THE EFFECT OF PRODUCT PRESENTATION ON MOOD, PERCEIVED RISK, AND APPAREL PURCHASE INTENTION IN INTERNET APPAREL SHOPPING

DISSERTATION

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the Degree Doctor of Philosophy in the Graduate
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By

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* * * * *

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U.S. apparel sales online during the past few years have doubled from 2.9 billion dollars in 1999 to 5.9 billion dollars in 2000 (“Retail Apparel Sales Statistics and Trends,” 2002). As a result, website design and product presentation in Internet shopping have gained attention from the press and researchers. Yet, despite an increased interest in apparel and apparel-related products in Internet shopping, it is surprising that so little empirical research has been conducted about the topic. Thus, the purpose of the study is to examine the effect of product presentation (image size and product movement) on mood, perceived risk, and purchase intention. Using Roger’s innovation decision process model as a framework, the relationships among variables were investigated to provide details of the effect of product presentation on mood, perceived risk, and purchase intention. In addition, impulsivity as a personal trait was examined in relation to perceived risk. Two hundred and forty four female undergraduate students participated in this study for extra credit and incentives. This study employed a 2 X 2 between subjects’ factorial design: Product movement (product in motion vs. product not in motion) by image size (large vs. small). Eight single websites were created to closely mimic the design of “true” websites (two websites for each condition). Each website presented one of two similar styles of khaki pants for women. The stimuli consisted of
two similar pairs of khaki pants, both presented using the same treatment condition. Using descriptive statistics, multiple regression analyses, multivariate analyses of covariance, and univariate analyses of covariance, the present research showed (1) main effects for product movement on mood, perceived risk, and apparel purchase intention, (2) an interaction effect for product movement and image size on apparel purchase intention, (3) a negative relationship between mood and perceived risk, (4) a positive relationship between mood and apparel purchase intention, and (5) a negative relationship between perceived risk and apparel purchase intention. The study added valuable empirical findings to the literature on the relationship between product presentation and mood, perceived risk, and purchase intention. This study provides theoretical support for the innovative-decision process model.
This dissertation is dedicated to my loving parents, Sarang Park and Hyanghee Chang who have supported me in all my endeavors. I would also like to dedicate this work to my advisors Dr. Sharron J. Lennon and Dr. Leslie Stoel for their continuous encouragement and valuable support during my research. Finally, I would like to thank my loving daughter, Hannah Gloria Kwon.
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CHAPTER 1

INTRODUCTION

E-commerce sales at domestic online retailers totaled 53 billion dollars in 2001 ("U.S. Online Consumer Sales Surge to $53 Billion," 2002). For the third quarter of 2001, U.S. retail-e-commerce sales for non-travel goods were $7.472 billion with an increase of 8.3 percent over the third quarter of 2000 ("U.S. Census Bureau," 2001). The average weekend day brings $97 million in sales, but average weekday sales were 60% greater at $155 million, due to increased shopping activity in the workplace. In addition, average monthly dollars spent per buyer by location in 2001 were $229 at work, $165 at home, and $146 at school. ("U.S. Online Consumer Sales Surge to $53 Billion," 2002). In particular, U.S. apparel sales online during the past few years have doubled from 2.9 billion dollars in 1999 to 5.9 billion dollars in 2000 ("Retail Apparel Sales Statistics and Trends," 2002). In 2001, the apparel category was expected to show the highest amount of online spending during the holiday season with $2.5 billion in revenues (Pastore, 2001). By 2003, online apparel sales are predicted to reach about 200 billion dollars (Duff, 1999). Among Internet users, sixty percent reported shopping online for clothing and 56 percent of them have purchased at least one clothing item from the Internet. Approximately 40 percent of Internet apparel purchasers expected to repeat their clothing purchases in the near future ("Online Apparel Shopping Gaining in Popularity," 2000).
Apparel was the third largest e-commerce category with 10% of market share following travel (e.g., airline tickets) and computer related goods (e.g., software, hardware) in Internet sales in 2001 (“U.S. Online Consumer Sales Surge to $53 Billion,” 2002). This illustrates the importance of apparel shopping from the Internet.

The five major Internet apparel retailers in terms of the number of website visitors are J Crew.com, LLBean.com, Bluefly.com, Gap.com, and Landsend.com (Duff, 1999). Familiarity with and brand trust in established retailers and manufacturers, such as store brands or catalog retailers, may augment the growth of apparel shopping through the Internet. According to Brand (2001), Internet shoppers want to purchase products from the sites whose names they recognize or they know. PricewaterhouseCooper E-Retail Intelligence System’s research showed that familiarity with a clothing brand drove Internet clothing purchases (“Online Apparel Shopping Gaining in Popularity,” 2000). Therefore, branded companies may have a greater opportunity to succeed in the competition. In addition, PC Data Online, a leading Internet research firm, reported that a favorable prior shopping experience with the retailer was an important factor influencing the decision to go to a shopping site. Finally, with respect to apparel sites, low price, recommendations from friends, online advertisements, radio or television commercials, and print advertisements or billboards featuring the site were also found to be important factors in deciding which online sites to visit (“Web Retailers’ Brand Recognition Drives Online Apparel Shopping,” 1999).

Website design and product presentation in Internet shopping have gained attention from the press and researchers. More attractive, pleasurable, and friendly Internet selling sites, featuring an easiness to use page structure, three-dimensional
rotated product display and active coordination functions may provide consumers a better Internet shopping experience and influence the purchase decision (Bhatti, Bouch, & Kuchinsky, 2000; Szymanski & Hise, 2000). In fact, 42 percent of dissatisfied Internet purchasers reported difficulties with site navigation and product comparisons. It may be tricky to go back and find the previous product sites that shoppers searched for and to compare the products among the sites (Elliot & Fowell, 2000).

In relation to a pleasurable shopping experience created by store environment, several studies have shown that a positive mood could be increased by exposure to a visual display (e.g., a moving object, prominent image size, distinct color) and result in greater intention to purchase (Jeandrain, 2001; Spies, Hesse, & Loesch, 1997; Swinyard, 1993). Well structured store layout and prominent store display using colorful signs and store lights can positively stimulate consumers’ mood, which is defined as “a type of affective state which is transient and particular to a specific time and situation” (Jeon, 1990, p. 24). In Internet shopping, Then and Delong (1999) suggested that product presentation with various angles and picture enlargement may create a pleasurable shopping experience. If so, then it is possible that product presentation could influence mood and purchase intention.

