit information with more detailed information about garment style, garment dimensions, and fit editorial presentation for more elaborate stimuli. One hundred fourteen women between the ages of 19 and 64 participated in this study for incentives such as a free plus-size apparel gift-card, using snowball sampling method.

Using descriptive statistics, multivariate analyses of variance and univariate analyses of variance, the present research showed (1) no main effects of visual fit information on perceived

fit risk, purchase intention, and loyalty intention, and (2) no main effects of written fit information on perceived fit risk, purchase intention and loyalty intention. The study added valuable empirical findings to the literature on the relationship between fit related information and perceived fit risk, purchase intention and loyalty intention among plus-size Internet apparel shoppers.

GRANT INFORMATION

The author of this study received grant funding from the Virginia Tech Graduate Research Development Program Diversity Award in the amount of \$500.00

DEDICATION

This thesis is dedicated to my loving parents, Linda Jackson Cole,

Larry Kirk Cole, and Naomi Perez Cole.

ACKNOWLEDGMENTS

I would like to express my sincerest appreciation to everyone who has provided me with assistance during my research. A special thank you goes to my parents and siblings, who always give me endless love and support. Without my family's love and concern, I could not have completed my work.

I would like to express my gratitude to my advisor, Dr. Jihyun Kim for her dedication, enthusiasm, time, and ideas, in helping me to complete my master's degree. I am forever grateful for your honesty, sincerity, and insightfulness.

A special thank you goes to my committee members Drs. LuAnn Gaskill and Alex White for their knowledge of related topics, valuable comments, and sincere advice for my research. Appreciation is extended to Dr. Bill Woodall for helping me build the confidence needed to tackle statistics and Dr. Marjorie Norton, for her insightful and expertise in related topics.

Special thanks to graduate assistantship supervisors Drs. JoAnn Emmel, Kathleen Parrott, Julia Beamish, and Doris Kincaid for continuous encouragement and giving me the opportunity to plan and execute the most phenomenal events for the Department of Apparel, Housing, and Resource Management.

A sincere thank you is extended to Dr. Julia Beamish for working with the AHRM Graduate Council and supporting the graduate students by providing the Topics in Teaching class to enhance my graduate study experience.

I would like to thank the lovely ladies of Wallace 248, Dayton Laird, Nicole Gerike, and Sung-jin Lee, for being the greatest of friends. I could not have made it these two years without their love, concern, and friendship. I am forever grateful.

Special thanks go to my dear friends Osaro Airen and Desiree Craig for being supportive, honest, and helping me keep my sanity and sense of humor. Without their kindness and friendship, I could not have made it through the most trying of times.

I am also grateful for my cousin Ashley Jackson, for her assistance in editing this paper and my life. I cherish the times we've shared during our graduate study process as well as her love, encouragement, and friendship.

TABLE OF CONTENTS

ABSTRACT	ii
GRANT INFORMATION	iv
DEDICATION.....	v
ACKNOWLEDGMENTS.....	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	xi
CHAPTER 1: INTRODUCTION.....	1
Plus-size apparel market and sales figures	2
Fit risk	2
Visual and written product presentation methods.....	3
Statement of the problem	3
Significance of the study	3
Definition of terms.....	4
Limitations of the study.....	5
CHAPTER 2: REVIEW OF LITERATURE.....	6
Plus-size women’s wear market: shoppers and retailers.....	6
<i>Plus-size market</i>	6
<i>Global perspective</i>	6
<i>National perspective</i>	7
<i>Plus-size apparel retailers</i>	7
<i>Online plus-size apparel retailers</i>	8
Fit issues in the women’s wear industry	8
<i>History of sizing</i>	9
<i>Plus-size fit issues</i>	10
Perceived risk	10
<i>Definitions and types of perceived risk</i>	10
<i>Perceived risk of Internet shopping</i>	11

<i>Perceived risk of apparel products in remote purchase context</i>	12
Product information presentation as risk reduction strategies.....	13
<i>Visual product information</i>	14
<i>Image interactivity technology (IIT)</i>	15
<i>Print advertisements</i>	16
<i>Written product information</i>	17
Hypotheses development.....	18
CHAPTER 3: METHOD.....	22
Research Design	22
Sample.....	22
Treatment manipulation and pilot test.....	23
<i>Visual fit information</i>	23
<i>Written fit information</i>	24
<i>Pilot test</i>	25
Web page stimulus development	25
Questionnaire development	26
<i>Questionnaire Part One</i>	26
<i>Previous Internet apparel shopping experiences</i>	26
<i>Beliefs about plus-size apparel industry retail practices</i>	26
<i>Questionnaire Part Two</i>	27
<i>Perceived fit risk</i>	27
<i>Purchase intention</i>	27
<i>Loyalty intentions</i>	27
<i>Product description</i>	29
<i>Demographic information</i>	30
Approval of human subjects use.....	30
Consent forms.....	30
Data collection procedure.....	31
Data analysis.....	32
CHAPTER 4: ANALYSIS OF RESULTS.....	33

General analysis information.....	33
Preliminary analyses	33
<i>Demographic characteristics of participants</i>	33
<i>Previous Internet apparel shopping experiences</i>	36
<i>Beliefs about plus-size apparel industry retail practices</i>	36
<i>Reliability analyses</i>	40
Manipulation checks	40
<i>Size of the model in photograph</i>	40
<i>Elaborateness of written fit information</i>	41
Product description manipulation check	42
Hypotheses testing	43
<i>Hypothesis 1</i>	44
<i>Hypothesis 2</i>	45
<i>Hypothesis 3</i>	45
<i>Hypothesis 4</i>	46
<i>Hypothesis 5</i>	47
<i>Hypothesis 6</i>	47
Summary of hypotheses testing.....	48
CHAPTER 5: DISCUSSION AND CONCLUSIONS	50
Discussion.....	50
<i>Hypothesis 1: Visual fit information and perceived fit risk</i>	51
<i>Hypothesis 2: Visual fit information and purchase intention</i>	52
<i>Hypothesis 3: Visual fit information and loyalty intentions</i>	52
<i>Hypothesis 4: Written fit information and perceived fit risk</i>	53
<i>Hypothesis 5: Written fit information and purchase intention</i>	53
<i>Hypothesis 6: Written fit information and loyalty intentions</i>	54
Conclusions and Implications.....	54
Limitations.....	58
<i>Limited simulation of a real shopping situation</i>	58
<i>Limitations of scales</i>	58
<i>Conditioning of sample</i>	59

Recommendations for future study.....	59
REFERENCES	61
APPENDIX A: MANIPULATED MOCK WEB PAGES.....	71
APPENDIX B: APPROVAL OF HUMAN SUBJECTS USE.....	76
APPENDIX C: CONSENT FORM	78
APPENDIX D: EMAIL INVITATION	80
APPENDIX E: ONLINE SURVEY QUESTIONNAIRE	83
APPENDIX F: FAIR USE CHECKLIST	95

LIST OF TABLES

Table 2. 1. Research Summary Supporting Hypotheses 1 through 6	21
Table 3. 1. Four Treatment Mock Web Pages	24
Table 3. 2. Statements for beliefs about Internet apparel shopping and plus-size apparel industry retail practices	28
Table 4. 1 Demographic characteristics of the sample (n = 114)	34
Table 4. 2. Descriptive statistic of participants' previous Internet apparel shopping experiences	37
Table 4. 3. Descriptive statistics of participants' beliefs about plus-size apparel industry retail practices	39
Table 4. 4. Participants' perceptions of the size of the model in the photograph.....	41
Table 4. 5. One sample t-test for the size of the model in the photograph on size perception (Web page one presents a better representation for a plus-size shopper).	41
Table 4. 6. Participants' perceptions of the elaborateness of the written garment fit information	42
Table 4. 7. One sample t-test for the elaborateness of the written garment fit information on elaborate perception (Web page one presents better elaboration of garment fit information than web page two).....	42
Table 4. 8. MANOVA multivariate tests Wilks' Lambda of on all three dependent variables	43
Table 4. 9. MANOVA of testing effects of both visual and written fit information on all three dependent variables	44
Table 4. 10 Means and standard deviation for visual fit information for perceived fit risk, purchase intention, and loyalty intentions	46
Table 4. 11. ANOVA for testing effects of visual fit information on perceived fit risk, purchase intention, and loyalty intentions.....	46
Table 4. 12. Means and standard deviation for written fit information for perceived fit risk, purchase intention, and loyalty intentions	48
Table 4. 13. ANOVA for testing effects of written fit information on perceived fit risk, purchase intention, and loyalty intentions.....	48
Table 4. 14. Means and standard deviation for the treatment for perceived fit risk, purchase intention, and loyalty intentions.....	49

CHAPTER 1: INTRODUCTION

Retail sales in the United States are steadily increasing. According to the United States Census Bureau, total retail sales increased 4% from 2006 to 2007, and total electronic retail commerce sales reached approximately \$136.4 billion dollars in 2007 (2008). More specifically, e-commerce sales increased 19% from 2006 to 2007, with e-commerce sales accounting for 3.4% of 2007's total retail sales (U.S. Census Bureau, 2008). Within the last few years, retail sales have averaged an annual growth of about 4% with electronic commerce retail sales averaging an increase of over 20% per year (U.S. Census Bureau, 2008).

Research firm comScore Networks reports that U.S. Consumers have spent more than \$102.1 billion shopping online in 2006, excluding travel, which is an increase of 24% from 2005 (Slocombe, 2007). Because online retail spending in the U.S. will continue to grow steadily due to increased broad band adoption, decreased Internet prices, and convenience, Investment firm Cowen & Co. predict that online retail spending will reach \$220 billion by 2011 (Slocombe, 2007). In 2006, consumers spent more money purchasing apparel via the Internet than for computers, the previous online sales leader (O'Donnell, 2007).

The e-commerce retail sector of apparel, accessories, and footwear reached \$18.3 billion in sales according to "The state of retailing 2007" conducted by Forrester research (Shop.org, 2007), and this accounts for only 8% of all online retail transactions. The National Retail Federation Shop.org projected that in 2007 clothing sales online would reach \$22.1 billion due to the strategies retailers are implementing to make shopping for clothes online easier (O'Donnell, 2007). An example of this strategy, according to the National Retail Federation, includes online apparel retailers offering "free and/or in store returns along with high-tech imaging that offers a more realistic look at the clothes" (O'Donnell, 2007, p. 1).

Multi-channel, dual channel, and purely e-commerce retailers that sell apparel, accessories, and footwear implement marketing plans with the goal of reaching their target market for the purpose of increasing online sales. The makeup of this market is quite distinct. According to Hitwise, in June 2007 women made up 62% of visitors to U.S. apparel and accessories web sites (Emarketer, 2007).

With such a large portion of women browsing online, in comparison to a small percentage of actual online apparel transactions, retailers are concerned with conversion rates. E-

commerce apparel retailers who spend resources on providing online shopping capability for these consumers would prefer a larger segment of consumers that browse to actually make the purchase online. The “Apparel E-commerce” report states that “to overcome customer resistance to actually purchasing online, Internet apparel retailers are pioneering visualization tools, personalizing services, and adopting liberal shipping and return policies” (Shop.org, 2007). This report suggests that having an effective web site that converts browsers to purchasers and repeat purchasers is the goal of online retailer.

In general, the online apparel company that provides the best product presentation for their market, which best reduces consumers’ risk, will be more likely to reap the benefit of converting their browser into a purchaser because she (the consumer) would be able to better view and comprehend the characteristics of the garment (i.e., color, texture, fit, and drape) being presented in substitution of examining an actual garment in a traditional physical retail store (Ha, Kwon, & Lennon, 2007; Lee, Fiore, & Kim, 2006; Park, Lennon, & Stoel, 2005).

Plus-size apparel market and sales figures

Plus-size women are brand loyal and have a great deal of spending power (Yao, 2006). The plus-size clothing industry was approximately \$32 billion in sales in 2005, and averages about a 10% growth rate each year (Yadegaran, 2006). The market of women wearing a size 16 or larger is expected to grow as the number of women aged 45 years old and over increases (Intel, 2000), which in 2005 was the largest population buying plus-size apparel (Otieno, Harrow, & Lea-Greenwood, 2005).

Fit risk

Finding the perfect fit for women’s clothing is difficult for retailers to provide, and time consuming for female consumers to undergo. In traditional physical retail stores, women undergo trials of trying on clothing in different sizes, from different brands, or even the same brand, due to the lack of standardized sizing in order to obtain the best fit. Nonetheless, 59% of U.S. shoppers found inconsistencies with one brand, and 57% complained of problems with standard sizes (Intellifit Corp, 2003), which ultimately results in about a 40% return rate of purchased clothing (Telmat Industrie, 2002).

Visual and written product presentation methods

In the brick-and-mortar retail setting, Martin (1971) and Davis (1987) found that shoppers most often searched for style, price, garment care, fit, brand, color, and fiber content information when making apparel purchase decisions (as cited by Park & Stoel, 2002). Consumers search for many of these same attributes in the online retail environment. Many researchers have studied the effects of visual product presentation method (e.g., 2-D photos vs. 3-D virtual model or rotation, photo enlargement) on consumer's purchase intention of a garment from an online store (Fiore, Kim, & Lee, 2007; Kim, Fiore, & Lee 2007; Lee, Geistfeld, & Stoel, 2007; Park, Lennon & Stoel, 2005).

Previous researchers have also found that providing written product information for Internet apparel shoppers decreases perceived risk (Gaal & Burns, 2001; Kim & Lennon, 2000; Yen, 2006) and increased purchase intentions (Allen, 2000; Park, Lennon, & Stoel, 2005). Also, several other researchers have included an investigation of verbal cues in online product presentation (Childers et al., 2001; Eroglu et al., 2001; Then & DeLong, 1991), and have examined the merchandising components of Internet apparel retailers' product descriptions through web content analyses (Jang & Burns, 2004; Lee et al., 2007).

Statement of the problem

Previous studies examined the effects of online product presentation methods (e.g., zoom features, 3-D interactivity, mix and match) on consumers' purchase intention of a garment from an online store (Fiore & Jin, 2003; Kim, Fiore, & Lee, 2007; Li, Daugherty, & Bocca, 2001, 2002) or risk perception (Park, Lennon & Stoel, 2005). However, no empirical research has examined the effects of model size or accuracy of written fit description on the consumer's perceived risk, purchase intention, or loyalty intention. The purpose of this study was to examine the effects of visual fit information (photographed model size) and written fit information (fit related product description) on plus-size women's perceived fit risk, purchase intention, and loyalty intention in Internet apparel shopping.

Significance of the study

Few studies have examined the actual size of the photographed model from apparel web sites and how it may influence perceived fit risk, purchase intention, and loyalty intention within

the plus-size population. Scholarly research is slowly addressing the issue of confusing and arbitrary sizing methods for women's apparel. By examining the influences of visual and written fit information provided on a plus-size online retailer site on the consumer's perception of fit risk and behavioral intentions, this study can provide useful implications to online apparel retailers to reduce the consumer's perceived fit risk and increase the consumer's purchase intention and loyalty intention. This study can also provide meaningful findings to the academia to understand the relationships between visual/written product information focusing on garment fit and the consumer responses toward the online retailer.

Definition of terms

1. **Plus-size:** in all cases plus-size will be considered women's wear in size 16 or larger.
2. **Plus-size model:** refers to the models that appear to be a size 16 or larger.
3. **Fit related information:** any type of information that describes or illustrates how the garment will fit on the consumer's body.
 - a. **Visual fit information:** any images including photographs and sketches that appeal to visual senses, which provide information about how the garment or product presented may fit.
 - b. **Written fit information:** any information written out that may be in chart form or copy, which provides information about how the garment or product presented may fit.
4. **Perceived fit risk:** consumers' perception of uncertainty regarding the fit of the garment in the online shopping context.
5. **Purchase intention:** consumers' willingness to purchase; the likelihood of purchasing a certain product; serves as an indicator for the actual purchasing decision (Dodds, Monroe, & Grewal, 1991; Kim & Lennon, 2000; Park & Stoel, 2002; Tan, 1999).
6. **Loyalty intention:** includes patronage intention, positive word of mouth, and willingness to pay more (Zeithaml, Berry, & Parasuraman, 1996).
 - a. **Patronage intention:** consumers' willingness to purchase repeatedly at a specific store or from a brand name.
 - b. **Positive word of mouth:** the willingness to voice positive remarks about the store or company (Boulding, Kalra, Staelin, & Zeithaml, 1993) and recommending the

company or store to others (Parasuraman, Berry, & Zeithaml, 1988; Parasuraman, Berry, & Zeithaml, 1991).

- c. **Pay more:** the willingness to pay more (a premium price) than the competitor for the same item and to continue to do business if the price increases (as cited in LaBarbera & Mazursky, 1983; Newman & Werbel, 1973; Rust & Zahorik, 1993; Zeithaml et al., 1996).

Limitations of the study

Because the experimental treatments were embedded in several online web surveys, the researcher expects a lack of control in external factors such as the participants' survey taking environment. The experiment stimuli web pages were image-captured and inserted in the online survey. As a result, consumer interactive experience was limited.

Because the treatments were simulated shopping situations containing just a single facet of the entire online shopping experience, the ability to gauge the true experience while shopping may be different. Thirdly, by using a snowball sampling technique, the sample of the study is not representative to the U. S. population. In order to make the experiment available to wider range of consumers, the researcher conducted an experiment via the Internet using an online survey.

Finally, the overall U.S. economy has an effect on this study. This study contained questions about consumers' purchase and loyalty intentions. Those answers may have been swayed due to the 2008 economic situation in the U.S. During data collection, the Conference Board of Consumer Confidence Index fell to an all time low in October, 2008 (Conference-board.org, 2008), employers had cut over 533,000 jobs in the month of November (Goldman, 2008) and the National Bureau of Economic Research officially declared a recession in early December 2008 (Isidore, 2008). The financial crisis over the previous weeks had taken a toll on consumers' confidence, whereas consumers assessed the labor market and business condition less than favorable (Conference-board.org, 2008). Further more, during this time period consumers expected business conditions to worsen over the next six months, expected the job market to decrease, and expected their incomes to decrease as well (Conference-board.org, 2008). Therefore, certain questions regarding pricing with the survey of this study were enhanced to include "in normal economic conditions."

CHAPTER 2: REVIEW OF LITERATURE

The first section describes the plus-size women's wear industry, including target consumers and the size of the market. The second section discusses issues leading to perceived fit risk within the plus-size women's apparel market. The third section focuses on the perceived risks of both online shopping and apparel including various types of risks, and risk reduction strategies.

Plus-size women's wear market: shoppers and retailers

The plus-size women's market consists of plus-size consumers in search for plus-size apparel. Plus-size retailers have the opportunity to provide these consumers with a selection of products that satisfy their needs.

Plus-size market

Global perspective

Internationally, women's waists are expanding. In India, women's waists grow comparably to the economy; urban areas have an overweight population of 30%, and western marketers are securing a place in the growing \$20 billion plus-size apparel industry (Lahiri, 2006). Indian women are more increasingly purchasing plus-size western apparel, specifically professional women in need of larger size suiting (Lahiri, 2006).

In Europe, England had the sixth highest level of obesity according to the International Obesity Taskforce, whereas in Greece 38% of Greek women are obese compared with 34% of US women (Adhya, 2006). The increased weight of Greek women can be attributed to a more sedentary lifestyle and increased diet of processed foods rich in fat, salt, and sugar (Adhya, 2006). In Germany, 7.44 million women between the ages of 14 and 64 wear a US size 14 (German size 44) or larger (Mission Statement, 2005). Due to lifestyle changes and dietary habits, the demand for fashionable plus size clothing has increased in Germany and the U.K; consequently, the US Commerce Department's Office of Textiles and Apparel and the US Commercial Service has sponsored a women's plus-size apparel trade mission to Europe (Mission statement, 2005). In North America, there are estimates that 30% of Canadian women wear a size 14 or larger (Infomat, 2006).

National perspective

Presently, over 2/3 of Americans are overweight or obese, compared with 46% in the early 1970's, according to the American Obesity Association in Washington D.C. (Yadegaran, 2006). Sixty two percent of American women wear a size 14 or larger (Yadegaran, 2006), while more than 30% of American teens are overweight and 15% are obese according to the American Obesity Association (Warren, 2007). The plus-size clothing industry reached approximately \$32 billion in sales in 2005, and averages about a 10% growth rate each year (Yadegaran, 2006). The plus-size women's apparel category is expected to grow as the number of women ages 45 years old and over, continually increases (Intel, 2000) ; this market segment spends the most money on plus-size apparel (Otieno et al., 2005).

Plus-size apparel retailers

In addition to a growing market, plus-size retailers reap higher profits because plus-size clothing averages an 8-10% higher markup than non plus-size apparel, and it has less frequent sale promotions (Yao, 2006). Designer labels like Lauren by Ralph Lauren, Tommy Hilfiger Woman, INC for Macy's, Elisabeth by Liz Claiborne, and Anne Klein New York provide fashionable lines of clothing tailored to this plus-size market. National chain specialty stores that offer plus-size women's apparel include Avenue, Catherine's, Lane Bryant, and Torrid. To keep up with designer brands, mass merchants like Wal-Mart provide private labels that include plus-size apparel such as George and Metro 7, as well as Kohl's Apt 9 and Daisy Fuentes.

In comparison, small businesses are capturing a niche in the plus-size apparel market by targeting women who have just undergone gastric bypass surgery and are in frequent need of different size clothing since these customers change size very quickly (Villa, 2007). Svoboda, founded by plus-size entrepreneur Jessica Svoboda, is a plus-size premium denim line that has expanded into tops, with future goals of creating lingerie and swimwear for her customers. Svoboda started her premium jeanswear collection in 2004 with a mission to provide "fashionable finds to shapely women coast to coast" in which her multichannel strategy allows her to sell her product in luxury department stores like Nordstrom and online at svobodastyle.com (svobodastyle.com 2007).

Similar to Svoboda's jean concept, Cheyenne Valenzuela launched a denim line called C.enne.V to the underserved plus-size population in sizes 12-24. Her strategy aims to sell her denim collection in stores that sell smaller women's clothing, not exclusively plus-size apparel, with a goal that larger size friends and smaller size friends can shop together in the same boutique and purchase clothing together (Daswani, 2006).

Online plus-size apparel retailers

Plus-size women also shop for their apparel online through online specialty stores. Kiyonna.com is an online women's plus-size apparel retailer that offers fashionable clothing for women size 12 and larger with the concept that they "design something a size 6 would die to wear" (Kiyonna.com, 2008). The Kiyonna.com web site features photos of plus-size models with the capability to zoom in on every aspect of the photo. Online competitor Igigi.com also sells trendy plus-size apparel online in sizes 14-32 for women who believe they are "ample, opulent, curvaceous, and voluptuous" (Igigi.com, 2008). Igigi.com's web site lets shoppers view their merchandise with option to zoom in, enlarge, look at an alternate front view and back view, as well as examine a sketch in order to supply the shopper with enough information to make the purchase.

On the other hand, Alight.com, a trendy, younger women's plus-size apparel retailer, offers multiple brands of women's plus-size clothing and over 100 styles for women who wear a size 34 (Alight.com, 2008). Alight.com merchandises their online apparel by using photographs of the garment worn on mannequins, with the actual mannequin erased leaving only a filled out garment and the ability to click on the garment picture for an enlarged view. These three online plus-size women's specialty retailers vary slightly in their target market's preferences, merchandise assortment, and their product presentation features; however, they are similar in providing apparel for one general target market: plus-size women.

Fit issues in the women's wear industry

Previous research found that the issues with the fit of women's apparel is a result of outdated body measurement data and population norms (Hwang & Istook, 2001), as well as the lack of enforced standardized sizing in the U.S. (Anderson, Brannon, Ulrich, Jenkins, Early,

Grasso, & Gray, 1998; Ashdown, 1998; Hwang & Istook, 2001; Jo, Ulrich, Woronka., Hutton, & Ashdown, 2003).

History of sizing

Currently in the U.S., sizing methods are out-of-date due to obsolete anthropometric data, sizes based on key dimension such as waist circumference or hip circumference (Ashdown, 1998). These methods attempt to create a sizing standard for a large population, but actually fails in addressing the true problem of large variability in the population body types (Ashdown, 1998). In 1958, the United States Department of Commerce published the Commercial Standard 215-58, and more recently in the 1970's published the PS 42-70 with anthropometric data from a military study, both based on proportional body measurements, in order to create a standard for sizing for the apparel industry (Ashdown, 1998).

However, these sizing standards are based on outdated population norms. The Commercial Standards for women are based on an hourglass figure of the hips being 9" or larger than the waist, and as such, a multitude of problems occur (Shin & Istook 2007). First, the proportion of the population with an hourglass figure has changed. Americans are increasingly larger; in the 1950's, the average woman wore a size 8; now in 2007, the average size is 14. Secondly, the standard is based on even growth between all sizes, which generalizes that as a woman becomes taller, she becomes larger; however, the weight is not evenly distributed across the entire body (Shin & Istook, 2007). Finally, Shin and Istook (2007) revealed that as adjustments have been made to the system for improvement, the changes have actually decreased the opportunity to better fit by cutting away at the previous 36 different size ranges.

The sizing standards established by the U.S Department of Commerce are not enforced in the apparel industry. This lack of enforcement leads to sizing issues within the industry, like vanity sizing. Vanity sizing occurs when retailers offer garments with smaller size numbers, but larger measurements to make a consumer of a certain brand feel better about fitting into a smaller size (Hylton and Kim, 2007). As a result, consumers believe they actually wear a smaller size, which makes them feel more socially acceptable in a country where being slim is ideal. Vanity sizing feeds consumers' psychological need to fit in among a culture that constantly presents images of slim, extra slim, and malnourished pictures of women in the media. Vanity sizing also

allows companies to build brand loyal customers because women who feel better due to fitting into smaller clothing are more likely choose to purchase from that brand again.

Plus-size fit issues

A U. K. study by Otieno et al. (2005) concurred with previous U.S. studies that larger women find it challenging to find fashionable clothing that fits well (Kind & Hathcote, 2000). More importantly, fit and sizing issues in purchasing apparel caused the most dissatisfaction (Choudhary & Beale, 1988). Otieno et al. (2005) revealed that among 250 females who wore a size 16 or larger, more than half of the 250 plus-size females could not find well fitting lingerie, swimwear, or eveningwear. These garments usually require a greater degree of fit compared to casual wear, which makes the task of finding a well fitting garment in these categories even more difficult.

Retailers should pay attention to this dissatisfaction of fit and sizing because customer satisfaction may lead to store patronage in the apparel sector (Bennett, 1990), and understanding customer satisfaction is vital in meeting the needs of this consumer segment. Plus-size online apparel retailers can address the issues of fit satisfaction by reevaluating their fit information provided online as well as reevaluating how their garments are presented on models online. In order to provide more accurate information of a plus-size garment, online retailers can use plus-size models to represent the target consumers' figures and portray how the garment may look on plus-size women. If retailers reduce this perceived fit risk for consumers, browsers may be more likely to become online purchasers.

Perceived risk

The following sections contain definitions and types of perceived risk, perceived risk in online shopping, and perceived risk of apparel products in the remote purchase context.

Definitions and types of perceived risk

Perceived risk may be defined as uncertain and unforeseen consequences that are likely to be unpleasant (Bauer 1960, 1967; Cunningham, 1967). Five major types of perceived risk are financial, performance, psychological, social, and physical risks (Jacoby & Kaplan, 1972).

Financial risk can be defined as the likelihood of a net financial loss that results from making a purchase (Horton, 1976; Jacoby & Kaplan, 1972). Performance risk can be defined as the likelihood of a purchased product failing to function (Jacoby & Kaplan, 1972). Both financial and performance perceived risks are negatively related to the perceived value of a product (Agarwal & Teas, 2001). Psychological risk is the consumer's perceived concerns or fears regarding the safety of a product, while physical risk pertains to threats the product may pose to the consumer (Jacoby & Kaplan, 1972; Kaplan, Szybillo, & Jacoby, 1974). Social risk is the consumer's feeling of being unsure that the product s/he is purchasing will be approved of by his or her reference group (Jacoby & Kaplan, 1972; Kaplan et al., 1974; Szmigin, 2003).

In addition to the five major risks dimensions, within catalog shopping, McCorkle (1990) presented two additional types of perceived risk: time loss and overall source risk. Time loss risk derives from the possibility of losing time in making the product purchase, whereas source risk stems from not being familiar with the source that is supplying the product. Two consequences of perceived risk are uncertainty and consequences (Cox, 1967). Risk is multidimensional regarding apparel selection, encompassing social, psychological, economic, performance, and physical attributes (Simpson & Lakner, 1993). In addition, fashion risk is related to dimensions for fashion goods such as clothing (Winakor, Canton, & Wolins, 1980). Finally, perceived risk is negatively related to a consumer's willingness to purchase (Agarwal & Teas, 2001; Bauer, 1967; Cunningham, 1967; Shimp & Bearden, 1982; Wood & Scheer, 1996) and loyalty intention (Fiore & Jin, 2003; Shi, 1999).

Perceived risk of Internet shopping

Perceived risk is generally higher for online shopping than traditional physical store shopping (Akaah & Korgaonkar, 1998; McCorkle, 1990; Tan, 1999) and can strongly deter consumers from shopping online (Siu & Cheng, 2001). Online shopping is regarded as high risk "because of its relative newness and non-store, computer based shopping mode" (Tan, 1999, as cited by Kim, 2004, p 9). A previous study found that online shopping was perceived more risky than printed catalog shopping (Vijayasathy & Jones, 2000). Liebermann and Stashevsky (2002) found that Internet browsers who did not make online purchases had a higher perceived risk of credit card fraud, feared the misuse of their personal information, distrusted the honesty

of the Internet retailer, and were unable to overcome the inability to physically touch the product. They (2002) also found that among heavy Internet users, privacy of personal information, lack of contact with goods, and lack of human contact were lower perceived risk than Internet users who occasionally used the web.

In another study examining perceived risk and Internet shopping, (Bhatnagar, Mirsa, & Rao, 2000), financial risk, was found as the most principal type of risk in Internet shopping. Bhatnagar et al. (2000) described financial risk as being closely associated with losing money through credit card fraud. Cases (2002) explored dimensions of perceived risk in the context of Internet apparel shopping using both interviews and surveys. Eight risk dimensions of Internet apparel shopping were uncovered, including privacy, source, performance, payment security, time, delivery, financial, and social risks. Three types of risk relievers were found in the study: 1) Internet-related (e.g., web site reputation, prior experience with the web site, payment security), 2) merchandise-related (e.g., view or picture of actual garment, product information like fiber and fabric content, price, and brand), and 3) customer service-related (e.g., exchange policy, money-back guarantee) (Cases, 2002). Park, Lennon, and Stoel (2005) found that as perceived risk on Internet shopping increased among participants, the purchase intention of Internet apparel shopping decreased.

Perceived risk of apparel products in remote purchase context

Apparel products have a relatively higher level of perceived risk than other consumer goods (Cunningham, 1967; Hawes & Lumpkin, 1986; Jacoby & Kaplan, 1972). Because clothing is regarded as an extension of the self (Belk, 1988) that is visible to the public eye and influenced by fashion, poorly chosen garment selection is associated with a high level of perceived risk (Kwon, Paek, & Arzeni, 1991; Laurent & Kapferer, 1985; Winakor, Canton, & Wolins, 1980). Consequently, purchasing apparel is positively related to higher levels of fashion risk (Winakor et al., 1980), financial risk, and social risk (Hawes & Lumpkin, 1986; Prasad, 1975).

Other risk factors are involved when consumers purchase apparel from remote purchase retail venues such as catalog, Internet, or television shopping. When in a traditional brick-and-mortar store, consumers usually evaluate the multi-sensory aesthetic qualities of a garment, such as the fabric hand, color, style, and fit. In a remote purchase environment, consumers are unable to evaluate these apparel attributes which may increase perceived risk. Previous studies show

that consumers shopping online are less confident in purchasing a product, such as a sweater, because of their inability to experience the tactile and haptic product characteristics (e.g., fabric hand, texture, weight) prior to delivery (Peck & Childers, 2003). Therefore, purchasing apparel products online may lead to increased levels of perceived risk due to the nature of apparel goods and the shopping medium (Kim, 2004).

The most important information for purchasing apparel via television include care instructions, fabric quality, price, fiber content, size, fit, and return/exchange information (Kim & Lennon, 2000). Similarly, researchers Gaal and Burns (2001) suggested that retailers provide verbal cues such as a general sizing chart, garment measurements, and written product descriptions (e.g., exact fiber content information, care instructions) in order to reduce perceived risk of purchasing apparel via catalogs. They (2001) also recommended the use of visual cues such as vivid, full-sized, close-up pictures of apparel for aiding catalog consumers in evaluating the color and style of the featured garments because customers lack the ability to see the garments in person. The Internet is similar to catalogs and television due to its nature as remote shopping medium; therefore, the prior recommendations of adding verbal and visual cues by Gaal and Burns (2001) have the same capability to enhance an online consumer's shopping experience.

Product information presentation as risk reduction strategies

In general, consumers take part in risk reduction strategies until their level of perceived risk reaches an acceptable level (Cox, 1967; Cox & Rich, 1964). Researchers discussed that consumers use various risk reduction strategies (Arndt, 1967; Barach, 1969; Bauer, 1960; Cunningham, 1967; Roselius, 1971) including use of "advertising, word-of-mouth information, brand and/or store loyalty, the price/quality relationship of an item, and money-back guarantees" as cited in Lee and Huddleston (2006, p. 9). Internet apparel shoppers can expect to encounter hassle free or more lenient exchange/return shipping policies, loyalty rewards programs, consumer reviews, advice columns, and technologically advanced product viewing features, which retailers use to reduce consumers' purchasing risk.

For instance, Yen (2006) provides empirical support that third party endorsements, having a physical store, and easily understood warranty terms were effective to reduce risks involving Internet shopping and to increase purchase intention while shopping in the online store.

In order to reduce perceived risk regarding Internet apparel shopping, online retailers should implement visual and written risk reduction strategies.

Visual product information

One of the main components of online visual merchandising is providing a pictorial view of the product. A visual representation of the product reduces the risk with not being able to touch and handle the product and raises confidence in product assessment (Peck & Childers, 2003). Weathers, Sharma and Wood (2007) provided empirical support that having vivid photographs of the products reduce performance uncertainty of experience goods, but not that of search goods. The multiple views of apparel products on the Internet may help the consumer visualize how the item may look when worn (Allen, 1999) and may also reduce risk. Pricewaterhouse Coopers found that most Internet shoppers are more likely to view a close-up of a product before purchasing; while 44% of shoppers said that being able to use a close-up view increases their purchase intent (*Emarketer*, 2001).

Previous researchers have studied the importance of 3D imaging in the Internet apparel shopping context for consumers. Park et al. (2005) found that visual 3D presentation of the product reduced perceived risk and increased purchase intent for online shopping. Maitland (2000) and Elkin (2001) found that fashion Internet apparel retailers that included 3D features that allowed their customers to try clothes on and coordinate garments improved their online shopping experience (Siddiqui, O'Malley, McColl, & Birtwistle, 2003).

In the area of Internet activity, Shih (1998) discovered that vividness and control from interactivity provides an enjoyable experience online that increases the amount of time a person spends online as well as increases their chance of returning to the site. Then and DeLong (1999) found that Internet shoppers increased their purchase intention after retailers visually provided a mix and match option and presented images of suggested coordinates. Researchers Fiore and Jin (2003) found that image interactivity in the manner of mix and match features increased purchase intention as well as loyalty intentions such as willingness to return to the store.

Park and Stoel (2002) conducted a web site analysis of 31 U.S. apparel retailers from Stores Magazine's Top 100 web sites. They (2002) found that only 13% of the apparel web sites featured the capability to personalize the garment and only 33% of merchant web sites provided

information on style. Park and Stoel (2002) also asserted that apparel retail sites need to enhance their sensory features, including multiple views of the product and advanced interactive features.

Presently, retailers are implementing strategies that past researchers have found to be successful in providing consumers a positive interactive Internet apparel shopping experience. UllaPopken.com, Macy's, Levi Strauss, and Amazon are Internet retailers who sell plus-size apparel and have adopted advanced technology called Scene7 and DMinSite Mercury 6.0, which are platforms that enhance their customers' browsing experience as well as aid in controlling the layout and functionality of site features (UllaPopken, 2006). Online plus-size apparel retailer UllaPopken.com added both to their web site, in which Scene7 enabled customers to view all color options available for a garment as well as zoom and pan products for fine detailed information (UllaPopken, 2006). By changing product presentation infrastructure on the web site, UllaPopken.com has benefited in saved time and energy, increased conversion rates, and decreased customer service calls from customers needing more clarification about products viewed online, as well as reduced number of returns based on customers citing what they received was not what they expected based on product presentation online (UllaPopken, 2006).

Image interactivity technology (IIT)

Image interactivity has been a heavily studied area regarding online image presentation. Fiore and Jin's (2003) research showed that advanced Image Interactivity Technology (IIT) features like mix and match provided by web sites increased purchase intention and willingness to return to the online retailer, and positively influenced attitude toward the online retailer. Several other researchers have found that Internet retailers who implement IIT produce richer visual product information by allowing their users to alter a product's design feature and replicate the product's operation (Fiore & Jin, 2003; Li et al., 2001, 2002).

Fiore, Jin, and Kim (2005) expanded their study in IIT and tested high level IIT by comparing 3D virtual models from online apparel retailers to 2D images on online apparel web sites. They (2005) found that levels of IIT had direct effects on approach responses towards an online retailer; for example, participants exposed to higher levels of IIT expressed higher levels of shopping enjoyment and involvement, and more positive online store perceptions, leading to a positive direct effect on willingness to stay at the online store and a positive indirect effect on patronage intention towards the online store. The findings of Fiore et al. (2005) concurred with

those of Fiore and Jin (2003) that image interactivity features stimulate emotional pleasure and arousal, leading to willingness to purchase and willingness to return to the site.

Researchers have assumed that interactivity features of a web site give the users the experience of telepresence, which often leads the consumer to have positive response towards the virtual retailer (Eroglu, Machleit, & Davis, 2003, 2001; Sautter, Hyman, & Lukosius, 2004; Shih, 1998). Web site interactivity has been correlated with saving time, effort, and reducing risk (Klein, 1998). Convenience and rich information also result from providing IIT on web sites (Li et al., 2001). Based on the previous findings, which place a great emphasis on the importance of providing strong visual product presentation methods for Internet apparel shopping, the researcher expects that by using plus-size models to model the garments for the plus-size shopper in the online product photographs, the plus-size shopper will have a decreased perceived fit risk and will have a higher intent to purchase the apparel and return to that web site.

The previous studies focused online visual product presentation in regards to interacting with customers through image manipulation. However, there is a void of information regarding the details of photos themselves and the models wearing the garments. By examining a non-Internet form of merchandising, such as print advertisement, the impact of the actual photographed model and the effects the image has on its viewers can be investigated.

Print advertisements

In general, print advertisements for women in the United States portray photographed female models below average weight (Loken & Peck, 2005). As reported by the National Association of Anorexia Nervosa and Associated Disorders, the average American woman is 5'4" tall and weighs 140 pounds, while the average American model is 5'11" and weighs 117 pounds (Loken & Peck, 2005). Fashion models shown in print advertisements in the United States are underweight representations of American women and are perceived to be normal and are admired by women and adolescent girls (Loken & Peck, 2005).

Heavier levels of exposure to pictures of thin models in print advertisements were positively associated with lower self-evaluation among viewers (Botta, 1999; Irving, 1990), depression, and body dissatisfaction (Stice & Shaw, 1994). Loken and Peck (2005) found that when print advertisements in a magazine designed for plus-size women are presented in an instructional frame that supports the use of larger-sized female models, the high school girls'

rating of their self-esteem and own attractiveness improved significantly. It is expected that plus-size women would perceive themselves as more attractive and have more positive feelings about themselves after viewing models that look similar to them at the Internet retailer's site.

Subsequently, these women may be more inclined to purchase apparel from this retailer that uses models that better represent their body type and assists them in making better purchase decisions regarding garment fit. With this support, the researcher expects that in future studies, plus-size shoppers will feel less perceived fit risk and stronger intentions to purchase and return to the web site that uses plus-size models to model the garments in the photographs targeted towards Internet apparel plus-size shoppers.