Internet shopping may be associated with risks similar to other in-home shopping methods (e.g., mail order, television shopping) which come from uncertainty and consequences of buying (Liang & Huang, 1998). Risk-taking behavior becomes more important for consumer buying behavior studies of Internet shopping. Several Internet shopping studies found that people tended to perceive Internet shopping as riskier than other shopping methods (e.g., retail store shopping, print catalog shopping) (Jarvenpaa &
Todd, 1997; Vijayasarthathy & Jones, 2000). However, research has found that for people who have had an Internet shopping experience, their perceived risk of Internet shopping is reduced (Moreno & McCormack, 1998; Yoh, 1999). Thus, risk taking or the amount of perceived risk may play important roles when shopping from the Internet. In addition, apparel shopping at home via telephone, catalog, television, or Internet may be associated with higher levels of perceived risk compared to other products (e.g., electronics, airline tickets). Cox and Rich (1964) found that clothing such as skirts, sweaters, and girdles are higher risk items because size, color, and fit play an important role in purchase decisions. McCorkle (1990) found that product sensory attributes such as fabric hand, garment fit, color, or quality were main criteria for apparel shopping at home. However, those cannot be completely evaluated when people shop for apparel from home. This may result in greater perceived risk associated with apparel shopping from home.

Impulsivity as a personal trait also may have an influence on shopping from the Internet. According to Rook and Fisher (1995), impulsivity had a positive relationship with the amount of risk taking. People who were more impulsive were likely to take risks. In fact, Donthu and Garcia (1999) found that Internet shoppers were likely to be risk takers, venturesome, and innovative.

Beatty and Ferrell (1998) and Dholakia (2000) found that impulsivity also had a great impact on buying behavior in retail settings. People who were more impulsive purchased more products and more frequently even though the purchase was not initially planned. Similarly, in Internet shopping, impulsivity may be related to perceived risk and purchase intention.
Problem Statement

Despite an increased interest in apparel and apparel-related products in Internet shopping, it is surprising that so little empirical research has been conducted about the topic. Previous studies have focused on the demographics of Internet shoppers (Donthu & Garcia, 1999; Lee & Johnson, 2002; Yoh, 1999), products sold on the Internet (Duff, 1999; Walsh & Godfrey, 2000), and systematic issues using Internet shopping sites such as response time and website design (Bhatti, Bouch, & Kuchinsky, 2000; Elliot & Fowell, 2000; Lin & Lu, 2000; Ramsay, Barbesi, & Preece, 1998). However, research is lacking regarding the relationship between online apparel purchase behavior and various psychological (e.g., impulsivity, mood, perceived risk) and marketing factors (e.g., website design).

Because apparel may be a risky product to buy via the Internet due to the inability to examine and try on apparel items and the uncertainty of apparel quality, consumers may avoid shopping from the Internet. Therefore, there is a need to understand whether or not better visual product presentation in Internet shopping may give some sense of fit and other tactile experience and also decrease perceptions of risk. In addition, although several Internet shopping studies (Park & Stoel, 2002; Then & Delong, 1999; Yoh, 1999) have discussed the importance of shopping environment on mood or on creating pleasurable shopping experiences for Internet shopping, none have empirically investigated the effect of shopping environment on mood.

Purpose of the Study
The purpose of the study is to examine the effect of product presentation on mood, perceived risk, and purchase intention. The size of product images and product movement on screen may influence mood, perceived risk, and purchase intention. In addition, the relationships among variables (e.g., mood and perceived risk, perceived risk and purchase intention, mood and purchase intention) were investigated to provide details of the effect of product presentation on mood, perceived risk, and purchase intention. In addition, impulsivity as a personal trait was examined in relation to perceived risk.

In this study, based on a number of studies which will be discussed in chapter 2 (See page 21), several important relationships were investigated: (a) between product presentation and mood (product presentation → mood), (b) between product presentation and purchase intention (product presentation → purchase intention), (c) between product presentation and perceived risk (product presentation → perceived risk), (d) between mood and perceived risk (mood → perceived risk), (e) between mood and purchase intention (mood → purchase intention), (f) between impulsivity and perceived risk (impulsivity → perceived risk), and (g) between perceived risk and purchase intention (perceived risk → purchase intention).

Significance of the Study

This study may be beneficial for both current and potential Internet apparel shoppers and e-tailers. Because Internet shoppers may rely only on visual information available on the screen (e.g., verbal description, product image) and there is no corresponding tactile experience (e.g., touch, feel, or fit of the garment), more descriptive product images may substitute for the tactile experience. Advanced product presentation
using a rotated simulation or a close-up view in a large size image may be helpful for consumers to inspect the garment shown on the screen and may affect purchase decisions. Garments shown on a human model in different sizes may increase reality and provide extended information about sizing and fit. For those who just browse the website without purchasing either to gather information about the product or to see what is available in the market, impressive product presentation may increase the chance for them to revisit the website and become an active shopper in the future.

E-tailers may be able to develop new marketing strategies for visual displays that provide descriptive and extensive information and thereby reduce risk and purchase intention. Large product images and product movement (e.g., rotation) on screen may create excitement or provide a pleasurable experience as compared to a motionless product. Therefore, e-tailers may be able to convert a browser to a purchaser. Furthermore, shoppers may revisit the website and purchase the products in the future.

**Definition of Terms**

Terms that are used in this study are defined as follows:

E-tailer: E-tailers are defined as retailers who develop shops in cyberspace and do business on the Internet (Frings, 2001).

E-tailing: E-tailing is described as nontraditional retailing via the Internet, where the customer and the retailer communicate through an interactive electronic computer system (Frings, 2001)
Impulse buying tendency: Impulse buying tendency is defined as “the degree to which an individual is likely to make unintended, immediate, and unreflective purchases” (Weun, Jones, & Beatty, 1997, p.306).

Impulsivity: Impulsivity is described as acting without adequate consideration, urge of the moment reactions, taking risks, and trying to get things done quickly (Barrett & Patton, 1983). In this study, following Beatty and Ferrell (1998), impulsivity is considered as a personal trait which may influence actual buying on impulse.

Internet: The Internet is “a worldwide network of networks that all use the TCP/IP communications protocol and share a common address space. Also known as ‘the net,’ ‘the information superhighway,’ and ‘cyberspace’”(Netdirectory, 2001).

Internet apparel browsers: Internet browsers are defined as those who browsed apparel sites but did not purchase apparel from the Internet (Lee & Johnson, 2002).

Internet apparel purchasers: Internet apparel purchasers are defined as those who have had an experience purchasing apparel via the Internet (Lee & Johnson, 2002).

Internet browsers: Browsers are referred to as shoppers who are just glancing at the products that pass in front of them and sometimes have a hard time finding the right product (Allen, 2000). Therefore, in this study, browsers are defined as those who search for information about, but do not purchase, apparel from the Internet.
Internet browsing: Browsing is “the in-store examination of a retailer’s merchandise for recreational and/or informational purposes without an immediate intent to buy” (Bloch, Ridgeway, & Sherrell, 1989, p.14). In this study, Internet browsing is defined as the on-site information search for recreational and/or informational purposes without an immediate or specific intent to buy.

Internet purchasers: Internet purchasers are defined as those who have had experience buying products via the Internet (Donthu & Garcia, 1999).

Internet purchasing: Purchasing is defined as an act or an instance of buying (Dictionary, 2001). In this study, Internet purchasing is defined as an actual buying enactment that comes after browsing for the products.

Internet shopping: Shopping is defined as a behavior of visiting stores in search of merchandise or bargains or looking for something with the intention of acquiring it (Dictionary, 2002). In this study, Internet shopping is defined as a behavior of purchasing merchandise from Internet selling sites. Purchasing may require browsing activity. Internet shopping is often called ‘online shopping,’ where people encompass purchasing merchandise from a computer network (Dictionary, 2002).

Mood: A mood is defined as “a type of affective state which is transient and particular to a specific time and situation” (Jeon, 1990, p.24).

Perceived risk: Perceived risk is defined as the nature and amount of uncertainty perceived by the consumer in contemplating a particular purchase decision (Cox & Rich, 1964).
Product presentation: Product presentation involves a consciously designed display of selected merchandise in a defined area (Fiore, Yah, & Yoh, 2000). In this study, product presentation on the Internet is defined as the display of merchandise on the screen.

Purchase intention: Purchase intention represents “what we think we will buy. A special type of purchase intention is repurchase intentions, which reflect whether we anticipate buying the same product or brand again. Shopping intentions indicate where we plan on making our product purchases” (Blackwell, Miniard, & Engel, 2001, p 283).
CHAPTER 2

REVIEW OF LITERATURE

This chapter provides a theoretical background for the research. The literature was reviewed as follows: 1) Overview of Internet shopping, 2) Theoretical framework (A model of innovation-decision process), and 3) Hypotheses development.

In the first section of the chapter, overall Internet shopping literature for both general products and apparel in particular is reviewed. It includes advantages, disadvantages, demographics and psychological characteristics of Internet shoppers, browsing and purchasing from the Internet, and past Internet shopping research. The first section also provides a general description of website design and product presentation online, mood, impulsivity, perceived risk, and purchase intention in relation to Internet shopping. It covers 1) the literature on website design and product presentation focusing on product in motion and attention, 2) mood in relation to cognition, 3) the definitions and concept of impulsivity, 4) the important concept of perceived risk in relation to in-home shopping and Internet shopping, and 5) purchase intention in in-home shopping and Internet shopping.
The second section of the chapter introduces the innovation-decision process model to provide the theoretical framework for the present study. Finally, detailed literature is discussed in relation to the hypotheses development.

Overview of Internet Shopping

Internet shopping

The Internet is defined as “a global network connecting millions of computers. More than 100 countries are linked into exchanges of data, news and opinions (“Webopedia,” 2002).” Each Internet computer, called a host, is independent. Its operators can choose which Internet services to use and which local services to make available to the global Internet community. There are various ways to access the Internet through online services such as America Online. It is also possible to access through a commercial Internet Service Provider (ISP) (“Webopedia,” 2002). Recently, the Internet has been used for several purposes including interactive communication, information search, and shopping for products. Shopping from the Internet is getting more attention from consumers for several reasons discussed in the next section.

Advantages of Internet shopping

Internet shopping may provide some unique benefits to consumers. PricewaterhouseCooper E-Retail Intelligence System’s research findings indicated that online clothing shoppers were more likely than online non-clothing shoppers to agree that the Internet saved time and made the shopping experience easier compared to store-based shopping (“Online Apparel Shopping Gaining in Popularity,” 2000). Elliot and Fowell (2000) found that Internet purchasers who had satisfactory experiences considered the
major benefits of Internet shopping to be a) increased customization (e.g., capability to treat customers as individuals), b) convenience in purchasing anytime, from anywhere, and to anywhere, c) responsiveness in product delivery (e.g., instantaneous distribution of products and services), and d) cost savings through lower prices (e.g., site aims at providing lower costs and latest information).

Compared to print catalog shopping, Internet shoppers may enjoy unlimited browsing activities through the Internet. A print catalog, which is passive, static, and old-fashioned in terms of product presentation, may reduce browsing activity (Walsh & Godfrey, 2000). However, the Internet provides various types of stores, numerous product assortments, and “live” communication with a sales associate through chat functions. These may be advantages for Internet shoppers (Walsh & Godfrey, 2000).

**Disadvantages of Internet shopping**

The security of customers’ private information and customer service are two main concerns related to Internet shopping. Settle (2000) reported that obstacles to online purchasing were privacy and security of information. People who did not shop from the Internet indicated that privacy was the primary reason not to do so (Seckler, 1999). U. S. consumers felt inhibited by concerns over security and privacy, with security identified as a perceived risk (Moreno & McCormack, 1998). According to Elliot and Fowell (2000), consumer concerns about security for transaction details resulted in 50 percent of transactions rated as unsatisfactory. Revealing private information through the possible distribution of personal information without permission of the purchaser was also perceived as a risk. For example, one purchaser was unhappy with a copy of his credit card authorization in an unsealed envelope attached to the package when it was delivered.
(Elliot & Fowell, 2000). Jarvenpaa and Todd (1997) also found that consumers envisioned a possible loss of privacy and financial information (e.g., credit card number) because of information collected about them as they shop.