Written product information

In the Internet apparel shopping context, written information used to reduce consumers' perceived risk include descriptions about the garment, return policies, shipping policies, payment methods, and customer service availability. The product description may include detailed information about the garment's color, fit, style, fabric content, care instruction, reviews from other customers, and advice about styling and fit. It is the online retailer's responsibility to make sure the information provided about the garment is accurate and that enough information has been made available to reduce the shopper's perceived risk.

Eroglu et al. (2001) included descriptions of merchandise, which they categorized as being "high task", designed to assist the utilitarian shopping motive (e.g., shopping to purchase a product) and enable consumers to achieve their shopping goals (Childers et al., 2001). It is important to focus on the description of the merchandise and present this information as accurately as possible because many Internet shoppers are goal-oriented and have a task to accomplish (CyberAtlas Staff, 2003).

Garment description in particular is a key aspect for shoppers when deciding whether or not to make the purchase (Then & DeLong, 1999). Information about the garment being viewed online is a supplement to the visual merchandising presentation. The purpose of the online garment description is to inform the shopper as much as possible about the garment because the consumer lacks the ability to touch or handle it while shopping online. Then and DeLong (1999) found that written information about fiber content and fabric care were the most important

factors for Internet apparel shoppers. Allen (2000) suggested that Internet retailers offer more detailed product information, as well as multiple photographs to increase purchase intention.

Other researchers conducted content analyses of web sites to investigate Internet apparel retailer's product descriptions. Jang and Burns (2004) examined over 46 apparel retail web sites to determine which retailer merchandising components provided written product descriptions in the areas of functional design, structural design, and sensuous design. When comparing Korean and American apparel web sites, Lee et al. (2007) investigated both visual and written product information. They (2007) looked for visual cues in the product description, such as product pictures, picture enlargement, and color descriptions, whereas in the written area, they searched for information about the product's fiber content, fabric construction, fabric hand, size chart, size measurement, product quality, product care, coordination, style and fashion, fitting information, product reviews, price information, and country of origin.

Hypotheses development

Apparel and Internet researchers have examined several different aspects of online visual product presentation and have found evidence that, among different levels and types of product, imaging reduces perceived risk of consumers (Allen, 1999; Gaal & Burns, 2001; Kim et al., 2007; Klein, 1998; Loken & Peck, 2005; Park et al., 2005; Weather et al., 2007). To effectively reduce risk, researchers have emphasized the importance of making information available to moderate perceived risk in television shopping (Kim & Lennon, 2000), and in Internet shopping (Park & Stoel, 2005). Therefore, the researcher will examine the effects of providing less elaborate or more elaborate garment information to reduce perceived fit risk and increase purchase intention and online store loyalty. The researcher expects that images with higher levels of fit information will reduce perceived risk among the plus-size Internet apparel shopper (H₁).

Many researchers examined and found empirical support that the amount of certain visual activities and features presented online for visual merchandising of apparel increased the willingness to purchase for plus-size Internet apparel shoppers (Allen, 2000; Fiore & Jin, 2003; Fiore et al., 2005; Kim et al., 2005; Park et al., 2005; Then & DeLong, 1999). The researcher postulates that visual merchandising features, such as a picture of a plus-size model presented on a plus-size Internet apparel web site, will increase the purchase intention of plus-size shoppers (H₂). Previous studies have investigated increased loyalty intentions, such as repeat purchase

behavior due to visual merchandising methods that involve the Internet apparel shopper with a need for visual product information, enjoyment, and enticement for return to the web site (Fiore & Jin, 2003; Fiore et al., 2005; Kim et al., 2005; Shi, 1998). It is expected that higher levels of visual fit information presented on an Internet apparel web site for plus-size shoppers will assist them in making a better purchase decision, which will likely increase their willingness to return to the site or recommend the site to other plus-size Internet apparel shoppers.

Since previous studies fail in addressing the issue of the effect of visual fit information, particularly model size, in online product presentation on the purchase intention and patronage intention of a plus-size woman, the researcher will attempt to show that plus-size women prefer to see a plus-size model wearing the garment they would like to purchase because the plus-size model will reduce perceived fit risk. Reduced perceived fit risk will lead the consumer to have a greater intent to purchase the item as well as return to that web site in the future. Therefore, by examining the photos and models within them, a simple and more constructive relationship can be understood between how model appearance in the photos can affect a plus-size Internet apparel shopper's willingness to purchase and loyalty intentions (H₂ and H₃).

There has been little research conducted in the area of written product information and its effects on perceived risk; however, studies have cited that product information and varying levels of product descriptions have a positive effect on perceived risk (Gaal & Burns, 2001; Yen, 2006). Therefore, the researcher assumes that when more elaborately written product information is presented on a plus-size apparel web page, the plus-size Internet apparel shopper will perceive less risk than about the garment (H₄).

Previous research that builds on the foundation of written product information reducing perceived risk have also found relationships between written product descriptions and purchase intention within the catalog shopping, television shopping, and Internet shopping contexts (Allen, 2000; Kim & Lennon, 2000; Lynch & Ariely, 2000; Yen, 2006). It is expected that, although the shopping mediums slightly differ, plus-size Internet apparel shoppers will be more inclined to make a purchase when more elaborate written garment information is included in the product description (H₅).

Currently, few studies have provided empirical support that the level of written product information can increase loyalty intentions such as positive word of mouth or willingness to pay a premium price. Lynch and Ariely (2000) found that the amount of information available on a

retailer's web site positively affects store patronage intentions. The researcher assumes that a plus-size apparel web page that provides rich and detailed written garment information will encourage the plus-size Internet apparel shopper to return the site for future purchases, as well as recommend the site to others (H₆).

Based on the previous literature review, the following hypotheses were developed:

- H₁. The level of visual fit information has a negative effect on the perceived fit risk of purchasing the apparel featured on the web page.
- H₂. The level of visual fit information has a positive effect on the purchase intention of the apparel featured on the web page.
- H₃. The level of visual fit information has a positive effect on the loyalty intention regarding the web page.
- H₄. The level of written fit information has a negative effect on the perceived fit risk of purchasing the apparel featured on the web page.
- H₅. The level of written fit information has a positive effect on the purchase intention of the apparel featured on the web page.
- H₆. The level of written fit information has a positive effect on the loyalty intention regarding the web page.

Table 2.1 shows the relationships among the independent and dependent variables and literature that provides supports for the proposed relationships.

Table 2. 1. Research Summary Supporting Hypotheses 1 through 6

Hypotheses	Relationships among variables		Research supports for the hypothesized relationships
H ₁	Level of visual fit information	→ Perceived fit risk	Allen (1999), Gaal and Burns (2001), Kim et al. (2007), Klein (1998), Loken and Peck (2005), Park et al. (2005), Weathers et al. (2007)
H ₂	Level of visual fit information	→ Purchase intention	Allen (2000), Fiore and Jin (2003), Fiore et al. (2005), Kim et al. (2005), Park et al. (2005), Then and DeLong (1999)
H ₃	Level of visual fit information	→ Loyalty intention	Fiore and Jin (2003), Fiore et al. (2005), Shi (1998), Kim et al. (2005)
H ₄	Level of written fit information	→ Perceived fit risk	Gaal and Burns (2001), Yen (2006)
H ₅	Level of written fit information	→ Purchase intention	Allen (2000), Kim and Lennon (2000), Lynch and Ariely (2000), Yen (2006)
H ₆	Level of written fit information	→ Loyalty intention	Lynch and Ariely (2000)

CHAPTER 3: METHOD

This section provides an explanation of methods and procedures of this experimental study. The method chapter includes the description of the research design, sample, treatment manipulation and pilot test, web page stimulus development, questionnaire development, approval of human subjects use, consent forms, data collection procedure, and data analysis.

Research Design

The researcher employed an experimental design approach, which included a 2 x 2 between subject factorial design to determine the cause-and-effect relationships between the treatment variables and dependent variables. The treatment variables in this study were 1) visual fit information presented on the web site (the size of the photographed model--plus-size vs. non plus-size) and 2) written fit description information provided on the web site (more elaborate vs. less elaborate written fit description). The dependent variables included 1) perceived fit risk, 2) purchase intention, and 3) loyalty intentions.

Sample

Women between the ages of 18 to 65 were actively recruited for participation in this experiment through email communication. Convenience sampling approach was used by contacting friends, family, and associates, of the researcher. To gain more participants with similar characteristics desired for the study, a snowball sampling method was implemented (Churchill, 1999a). Women who received the email were encouraged to forward the email to other women they knew, to help increase participation.

From the total of 118 participants, 114 provided usable data for the analysis. All participants included in the analysis stated their size to verify eligibility as a plus-size shopper.

There are justifications for using the sampling and data collection methods. First, plus-size women were recruited because the study was specifically based on women who were a size 14 and larger. The recruitment email specifically stated for recipients to be a size 14 or larger to participate, or forward the email to other female friends and family if she did not meet this requirement. Secondly, women were contacted through email because the study required women to have access to the Internet and who have Internet apparel shopping experiences in the past six

months. It is reasonable to expect that a female plus-size Internet apparel shopper would most likely have an email address and access to the Internet, since most online retailers require a shopper to provide their email address when making online purchases. Thirdly, women over the age of 60 and under the age of 20 were not included in this study because a few outliers in age may have skewed results. Finally, female plus-size Internet apparel shoppers were selected as a sample in order to closely reflect the online plus-size apparel shopping situation. The environment in which the women participate in this experiment was not controlled in order to copy the natural settings of women shopping online at home, school, or work for their apparel.

Treatment manipulation and pilot test

There were two treatment variables, visual fit information stimuli (photographed model size; plus-size vs. non plus-size) and written fit information stimuli (more elaborate vs. less elaborate) within this study. Both the visual and written stimuli contained a higher and a lower level, illustrated in Table 3.1. Internet web pages were developed for this experimental study as media to simulate the online shopping setting and to frame the treatment stimuli (see Appendix A). Each web page contained a front and back view of the plus-size or non plus-size model wearing a garment, as well as written fit information within a product description placed next to the two photographic views. The following sections discuss the visual and written fit information manipulations and framework within the experiment.

Visual fit information

The treatments for the visual fit information were a plus-size model size 16W for a higher level and a non plus-size model size 6 for a lower level. Both models had similar skin color and wore identical garments in different sizes, 16W and 6, respectively. For this study, the actual body size of the featured model served as the treatment. The photographs of the plus-size model, both front and back views, were placed along the left side of product description on web pages A and B, which were inserted into two web surveys A and B. The photographs of the size 6 model, both front and back view, were also placed on the left side of the product description on web pages B and D, and were inserted into the web surveys C and D. The purpose of varying higher and lower levels of visual fit information through models size was to test H_1 - H_3 .

Written fit information

The product description stimulus in this study contained two sets of information: 1) general information controlled for both the higher and lower level treatments, and 2) written fit related information, which was manipulated between the treatments (see Table 3.1).

The treatments for the written fit information were more (higher level) or less elaborate (lower level) descriptions about the style of the garment, garment dimensions, and editorial suggestions.

Table 3. 1. Four Treatment Mock Web Pages

	<u>Web page A</u>	<u>Web page B</u>	<u>Web page C</u>	<u>Web page D</u>
<u>Visual fit information treatment</u>	<u>Plus-size model</u>	<u>Plus-size model</u>	<u>Non plus-size model</u>	<u>Non plus-size model</u>
Photographed images	Size 16W	Size 16W	Size 6	Size 6
<u>Written fit information treatment</u>	<u>More elaborate fit information</u>	<u>Less elaborate fit information</u>	<u>More elaborate fit information</u>	<u>Less elaborate fit information</u>
Product Description	<ul style="list-style-type: none"> ▪ Specific style information (e.g., fitted, surplice bust, princess seams) ▪ Exact dimensions (e.g. 47” bust) ▪ Fit related editorial suggestions (e.g. “camouflage wide hips”) 	<ul style="list-style-type: none"> ▪ <i>Less detailed style information</i> ▪ <i>No given dimensions (e.g. knee length)</i> ▪ <i>Non-fit related editorial suggestions (e.g. “comfortable dress to wear”)</i> 	<ul style="list-style-type: none"> ▪ Specific style information (e.g., fitted, surplice bust, princess seams) ▪ Exact dimensions (e.g. 47” bust) ▪ Fit related editorial suggestions (e.g. “camouflage wide hips”) 	<ul style="list-style-type: none"> ▪ <i>Less detailed style information</i> ▪ <i>No given dimensions (e.g. knee length)</i> ▪ <i>Non-fit related editorial suggestions (e.g. “comfortable dress to wear”)</i>
<u>Controlled information</u>	<ul style="list-style-type: none"> ▪ Front and back view of garment ▪ Price ▪ Fabric hand ▪ Garment care ▪ Country of origin ▪ Details (e.g. pocket, zipper) 			

These three features were chosen because they inherently provided more information about how a garment may fit (Gaal & Burns, 2001; Jang & Burns, 2004, Lee et al., 2007). For example, if the product description stated that the garment was designed to camouflage large hips, the consumer would assume that if she has large hips, this garment could potentially fit her body well.

Control for the written information (i.e., garment product description) included: price, fabric hand, garment care, country of origin, and design details (e.g. pockets, zippers, and embellishment). The list of information has been adapted from Jang and Burns's (2004) Internet apparel content analysis study. The higher and lower levels of the written treatments and the written controls were placed along the right side the visual treatments (photographs of product worn a model) in order to replicate an apparel product web page. After the four web pages were developed, the researcher conducted a pilot test of stimuli web pages to ensure the correct manipulation of the treatments.

Pilot test

Twenty plus-size women examined written product descriptions and fit information to determine if the details provided in each web page are manipulated (more or less elaborate) as intended by the researcher. A pilot test was conducted with a group of twenty plus-size women to ensure that the photographed model sizes were perceived as intended by the researcher. The pilot test participants also read through the product descriptions and verified that the higher level and lower levels of written fit information were perceived as intended in this research study.

Web page stimulus development

The researcher created four different mock web pages of the stimuli with varying levels of visual and written information treatment. Adobe Illustrator and Adobe Photoshop software were used for creation of the mock web pages. The four differing mock web pages A through D were then inserted into four identical questionnaires on SurveyMonkey.com. Survey A consisted of a visual stimuli of size 16W model (high) and more elaborate written fit information (high); Survey B: visual stimuli of a size 16W model (high), and less elaborate written information (low); survey C: visual stimuli of a size 6 model (low) and more elaborate written fit information (high); and Survey D: visual stimuli of a size 6 model (low) and less elaborate written fit

information (low). Mock web pages are shown in Appendix A. The mock web pages were inserted in the middle of the online survey so that after exposure, participants would answer questions based on what they observed.

Questionnaire development

The questionnaire consisted of two sections: Part One and Part Two. Part One consisted of previous Internet apparel shopping experiences and beliefs about plus-size apparel industry retail practices. Part One was completed by the participant before exposure to the stimulus. Part Two contained questions regarding perceived fit risk, purchase intention, loyalty intentions, product description, and demographic information. Participants completed Part Two of the questionnaire after exposure to the stimulus.

Questionnaire Part One

Previous Internet apparel shopping experiences

In order to better understand the participants' previous Internet apparel shopping experiences for plus-size garments, the following five items were asked and measured using a 5-point ordinal scale. The ordinal scales were: *Less than 6 months* (1), *Six months to 1 year* (2), *One to 3 years* (3), *Three to 5 years* (4), *More than five years* (5). The first item was the length of time the participant has been using the Internet for shopping in general, and secondly, the length of time the participant has been using the Internet for shopping for plus-size apparel. The rest of the items were: "How many apparel items have you bought for yourself on the Internet within the last 6 months," "Rounding off to the nearest dollar, how much have you spent on apparel purchased for yourself via the Internet within the last 3 months," and "How many times have you browsed the Internet for plus-size apparel within the last 2 weeks." All of the questions were adopted and modified from Kim (2004).

The final question for this section was open-ended for the participant to provide one favorite online plus-size apparel store from which the participant has previously made purchases within the last 6 months. This item was included in the survey to determine the most popular plus-size retailers on the Internet within this sample group in this study.

Beliefs about plus-size apparel industry retail practices

Several questions were created by the researcher to gain more information about the participants' beliefs regarding current practices within the plus-size apparel industry in regards to sizing practices, product assortment, and shopping convenience. Questions about satisfaction with sizing practices and fit for plus-size apparel were also included. Participants were asked to answer the belief statements using a five-point Likert scale ranging from *Strongly Agree* (5) to *Strongly Disagree* (1). Questions eight through nineteen for this section are presented in Table 3.2.

Questionnaire Part Two

Part two of the questionnaire consisted of questions regarding perceived fit risk, purchase intention, loyalty intention, product description, and demographic information.

Perceived fit risk

One item was developed by the researcher to measure consumers' perception of fit risk regarding purchasing the garment shown on the web page. The question reads, "If the web site was available for actual shopping, I would be likely to perceive purchasing a garment from this site as risky," was measured on a five-point Likert scale ranging from *Strongly Agree* (5) to *Strongly Disagree* (1).

Purchase intention

One item adopted from Kim (2004) was used to measure consumer's purchase intention of plus-size garments featured on the web pages. Question 20b stated, "If the web site was available for actual shopping, I would be likely to purchase a garment from this site," was measured on a five-point Likert scale ranging from *Strongly Agree* (5) to *Strongly Disagree* (1).

Loyalty intentions

Loyalty intention was measured by examining three components: positive word of mouth, patronage intention (repeat purchase), and willingness to pay a premium price (Zeithaml et al., 1996). A total seven items were asked on a five-point Likert scale with responses ranging from *Strongly Agree* (5) to *Strongly Disagree* (1).

Table 3. 2. Statements for beliefs about Internet apparel shopping and plus-size apparel industry retail practices

Statements
I am very satisfied with the garment fit information provided by the following Internet apparel retailers: department stores (e.g., Macy's.com) specialty chain stores (e.g., Talbots.com) mass merchant stores (e.g., Walmart.com) online plus-size only stores (e.g., Avenue.com, Kiyonna.com)
I am very satisfied with garment fit information among online apparel stores that carry a wide range of women's sizes including misses, petites, tall, and plus-size among the following categories: Careerwear/ Professional dress Casualwear/ Lounge Formalwear Intimates Swimwear
I am very satisfied with garment fit information among online apparel stores that ONLY carry plus-sizes among the following categories: Careerwear/ Professional dress Casualwear/ Lounge Formalwear Intimates Swimwear
I feel very comfortable shopping online for plus-size apparel compared to shopping in the plus-size section of the following retailers: Physical department stores (e.g., Macy's) Specialty Chain stores (e.g., Talbots) Mass merchant stores (e.g., Walmart) Plus-size only stores (e.g. Avenue)
I almost always fluctuate sizes among different brands.
I almost always fluctuate sizes within the same brand for different garment styles.
I almost always purchase my clothing from an online retailer rather than in a physical store
There are many more fashionable plus-size styles of apparel available on the Internet than at the physical stores I shop.
I feel really great about myself when I see a plus-size woman modeling a garment that is available to purchase in the plus-size range.

Table 3.2 continued

Statements
It is very easy to find well-fitting plus-size garments online.
Most of the time I find detailed garment information from online retailers while browsing for apparel.
There are many plus-size apparel online retailers offering a wide product assortment (e.g., styles, sizes)

Three items measuring positive word of mouth adopted from Zeithaml et al (1996) and modified to fit the online context were, “If the web site was available for actual shopping, I would be likely to” 20c) “recommend this web site to other plus-size apparel shoppers”, 20d) “encourage my friends and relatives to shop from this web site”, and 20e) “I would say positive things about this web site to plus-size shoppers.”

To measure patronage intention toward the web page, two items were adapted from Kim (2004), who previously modified items from Zeithaml et al (1996). The questions were prefaced with, “If the web site was available for actual shopping, I would be likely to”: 20f) “consider this my first choice to buy apparel” and 20g) “return here to shop for the next occasion that I need new clothing” The two items were measured on a five-point Likert scale ranging from *Strongly Agree* (5) to *Strongly Disagree* (1).

To measure the willingness to pay a premium price, two items were adapted and modified from Zeithaml et al (1996). Participants were asked to respond to a five-point Likert scale ranging from *Strongly Agree* (5) to *Strongly Disagree* (1). The items were prefaced with “If this web site was made available for actual shopping, I would be likely to” 20h) “pay a higher price to purchase a garment at this retailer (in normal economic condition)”, and 20i) “continue to shop for a plus-size garment from this retailer even if the prices increase somewhat (in normal economic conditions)”.