Return of goods is another concern of shoppers. Settle (2000) suggested facilities that make the return process more convenient (e.g., return to the nearest retail store) would be a customer service that is beneficial for both e-commerce merchandisers and their customers. In addition, unsatisfactory responses from site staff and malfunctions in websites have resulted in higher dissatisfaction (Elliot & Fowell, 2000).

Similar to other in-home shopping methods such as catalog and television shopping, one barrier to Internet shopping may be the inability to touch or try on clothing before purchasing. About 81 percent of Internet clothing non-purchasers reported that Internet apparel purchases were avoided because of the inability to try on clothing for fit (“Online Apparel Shopping Gaining in Popularity,” 2000). Similarly, 45 percent also mentioned that the inability to feel clothing for quality of material was their main concern for purchasing apparel through the Internet. Jupitor’s research also found that 85 percent of women online purchasers avoided buying apparel because of the inability to try an item on for size or appearance. About 58 percent of women also complained about not being able to see items well enough and to feel the fabric (“What Do Women Really Want Online?” 2001). Uncertainty about standard sizes in women’s apparel might be another inhibitor to Internet apparel shopping (Elliot & Fowell, 2000).

Accuracy of apparel color on the screen may be another factor causing apprehension for online shoppers. A study by Cyber Dialogue indicated that 30 percent of
online shoppers had avoided purchasing apparel because the color of the item was in question (“New Technologies Enhance Online Apparel Shopping,” 1999).

Cude (2000) reported that economic barriers to Internet access could limit Internet shopping for rural consumers. For example, the higher cost of buying a computer, extra devices to access the Web (e.g., modem), and the monthly Internet Service Provider charges may cause hesitation to use the Internet for shopping. A high-speed connection to the Internet also may be less available to rural consumers.

Internet shopping also may restrict comparisons of stores and product alternatives. Rowley (1996) pointed out that it might be difficult to locate shops on the Internet. Shoppers either need to know the location of a shop or to perform a keyword search using a search engine. Thus, it may be problematic for Internet shoppers to browse different stores all at once and also to recall a particular store location from several previous locations searched.

Similar to other in-home shopping methods such as telephone, catalog, or television shopping, Internet shopping may also be affected by perceived risk. Perceived risk is defined as the nature and amount of uncertainty perceived by consumers in considering a particular purchase decision (Cox & Rich, 1964). Liang and Huang (1998) described two kinds of uncertainty in Internet shopping: product uncertainty and process uncertainty. Product uncertainty, which occurs when the product received does not meet the customer’s expectations (Liang & Huang, 1998), may also be associated with catalog or television shopping (Cox & Rich, 1964; Gillet, 1976; Kim & Lennon, 2000; Kwon, Paek, & Arzeni, 1991; Simpson & Lakner, 1993; Stanforth, Lennon, & Moore, 2001). Process uncertainty occurs when the customer may not have complete confidence in the
transaction process. The aggregate effect of these two types of uncertainties may influence Internet shopping acceptance (Liang & Huang, 1998). Vijayasarathy and Jones (2000) found that people perceived Internet shopping as riskier than print catalog shopping. Consumers’ perceived risk was an important factor that influenced intention to shop online. Jarvenpaa and Todd (1997) also indicated that about 55 percent of study participants had negative comments about Internet shopping with regards to risk.

Product category may be related to the degree of perceived risk in Internet shopping. According to Bhatnagar, Misra, and Rao (2000), fashion products such as apparel and cologne may be perceived as a greater risk than books and software. Although touching, feeling, and trying are important for these products, material or size inspection cannot occur prior to purchase in Internet shopping. The color may not be exactly the same as displayed on the computer screen. Similarly, Then and Delong (1999) indicated that uncertainties might be experienced on the Internet regarding fit. Using a “smart card” containing specific information on the consumer’s body shape may be helpful to overcome this uncertainty by enabling the consumer to look at different styles, colors, and fabrics on their personal three-dimensional body scan.

**Demographic and psychological characteristics of Internet shoppers.**

Donthu and Garcia (1999) randomly selected 2,000 households from a large city telephone directory and divided them into Internet shoppers and non-shoppers. Internet shoppers who purchase general goods such as electronics, airline tickets, or CDs from the Internet were found to be older than Internet non-shoppers who did not make any purchase from the Internet. The ages of most Internet shoppers ranged from 35 to 50, while those of Internet non-shoppers ranged from 20 to 35. Internet shoppers also had
higher income levels than Internet non-shoppers. Moreover, Internet shoppers were more likely to be convenience and variety seekers than Internet non-shoppers. Internet shoppers tended to be innovative, impulsive, less risk averse, and to consider detailed product information available on the website as a symbol of product quality (Donthu & Garcia, 1999). In addition, Internet shoppers have a more positive attitude toward advertising and direct marketing than non-shoppers do.

Internet apparel purchasers may have distinctive demographic and psychological characteristics. Lee and Johnson (2002) found that Internet apparel purchasers were more likely to be female and to have higher incomes, compared to Internet shoppers who had not purchased apparel from the Internet. More than fifty percent of Internet apparel shoppers were ages from 21 to 30 or ages from 41 to 50.

Yoh (1999) also found demographic differences in terms of prior experience, attitude, and purchase intentions for apparel shopping. Twenty one percent had never visited any Internet apparel sites. Age was negatively related to prior experience, attitude, and purchase intentions for Internet shopping, whereas income level was positively related to those three variables. This means that people who are younger and/or have higher incomes are more likely to have used the Internet, have a positive attitude toward Internet apparel shopping, and have greater purchase intentions for Internet apparel shopping. In addition, Yoh (1999) found that Internet apparel purchasers tended to be catalog customers. This may imply that they are accustomed to buying clothing without being able to touch the fabric or to try on the items.
Overall, the findings for Internet shoppers’ age were not consistent across the literature. Age of Internet shoppers varied by study perhaps due to the use of different subject pools and times of data collection.

**Browsing and purchasing through the Internet.**

Users aged 26 to 45 years accessed the Internet as a source of information, but were likely to make purchases in a store, while users aged 18 to 26 years made more direct purchases on the Internet (“Retail Online,” 1998). Two different goals for using the Internet were also found in focus group interviews in Szymanski and Hise’s (2000) study. Comments such as “I use the Internet to buy books and I also use it to get information about books (p.312)” and “I do most of my research on the Internet and then when it comes time to buying I can make a decision on where I want to purchase. I like the fact that I can go online for information (p.312)” may suggest that Internet may be used for information seeking either for browsing in order to purchase in retail stores or for purchasing the products from the Internet.

Lee and Johnson (2002) found differences in Internet usage among a) Internet apparel browsers who had browsed but not purchased apparel, b) Internet non-purchasers who did not purchase or browse for apparel, and c) Internet purchasers who had purchased apparel items over the Internet. Internet apparel purchasers were likely to browse more frequently than Internet apparel browsers and Internet non-purchasers. Moreover, Internet apparel purchasers tended to perceive Internet shopping as safer than Internet apparel browsers. There were some differences in willingness to provide financial information and attitudes toward the Internet retailers. Compared to Internet apparel browsers, Internet apparel purchasers tended to agree with releasing credit card
and purchasing information through the Internet and to feel better about customer service from the Internet retailers (Lee & Johnson, 2002).

Shoppers who search for clothing to purchase from home may engage in a number of browsing activities to seek information in order to cope with uncertainty and risk (Cox, 1967; Sheth & Venkatesan, 1968). Because Internet shopping is limited to on-screen information and because of the inability to inspect quality or fit of the garment, purchasers may heavily rely on information available through words or images on the screen. For purchasers, the accuracy of information and a sufficient amount of information to make a purchase decision may be crucial. Based on an analysis of multiple websites, Allen (2000) proposed including expanded product information, multiple photographs, and product collections for coordination in websites. Detailed product descriptions, instructions for product usage, product presentations from different angles, images of products being used, and images of complete outfits may help consumers to make purchase decisions. Using merchandising techniques such as displaying combinations of pants, shirts, and accessories or multiple photographs showing the product from several angles to create an entire outfit may also be helpful.

**Internet shopping research**

Internet shopping studies have focused on Internet apparel site classification (Spiller & Lohse, 1998), the decision making process (Peterson et al., 1997), consumer shopping experience (Moreno & McCormack, 1998; Yoh, 1999) and e-satisfaction (Lee & Lee, 2000; Szymanski & Hise, 2000).

**Internet apparel site classification.** Spiller and Lohse (1998) studied Internet sites selling women’s apparel and classified five Internet store types based on size: 1)
Superstores sell more than 500 products (e.g., LL Bean), 2) promotional stores carry extensive information about the organization (e.g., AWEAR), 3) plain sales stores contain medium-to-large catalogue size but have little product information (e.g., leather and gift outlet), 4) one-page stores have limited catalogue size (e.g., Al’s Texas Jeans), and 5) product listings sites have medium catalogue size (e.g., Full Swing Golf of Alaska). In addition, Lohse and Spiller (1998) proposed a number of important attributes that may determine apparel online sales. Merchandise (e.g., breadth of assortment, variety, quality, guarantees, and price), service (e.g., general levels of service, credit, and payment policies), promotion (e.g., sales, advertising, and special promotions), convenience (e.g., store organization and layout), checkout (e.g., availability of shopping cart and ease of checkout process), and store navigation (e.g., use of menus and search facilities) may predict customer online store choice behavior.

**Decision making process in Internet shopping.** Peterson et al. (1997) proposed possible consumer decision sequences in Internet shopping. The researchers made the assumption that consumers are rational and may start searching for the product using either a brand or a category and go through four or five stages of decision sequences. Brand choice may be affected by brand advertising, a personal recommendation, or prior experience. When brand choice is clearly defined in the beginning of the search process, shoppers would probably focus on price information and brand availability in the next purchase stage. If brand choice is not clear, shoppers may begin with a product category. In this case, shoppers may concentrate on information acquisition regarding brands and prices across Internet retailers and make a brand choice decision. The final search for
availability and prices of the chosen brand can be conducted before the final brand acquisition.

**Consumer shopping experience.** Yoh (1999) developed a theoretical model predicting Internet apparel shopping behavior. Three causal relationships adopted and modified from Fishbein and Ajzen’s (1975) theory of reasoned action (TRA) were considered significant: a) prior experience with the Internet influenced beliefs about the Internet for apparel shopping, b) prior experience with the Internet influenced apparel purchase intentions through the Internet, and c) beliefs about in-home shopping for apparel influenced beliefs about Internet apparel shopping. Her study suggested the importance of prior experience with the Internet for Internet apparel shopping. People who have prior experience may be more confident about purchasing apparel through the Internet. Moreno and McCormack (1998) also pointed out that consumer experience might be a factor that drives or inhibits the growth of Internet shopping.

**Consumer e-satisfaction.** Szymanski and Hise (2000) studied the determinants of customer satisfaction in e-retailing. E-satisfaction, defined as consumer liking and contentment in e-tailing, was influenced by consumer perceptions of online convenience, merchandising, site design, and financial security. Time and browsing ease, such as staying at home when shopping and browsing by category or online store, were likely to be associated with convenience in Internet shopping. Merchandising, including product offerings and product information available online, can lead to higher levels of e-satisfaction.

According to Lee and Lee (2000), familiarity with online shopping and product involvement influence online shopping behavior and satisfaction. Their findings showed
that high familiarity with online shopping and high product involvement were related to a higher level of satisfaction. However, the number of Web hosts and pages visited was not related to satisfaction with online shopping.

In summary, prior Internet experience and familiarity with online shopping may engender more confidence in evaluation of products and making purchasing decisions for apparel from the Internet. In addition, online convenience (e.g., time saving and browsing ease), merchandising (e.g., various product offerings), and more product information available online may lead to greater e-satisfaction.

**Website design and product presentation**

**Web site design**

As increases in online shopping and in the number of retailers selling online have created a competitive market place, the importance of cognitive computing has emerged. Cognitive computing is a consumer-oriented approach to site design and management aimed at providing insights into consumer shopping behaviors and best practices. Cognitive computing describes consumer information processing styles, shopping patterns, storefront preferences, and related areas that yield insights into developing more attractive, friendly, and successful Internet shopping environments (Szymanski & Hise, 2000).