Product description

Three items were developed by the researcher to test impact of the three written manipulated treatments placed within the product description. The three items: garment style, garment dimensions, and fit advice were measured using a five-point Likert scale ranging from *Strongly Agree* (5) to *Strongly Disagree* (1). The questions were prefaced with “The product description provided me very detailed information about the garment fit for the following items”: 21a) “garment style”, 21b) “garment dimensions”, and 21c) “fit advice”.

Demographic information

Participants’ demographic information was obtained using eight questions relating to age, ethnicity, occupation, highest level of education completed, marital status, and annual household income. To better understand the makeup of the participants in the sample population, the women were asked two questions regarding the garment sizes they most often wear, and how they describe their body shape. The women were asked to choose one of six body shape descriptions that best identified the shape of her figure, which also included images for visual assistance, adopted from Igili.com (2008).

Approval of human subjects use

Prior to collecting data, the Institutional Review Board at Virginia Polytechnic Institute and State University reviewed the proposed study and approved the use of human subjects (see Appendix B). The wellbeing and rights of the human subjects were secured by voluntary participation, procedures of minimal risk to participants, and confidential data reporting procedures.

Consent forms

Participants were given consent forms within the recruitment materials (i.e., email invitation) and the welcome page of the online survey that described the activity they would be participating in and its purpose. The consent form contained statements regarding voluntary participation, confidentiality of individual responses, risk involved, compensation, and required time for completion. Below these statements was a place for participants to initial, indicating their acceptance of the informed consent, and then proceed to the experiment (see Appendix C).

Data collection procedure

After receiving approval from the Institutional Review Board at Virginia Polytechnic Institute and State University regarding the use of human subjects, pilot tests of the treatment manipulation and questionnaire were performed, followed by recruitment emails for the actual Internet survey. The researcher developed a list of contacts and sent each person an initial email that stated her name, status in graduate school, and purpose of her study, a request to gather a list of friends and family she could forward the survey to, and a statement to anticipate the official email invitation within the following days. The official email invitation contained a brief paragraph about the researcher and her study objectives, eligibility for participation, as well as the consent form that contained links to the surveys participants were to select. Four links were included on the email invitation based on the last digits of the participants' zip code, for random assignment of participants. The researcher adopted a snowball sampling technique and asked participants to forward the survey URL address to other female friends and family.

Participants were introduced to the study with a brief overview in the welcome page provided by the researcher, as well as an informed consent agreement. After the participants agreed to participate in the study, they completed the first part of the questionnaire regarding beliefs about Internet apparel shopping and plus-size apparel industry retail practices. After completing part one, the participants were given brief instructions to "Assume that you are viewing a page in order to shop for a plus-size garment online", and then "Proceed to the next page and view the page as long as needed." Participants were notified that once they leave the scenario web page that they would not be able to return.

Upon leaving the stimulus web page of the photographed model and product information, participants were directed to part two of the questionnaire. After completing part two, they were redirected to a contest page to win a \$25 e-gift card. In order to increase the response rate, a drawing of a \$25 gift card for every 30 participants was implemented. This study incentive was mentioned at the beginning of the web survey, and participants had the opportunity to enter their information at the end of the survey. They were then prompted to enter their email address and phone number. Data was collected by retrieving the responses under the administration function within SurveyMonkey.com. SurveyMonkey.com is an online survey tool that allows educators and professionals to create and distribute various types of surveys and analyze the responses, with a SSL (Security Socket Layer).

Data analysis

Data analysis included descriptive statistics, multivariate analyses of variance (MANOVA), and univariate analyses of variance (ANOVA) utilizing the Statistical Package for the Social Sciences (SPSS) version 16.0. Descriptive analysis focused on participants' demographic profile, beliefs about plus-size apparel industry practices, Internet shopping experiences, and other proposed research variables. Frequencies, percents, means, and standard deviations were used for descriptive statistics. To examine the effects of visual and written fit information on perceived fit risk, purchase intention, and loyalty intention, MANOVA and ANOVA were performed.

CHAPTER 4: ANALYSIS OF RESULTS

General analysis information

Data was analyzed using SPSS 16.0. Descriptive statistics, multivariate analyses of variance, and univariate analyses of variance were calculated. Descriptive statistics were used to describe demographics, previous Internet apparel shopping experiences, beliefs about plus-size apparel industry retail practices, perceived risk, purchase intention, and loyalty intentions. To determine the existence of any visual and written fit information merchandising differences on perceived risk, purchase intention, and loyalty intentions, MANOVA and ANOVA were performed.

Preliminary analyses

Characteristics of participants, participants' previous Internet apparel shopping experiences, beliefs about plus-size apparel industry retail practices, and analyses of reliability were performed.

Demographic characteristics of participants

The participants in this study (N = 114) ranged between 19 to 64 years old. All participants were women. About 43.8 percent of participants consisted of Black/African American/African, followed by White/Caucasian (38.4%), Asian/Asian American/ Pacific Islander (8.9 %), Latino/Hispanic/Hispanic American (5.4 %), Multi-racial (3.6%) ethnicities (see Table 4.1).

Additionally, 22.8 percent of participants' occupations were classified as educators, followed by students (16.7%), and administrative/ customer service (14.9%). Approximately 58.5 percent had earned a Graduate Degree or Professional Degree (Certificate), while approximately 28.3% earned a Bachelor's Degree. About 45.5 percent were single, followed by married (39.3%), divorced/ separated (8.9%), engaged (3.6%), and widowed (2.7%) (see Table 4.1).

Table 4. 1 Demographic characteristics of the sample (n = 114)

Variables	Descriptions	Frequency (<i>n</i>)	Percent
Age (n = 114)	19 – 25 years	18	15.8%
	26 – 35 years	25	21.9%
	36 – 45 years	24	21.15
	46 – 55 years	36	31.6%
	56 and older	9	7.95
	None given	2	1.8%
Ethnic background (n = 112)	Asian, Asian American, Pacific Islander	10	8.9%
	Black, African American, African	49	43.8%
	Latino, Hispanic, Hispanic American	6	5.4%
	Multi-racial	4	3.6%
	Native American	0	0%
	White, Caucasian American	43	38.4%
	Other	0.0	0%
Occupation (n = 114)	Administrative/ Customer Service	17	14.9%
	Businesses IT	5	4.4%
	Business Mgmt/ Self Employed	7	6.1%
	Business Research/ Analyst/ Marketing	3	2.6%
	Educator	26	22.8%
	Government	7	6.1%
	Home Maker	3	2.6%
	Legal	3	2.6%
	Medical/ Scientist	5	4.4%
	Retired	3	2.6%
	Student	19	16.7%
	None reported	4	3.5%
	Other	12	10.7%
Highest level of education completed (n = 113)	Bachelor Degree	32	28.3%
	Graduate Degree/ Post Bacc. Degree	52	45.6%
	High School Diploma	15	13.3%
	Middle School/ Junior High	0	0%
	Professional Degree/ Certificate	14	12.4%

Table 4. 1. continued

Variables	Descriptions	Frequency (<i>n</i>)	Percent
Marital status (n = 112)	Divorced/ Separated	10	8.9%
	Engaged	4	3.6%
	Married	44	39.3%
	Single	51	45.5%
	Widowed	3	2.7%
Annual household income (n = 111)	\$0 - \$10,000	6	5.4%
	\$10,001 - \$20,000	5	4.5%
	\$20,001 - \$30,000	12	10.8%
	\$30,001 - \$40,000	12	10.8%
	\$40,001 - \$50,000	15	13.5%
	\$50,001 - \$60,000	16	14.4%
	\$60,001 - \$70,000	11	9.9%
Body shape (n = 112)	More than \$70,001	34	30.6%
	Diamond	3	2.7%
	Triangle	8	7.1%
	Rectangle	6	5.4%
	Oval	19	17%
	Hourglass	24	21.4%
	Inverted Triangle	4	3.6%
Figure Eight	48	42.9%	
Dress size (n = 113)	14/ 16 W	37	32.7%
	18/ 20 W	34	30.1%
	22/ 24 W	26	23.0%
	26/ 28 W	12	10.6%
	30/ 32 W	3	2.7%
	34 /36 W	1	.9%
	38 W and larger	0	0%

*Note: Different Ns are due to missing information

In this study about sixty percent of participants earned an annual household income between \$0 and \$60,000. Over half of participants identified their body shape as either Figure Eight (42.9%) or Hourglass (21.4%), followed by Oval (17%), Triangle (7.1%), Rectangle (5.5%), Inverted Triangle (3.6%), and Diamond (2.7%). About one third of participants wore a size 14 /16W, while almost 86 percent of all participants in the study wore a size 14W to 24W (see Table 4.1).

Previous Internet apparel shopping experiences

Among participants in this study, 51.8 % have used the Internet for shopping in general within the last five years. The length of time the participants have been using the Internet for shopping for plus-size apparel was as follows: 21.9% used the Internet for shopping for plus size apparel less than 6 months; 7% had plus-size apparel shopping experiences from six months to one year; 29.8% use the Internet for shopping for plus size apparel from one to three years; 19.3% had three to five years of experience; 21.9% had more than five years experience shopping online for plus-size apparel (see Table 4.2).

About thirty percent of participants purchased about one to four apparel items for themselves on the Internet within the last six months, and approximately sixty percent of participants spent less than \$100 on apparel purchased for themselves via the Internet within the last six months; ten participants spent more than \$501 on apparel for themselves online within 3 months prior to taking the survey (see Table 4.2).

Among the participants in this study, 56.3% browsed the Internet for plus-size apparel within the two previous weeks prior to taking the survey, and 8.8% named Lane Bryant as their favorite Internet plus-size apparel store, from which they have previously made purchases, while Old Navy and JC Penney tied for second, at 5.3% (see Table 4.2).

Beliefs about plus-size apparel industry retail practices

Participants' general beliefs about plus-size apparel industry retail practices were examined. A detailed description is exhibited in Table 4.3. Approximately thirty percent of women agreed that there were many plus-size apparel online retailers offering a wide product assortment, and 28.1% agreed with the statement that they usually found detailed garment information from online retailers while browsing for apparel.

Table 4. 2. Descriptive statistic of participants' previous Internet apparel shopping experiences

Variables and description	Frequency (<i>n</i>)	Percent
<u>Length of time use Internet for general shopping</u>		
Less than 6 months	9	7.9%
Six months to 1 year	4	3.5%
One to 3 years	23	20.2%
Three to 5 years	23	20.2%
More than 5 years	55	48.2%
<u>Length of time using Internet for plus-size apparel shopping</u>		
Less than 6 months	25	21.9%
Six months to 1 year	8	7.0%
One to 3 years	34	29.8%
Three to 5 years	22	19.3%
More than 5 years	25	21.9%
<u>Number of items purchased online for self within last 6 months</u>		
None	43	37.7%
One	14	12.3%
Two to 4 items	20	17.5%
Five to 7 items	17	14.9%
Eight to 10 items	6	5.3%
More than 10 items	14	12.3%
<u>Amount spent on apparel purchased for the self within the last 6 months</u>		
None	42	36.8%
\$1 - \$100	26	22.8%
\$101- \$300	23	20.2%
\$301 - \$500	13	11.4%
\$501 -\$700	6	5.3%
\$701-\$1,000	2	1.8%
<u>Number of times participant browsed the Internet for plus-size apparel within last 2 weeks</u>		
None	50	43.9%
One to 4 times	45	39.5%
Five to 10 times	15	13.2%
Eleven to 15 times	2	1.7%
Sixteen to 20 times	0	0%
More than 21 times	2	1.7%

Table 4.2 continued

Variables and description	Frequency (<i>n</i>)	Percent
<u>Favorite Internet plus-size apparel store</u>		
Lane Bryant	10	8.8%
JC Penney	6	5.3%
Old Navy	6	5.3%
Avenue	5	4.4%
Macy's	5	4.4%
None reported	29	25.4%
Other	53	46.4%

When examining garment fit components, nearly 30% of the participants reported that they agreed that they were very satisfied with the garment fit information provided by plus-size only Internet apparel retailers. About 43.9% agreed they were very satisfied with garment fit information among online apparel stores that carry a wide range of women's size including misses, petites, tall, and plus-size among casual clothing category. The swim, intimates, and careerwear categories provided the highest level of dissatisfaction for garment fit information among online apparel stores that carried a range of women's sizes. Similarly, 37% of all the participants agreed or strongly agreed that they were satisfied the garment fit information provided from Internet plus-size only retailers, followed by department stores that operate online (31.5%). Finally, seven percent of the women strongly agreed that it was very easy to find well-fitting plus-size garments online, while 26.3% stated they agreed, and 38.6% responded neutral about the statement.

About 26.5% of participants agreed that they felt very comfortable shopping online for plus-size apparel instead of shopping in the plus-size section of department stores, and 11.5% strongly agreed that they felt more comfortable shopping online than going into a department store. Surprisingly, 26.8% of participants agreed that they preferred online shopping to going into physical plus-size only stores (e.g., Lane Bryant, Avenue, Catherine's). Among participants in this study, 35.1% disagreed with the statement that they were able to find much more fashionable plus-size apparel on the Internet than in physical stores. Furthermore, 19.8% strongly disagreed on being able to find more fashionable clothing online instead of in physical stores.

When asked about brand sizing practices, almost half of women stated that they disagreed with the statement of almost always fluctuating sizes from one brand to another, while only 22.8% agreed that they almost always fluctuated sizes within the same brand for different

Table 4. 3. Descriptive statistics of participants' beliefs about plus-size apparel industry retail practices

Item	Mean	SD
I am very satisfied with the garment fit information provided by the following Internet apparel retailers:		
Department stores (e.g., Macy's.com)	2.34	1.65
Specialty chain stores (e.g., Talbots.com)	2.25	1.60
Mass merchant stores (e.g., Walmart.com)	2.21	1.58
Online plus-size only stores (e.g., Avenue.com, Kiyonna.com)	2.36	1.87
I am very satisfied with garment fit information among online apparel stores that carry a wide range of women's sizes including misses, petites, tall, and plus-size among the following categories:		
Careerwear/ Professional dress	3.06	1.23
Casualwear/ Lounge	3.33	1.72
Formalwear	2.20	1.46
Intimates	2.54	1.46
Swimwear	2.35	1.41
I am very satisfied with garment fit information among online apparel stores that ONLY carry plus-sizes among the following categories:		
Careerwear/ Professional dress	2.83	1.63
Casualwear/ Lounge	2.91	1.56
Formalwear	2.24	1.68
Intimates	2.60	1.63
Swimwear	2.45	1.68
I feel very comfortable shopping online for plus-size apparel compared to shopping in the plus-size section of the following retailers:		
Physical department stores (e.g., Macy's)	2.70	1.56
Specialty Chain stores (e.g., Talbots)	2.40	1.60
Mass merchant stores (e.g., Walmart)	2.50	1.50
Plus-size only stores (e.g. Avenue)	2.62	1.49
I almost always fluctuate sizes among different brands.	1.94	.91
I almost always fluctuate sizes within the same brand for different garment styles.	2.47	1.11
I almost always purchase my clothing from an online retailer rather than in a physical store.	3.84	1.10
I feel really great about myself when I see a plus-size woman modeling a garment that is available to purchase in the plus-size range.	2.01	.92

Table 4.3 continued

Item	Mean	SD
It is very easy to find well-fitting plus-size garments online.	3.08	.98
Most of the time I find detailed garment information from online retailers while browsing for apparel.	2.97	.85
There are many plus-size apparel online retailers offering a wide product assortment (e.g., styles, sizes, colors).	3.05	1.01

*Note: All questions were anchored on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

garment styles. Furthermore, when participants were asked if viewing a plus-size model online made them feel better about themselves, over 75% of participants stated that they disagreed or strongly disagreed.

Reliability analyses

Reliability analysis was used for the seven items testing loyalty intentions. Those items were based on three main components including positive word of mouth, patronage intention (repeat purchase), and willingness to pay a premium price (Zeithaml et al., 1996). The seven items were asked using a five point Likert scale with responses ranging from *Strongly Disagree* (1) to *Strongly Agree* (5). Using reliability analysis for the loyalty intention scale, the Cronbach's *alpha* coefficient of the construct was .917, which is considered acceptable.

Manipulation checks

In the present study, two treatments, visual and written fit information were manipulated in terms of the size of the model in the photograph (plus-size vs. non plus-size) and elaborateness of the written fit information within the product description (more elaborate vs. less elaborate). Manipulation checks were performed to determine if participants would perceive different models sizes and written product descriptions.

Size of the model in photograph

Participants were asked to assess their perception of the size of the model for the visual portion of the manipulation check (Web page one presents a better size model (16W) for plus-size shoppers than web page two, which contains a size 6 model). The mean score for web page one as the better representation of a plus-size model was 3.62, with a range 1 (Strongly Disagree) to 5 (Strongly Agree) (see Table 4.4). A somewhat higher than neutral score in this study indicated that participants did not have a significantly higher perception for a larger size model. Based on mean comparisons, people who were exposed to either web pages with the plus-size model photographed and the size 6 model perceived somewhat perceived the size 16W model to be the better representative for a plus-size shopper. In order to test for significant differences in size perceptions (plus-size model vs. non plus-size model), a one sample *t*-test was performed. The results revealed a significant main effect for model size on size perceptions, $t(12, .432) = 8.374, p < .000$, using a two-tailed test (see Table 4.5). In this analysis, the independent variable was model size (large model vs. small model) and the dependent variable was perception of size. There was a slight difference between the plus-size model and non plus-size model on size perceptions. Therefore, the size of the models on the web pages was successfully manipulated.

Table 4. 4. Participants' perceptions of the size of the model in the photograph

Item	N	Min.	Max.	<i>M</i>	<i>SD</i>
Web page one better than web page 2	13	1	5	3.62	1.55

Table 4. 5. One sample t-test for the size of the model in the photograph on size perception (Web page one presents a better representation for a plus-size shopper).

Variable	<i>t-value</i>	<i>p-value</i>	<i>df</i>	Std. error mean
Photographed model	8.374	.000	12	.432

Elaborateness of written fit information

Participants were asked to assess their perception of the written fit information provided within the garment product description for the written portion of the manipulation check (Web page one presents better elaboration of garment fit information than web page two). The mean

score was 4.31, with a range of 1(Strongly Disagree) to 5 (Strongly Agree), (see Table 4.6). A higher score indicates that people perceived a detailed written fit description. Based on the mean comparison, people who were exposed to both web pages perceived web page one with detailed fit information to be more elaborate, and web page two with less detailed information to be less elaborate. In order to test for significant differences in elaborateness of written fit information perceptions (more elaborate vs. less elaborate), a one sample *t*-test was performed. The results revealed a main effect for elaborateness of written fit information on elaborate perceptions, $t(12, .237) = 18.169, p < .000$, using a two-tailed test (see Table 4.7). In this analysis, the independent variable was written garment fit information (more elaborate vs. less elaborate) and the dependent variable was perceptions of elaborateness. There was a difference between more elaborate garment fit information and less elaborate garment fit information on elaborateness perceptions. Therefore, the elaborateness of the written garment fit information of the web pages was successfully manipulated.

Table 4. 6. Participants’ perceptions of the elaborateness of the written garment fit information

Item	N	Min.	Max.	<i>M</i>	<i>SD</i>
Web page one better than web page 2	13	2	5	4.31	.855

Table 4. 7. One sample t-test for the elaborateness of the written garment fit information on elaborate perception (Web page one presents better elaboration of garment fit information than web page two).

Variable	<i>t-value</i>	<i>p-value</i>	<i>df</i>	Std. error mean
Elaboration of written garment fit information	18.169	.000	12	.237

Product description manipulation check

During the main study, participants were asked if the product description provided very detailed information about garment style, garment dimensions, and fit editorial. Of the participants who were exposed to the more elaborate product description, 83%, 88.4%, and 50% either strongly agreed or agreed for the three components, respectively. Of the participants exposed to the less elaborately written product description of garment style, garment dimension, and fit editorial, 16.7%, 31.5%, and 38.9% either strongly disagreed or disagreed, respectively.

Therefore, it seems all response answers, except for participants who were exposed to the lower level of garment style information, perceived the level as the researcher intended.