The importance of website design has been emphasized in several previous studies (Elliot & Fowell, 2000; Bhatti, Bouch, & Kuchinsky, 2000; Szymanski & Hise, 2000). Consumers may look for economic ways to reduce cognitive effort and save the cost of shopping time through the Internet. Website designs that use fast presentations,
uncluttered screens, and easy search paths support a pleasurable and effective shopping experience by economizing on shopping time and the cognitive effort of shopping. For example, the need for a good website design is reflected in some statements such as “I don’t like all the different presentation formats. I think a lot of sites have good quality information and products, but then are a real bother to navigate. That bothers me” and “A lot of Websites are not well designed. It seems to take forever to navigate down far enough into the site to find what I am looking for” (Szymanski & Hise, 2000). Similarly, Elliot and Fowell (2000) found that 42 percent of dissatisfied purchasers identified difficulties with site navigation and the checkout process. For example, if shoppers lose an item in their shopping basket but have already moved onto a new department, it may be difficult for them to go back to the right site to find the item they lost. Likewise, page structure (e.g., annoyance with scrolling a page to reach the desired information), iconic representation (e.g., placement of ‘Add to Shopping Cart’ button on all pages of the Web site), and the number of links (e.g., fewer Web pages visited to reach the expected item) are also crucial for Web site design (Bhatti et al., 2000).

**Product presentation on apparel websites**

For apparel websites, the significance of the layout and design of the Web site has been emphasized in previous studies by Then and Delong (1999), Allen (2000), and Lindroos (1997). Then and Delong (1999) found that the more information that a retailer can offer through the visual display of apparel, the more interested the consumer will be in purchasing the product online. Three important visual aspects of product presentation were suggested for success in selling online: Images of the product in its closest representation of end use, displayed in conjunction with similar items, and images from
various angles such as front and back. About 89 percent of respondents preferred a realistic human model to display the silhouette of the garment and to see how it fit the body. Displaying apparel on a three-dimensional model may minimize the uncertainties of shopping for apparel on the Internet. However, even though the importance of displaying apparel on a three-dimensional model or with different angles was emphasized by researchers, in fact, a content analysis of the top 31 apparel websites revealed that only one front view was available in 30 apparel websites for product presentation. Only one Internet retailer, Landsend.com, presented apparel on a three-dimensional virtual model, or offered browsers the opportunity to try clothes on a personal body figure created on screen to mimic the shopper’s own body (Park & Stoel, 2002). According to Duff (1999), Gap.com allows site visitors to rotate an image of jeans in 3-D and examine garment details in extreme close-up.

Similarly, Allen (2000) suggested that shoppers might look for and enjoy visuals (e.g., a virtual model and a self-coordination activity system that involves moving and matching clothing items) when browsing among websites. Lindroos (1997) also noted that the situation where the user is surfing the Internet and choosing among sites is similar to walking around a fair where a visitor’s attention has to be caught and converted into interest, and then hopefully, the visitor will become an active customer. Due to the unique nature of the Internet, on which the user is free to choose information and service sites, it becomes essential to entice the user to stay a while and/or come back at another time by providing some special services or fun and enjoyable features. Therefore, it is important to capture Internet shoppers’ attention. One way to do this is through prominent visual product presentation.
Product movement and a large size image influence attention to the product (Cheal & Chastain, 1998; Cox, 1970; Finn, 1988; Maljkovic & Nakayama, 1994; Nakayama & Silverman, 1986; Wagner, 1988; Yantis & Jonides, 1984). The effect of product movement and size on consumer attention will be discussed in the next sections.

**Product presentation and attention**

**Attention.** Attention is described as the prioritization of some aspects of processing which may be necessitated by capacity limits of the processing system (Van der Heijden, 1992). Two types of attention may be useful to distinguish in the study. Selective attention refers to “the prioritization of one or more concurrently presented stimuli or categories of stimuli (p.172),” while intensive attention is observed when a person concentrates and puts an effort to a task (Matthews & Wells, 1999). Selective attention can apply to the situation where the person must select a single channel among multiple information channels or switch between channels in searching for target stimuli (Broadbent, 1971).

According to Yantis (1993), selection of information from visual displays is controlled in at least two ways: Goal-directed selection and stimulus-driven selection. Goal-directed selection is based on the observer’s ability to control what regions or objects in the visual field are selected for future visual processing given a set of goals and beliefs about the current task. This is often called “top-down” or “endogenous” control over the locus of attention. On the other hand, stimulus-driven selection comes from certain properties of the stimulus that may capture attention independently of the observer’s goals and beliefs. This mechanism is referred to as “bottom-up” or “exogenous” control over the locus of attention. Either one of these or some combination
may determine how attention is distributed. Attentional orienting can be voluntarily driven by goals or involuntarily driven by stimuli.

According to Folk, Remington, and Johnson (1992), stimulus-driven selection, so-called exogenous attention orientation, is elicited by salient external events. In addition, Folk, Remington, and Johnson (1992) found that the stimulus-driven selection of information, or bottom-up control of attention by stimuli, interacts with the observer’s state of readiness. When observers are prepared to identify a display element that is defined by some prespecified feature singleton such as the name of the red target object that is displayed among white nontarget objects, then a preceding to-be-ignored cue in that same dimension cannot be ignored.

**Movement and attention.** According to Yantis and Jonides (1984), the human visual system is particularly sensitive to relative movement and flicker. Yantis and Jonides (1984) examined reaction time to dynamic movements by assigning subjects to an abrupt onset condition in which a target letter appeared at a previously blank location and a no-onset condition in which the target letter was revealed by removing its camouflage gradually. Reaction time to the target location was significantly shorter in the abrupt onset condition. Cheal and Chastain (1998) found that dynamic moving precues (e.g., one thick horizontal line moving vertically while seven thick horizontal lines remain stationary; one thick vertical line moving horizontally when seven thick vertical lines remain stationary) resulted in more attention compared to static precues (e.g., one blue element among seven red elements, one red element among seven blue elements). In addition, attention may be involuntarily captured (Maljkovic & Nakayama,
Prominent attributes such as the shape of an odd-colored diamond that is detected without attentional scrutiny can capture attention.

Salience of moving objects may attract attention. Nakayama and Silverman (1986) reported that subjects’ attention was drawn to the moving element in the display. Todd and Van Gelder (1979) also found that an object that was rapidly undergoing change and therefore moving was more perceptually salient than an object that was stationary.

**Display size and attention.** Previous studies (e.g., Cox, 1970; Finn, 1988; Wagner, 1988) found that display size influenced attention. Increasing the size of a print advertisement enhanced the chances of gaining consumers’ attention. In other words, when a large size of a print advertisement was presented, people were more likely to pay attention to the stimulus as compared to when a small size of the print advertisement was presented (Finn, 1988). Similarly, Cox (1970) found an effect for the size of shelf space on attention. The likelihood of a product being noticed in a store depended on the size or amount of shelf space allocated to the product. A large shelf space where the products were displayed captured more attention than a small shelf space. This demonstrates the importance of display size on attention in stores. The effect of display size on attention also has been found in advertisements in the yellow pages (Wagner, 1988). Wagner (1988) reported that doubling the size of a yellow pages’ advertisement improved sales five hundred percent. When the advertisement quadrupled in size, sales jumped up to fifteen hundred percent. As consumers flip pages, they may be more likely to become aware of the bigger advertisements (Wagner, 1988).
In summary, several researchers studied the relationship between moving objects and attention and between size and attention. Salient external events or stimuli (e.g., prominent visual displays, salience of moving objects, large display size) involuntary increase attention (Cox, 1970; Finn, 1988; Folk et al., 1992; Johansson, 1973; Maljkovic & Nakayama, 1994; Morrin & Ratneshwar, 2000; Nakayama & Silverman, 1986; Todd & Van Gelder, 1979; Yantis, 1993). In a similar way, in the Internet shopping context, dynamic movement and large size of a product may capture shoppers’ attention. These may be important features for apparel websites to make shoppers stop and focus on the product. Once the product captures shoppers’ attention, shoppers may be more likely to focus on the product on the website rather than skip to another selling site.

Mood

Mood, is defined as “a type of affective state which is transient and particular to a specific time and situation (Jeon, 1990, p.24).” Gardner (1985) described mood as a phenomenological property of an affective state that an individual subjectively perceives. Both positive and negative moods are important determinants of human impressions and behaviors. Positive moods have been found to enhance the performance of behaviors that lead to positive outcomes such as greater personal power and greater freedom to act as one wishes. People in positive moods tend to feel more confident, optimistic, and unconstrained (Forest, Duncan, Clark, Mills, & Isen, 1979). As a result, people in positive moods may perceive less risk which will be discussed later in this chapter.
**Mood and cognition**

Interest in the relation between mood and cognition was sparked by several researchers in psychology (Bower, Montiero, & Gilligan, 1978; Isen, Shalker, Clark, & Karp, 1978; Schwarz, 2001). Past studies showed mood-dependent recall and mood-congruent evaluation in terms of the effect of mood on memory and evaluation (Bower, Montiero, & Gilligan, 1978; Isen, Shalker, Clark, & Karp, 1978). Individuals with positive moods were likely to process information less systematically, but more creatively and flexibly than those with negative moods. In other words, under a good-mood condition, people may follow a heuristic form of information processing, while under bad-mood conditions, people may follow a higher degree of systematic information processing. Because a bad mood signals a problematic situation, systematic information processing requires more attention to details and cognitive effort (Broadbent, 1971). However, a positive mood may lead people to pay less attention to details and put forth less cognitive effort (Mackie & Worth, 1989). Schwarz (2001) showed that people’s evaluation of a target object was related to their mood rather than to a detailed review and integration of relevant information. Their feelings about the target rather than evaluation of the objective information may serve as a source of information in forming evaluative judgments. If they feel good about the target object, they render a positive evaluation (Schwarz, 2001).

Recent research found that the effect of mood on cognitive processing depended on a number of moderating variables such as familiarity of target and attribution of source of mood. Clore et al. (2001) found that for a task in which people engage in some activities for fun rather than for performance, positive feelings may be experienced as an
outcome from the task. This positive mood also may lead to greater creativity on these
tasks and to judgments that the tasks are more enjoyable (Isen, 1987; Martin, Ward,
Archee, & Wayer, 1993).

Individuals may use their perceived affective reaction as relevant information
when making evaluative judgments. People may simplify the judgmental task by holding
the target of judgment in mind and asking themselves, “How do I feel about it” rather
than engaging in a detailed review and integration of relevant information (Schwartz &
Clore, 1983). In an experimental study by Schwarz (1983), subjects who found a dime
rated satisfaction and happiness with life as a whole higher than subjects who did not find
a dime. Similarly, Schwarz and Clore (1983) found that people who were interviewed on
sunny days reported being in a positive mood and being more happy and satisfied with
life than people who were interviewed on rainy days. Attributing one’s current feelings
to the weather may imply that the feelings seem informative to make judgments about the
task. Another study by Schwarz et al. (1987) conducted in Germany found that people
reported higher life-satisfaction after a winning soccer game as compared to before the
game. These studies also found that people used their feelings as heuristically relevant
information in making judgments about events or objects. In particular, when a complex
task or event such as evaluating their life as a whole is given to people to make
judgments, people may simply consider the target using any feelings at the time of
judgment as information to guide the evaluation. This results from the fact that too many
factors are potentially relevant for the target and judgmental criteria are ill-defined for the
complex task (Schwartz & Clore, 1988). Kelly’s (1972) work also supported the model
that affective states may serve informational functions. A person may use whatever
feelings are felt at the time of judgment as an indication of his or her reaction to the question, when facing the complex task of evaluating his or her life as a whole.

In summary, the previous studies of mood found differences in information processing and judgments as a function of positive and negative mood (Bower et al., 1978; Clore et al., 2001; Forest et al., 1979; Isen, 1987; Isen et al., 1978; Martin et al., 1993; Schwarz, 2001). People with positive moods were likely to process information less systematically, but more creatively than those with negative moods. Positive mood also leads people to judge the task more enjoyable.

**Impulsivity**

Murray (1938) defined impulsivity as a tendency to respond quickly and without deliberation. Impulsive individuals have difficulty in restricting their own behaviors. Barrett and Patton (1983) described impulsivity as acting without adequate consideration, urge of the moment reactions, taking risks, and trying to get things done quickly.