Hypotheses testing

Multivariate analysis of variance (MANOVA) and univariate analysis of variance (ANOVA) were used to test the effects of visual fit information (plus-size model vs. non plus-size model) and written fit information (more elaborate vs. less elaborate) on perceived fit risk, purchase intention, and loyalty intentions (Hypotheses 1 to 6). Each of the two independent variables had two levels, high or low. The high level was the photograph of the plus-size model (size 16W), and more elaborately written fit information for visual and written fit information, respectively. The low level tested in this study was the photograph of the non plus-size model (size 6) and the less elaborately written fit information for the visual and written fit information, respectively.

A probability level of .10 was set for a one tail test. In this analysis, using Wilks' Lambda test, a significant multivariate main effect for visual fit information was found, $F(3, 108) = 2.728$, $p = .048$, $\text{Eta}^2 = .070$, and a significant multivariate main effect for written fit information on the dependent variables collectively was found, $F(3, 108) = 2.320$, $p = .089$, $\text{Eta}^2 = .058$. Together, both visual and written information had no significant interaction or affect on all three independent variables, collectively, according to Wilks' Lambda test, $F(3, 108) = .643$, $p = .589$, $\text{Eta}^2 = .018$ (see Table 4.8).

Table 4. 8. MANOVA multivariate tests Wilks' Lambda of on all three dependent variables

Source	<i>df</i>	Error <i>df</i>	<i>F</i>	<i>p-value</i>	Partial Eta^2
Visual	3	108.00	2.78	.048	.070
Written	3	108.00	2.23	.089	.058
Visual * Written	3	108.00	.643	.589	.018

Further analyses were conducted with MANOVA to better understand the tests of between-subjects effects of the dependent and independent variables. Visual fit information had no main effect on perceived fit risk, $F(1, 133.092) = .294$, $p = .589$, $\text{Eta}^2 = .003$, purchase intention, $F(1, 130.064) = .941$, $p = .334$, $\text{Eta}^2 = .008$, or loyalty intentions, $F(1, 75.714) = .285$, $p = .594$, $\text{Eta}^2 = .003$. Similarly, written fit information had no significant main effect on the

three dependent variables, perceived fit risk, $F(1, 133.092) = .976, p = .325, \text{Eta}^2 = .009$, purchase intention $F(1, 130.064) = .005, p = .941, \text{Eta}^2 = .000$, or loyalty intentions $F(1, 75.714) = 1.140, p = .288, \text{Eta}^2 = .010$.

Finally, both visual and written fit information together had no significant interaction effect on the dependent variables, perceived fit risk, $F(1, 133.092) = .342, p = .560, \text{Eta}^2 = .003$, purchase intention, $F(1, 130.064) = 1.950, p = .202, \text{Eta}^2 = .015$, or loyalty intentions, $F(1, 75.714) = .792, p = .375, \text{Eta}^2 = .007$ (see Table 4.9).

Table 4. 9. MANOVA of testing effects of both visual and written fit information on all three dependent variables

Source	Dependent Variable	<i>df</i>	Error <i>df</i>	<i>F</i>	<i>p-value</i>	Partial Eta^2
Visual	Perceived risk	1	133.092	.294	.589	.003
	Purchase Intention	1	130.064	.941	.334	.008
	Loyalty intentions	1	75.714	.285	.594	.003
Written	Perceived risk	1	133.092	.976	.325	.009
	Purchase intention	1	130.064	.005	.941	.000
	Loyalty intentions	1	75.714	1.140	.288	.010
Visual *	Perceived risk	1	133.092	.342	.560	.003
Written	Purchase intention	1	130.064	1.649	.202	.015
	Loyalty intentions	1	75.714	.792	.375	.007

ANOVA were calculated to further explain how visual and written fit information contributed to the significant multivariate effect on the dependent variables in the Wilks' Lambda test in MANOVA.

Hypothesis 1

H₁. The level of visual fit information has a negative effect on the perceived fit risk of the apparel featured on the web page.

ANOVA was conducted to evaluate the relationship between the high and low levels visual fit information, on perceived fit risk. In this analysis the independent variable was a two level treatment of visual fit information (plus-size model vs. non plus-size model), and the dependent variable was perceived fit risk. ANOVA indicated no significant main effect for visual fit information on perceived fit risk, $F(1, 134.431) = .431, p = .513$ (see Table 4.11).

Results reveal that consumers who were exposed to the web page with a high level of visual fit information, which included the size 16W model, did not perceive fit risk differently from the consumers who were exposed to the web page with the low level of visual fit information. Means and standard deviations for each level of the visual fit information for perceived fit risk are shown in Table 4.10. Therefore, Hypothesis 1 was not supported.

Hypothesis 2

H₂. The level of visual fit information has a positive effect on the purchase intention of the apparel featured on the web page.

ANOVA was conducted to evaluate the relationship between the high and low levels visual fit information, on purchase intention. In this analysis the independent variable was a two level treatment of visual fit information (plus-size model vs. non plus-size model), and the dependent variable was purchase intention. ANOVA indicated no significant main effect for visual fit information on purchase intention, $F(1, 132.193) = 1.122, p = .292$ (see Table 4.11).

Results reveal that consumers who were exposed to the web page with a high level of visual fit information, which included the size 16W model, did not have a significantly greater purchase intention, compared to consumers who were exposed to the web page with the low level of visual fit information, which contained the photograph of the size 6 model. Means and standard deviations for each level of the visual fit information for purchase intention are shown in Table 4.10. Therefore, Hypothesis 2 was not supported.

Hypothesis 3

H₃. The level of visual fit information has a positive effect on the loyalty intention regarding the web page.

ANOVA was conducted to evaluate the relationship between the high and low levels visual fit information, on loyalty intentions. The independent variable was a two level treatment

of visual fit information (plus-size model vs. non plus-size model), and the dependent variable was loyalty intention. The seven loyalty intention items were averaged to find a test a singular loyalty intention component. ANOVA indicated no significant main effect for visual fit information on loyalty intention, $F(1, 76.795) = .163, p = .687$ (see Table 4.11).

Results reveal that consumers who were exposed to the web page with a high level of visual fit information, which included the size 16W model, did not have significantly greater loyalty intentions from consumers who were exposed to the web page with the low level of visual fit information, which contained the photograph of the size 6 model. Means and standard deviations for each level of the visual fit information for loyalty intentions are shown in Table 4.10. Therefore, Hypothesis 3 was not supported.

Table 4. 10 Means and standard deviation for visual fit information for perceived fit risk, purchase intention, and loyalty intentions

Dependent variables	Visual: Size of model photographed			
	Size 16W model (<i>n</i> = 70)		Size 6 model (<i>n</i> =44)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Perceived fit risk	2.842	1.098	2.104	1.090
Purchase intention	3.028	1.102	3.250	1.059
Loyalty intention	2.957	.864	2.892	.765

Table 4. 11. ANOVA for testing effects of visual fit information on perceived fit risk, purchase intention, and loyalty intentions

Independent variable	Dependent variables	<i>df</i>	<i>F</i>	Error	<i>p</i>
Size of model photographed	Perceived fit risk	1	.431	134.431	.513
	Purchase intention	1	1.122	132.193	.292
	Loyalty intentions	1	.163	76.795	.687

Hypothesis 4

H₄. The level of written fit information has a negative effect on the perceived fit risk of the apparel featured on the web page.

ANOVA was conducted to evaluate the relationship between the high and low levels written fit information, on perceived fit risk. In this analysis the independent variable was a two

level treatment of visual fit information (more elaborate vs. less elaborate), and the dependent variable was perceived fit risk. ANOVA indicated no significant main effect for visual fit information on perceived fit risk, where $p < .10$, $F(1, 133.933) = .848$, $p = .359$ (see Table 4.13).

Results reveal that consumers who were exposed to the web page with a high level of written fit information, which included the more detailed description, did not perceive fit risk differently from the consumers who were exposed to the web page with the lower level of written fit information for the garment description. Means and standard deviations for each level of the written fit information for perceived fit risk are shown in Table 4.12. Therefore, Hypothesis 4 was not supported.

Hypothesis 5

H₅. The level of written fit information has a positive effect on the purchase intention of the apparel featured on the web page.

ANOVA was conducted to evaluate the relationship between the higher and lower levels of written fit information, on purchase intention. In this analysis, the independent variable was a two level treatment of written fit information (more elaborate vs. less elaborate), and the dependent variable was purchase intention. ANOVA indicated no significant main effect for written fit information on purchase intention, $F(1, 133.398) = .100$, $p = .752$ (see Table 4.13).

Results reveal that consumers who were exposed to the web page with a higher level of written fit information, which included the more detailed garment description, did have a significantly greater purchase intention, compared to consumers who were exposed to the web page with the lower level garment description. Means and standard deviations for each level of the written fit information for loyalty intentions are shown in Table 4.12. Therefore, Hypothesis 5 was not supported.

Hypothesis 6

H₆. The level of written fit information has a positive effect on the loyalty intention regarding the web page.

ANOVA was conducted to evaluate the relationship between the higher and lower levels of written fit information, on loyalty intentions. The independent variable was a two level treatment of written fit information (more elaborate vs. less elaborate), and the dependent variable was

loyalty intentions. The seven loyalty intention items were averaged to find a test a singular loyalty intention component. ANOVA indicated no significant main effect for visual fit information on loyalty intention, $F(1, 76.405) = .735, p = .393$ (see Table 4.13). Using a one tail test, results show that consumers who were exposed to the web page with the higher level of written fit information, containing the more elaborately written garment description, had no significantly greater loyalty intention responses compared to consumers who were exposed to the web page with the lower level of written fit information. Means and standard deviations for each level of the visual fit information for loyalty intentions are shown in Table 4.12. Therefore, Hypothesis 6 was not supported.

Table 4. 12. Means and standard deviation for written fit information for perceived fit risk, purchase intention, and loyalty intentions

Dependent variables	Written: Elaborateness of written fit information			
	More elaborate (<i>n</i> = 60)		Less elaborate (<i>n</i> = 54)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Perceived fit risk	2.700	1.139	2.888	1.040
Purchase intention	3.083	1.093	3.148	1.088
Loyalty intention	2.995	.786	2.862	.868

Table 4. 13. ANOVA for testing effects of written fit information on perceived fit risk, purchase intention, and loyalty intentions

Independent variable	Dependent variables	<i>df</i>	<i>F</i>	Error	<i>p</i>
Level of written fit information	Perceived fit risk	1	.848	133.933	.359
	Purchase intention	1	.100	133.398	.752
	Loyalty intentions	1	.735	76.405	.393

Summary of hypotheses testing

In summary, all hypotheses were not statistically supported. Although statistical significance was found to support the multivariate effect of visual fit and written fit information on the dependent variables using MANOVA with the Wilks' Lambda test, when further analyzed, no statistical support was found to support each individual hypotheses 1-3, regarding visual fit information on perceived fit risk, purchase intention, and loyalty intentions, or hypotheses 4-6

regarding written fit information on the three independent variables. Lack of statistical support for each hypothesis was quite surprising. Means and standard deviations for each of the four treatments and the dependent variables are found in Table 4.14. Further discussion of each hypothesis is included in the following chapter.

Table 4. 14. Means and standard deviation for the treatment for perceived fit risk, purchase intention, and loyalty intentions

Dependent variables	Treatment groups (<i>n</i>)							
	A (<i>n</i> = 35)		B (<i>n</i> = 35)		C (<i>n</i> = 25)		D (<i>n</i> = 19)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Perceived fit risk	2.8	1.16	2.89	1.05	2.56	1.12	2.89	1.05
Purchase intention	2.89	1.08	3.17	1.12	3.36	1.08	3.00	1.05
Loyalty intention	2.97	.81	2.94	.93	3.03	.76	2.71	.75

CHAPTER 5: DISCUSSION AND CONCLUSIONS

Despite an increase in retail sales in Internet apparel shopping and steady growth in the plus-size apparel market, few empirical studies have been conducted concerning the effects visual and written fit information in the context of plus-size Internet apparel buying behavior. Although several Internet apparel shopping studies have emphasized the importance of creating informative and pleasurable shopping experiences through manipulating product presentation features, none of the studies has empirically tested the effects of model size or written fit information on perceived fit risk, purchase intention, and loyalty intentions. Therefore, the purpose of this study was to examine the effect of visual fit information (size of model photographed) and written fit information (fit related product description) on consumers' perceived fit risk, purchase intention, and loyalty intentions in plus-size Internet apparel shopping. The visual fit information (plus-size vs. non plus-size) and the level of written fit information (more elaborate vs. less elaborate), for plus-size Internet garment product presentation, may possibly affect perceived fit risk, purchase intention, and loyalty intentions.

To analyze the effects of visual fit information (size of photographed model) and written fit information (level of written fit information) on dependent variables perceived fit risk, purchase intention, and loyalty intention, a two level of visual information (plus-size vs. non plus-size) x 2 level of written fit information (more elaborate vs. less elaborate) MANOVA was conducted. Utilizing the Wilks' Lambda test both variables were found to have a significant multivariate effect using a one tail test ($p < .05$). ANOVA was performed to better determine which level contributed to the multivariate effect. The results from ANOVA revealed no statistical significance in the difference of means of the higher and lower levels of visual fit information or written fit information. Therefore, H1 through H6 were not statistically supported.

Discussion

In this study, over half of participants had previously shopped on the Internet and over sixty percent had previously purchased plus-size apparel for themselves over the Internet. Approximately 41% of the participants have been shopping online for at least three to five years, and about 43 percent of the participants had spent between \$100 and \$300 on apparel online within the last six months. Characteristics of the respondents of this study reveal that women

between the ages of 45 years and 64 use the Internet for shopping. In this study the largest age group of participants, 31 percent, were women 46 to 55 years old, and 8 percent, women 56 to 64 years. This is consistent with Otieno et al. (2005) who found that women aged 45 and over was the largest population buying plus-size apparel.

The present study examined: (1) difference in perceived fit risk, purchase intention, and loyalty intentions between people who were exposed to the web pages with product descriptions that contained high or low levels of visual fit information (plus-size vs. non plus-size model), Hypotheses 1, 2, and 3, and (2) difference in perceived fit risk, purchase intention, and loyalty intentions between people who were exposed to the web pages with product descriptions that contained high or low level of written fit information (more elaborate vs. less elaborate), Hypotheses 4, 5, and 6. The present research shows: (1) no statistically significant main effects for visual fit information on perceived fit risk, purchase intention, and loyalty intentions (Hypotheses 1, 2, and 3), and (2) no statistically significant main effects for written fit information on perceived fit risk, purchase intention, and loyalty intentions. All six hypotheses (Hypotheses 1 through 6) lacked statistical support.

Hypothesis 1: Visual fit information and perceived fit risk

There was no statistically significant main effect for visual fit information on perceived fit risk. Women who were exposed to the web pages with the high level of visual information, which included the photograph of the 16W plus-size model, did not exhibit any less perceived fit risk than people who were exposed to the web pages with the photograph of size 6 model. This suggests that when a photograph of a plus-size garment is modeled by a woman of larger size, plus-size women do not perceive their fit risk, determining how the garment may fit their bodies, any differently than when viewing a garment modeled on smaller size woman, in Internet product presentation. These provide interesting results to add to the field of risk in Internet apparel shopping literature. These findings are in opposition to many previous studies that suggest that more detailed visual cues may impact perceived fit risk, and Internet apparel shoppers prefer to view models similar to them modeling garments to decrease their fit risk (Allen, 1999; Gaal & Burns, 2001; Kim et al., 2007; Klein, 1998; Loken & Peck, 2005; Park et al., 2005; Weathers et al., 2007).

Presenting larger size models in product presentation for plus-size Internet retailers may be a practical visual merchandising method; however, there is no statistical evidence to support this. The results suggest that presenting photographs of larger models on plus-size apparel web pages may have no effect on assisting plus-size shoppers in choosing garments that may fit their body well, which opposes previous findings (Park & Stoel, 2002; Peck & Childers, 2003). The researchers expected that most of the plus-size women in this study would prefer to see a model that was more similar to them in size, shape, or body mass. The researchers also expected that the plus-size women exposed to the picture of the plus-size model would use the model to ascertain whether they could wear a garment based on the way the garment appeared on the plus-size model's body and agree that the high level of visual fit information influenced their perceived fit risk; however, the results proved differently.

Hypothesis 2: Visual fit information and purchase intention

There was no statistically significant main effect for visual fit information on purchase intention. Women who were exposed to the web pages with the high level of visual information, which included the photograph of the 16W plus-size model, did not exhibit any greater intent to purchase the product compared to those who were exposed to the web pages with the photograph of the non plus-size 6 model. Results suggest that when a photograph of a plus-size garment is modeled by a woman of larger size, plus-size women do not exhibit any greater intentions to purchase the garment, when viewing a picture of the same garment modeled on smaller size woman, in Internet product presentation.

Visual online product presentation for apparel shoppers with photographs of smaller, non plus-size models may enable plus-size shoppers to perform similar levels of visual inspection to check the fit of the garment. The results of the current study contradict previous studies that certain visual activities and features presented in Internet apparel retailers' sites increase willingness to purchase for apparel shoppers (Allen, 1999; Fiore & Jin, 2003, Fiore et al., 2005; Kim et al., 2007; Park et al., 2005; Then & DeLong, 1999).

Hypothesis 3: Visual fit information and loyalty intentions

There was no statistically significant main effect for visual fit information on loyalty intentions. Women who were exposed to the web pages with the high level of visual information,

which included the photograph of the 16W plus-size model, did not exhibit any greater intent to spread positive comments about the website by word of mouth, return to the website, or pay a higher price for the item, compared to those who were exposed to the web pages with the photograph of the non plus-size 6 model. The result suggests that when a photograph of a plus-size garment is modeled by a woman of larger size, plus-size women do not exhibit any greater loyalty intentions to the web retailer, than viewing a picture of the same garment modeled on smaller size woman, on an Internet apparel retailer's site. The results of the current study oppose previous studies where visual product information has been found to incite customers to return to the website (Fiore & Jin, 2003; Fiore et al., 2005; Shi, 1998).

Hypothesis 4: Written fit information and perceived fit risk

There was no statistically significant main effect for written fit information on perceived fit risk. Women who were exposed to the web pages with the higher level of written information, which included the more elaborately written details of garment style, garment dimension and fit editorial, did not exhibit any less perceived fit risk compared to those who were exposed to the web pages with the photograph of the non plus-size 6 model. Based on results of this study, elaborateness of written fit information may not be an important determinant of perceived fit risk when plus-size shoppers are presented online with more elaborately written product descriptions about fit, they do not experience less perceived fit risk compared to when online retailers present less detailed written product descriptions regarding fit.

The results of this study, contradict previous studies that varying levels of product descriptions have a positive effect on perceived risk in a non-store based shopped context (Gaal & Burns, 2001; Yen, 2006).

Hypothesis 5: Written fit information and purchase intention

There was no statistically significant main effect for written fit information on purchase intention. Women who were exposed to the web pages with the high level of written fit information, which included the more detailed description of garment style, specific garment dimensions, and specific fit related editorial, had similar amounts of purchase intention compared to those who were exposed to the web pages with the less elaborately written fit description.

Although no statistical support was found in this study to provide evidence that a plus-size Internet apparel shopper will have increased purchase intentions when an Internet apparel retailer provides more elaborately written product descriptions, the researcher suggests that Internet apparel retailers continue to provide as much written information about the garment as necessary. The results of this study contradict previous studies that shoppers will be more inclined to make a purchase when more written garment information is included in the product description based in a non-traditional store shopping context (Allen, 2000; Kim & Lennon, 2000; Lynch & Ariely, 2000; Yen, 2006).

Hypothesis 6: Written fit information and loyalty intentions

No statistically significant main effect for written fit information on loyalty intentions was found. Women who were exposed to the web pages with the high level of written fit information, which included the more detailed information regarding garment style, garment dimensions, and fit editorial, had similar amounts of loyalty intentions compared to those who were exposed to the web pages with the less detailed garment style, garment dimensions, and fit editorial.

Based on the results of this study, level of written fit information might not be a determinant of loyalty intentions. In this study, the more elaborately written fit information manipulated in this study was more detailed and provided enough information about fit were similar across each of the two groups, which consequently may not have an affect on plus-size women's intent to return to the website, say positive comments, or pay a premium prices for the apparel presented. The results offset the previous study that found the amount of information available on a retailer's page positively affects store patronage intentions in the Internet shopping context (Lynch & Ariely, 2000).

Conclusions and Implications

The present study provides interesting results about plus-size apparel Internet shoppers and their perceptions and beliefs when varying levels of visual (size of model) and written (fit related product description) fit information of a plus-size garment are presented on web pages.

These findings revealed that consumers who were exposed to the higher level of visual fit information (plus-size model photograph) had no difference in perceived fit risk than consumers

who were exposed to lower levels of visual fit information (non plus-size model photograph). This suggests that plus-size apparel shoppers may not have perceived a difference in models presenting garments in web page photos when shopping for apparel and trying to determine if the item may fit. Even though plus-size women in this study exposed to higher levels of visual fit information may not have perceived lower fit risk, plus-size Internet apparel retailers may want to continue providing pictures of women who represent the physique of their target market, as suggested by previous studies of self-referencing (Burnkrant & Unnava, 1995; Klein & Loftis, 1988).

Since there was no statistical difference found in presenting a plus-size model versus non plus-size model, Internet apparel retailers who provide apparel products to plus-size shoppers are advised to use models that best represent their target market to attract shoppers. Retailers, whether large or small businesses, who sell to plus-size and non plus-size shoppers may want to consider the total cost of providing both pictures of plus-size and non-plus size models on their web pages.

The present study also revealed no main effect for the level of visual fit information on purchase intentions for plus-size apparel shoppers. Women who were exposed to the higher level of visual fit information (i.e., the size 16W model) had no greater intent to purchase the garment presented, compared to the women who were exposed to the lower level of visual fit information (i.e., the size 6 model). This suggests that if a plus-size apparel retailer presents either size model in their Internet product presentation for plus-size garments, there would be no effect on purchase intention. Therefore, Internet apparel retailers who are targeting plus-size shoppers can continue to keep up web pages of plus-size apparel featuring plus-size or non plus-size models since there is no direct determinant that proves the plus-size Internet apparel shoppers will be more willing to purchase the apparel based on the physique of the model.

The findings also showed that there is no main effect for the level of visual fit information on loyalty intentions for plus-size apparel shoppers on the Internet. Women who viewed the picture of the plus-size model did not have a significantly greater intent to return to the web site, say positive comments about the web site, or pay a higher price for the item, compared to women who only viewed the web page of the non plus-size model. It is possible that during this study, women who viewed either size model would not be interested in paying a premium price for goods due to the 2008 U.S. recession. Internet retailers who sell apparel goods

may not have to be cautious about the size of the model in the photograph for the purpose of encouraging the browser to repeat a purchase, recommending the website to friends, or paying a higher price; however, they should definitely be aware of other external influences that may be affecting overall purchase behavior, such as the economic downturn, loss of jobs, increase in society body size preference and obesity rates, and limited purchasing power.

The present study also illustrated that there may be no difference in perceived fit risk when plus-size women are exposed to different levels of written fit information in Internet apparel shopping. Women who were exposed to more elaborate written fit information about the garment had no less perceived fit risk than women who were exposed to the less elaborate written fit information. Although the manipulation check of the product descriptions showed a distinct significant difference in the higher and lower levels of garment style, garment dimensions, and fit editorial within the product description, plus-size apparel shoppers in this study had no different perceived risk.

There are possible explanations for the insignificant results of the current study. First, there is a possibility that plus-size Internet apparel shoppers in this study had a lower recall of what they read when they had to answer the questions. Recall was not tested in this study. Moreover, since the participants were not able to move back and forth within the survey and review the written information, they may not have been able to remember the specific details included in the product description regarding fit. Even so, participants may have paid more attention to the visual portion of the web page, which was more obvious in the middle of the web page, compared to the product description on the right hand side. Internet retailers who sell apparel to both plus-size and non plus-size shoppers may want to continue to provide the best and most elaborate information in their product description for shoppers since previous studies have shown that greater amounts of visual cues may be helpful in reducing perceived risk (Gaal & Burns, 2001; Yen, 2006) and consequently increase purchase intention (Kim & Lennon, 2000).

This study also provides counter evidence that levels of written information should have a significant effect on purchase intentions. The findings of this study revealed that women who read the higher level of written fit information did not have any greater significant purchase intention compared to women who read the less elaborately written fit description. Although previous studies (Allen, 2000; Kim & Lennon, 2000; Lynch & Ariely, 2000; Yen, 2006) have provided evidence that more written product information, within the catalog, television, and

Internet shopping context, increases purchase intentions among shoppers, this study with plus-size apparel shoppers is quite a surprising contradiction.

As stated previously, external factors may have acted as a determinant when questioning participants about purchase intention. During the time frame this study was conducted, the U.S. government and society (i.e., media, private agencies) advised people to save their disposable income. Internet retailers selling apparel goods to either plus-size or non plus-size women should be aware of economic conditions that may drastically alter the mindset and purchase behavior of its customers, even for brief time periods. Internet apparel retailers should continue to provide a great amount and detailed level of product information, including those related to fit for shoppers as proven by previous studies (Allen, 2000; Kim & Lennon, 2000; Lynch & Ariely, 2000; Yen, 2006).

Finally, this study provided evidence that plus-size Internet apparel shoppers have no difference in loyalty intentions when exposed to high or low levels of written fit information. Loyalty intentions of the plus-size apparel shoppers were not affected when different groups were exposed to a more elaborate or less elaborate written fit description for the garment pictured. Although previous studies have provided support that the more information provided on a web page increases the shoppers' willingness to return to the web page and purchase again (Lynch & Ariely, 2000), the participants in this study did not illustrate those behaviors. It may be possible that participants may not have liked the garment or the web page enough to want to recommend it to others or pay a higher price for the garment. It is quite possible that the participants were focused more on other Internet apparel shopping risks such as security, social and performance risk, which may have overshadowed in thoughts of returning to the web site, recommending the web page to friends, and paying a higher price.

Internet apparel retailers selling plus-size apparel should continue to provide detailed amounts of visual information for potential purchasers, because previous studies have proven the more information provided about the item, the higher the loyalty intentions.

This study provided valuable contributions to the field of Internet retailing because it empirically examined the effects of Internet apparel visual and written merchandising methods on perceived fit risk, purchase intention, and loyalty intentions with a focus on plus-size apparel shoppers. The study added worthwhile findings to the literature on the relationship between the varying levels of visual and written fit information on perceived fit risk, purchase intentions, and

loyalty intentions. Because past Internet apparel shopping studies on perceived risk, purchase intentions, and loyalty intentions lacked a focus on fit and the plus-size market, it may be important to test the effects for all three components in an actual shopping situation. Thus, this study was valuable in the sense that the effect of levels of photographed model size and written fit related information were studied in the Internet apparel shopping context with a specific group of shoppers.

Limitations

Although having participants fill out their online survey has numerous advantages such as the experiment is simulated as close to a true shopping experience as possible, its limitations are as follows in this study: Researcher lacked control over the participants' environment, the researcher used a limited number of scales, and participants' may have been influenced by media and economic conditioning.

Limited simulation of a real shopping situation

Plus-size apparel shoppers in this study were not fully able to participate in this experiment as they would have in real-life. Participants were expected to fill out the online survey and participate in the experimental portion of the web survey wherever they were using their computer to check their email. Even though participants were able to perceive the task as a real shopping situation, several major factors such as time, garment selected for the treatment, and external environmental influences may have reduced the quality of the shopping situation. In addition, participants only saw a snapshot of a web page, not a fully functioning web site, which might have reduced the quality of the shopping situation. Participants were also not allowed to go back and forth between the survey pages, which may have hindered them from changing mistakes or from viewing the mock web page a second time to ensure what they recalled was actually the information that had been provided. In addition, motivation to participate in this experiment (e.g., \$15 e-gift card to plus-size apparel retailer) may have also decreased the reality of a true shopping experience.

Limitations of scales

The scales for this survey were limited, whereas only one question tested perceived fit risk, and one question tested purchase intention. The lack of various questions to test each item may have lead to lower reliability responses. The use of multiple items to measure variables tested in this study is advised for a future study.

Conditioning of sample

The participants in the sample were all plus-size shoppers between the ages of 19 and 64. Majority of participants in this study were over 46 years old. The women in this study participated in the Internet apparel shopping experiment during a great economic crisis, whereas the media disseminated information on a daily basis that the U.S. economy was near or in a recession. Women in the sample may have been conditioned to deter from spending behaviors, which would include shopping online for apparel, and to start saving their money. The media focused on disseminating news that encouraged consumers to only spend their money on necessary items. Women may have exhibited negative feelings about purchase intentions and loyalty intentions because of this factor.

Additionally, media and society have generally provided pictures of non plus-size models for advertising, whereas plus-size models are not as popular in magazines, television, or product advertisements (unless for specific plus-size goods). This may have influenced women to be immune to the smaller size model and not care whether they see a plus-size model when trying to determine garment fit. This sample group may have been previously conditioned to ignore the body size of the model when trying to decide how the garment may fit. Furthermore, the Internet apparel shopper may automatically decide that if the garment is something she truly likes, and has a similar item in possession, she may be less inclined to examine the model with the mindset, that “this person has a similar body physique compared to mine; therefore, this item may fit me the way it fits her.”

Recommendations for future study

Various elements of product presentation in Internet apparel retailing can be investigated in relation to perceived fit risk, purchase intention, and loyalty intentions. This study focused on two elements: 1) visual fit information regarding the size of the model presented in the product photograph and 2) the elaborateness of written fit information specifically garment style

information, garment dimensions, and fit related editorial, regardless of garment selection, type of online store, and purpose of shopping. However, in a real shopping situation, shoppers' motives for browsing or purchasing online, as well as preference of garment type, or preference for a particular online retailer may influence perceived fit risk, purchase intention, and loyalty intentions. In future studies, these aspects can be investigated in addition to visual and written fit information.

In relation to visual fit information and perceived fit risk, showing various size models throughout a plus-size apparel website may be another possible topic for a future study. Since plus-size apparel ranges from approximately 14W to 34W and larger, having photographs online of models of various sizes showcasing the same garment may decrease perceived fit risk for plus-size apparel shoppers. Similarly, giving participants the chance to decide their own body shape or enter their measurements, so they are guided to web pages with models similar or totally different to their body physique may also be a feasible option for a future research and visual fit information.

In the context of plus-size Internet apparel shoppers, body image, or physical attractiveness can be included in future studies as a moderating variable, influencing the main effect of visual product presentation on consumer behaviors (Bloch & Richins, 1992; Caballero, Lumpkin, & Madden, 1989; Reingen & Kernan, 1993; Solomon & Schopler, 1982). Body image may also influence how consumers view plus-size models vs. non plus-size models (Peck & Loken, 2004). Including a gender viewpoint in future research may also provide new determinants for consumer responses.

Finally, since the sample in this study had a high level of education and majority of participants were considered Baby Boomers, future studies can encompass a smaller age group and narrower education level, or include demographic information such as shopping online while residing in an urban or rural area. Researchers may want to question participants if they have access to plus-size apparel brick and mortar stores in a close living proximity. Future research can also include a qualitative component such as a focus group or personal interview of select participants, to be conducted after the online survey to gain a better understanding of the results.

REFERENCES

- Adhya, S. (2006 August 24). A growing concern across Europe. *The Financial Times*. 4.
- Agarwal, S., & Teas, R.K. (2001). Perceived value: Mediating role of perceived risk. *Journal of Marketing Theory and Practice*, 9(4), 1-14.
- Akaah, I. A., & Korgoankar, P. K. (1988). A conjoint investigation of the relative importance of risk relievers in direct marketing. *Journal of Advertising Research (Aug/Sept)*, 38-44.
- Allen, C. (1999). See it in 3D. Retrieved February 22, 2008, from www.clickz.com/mkt/precis_mkt/article.php/816841
- Allen, C. (2000). Effective online merchandising techniques. Retrieved February 22, 2008, from www.clickz.com/cgi-bin/gt/print.html?article=2892
- Alight.com. (2008). Plus size clothing for full figured women + teens – sizes 14-32. The hottest place. Retrieved February 27, 2008 from www.alight.com/
- Anderson, L. J., Brannon, E., Ulrich, P., Presley, A. B., Grasso, M., Gray, S., & Early, J. (2000, Spring). Understanding fitting preferences of female consumers: Development of an expert system to enhance accurate sizing selection (National Textile Center 198-A8/1).
- Arndt, J. (1967). Word of mouth advertising and informal communication. In D.F. Cox (Ed.), *Risk taking and information handling in consumer behavior* (pp. 188-239). Boston: Harvard University Press.
- Ashdown, S. P. (1998). An investigation of the structure of sizing systems. *International Journal of Clothing Science and Technology*, 10 (5), 324-341.
- Barach, J. A. (1969). Advertising effectiveness and risk in the consumer decision process. *Journal of Marketing Research*, 6(3), 314-320.
- Bauer, R. A. (1960). Consumer behavior as risk taking. In R. S. Hancock (Ed.), *Dynamic marketing for a changing world* (pp. 389-398). Chicago: American Marketing Association.
- Bauer, R. A. (1967). Consumer behavior as risk taking. In D. F. Cox (Ed.), *Risk taking and information handling in consumer behavior* (pp. 23-33). Boston: Harvard University Press.
- Belk, R. W. (1988). Possessions and the extended self. *Journal of Consumer Research*, 15, 139-169.

- Bennett, A. (1990, November 13). Many consumers expect better service- and they say they are willing to pay for it. *Wall Street Journal*, B, p7.
- Bhatnagar, A., Mirsa, S., & Rao, H.R. (2000). On risk convenience, and Internet shopping behavior. *Communication of the ACM*, 43(11), 98-105.
- Bloch, P. H., & Richins, M. L. (1992). You look “mahvelous.” The pursuit of beauty and the marketing concept. *Psychology & Marketing*, 9, 3-15.
- Botta, R. (1999, Spring). Television images and adolescent girls’ body image disturbance. *Journal of Communication*, 22-41.
- Boulding, W., Kalra, A., Staelin, R., & Zeithaml, V. (1993). A dynamic process model of service quality: From expectations to behavioral intentions. *Journal of marketing research*, 30, 7-27.
- Burnkrant, R.E. , & Unnava, H.R. (1995). Effects of self-referencing on persuasion. *Journal of Consumer Research*, 22, 17–26.
- Caballero, M. J., Lumpkin, J. R., & Madden, C. S. (1989). Using physical attractiveness as an advertising tool: An empirical test of attractiveness phenomenon. *Journal of Advertising Research*, 29, 16-22.
- Cases, A.-S. (2002). Perceived risk and risk reduction strategies in Internet shopping. *The International Review of Retail, Distribution and Consumer Research*, 12(4), 375-394.
- Childers, T., Carr, C., Peck, J., & Carson, S. (2001). Hedonic and utilitarian motivations for online retail shopping behavior. *Journal of Retailing*, 77(4), 511-535.
- Chodhary, U., & Beale, N. V. (1988). Plus-size women’s clothing interest, satisfaction, and dissatisfactions with ready-to-wear apparel. *Perceptual and Motor Skills*, 66, 783-788.
- Churchill, G. A. Jr. (1999). In *Marketing research methodological foundations*. New York: The Dryden Press.
- Conference-board.org. (2008, October). *Consumer confidence survey press release*. Retrieved November 15, 2008 from, <http://www.conference-board.org/economics/ConsumerConfidence.cfm>
- Cox, D. F. (1967). Risk handling in consumer behavior-an intensive study of two cases. In D. F. Cox (Ed.), *Risk taking and information handling in consumer behavior* (pp. 34-81). Boston: Harvard University Press.

- Cox, D. F., & Rich, S. U. (1964). Perceived risk and consumer decision making: the case of telephone shopping. *Journal of Marketing Research*, 1, 32-39.
- Cronin, J. Jr., & Taylor, S. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing*, 56, 55-68.
- Cunningham, S. M. (1967). The major dimensions of perceived risk. In D. F. Cox (Ed.), *Risk taking and information handling in consumer behavior* (pp. 82-108). Boston: Harvard University Press.
- CyberAtlas Staff. (2003). *Personalization not to secret to e-commerce*. Retrieved February 20, 2008, from <http://cyberatlas.internet.com/market>
- Davis, L. L. (1987). Consumer use of label information in rating of clothing quality and clothing fashionability. *Clothing and Textiles Research Journal*, 6(1), 8-14.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. *Management Science*, 35, 982-1003.
- Daswani, K. (2006, October 5). A new plus for premium. *Women's Wear Daily*. Retrieved January 24, 2007, from LexisNexis Academic database.
- Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of price, brand, and store information on buyer's product evaluations. *Journal of Marketing Research*, 28(3), 307-319.
- Elkin, N. (2001). The virtual dressing room. Retrieved February 20, 2008, from www.emarketer.com/analysis/ecommerce_b2c
- Emarketer. (2007). Apparel e-commerce report. Retrieved, Feb 18, 2008 from http://www.emarketer.com/Reports/All/Emarketer_2000423.aspx?src=report_head_info_sitesearch
- Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing; a conceptual mode and implications. *Journal of Business Research*, 54(3), 177-184.
- Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2003). Empirical testing of a model of online store atmospherics and shopper responses. *Psychology & Marketing*, 20(2), 139-150.

- Fiore, A. M., & Jin, H.-J. (2003). Influence of image interactivity on approach responses towards an online retailer. *Internet Research: Electronic Networking Applications and Policy*, 13(1), 38-48.
- Fiore, A. M., Jin, H.-J., & Kim, J. (2005). For fun and profit: Hedonic value from Image interactivity and responses toward the online store. *Psychology and Marketing*, 19(3), 38-53.
- Fiore, M., Kim, J., & Lee, H.-H. (2007). Influences of online store perception, shopping enjoyment, and shopping involvement on consumer patronage behavior towards an online retailer. *Journal of Retailing and Consumer Services*, 14(2), 95-107.
- Gaal, B., & Burns, L. D. (2001). Apparel descriptions in catalog and perceived risk associated with catalog purchases. *Clothing and Textiles Research Journal*, 19(1), 22-30.
- Goldman, D. (2008, December 5). *Lost: 1.9 million jobs*. Retrieved December 11, 2008 from, http://money.cnn.com/2008/12/05/news/economy/jobs_november/index.htm
- Ha, Y., Kwon, W., & Lennon, S. (2007). Online visual merchandising (VMD) of apparel web sites. *Journal of Fashion Marketing and Management*, 11(4), 477-493.
- Hawes, J., & Lumpkin, J. (1986). Perceived risk and the selection of a retail patronage mode. *Journal of the Academy of Marketing Sciences*, 14, 37-42.
- Horton, R. L. (1976). The structure of perceived risk. *Journal of Academy of Marketing Science*, 4, 694-706.
- Hwang, S., & Istook, C. (2001). Body measurement terminology used in the apparel industry. *Proceedings of the 2001 Seoul KSCT/ITAA Joint World Conference*, 91, p. 24.
- Hylton, R., & Kim, J. (2007). An exploratory study on fit issues of maternity and apparel. *Proceedings of the 2007 International Textiles and Apparel Association Annual Conference in Los Angeles, CA*, 4-7 November 2007.
- Igigi.com (2008). Designer plus size clothing. Retrieved February 25, 2008, from www.igigi.com/
- Infomat (2006, August). *Plus-size apparel industry in Canada research report*. Retrieved February 21, 2008, from <http://www.infomat.com/research/infre0000333.html>
- Intellifit Corp (2003). Pattern optimization. Retrieved December 15, 2006, from <http://intellifit.com/patop.html>
- Irving, L. (1990). Mirror images: effects of the standard of beauty on the self and body esteem of

- women exhibiting varying levels of bulimic symptoms. *Journal of Social and Clinical Psychology*, 9, 230-242.
- Isadore, C. (2008, December 1). *It's official: Recession since Dec. '07*. Retrieved December 11, 2008 from <http://money.cnn.com/2008/12/01/news/economy/recession/index.htm>
- Jacoby, J., & Kaplan, L. B. (1972). The components of perceived risk. In M. Venkatesan (Ed.), *Proceedings of the third annual conference of the Association for Consumer Research* (pp. 382-393). College Park, MD: Association of Consumer Research.
- Jang, E., & Burns, L. (2004). Components of apparel retailing web sites. *Journal of Fashion Marketing and Management*, 8(4), 375-388.
- Jo, L., Ulrich, P., Woronka., Hutton., & Ashdown, S. (2003). *Body scan analysis for fit models based on body shape and posture analysis*. National Textile Center, S01-AC27.
- Kaplan, L., Szybillo, G. J., & Jacoby, J. (1974). Components of perceived risk in product purchase: A cross-validation. *Journal of Applied Psychology*, 59, 287-291.
- Kim, J. (2004). *Effects of perceived merchandise quality and service quality on consumer shopping behavior in the Internet retailing environment*. Unpublished doctoral dissertation, Iowa State University, Ames.
- Kim, J., Fiore, A. M., & Lee, H.-H. (2007). Influences of online store perception, shopping enjoyment, and shopping involvement on consumer patronage behavior towards an online retailer. *Journal of Retailing and Consumer Services*, 14, 95-107.
- Kim, M., & Lennon, S. J. (2000). Television shopping for apparel in the United States: effects of perceived amount of information on perceived risk and purchase intention. *Family Consumer Sciences Research Journal*, 28(3), 301-330.
- Kind, K. O., & Hathcote, J. M. (2000). Specialty-size college females: satisfaction with retail outlets and apparel fit. *Journal of Fashion Marketing and Management*, 4, 48-64.
- Kiyonna.com. (2008). Stylish plus size clothing, dresses and apparel. Retrieved February 27, 2008 from www.kiyonna.com/
- Klein, L. (1998). Evaluating the potential of interactive media through a new lens: Search versus experience goods. *Journal of Business Research*, 41(March), 195-203.
- Klein, S.B., & Loftus, J. (1988). The nature of self-referent encoding: the contributions of elaborative and organizational processes. *Journal of Personality and Social Psychology*, 55, 5-11.

- Kwon, Y. H., Paek, S. L., & Arzeni, M. (1991). Catalog vs. non-catalog shopping of apparel: Perceived risks, shopping orientations, demographics, and motivations. *Clothing and Textiles Research Journal*, 10(1), 13-19.
- LaBarbera, P., & Mazursky, D. (1983). A longitudinal assessment of consumer satisfaction/dissatisfaction: the dynamic aspect of the cognitive process. *Journal of Marketing Research*, 20(November), 394-404.
- Lahiri, T. (2006, September 26). Plus-size fashion finding a niche in India. *Agence France Presse*. Retrieved January 24, 2007, from LexisNexis Academic database.
- Laurent, G., & Kapferer, J. N. (1985). Measuring consumer involvement profiles. *Journal of Marketing Research*, 22(1), 41-53.
- Lee, H.-H., Fiore, A. M., & Kim, J. (2006). The role of the technology acceptance model in explaining effects of image interactivity technology on consumer responses. *International Journal of Retail and Distribution Management*, 34(8), 621-644.
- Lee, M., Geistfeld, L., & Stoel, L. (2007). Cultural difference between Korean and American apparel web sites. *Journal of Fashion Marketing and Management*, 11(4), 511-528.
- Li, H., Daugherty, T., & Biocca, F. (2001). Characteristics of virtual experience in electronic commerce: a protocol analysis. *Journal of Interactive Marketing*, 15(3), 13-30.
- Li, H., Daugherty, T., & Biocca, F. (2002). Impact of 3-D advertising on product knowledge, brand attitude and purchase intention: the mediating role of presence. *Journal of Advertising*, 31(3), 43-57.
- Liebermann, Y., & Stashevsky, S. (2002). Perceived risks as barriers to Internet and e-commerce usage. *Qualitative Market Research: An International Journal*, 5(4), 291-300.
- Loken, B., & Peck, J. (2005). The effects of instructional frame on female adolescents' evaluation of larger sized female models in print advertising. *Journal of Applied Social Psychology*, 35 (4), 850-868.
- Lynch, J. G., & Ariely, D. (2000). Wine online: search costs affect competition on price, quality, and distribution. *Marketing Science*, 19(1), 88-103.
- Maitland, J. (2000, June 3). Fashion on the web- can you feel it? *Drapers Record*, 15-17.
- Martin, C. R. (1971). What consumers of fashion want to know. *Journal of Retailing*, 47(4), 65-71, 94.

- McCorkle, D. E. (1990). The role of perceived risk in mail order catalog shopping. *Journal of Direct Marketing*, 4(4), 26-35.
- Mintel International Group Ltd (2000). *Outsize Clothing*, December.
- Mission Statement. (2005). U.S women's plus-size apparel trade mission to the United Kingdom and Germany. Retrieved February 21, 2008, from http://trade.gov/doctm/womens_apparel_uk_germany_0205.html
- Newman, J., & Werbel, R. (1973). Multivariate analysis of brand loyalty for major household appliances. *Journal of Marketing Research*, 42(November), 404-449.
- O'Donnell, J. (2007, May 14). Computers bumped from top of online sales. (statistics and report of Online shopping). *USA Today*, 01B. Retrieved February 25, 2008 from Academic OneFile Database.
- Otieno, R., Harrow, S., & Lea-Greenwood, G. (2005). The unhappy shopper, a retail experience: exploring fashion, fit, and affordability. *International Journal of Retail and Distribution Management*, 33(4), 298-309.
- Parasuraman, A., Berry, L., & Zeithaml, V. (1991). Refinement and reassessment of the SERVQUAL scale. *Journal of Retailing*, 67(4), 420-450.
- Parasuraman, A., Berry, L., & Zeithaml, V. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12-40.
- Park, J. H., Lennon, S. J., & Stoel, L. (2005). On-line product presentation: Effects on mood, perceived risk, and purchase intention. *Psychology & Marketing*, 22(9), 695-719.
- Park, J. H., & Stoel, L. (2002). Apparel shopping on the Internet: Information availability on US apparel merchant web sites. *Journal of Fashion Marketing and Management*, 6(2), 158-176.
- Park, J. H., & Stoel, L. (2005). The effect of brand familiarity, experience, and information on online apparel purchase. *International Journal of Retail & Distribution Management*, 33(2), 148-60.
- Peck, J., & Childers, T. (2003). To have and to hold: The influence of haptic information of product judgments. *Journal of Marketing*, 67(April), 35-48.
- Peck, J., & Loken, B. (2004). When will larger-sized female models in advertisements be viewed positively? The moderating effects of instructional frame, gender, and need for cognition. *Psychology & Marketing*, 21, 425-442.

- PR Newswire US (2006, July 27). *Ulla Popken Increases Online Revenue Using Scene7's Rich Media Solution Integrated With DMinSite's eCommerce Platform; Plus Size Women's Retailer Leveraging DMinSite's Mercury 6.0 and Scene7 On-Demand to Relaunch New Business-to-Business and Business-to-Consumer Sites*. Retrieved January 24, 2007, from LexisNexis Academic database.
- Prasad, V.K. (1975). Socioeconomic product risk and patronage preferences of retail shoppers. *Journal of Marketing*, 39(3), 42-47.
- Redcats USA Launches OneStopPlus.com; The world's First Plus-Size Fashion Mall. (2006, November 9). *Business Wire*. Retrieved January 24, 2007, from LexisNexis Academic database.
- Reigen, P. H., Kernan, J. B. (1993). Social perception and interpersonal influence: Some consequences of the physical attractiveness stereotype in a personal selling setting. *Journal of Consumer Psychology*, 2, 25-38.
- Roselius, T. L. (1971). Consumer rankings of risk reduction methods. *Journal of Marketing*, 35(1), 56-61.
- Rust, R., & Zahorik, A. (1993). Customer satisfaction, customer retention, and market share. *Journal of Retailing*, 69(2), 193-215.
- Sautter, P., Hyman, M., & Lukosius, V. (2004). E-tail atmospherics: A critique of the literature and model extension. *Journal of Electronic Commerce Research*, 5(2), 14-24.
- Shih, C. F. (1998). Conceptualizing consumer experiences in cyberspace. *European Journal of Marketing*, 32(7/8), 655-663.
- Shimp, T. A., & Bearden, W. O. (1982). Warranty and other extrinsic cue effects on consumer risks perception. *Journal of Consumer Research*, 9(1), 38-46.
- Shin, S. J., & Istook, C. (2007). The importance of understanding the shape of diverse ethnic female consumers for developing jeans sizing systems. *International Journal of Consumer Studies*, 31, 135-143.
- Shop.org (2007, May). *The state of retailing 2007*. Retrieved October 24, 2007 from, http://www.emarketer.com/Reports/All/Emarketer_2000423.aspx?src=report_head_info_sitesearch

- Siddiqui, N., O'Malley, A., McColl, J., & Birtwistle, G. (2003). Retail and consumer perception of online fashion retailers. *Journal of Fashion Marketing and Management*, 7(4), 345-355.
- Simpson, L., & Lakner, H. B. (1993). Perceived risk and mail order shopping for apparel. *Journal of Consumer Studies and Home Economics*, 17, 377-398.
- Siu, N. Y., & Cheng, M. M. (2001). A study of the expected adoption of online shopping: The case of Hong Kong. *Journal of International Consumer Marketing*, 13(3), 87-106.
- Slocombe, M. (2007, January 15). *US Internet Sales Pass \$100 Billion*. Retrieved February 20, 2007 from <http://digital-lifestyles.info/2007/01/15/us-internet-sales-pass-100-billion/>
- Solomon, M. R., & Schopler, J. (1982). Self-consciousness and clothing. *Personality and Social Psychology Bulletin*, 8, 508-514.
- Stice, E., & Shaw, E. (1994). Adverse effects of the media portrayed thin ideal on women and linkages to bulimic symptomatology. *Journal of Social and Clinical Psychology*, 13, 288-308.
- Svobodastyle.com (2008). Plus size evening wear set standards for plus size designer clothing. Retrieved February 26, 2008 from www.svobodastyle.com
- Szmigin, I. (2003). Barriers to consumption of the new. In *Understanding the Consumer* (pp. 116-117). London: Sage Publications.
- Tan, S. J. (1999). Strategies for reducing consumers' risk aversion in Internet shopping. *Journal of Consumer Marketing*, 16(2), 163-180.
- Telmat Industrie (2002). Instant 3D capture & automated body measurement. <http://www.symcad.com/eng/index.htm>
- Then, N. K., & DeLong, M. R. (1999). Apparel shopping on the Web. *Journal of Family and Consumer Sciences*, 91, 65-68.
- United States Census Bureau. (2008). Quarterly retail e-commerce sales, 4th quarter 2007. Retrieved February 27, 2008 from, <http://www.census.gov/mrts/www/data/pdf/07Q4.pdf>
- United States Department of Commerce. Body measurements for the sizing of women's patterns and apparel. A Recorded Voluntary Standard of the Trade CS 215-58, U.S. Department of Commerce, Washington DC, 1958.
- United States Department of Commerce. Body measurements for the sizing of women's patterns and apparel. Voluntary Product Standard PS 42-70, U.S. Department of Commerce,

- Washington, DC, 1970.
- Vijayasathy, L. R., & Jones, J. M. (2000). Print and Internet catalog shopping. *Internet Research: Electronic Networking Applications and Policy*, 10(3), 191-202.
- Villa, M. (2007, January 11). Clothes niche is a good fit. *Conexion*. Retrieved January 24, 2007, from LexisNexis Academic database.
- Warren, C. (2007, January 9). Sisters of Size Scotlandville girls out to break stereotypes. *The Advocate*, p.E1.
- Weathers, D., Sharma, S., & Wood, S. (2007). Effects of online communication practices on consumer perception of performance uncertainty for search and experience goods. *Journal of Retailing*, 83(4), 393-401.
- Winakor, G., Canton, B., & Wolins, L. (1980). Perceived fashion risk and self-esteem of males and females. *Home Economics Research Journal*, 9(1), 45-56.
- Wood, C. M., & Scheer, L.K. (1996). Incorporating perceived risk into models of consumer deal assessment and purchase intent. *Advances in Consumer Research*, 23, 399-404.
- Yadegaran, J. (2006, September 11). Savvy, stylish and plus-size. *The Bismark Tribune*, LIFE, 1C.
- Yao, D. (2006). *Plus-size becoming more mainstream*. Retrieved August 12, 2007, from http://www.softcom.net/webnews/wed/bq/Ayb92201023.RGIQ_GMN.html
- Yen, H. J. R. (2006). Risk-reducing signals for new online-retailers: A study of single and multiple signaling effects. *International Journal Internet Marketing and Advertising*, 3(4) 299-317.
- Zeithaml, V., Berry, L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing*, 60, 31-46.

APPENDIX A: MANIPULATED MOCK WEB PAGES

[My Account](#) | [My Wishlist](#) | [Customer Service](#) | [Store Locator](#) | [Shopping Bag](#) | [Checkout](#)

Perfect Plus

Search 800.888.8888

Boutiques

- Island Fever
- Candy Couture
- Workin' It 9 to 5
- Customer Favorites
- Little Black Dresses
- Bridal Boutique
- Sale



Departments

- New Arrivals
- Tops
- Dresses
- Tees
- Premium Denim
- Bottoms
- Swimwear
- Body Shapers Etc.
- Fashion Accessories
- Gift Certificates

Enter email address for exclusive updates

Home > Dresses

◀ Previous | Next ▶

◀ Previous Viewed ▶

Brown Eyelet Dress **\$56.00**

DESCRIPTION

Beautiful brown sleeveless dress with eyelet detail by Rabbit Women.

Fitted, lightweight 100% cotton dress with a 100% polyester lining, with lace details at empire waist. Surplice bust with princess seams. V-neck back and back zipper. 16W measures a 47" bust, 40" waist, and 47" from shoulder to hem.

Handwash in cold water with like colors, no bleach, hang to dry, warm iron if necessary. Made in China.

Great dress to camouflage wide hips and create a balanced silhouette.

Quantity in basket: none

Color:

Size:

Quantity:

[Size Chart](#) | [Shipping Info](#) | [Return Info](#) | [Live Help](#)



[home](#) | [shop](#) | [register](#) | [company](#) | [customer service](#) | [wholesale](#) | [affiliate program](#) | [sitemap](#)

Mock web page A

Home > Dresses

◀ Previous | Next ▶

◀ Previous Viewed ▶



Brown Eyelet Dress **\$56.00**

DESCRIPTION

Beautiful brown sleeveless dress with eyelet detail by Rabbit Women.

Fitted, lightweight 100% cotton dress with a 100% polyester lining, with lace details at waistline. Surplice bust, V-neck back. Sleeveless dress has a back zipper. Dress hits midcalf.

Handwash in cold water with like colors, no bleach, hang to dry, warm iron if necessary. Made in China.

Fitted and comfortable dress to wear this fall for almost any occasion.

Quantity in basket: none

Color:

Size:

Quantity:

[Size Chart](#) | [Shipping Info](#) | [Return Info](#) | [Live Help](#)

Boutiques

- Island Fever
- Candy Couture
- Workin' It 9 to 5
- Customer Favorites
- Little Black Dresses
- Bridal Boutique
- Sale

Departments

- New Arrivals
- Tops
- Dresses
- Tees
- Premium Denim
- Bottoms
- Swimwear
- Body Shapers Etc.
- Fashion Accessories
- Gift Certificates

Enter email address for exclusive updates

Mock web page B

Perfect Plus

Search 800.888.8888

Boutiques

- Island Fever
- Candy Couture
- Workin' It 9 to 5
- Customer Favorites
- Little Black Dresses
- Bridal Boutique
- Sale

Departments



- New Arrivals
- Tops
- Dresses
- Tees
- Premium Denim
- Bottoms
- Swimwear
- Body Shapers Etc.
- Fashion Accessories
- Gift Certificates

Enter email address for exclusive updates

Home > Dresses

◀ Previous | Next ▶

- Previous Viewed - ▼



Brown Eyelet Dress \$56.00

DESCRIPTION

Beautiful brown sleeveless dress with eyelet detail by Rabbit Women.

Fitted, lightweight 100% cotton dress with a 100% polyester lining, with lace details at empire waist. Surplice bust with princess seams. V-neck back and back zipper. 16W measures a 47" bust, 40" waist, and 47" from shoulder to hem.

Handwash in cold water with like colors, no bleach, hang to dry, warm iron if necessary. Made in China.

Great dress to camouflage wide hips and create a balanced silhouette.

Quantity in basket: none

Color:

Size:

Quantity:

[Size Chart](#) | [Shipping Info](#) | [Return Info](#) | [Live Help](#)

Mock web page C

[My Account](#) | [My Wishlist](#) | [Customer Service](#) | [Store Locator](#) | [Shopping Bag](#) | [Checkout](#)

Perfect Plus

Search 800.888.8888

Boutiques

- Island Fever
- Candy Couture
- Workin' It 9 to 5
- Customer Favorites
- Little Black Dresses
- Bridal Boutique
- Sale



Departments

- New Arrivals
- Tops
- Dresses
- Tees
- Premium Denim
- Bottoms
- Swimwear
- Body Shapers Etc.
- Fashion Accessories
- Gift Certificates

Enter email address for exclusive updates

Home > Dresses

◀ Previous | Next ▶

Brown Eyelet Dress **\$56.00**

DESCRIPTION

Beautiful brown sleeveless dress with eyelet detail by Rabbit Women.

Fitted, lightweight 100% cotton dress with a 100% polyester lining, with lace details at waistline. Surplice bust, V-neck back. Sleeveless dress has a back zipper. Dress hits midcalf.

Handwash in cold water with like colors, no bleach, hang to dry, warm iron if necessary. Made in China.

Fitted and comfortable dress to wear this fall for almost any occasion.

Quantity in basket: none

Color:

Size:

Quantity:

- Previous Viewed - ▼

[home](#) | [shop](#) | [register](#) | [company](#) | [customer service](#) | [wholesale](#) | [affiliate program](#) | [sitemap](#)

Mock web page D

APPENDIX B: APPROVAL OF HUMAN SUBJECTS USE

DATE: May 1, 2008

MEMORANDUM

TO: Ji-Hyun Kim
Larinda Cole

FROM: David M. Moore 

Approval date: 4/30/2008
Continuing Review Due Date: 4/15/2009
Expiration Date: 4/29/2009

SUBJECT: **IRB Expedited Approval:** "The Effects of Visual and Verbal Fit Information on Plus-Size Women's Perceived Risk, Purchase Intentions, and Loyalty Intentions in Internet Apparel Shopping", IRB # 08-274

This memo is regarding the above-mentioned protocol. The proposed research is eligible for expedited review according to the specifications authorized by 45 CFR 46.110 and 21 CFR 56.110. As Chair of the Virginia Tech Institutional Review Board, I have granted approval to the study for a period of 12 months, effective April 30, 2008.

As an investigator of human subjects, your responsibilities include the following:

1. Report promptly proposed changes in previously approved human subject research activities to the IRB, including changes to your study forms, procedures and investigators, regardless of how minor. The proposed changes must not be initiated without IRB review and approval, except where necessary to eliminate apparent immediate hazards to the subjects.
2. Report promptly to the IRB any injuries or other unanticipated or adverse events involving risks or harms to human research subjects or others.
3. Report promptly to the IRB of the study's closing (i.e., data collecting and data analysis complete at Virginia Tech). If the study is to continue past the expiration date (listed above), investigators must submit a request for continuing review prior to the continuing review due date (listed above). It is the researcher's responsibility to obtain re-approval from the IRB before the study's expiration date.
4. If re-approval is not obtained (unless the study has been reported to the IRB as closed) prior to the expiration date, all activities involving human subjects and data analysis must cease immediately, except where necessary to eliminate apparent immediate hazards to the subjects.

Important:

If you are conducting **federally funded non-exempt research**, please send the applicable OSP/grant proposal to the IRB office, once available. OSP funds may not be released until the IRB has compared and found consistent the proposal and related IRB application.

APPENDIX C: CONSENT FORM

14%

This Plus-size Woman and Internet Shopping research study is provided by Virginia Polytechnic Institute and State University on behalf of Larinda Cole and Dr. Jihyun Kim.

You are being asked to participate in this survey because you may have experience browsing and/or shopping on the Internet. Your participation in this study will help us to better understand your attitudes toward purchasing plus-size apparel on the Internet.

Procedure:

The study involves a web survey that should take approximately 10-15 minutes to complete. There is no time limit and you may complete this web survey on any computer. All responses are voluntary and will be kept confidential. The only information needed is your email address at the end of the survey to contact you for your compensation. Submission of your state and zip code are voluntary. You have the option to withdraw your survey answers by clicking the "Exit survey link" button during or at the end of the web survey.

Risks:

There are no physical risks with taking this survey. Survey questions are worded to gain general information about your online shopping experience, and are in no way meant to be purposively offensive.

Compensation:

The first 120 participants who complete the survey by December 7, 2008 (12-07-08) may submit their email address upon completion and to be into a drawing to receive a \$15.00 e-gift card. Twenty (20) email addresses will be chosen to receive the e-gift cards. You will be directed to the compensation web page after completing the survey.

Any participants, who complete the survey after the first 120 have been collected, may submit their email address to be entered into a contest to have a chance at winning a \$10.00 e-gift card. After the initial 120 surveys are tallied the participants who completed the 25th, 50th, and 75th, 100th, and 125th surveys will receive a \$10.00 e-gift card. Any participant who chooses to withdraw during the middle of the survey, or who does not submit the completed survey will be included in the contest to receive a \$10.00 e-gift card with participants who submitted the survey after the 120 mark. You must submit your email address to be entered into the prize drawing.

Please read the following statement. If you agree, please initial in the box below and proceed with the survey. If you do not agree with the terms you may exit at this time.

1. I have read and understand the previous statements of procedure, risk, and compensation, and I agree to participate and proceed to the survey.

Next

APPENDIX D: EMAIL INVITATION

Hi. My name is Larinda Cole and I am graduate student conducting a research study as part of a requirement for the Master's Degree in Apparel at Virginia Tech. The study investigates **plus-size women's satisfaction and experiences shopping for plus-size apparel** in physical stores and on the Internet. The study also seeks to develop a better understanding of how retailers can better merchandise apparel for plus-size shoppers online. **If you are a female, size 14+, then you are eligible to participate. Please complete the survey by November 11, 2008. If this does not apply to you, please forward to another female friend or family member.** If you already responded the online survey, please accept our sincere thanks.

Purpose:

You are invited to participate in a research study on plus-size internet shopping. The following survey is part of a research project being conducted Larinda Cole and Dr. Jihyun Kim at Virginia Tech. You are being asked to participate in this survey because you may have experience browsing and/or shopping on the Internet for plus-size apparel. Your participation in this study will help us to better understand your attitudes toward purchasing plus-size apparel on the Internet.

Procedure:

The study involves a web survey that should take approximately **10-15** minutes to complete. There is no time limit and you may complete this web survey on any computer. All responses are voluntary and will be kept confidential. The only information we request is your email address, state, and zip code, at the end of the survey to contact you for your compensation. You have the option to withdraw your survey answers by clicking the "Exit survey link" button during or at the end of the web survey.

Risks:

There are no physical risks with taking this survey. Survey questions are worded to gain general information about your online shopping experiences and are in now way mean to be purposely offensive.

Compensation:

The first 120 participants who complete the survey by November 11, 2008 (11-11-08) may submit their email address upon completion and to be into a drawing to receive a **\$15.00 e-gift card. Twenty (20) email addresses will be chosen to receive the e-gift cards.** You will be directed to the compensation web page after completing the survey.

Any participants, who complete the survey after the first 120 have been collected, may submit their email address to be entered into a contest to have a chance at winning a \$10.00 e-gift card. After the initial 120 surveys are tallied the participants who completed the 25th, 50th, and 75th, 100th, and 125th surveys will receive a \$10.00 e-gift card. Any participant who chooses to withdraw during the middle of the survey, or who does not submit the completed survey will be included in the contest to receive a \$10.00 e-gift card with participants who submitted the survey after the 120 mark. You must submit your email address to be entered into the prize drawing.

Please follow these guidelines to take the proper survey. (You may need to copy and paste in new browser address bar)

If the last digits of your **ZIP CODE** fall between:

0-1, follow this link to form

A: https://www.surveymonkey.com/s.aspx?sm=2TLL6I8DC6q6P47USk2m4g_3d_3d

2-4, follow this link to form

B: https://www.surveymonkey.com/s.aspx?sm=OmKuOEAbEZ04TnYySxe0WQ_3d_3d

5-7, follow this link to form

C: https://www.surveymonkey.com/s.aspx?sm=5A2GyIVPSxMPMVt1A8paug_3d_3d

8-9, follow this line to form

D: https://www.surveymonkey.com/s.aspx?sm=4j7bhIK9MB2nXU5HGTfxUQ_3d_3d

We hope you will take the time to complete the survey in the next few days.

If you have any questions you may contact Larinda Cole at lcoleva@vt.edu and Dr. Jihyun Kim at jhkim@vt.edu. You may also contact Dr. David Moore, Chair of Institutional Review Board, Virginia Tech, moored@vt.edu, (540) 231-4991, if you have any problems or concerns.

Thank you for your assistance.

Best Regards,

Larinda Cole
AHMR Graduate Council President
Dept. of Apparel, Housing, and Resource Management
248 Wallace Hall
Virginia Tech
Blacksburg, VA 24061-0410

Jihyun Kim, Ph.D.
Assistant Professor
Dept. of Apparel, Housing, and Resource Management
111 Wallace Hall
Virginia Tech
Blacksburg, VA 24061-0410
Office (540) 231-6177
Fax (540) 231-1697

APPENDIX E: ONLINE SURVEY QUESTIONNAIRE

Part 1. Online Apparel Shopping Experiences

29%

In this section we would like for you to tell us about your shopping experiences for apparel online. Click the dial beside the statement that best describes your response.

2. How long have you been using the Internet for browsing and/or purchasing, in general?
- Less than 6 months
 - Six months to 1 year
 - One to 3 years
 - Three to 5 years
 - More than 5 years
3. How long have you have been using the Internet for browsing and/or purchasing for plus-size apparel?
- Less than 6 months
 - Six months to 1 year
 - One to 3 years
 - Three to 5 years
 - More than 5 years
4. How many apparel items have you bought for yourself on the Internet within the last 6 months?
- None
 - One item
 - 2-4 items
 - 5-7 items
 - 8-10 items

More than 10 items

5. Rounding off to the nearest dollar, how much have you spent on apparel purchased for yourself via the Internet within the last 3 months?

None

\$1 - \$100

\$101 - \$300

\$301 - \$500

\$501 - \$700

\$701 - \$1,000

More than \$1,000

6. How many times have you browsed the Internet for plus-size apparel within the last 2 weeks (14 days)?

None

1 - 4 times

6 - 10 times

11 - 15 times

16 - 20 times

More than 21 times

7. Please provide the name of ONE online store you shopped most frequently for plus-size apparel within the last 6 months. If you have not shopped online with the last 6 months please write None.

Prev

Next

Part 2. Apparel Shopping Satisfaction & Perceptions

4.3%

In this section we would like for you to tell us the extent to which you agree or disagree with the following statements. Click the dial beneath or beside the statement that best represents your response

8. I am very satisfied with the garment fit information provided by the following Internet apparel retailers:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/A
department stores (e.g., Macy's.com)	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	<input type="checkbox"/> N/A
specialty chain stores (e.g., Talbots.com)	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	<input type="checkbox"/> N/A
mass merchant stores (e.g., Walmart.com)	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	<input type="checkbox"/> N/A
online plus-size only stores (e.g., Avenue.com, Kiyonna.com)	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	<input type="checkbox"/> N/A

9. I am very satisfied with garment fit information among online apparel stores that carry a wide range of women's sizes including misses, petites, tall, and plus-size among the following categories:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/A
Careerwear/ Professional dress	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	<input type="checkbox"/> N/A
Casualwear/ Lounge	<input type="checkbox"/> Casualwear/	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	<input type="checkbox"/> N/A

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/A
	Lounge Strongly Agree				Disagree	
Formalwear	<input checked="" type="checkbox"/> Formalwear Strongly Agree	<input checked="" type="checkbox"/> Agree	<input checked="" type="checkbox"/> Neutral	<input checked="" type="checkbox"/> Disagree	<input checked="" type="checkbox"/> Strongly Disagree	<input checked="" type="checkbox"/> N/A
Intimates	<input checked="" type="checkbox"/> Intimates Strongly Agree	<input checked="" type="checkbox"/> Agree	<input checked="" type="checkbox"/> Neutral	<input checked="" type="checkbox"/> Disagree	<input checked="" type="checkbox"/> Strongly Disagree	<input checked="" type="checkbox"/> N/A
Swimwear	<input checked="" type="checkbox"/> Swimwear Strongly Agree	<input checked="" type="checkbox"/> Agree	<input checked="" type="checkbox"/> Neutral	<input checked="" type="checkbox"/> Disagree	<input checked="" type="checkbox"/> Strongly Disagree	<input checked="" type="checkbox"/> N/A

10. I am very satisfied with garment fit information among online apparel stores that ONLY carry plus-sizes among the following categories:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/A
Careerwear/ Professional Dress	<input checked="" type="checkbox"/> Strongly Agree	<input checked="" type="checkbox"/> Agree	<input checked="" type="checkbox"/> Neutral	<input checked="" type="checkbox"/> Disagree	<input checked="" type="checkbox"/> Strongly Disagree	<input checked="" type="checkbox"/> N/A
Casualwear/ Lounge	<input checked="" type="checkbox"/> Casualwear/ Lounge Strongly Agree	<input checked="" type="checkbox"/> Agree	<input checked="" type="checkbox"/> Neutral	<input checked="" type="checkbox"/> Disagree	<input checked="" type="checkbox"/> Strongly Disagree	<input checked="" type="checkbox"/> N/A
Formalwear	<input checked="" type="checkbox"/> Formalwear Strongly Agree	<input checked="" type="checkbox"/> Agree	<input checked="" type="checkbox"/> Neutral	<input checked="" type="checkbox"/> Disagree	<input checked="" type="checkbox"/> Strongly Disagree	<input checked="" type="checkbox"/> N/A
Intimates	<input checked="" type="checkbox"/> Intimates Strongly Agree	<input checked="" type="checkbox"/> Agree	<input checked="" type="checkbox"/> Neutral	<input checked="" type="checkbox"/> Disagree	<input checked="" type="checkbox"/> Strongly Disagree	<input checked="" type="checkbox"/> N/A
Swimwear	<input checked="" type="checkbox"/> Swimwear Strongly Agree	<input checked="" type="checkbox"/> Agree	<input checked="" type="checkbox"/> Neutral	<input checked="" type="checkbox"/> Disagree	<input checked="" type="checkbox"/> Strongly Disagree	<input checked="" type="checkbox"/> N/A

11. I feel very comfortable shopping online for plus-size apparel compared to shopping in the plus-size section of the following retailers:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/A
physical department stores (e.g., Macy's)	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	<input type="checkbox"/> N/A
specialty chain stores (e.g. Tailbots)	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	<input type="checkbox"/> N/A
mass merchant stores (e.g., Walmart)	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	<input type="checkbox"/> N/A
plus-size only stores (e.g. Avenue)	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree	<input type="checkbox"/> N/A

12. I almost always fluctuate sizes among different brands.

Strongly Agree Agree Neutral Disagree Strongly Disagree

13. I almost always fluctuate sizes within the same brand for different garment styles.

Strongly Agree Agree Neutral Disagree Strongly Disagree

14. I almost always purchase my clothing from an online retailer rather than in a physical store.

Strongly Agree Agree Neutral Disagree Strongly Disagree

15. There are many more fashionable plus-size styles of apparel available on the Internet than at the physical stores I shop.

Strongly Agree Agree Neutral Disagree Strongly Disagree

16. I feel really great about myself when I see a plus-size woman or mannequin modeling a garment that is available to purchase in the plus-size range.

Strongly Agree Agree Neutral Disagree Strongly Disagree

17. It is very easy to find well-fitting plus-size garments online.

Strongly Agree Agree Neutral Disagree Strongly Disagree

- Strongly Agree Agree Neutral Disagree Strongly Disagree
18. Most of the time I find detailed garment information from online retailers while browsing for apparel.
 Strongly Agree Agree Neutral Disagree Strongly Disagree
19. There are many plus-size apparel online retailers offering a wide product assortment (e.g. styles, sizes, colors.)
 Strongly Agree Agree Neutral Disagree Strongly Disagree

Part 3. Internet Retailer's Site Evaluation.

71%

Please respond to the following questions based on your evaluation of the mock web page you just browsed.

20. If the web site was available for actual shopping, I would be likely to...

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Perceive purchasing a garment from this site as risky.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
purchase a garment from this site.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
recommend this web site to other plus-size apparel shoppers, whom I know.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
encourage my friends and relatives to shop from this web site.	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree
say positive comments about this web site to	<input type="checkbox"/> Strongly Agree	<input type="checkbox"/> Agree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Disagree	<input type="checkbox"/> Strongly Disagree

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
plus-size shoppers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
consider this my first choice to buy apparel.	<input type="radio"/> Strongly Agree	<input type="radio"/> Agree	<input type="radio"/> Neutral	<input type="radio"/> Disagree	<input type="radio"/> Strongly Disagree
return here to shop for the next occasion that I need new clothing.	<input type="radio"/> Strongly Agree	<input type="radio"/> Agree	<input type="radio"/> Neutral	<input type="radio"/> Disagree	<input type="radio"/> Strongly Disagree
pay a higher price to purchase a garment at this retailer (in normal economic conditions).	<input type="radio"/> Strongly Agree	<input type="radio"/> Agree	<input type="radio"/> Neutral	<input type="radio"/> Disagree	<input type="radio"/> Strongly Disagree
continue to shop for a plus-size garment from this retailer even if the prices increase somewhat (in normal economic conditions).	<input type="radio"/> Strongly Agree	<input type="radio"/> Agree	<input type="radio"/> Neutral	<input type="radio"/> Disagree	<input type="radio"/> Strongly Disagree

21. The product description provided very detailed information about the garment fit for the following items:

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
garment style	<input type="radio"/> Strongly Agree	<input type="radio"/> Agree	<input type="radio"/> Neutral	<input type="radio"/> Disagree	<input type="radio"/> Strongly Disagree
garment dimensions	<input type="radio"/> Strongly Agree	<input type="radio"/> Agree	<input type="radio"/> Neutral	<input type="radio"/> Disagree	<input type="radio"/> Strongly Disagree
Fit advice	<input type="radio"/> Strongly Agree	<input type="radio"/> Agree	<input type="radio"/> Neutral	<input type="radio"/> Disagree	<input type="radio"/> Strongly Disagree

Prev

Next

Part 4. Demographic Information

86%

Please answer the following 8 questions that best describe you.

22. What is your age?

23. What is your ethnicity (check all that apply)?

- Asian, Asian American, Pacific Islander
- Black, African American, African
- Latino, Hispanic, Hispanic American
- Multi-racial
- Native American
- White, Caucasian American
- Other (please specify)

24. What is your occupation?

25. What is the highest level of education you have completed?

- Bachelor Degree
- Graduate Degree/ Post Baccalaureate Degree
- High school Diploma
- Middle School/ Junior High

- Professional Degree/Certificate
- Other (please specify)

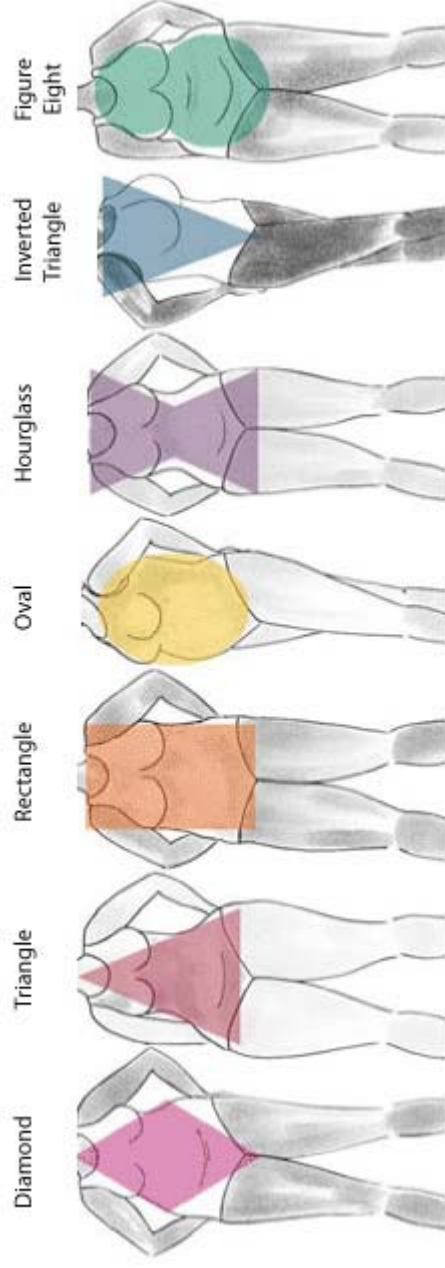
26. What is your marital status?

- Divorced/ Separated
- Engaged
- Married
- Single
- Widowed

27. Round to the nearest dollar your annual household income.

- \$0-\$10,000
- \$10,001 - \$20,000
- \$20,001 - \$30,000
- \$30,001 - \$40,000
- \$40,001 - \$50,000
- \$50,001 - \$60,000
- \$60,001 - \$70,000
- More than \$70,001

Please use the following picture of body shapes to answer question 28.



28. Please mark beside the body type explanation that best describes your shape using the picture above.

- Diamond: You have a smaller frame, narrow shoulders and back, smaller to medium sized bust with no defined waist. Your body carries weight towards your middle. You have broad hips and generous thighs.
- Triangle: Your shoulders are proportionally narrow or average, and your waist is more defined due to pronounced hips. Your hips are wider compared to the rest of your body, you have full round, or flat buttocks and full thighs.
- Rectangle: Your shoulders, bust, and hips are around the same size with no defined waistline. Your ribcage is larger with a broad back, and you buttock are average or less pronounced.
- Oval: Your shoulders are prominent or average and slightly sloped, and your back is broader, fleshier. Your bust is ample usually larger than your hips, waist is undefined carrying weight in the midsection, flat buttocks with hips proportionately slender to body, and thighs relatively thinner with fullness at the hip height.
- Hourglass: You have a very curvy shape with a very defined waist that may be 6-9 inches narrower than your bust and hips. Your shoulders and hips are around the same size, and your bust is medium to large. Your hips are soft and round with your lower hips the widest part of your body. You have fuller thighs that may bulge towards the outside, with slender lower legs.
- Inverted Triangle: Your shoulders or bust are larger than your hips, and your back is broader and fleshier. You have wider rib

cages and your hips and thighs are proportionally slender. Your waist can be slightly indented with weight in the midsection.

Figure Eight: You are curvy with an hourglass silhouette; however heavier on the bottom, with fuller thighs and fullness in the midriff section. Your hips are usually well defined, round, and full. Your back is larger and tends to be fleshier and full. Your bust is medium to large, shapely and full, but usually smaller than your hips.

29. Please mark which best represents your dress size.

14/16 (W)

18/20 (W)

22/24 (W)

26/28 (W)

30/32 (W)

34/36 (W)

38 and up (W)

Prev

Next

APPENDIX F: FAIR USE CHECKLIST

Document to be copied: Sketch of body shapes
Date: 02-16-2009

Summary: Favors Fair Use

Your analysis of the four factors suggests that your proposed use **favors fair use**. An analysis that weighs favorably toward fair use supports this use of the material under the circumstances you described without getting permission from the copyright owner.

Detailed Report

In determining fair use there are no simple answers. Each use is dependent on the conditions for that use. After considering and examining the four factors, the factors need to be weighed against each other. No one factor makes the use fair or unfair. And, at times, depending on particular circumstances, some factors may carry more weight than others.

You've analyzed **purpose** to be *strongly favorable* towards fair use.

You cited the following elements for your analysis:

Favors Fair Use

- Instruction, restricted access course websites, research, and/or personal use

Weighs Against Fair Use

Notes: For women to see the shape and try to identify which shape seems to represent their bodies.

You've analyzed **nature** to be *neutral* towards fair use.

You cited the following elements for your analysis:

Favors Fair Use

- Published

Weighs Against Fair Use

- Creative, artistic, fiction

Notes: Shown on a retailers web page section under size chart.

You've analyzed **amount** to be *neutral* towards fair use.

You cited the following elements for your analysis:

Favors Fair Use

Weighs Against Fair Use

- Only portion needed for favored purpose
- Portion used is heart of the work

Notes: Only the middle section of the body images were captured.

You've analyzed **market** to be *strongly favorable* towards fair use.

You cited the following elements for your analysis:

Favors Fair Use

- Use stimulates market for original work, no impact on market

Weighs Against Fair Use

Notes: The image has been altered somewhat, and is only used for research purposes. No permission was needed to copy the picture off of the website. The website allows images to be emailed to a friend or saved.

Larinda Cole has appropriately considered copyright.



Jihyun Kim, Committee Chair

2/18/2009

Date