**Impulsivity as a consumer trait**

Impulsivity may be connected to the impulse buying tendency in a consumer buying situation. The impulse buying tendency to purchase spontaneously, unreflectively, immediately, and kinetically is conceptualized as a consumer trait (Rook & Fisher, 1995). Impulsivity may be positively related to impulse buying behavior. Consumers who rate high on the impulsivity trait buy things on impulse more frequently than do others (Rook & Fisher, 1995).

Impulsivity as an enduring personality trait of an individual consumer (Beatty & Ferrell, 1996; Cobb & Hoyer, 1986; Raju, 1980) has been studied within theoretical
models of impulse buying. A theoretical model of impulse buying developed by Beatty and Ferrell (1998) encompassed impulsivity as an impulse buying trait. In the model, impulsivity influenced in-store browsing, which is defined as the in-store examination of merchandise for recreational and/or informational purposes without an immediate or specific intent to buy and is considered an important component of the buying process (Beatty & Ferrell, 1998). Dholakia (2000) also developed a conceptual model focusing on the sequence of impulse buying called the consumption impulse formation and enactment (CIFE) model. In the CIFE model, the impulsive trait as a tendency to react quickly toward a stimulus without much consideration contributes to the formation of the consumption impulse.

**Impulsivity and physical/temporal proximity**

Under many circumstances, human behavior can be interrupted by powerful demands such as fear, hunger, or a sudden urge to buy which are entirely unrelated to one’s goals at that moment. Such powerful demands may engender an out-of-control state (Simon, 1967). Impulsivity can be manifested by a sudden and powerful urge to purchase product in an out-of-control state. A transient alteration in tastes may increase the desire to buy a product. The level of impulsivity can be influenced by physical proximity in a store or temporal proximity (Hoch & Lowenstein, 1991).

The effect of physical proximity on impulsivity was measured in several early experiments (Mischel, 1974; Mischel & Grusec, 1967; Thaler, 1980). Impulsive people tended to make a decision to accept an inferior reward rather than wait for a superior reward when the object of the reward was placed in view. The visible presence of a
reward caused people to be less willing to delay (Mischel & Grusec, 1967). According to Loewenstein (1996), the immediate availability of products often evokes impulsivity.

Temporal proximity also increases impatience and impulsivity (Hoch & Loewenstein, 1991). The effects of temporal proximity have been examined in time preference studies by manipulating the interval of immediate rewards and delayed rewards. Impulsive people tended to choose immediate objects, in other words, temporally proximate objects with inferior rewards rather than later objects with superior rewards (Irwin, Armitt, & Simon, 1943).

In summary, impulsivity as a consumer personal trait may influence purchasing behavior (Beatty & Ferrell, 1996; Cobb & Hoyer, 1986; Dholakia, 2000; Raju, 1980). Consumers who are more impulsive may be more likely to purchase the product on impulse compared to those who are less impulsive. Impulsivity can be increased or decreased due to physical or temporal proximity to the stimulus (Hoch & Lowenstein, 1991; Irwin et al., 1943 Loewenstein, 1996; Mischel, 1974; Mischel & Grusec, 1967; Thaler, 1980). The presence or immediate availability of the product increased impulsivity. In the next section, the definitions and concepts of perceived risk in in-home shopping and internet shopping will be discussed.

**Perceived risk**

Perceived risk is defined as the nature and amount of uncertainty perceived by consumers in contemplating a particular purchase decision (Cox & Rich, 1964). Two elements, uncertainty and consequences, may play significant roles in perceived risk. Uncertainty comes from the difficulty of identifying buying goals and matching these
goals with product or brand offerings. Uncertainty may be subjective as perceived by the consumer. For instance, consumers may be uncertain about the product category that will meet and satisfy their buying goals such as “If I want to be formal and well-dressed, should I buy a black suit with skirts or with pants?” The consequence as another element of perceived risk may be associated with: a) functional or performance goals (e.g., Will the product work as well as I expected?), b) psychosocial goals (e.g., How will it affect what others think of me and what I think of myself?), and c) the means such as money, time, and effort invested to achieve those goals (Cox, 1967).

Perceived risk may be related to the buyer’s level of confidence in making a judgment of the quality of a particular brand (Howard, 1973; Howard & Sheth, 1969). The degree of uncertainty consumers feel about their ability to judge the outcome of purchasing a product may be considered the inverse of the buyer’s confidence (Howard, 1973). Howard and Sheth (1969) found that confidence was positively related to purchase intentions and negatively related to information search. Similarly, Bennett and Harrell (1975) found that the buyer’s overall confidence in a brand is positively related to intention to purchase the brand. Thus, risk should be negatively related to purchase intention.

**Perceived risk in in-home shopping**

Perceived risks have been a prime focus in the in-home shopping literature (Cox & Rich, 1964; Gillet, 1976; Kim & Lennon, 2000; Kwon, Paek, & Arzeni, 1991; Simpson & Lakner, 1993; Stanforth, Lennon, & Moore, 2001). The inability to inspect or test the merchandise and limited information available may increase uncertainty about the outcome of in-home shopping. For example, Cox and Rich (1964) found when
people shop by phone, perceived risk is a main concern. Non-telephone shoppers avoid this type of shopping because of the greater perceived risk. Higher risk items included clothing such as skirts, sweaters, and girdles where size, color, and fit did matter. Jasper and Ouellette (1994) found that perceived risk associated with the inability to inspect the product physically could influence the frequency of catalog shopping for apparel. Higher perceived risk was related to less frequent purchases from catalogs.

Simpson and Lakner (1993) explored dimensions of perceived risk and examined the effect of those dimensions of perceived risk in apparel selection on catalog shopping. The four dimensions of risks, which were social/psychological risk (e.g., concerns with fashion innovation, acceptance, planning purchases, conforming to others), economic risk (e.g., concerning prices of apparel, possible financial loss), performance risk (e.g., style, durability, or wear life of a garment), and physical risk (e.g., bodily comfort, discomfort, appearance), may exist when consumers make decisions regarding apparel selection and purchase through catalogs. Among the four distinctive dimensions of perceived risks associated with catalog shopping for apparel, the economic risk was the only one that was significantly different between catalog shoppers and non-catalog shoppers. The economic risk was higher for non-catalog order shoppers or infrequent catalog shoppers than for frequent catalog shoppers. Kwon et al. (1991) also found that apparel consumers experience multiple dimensions of risk perceptions related to purchasing apparel from a catalog. The reasons for avoiding shopping from catalogs were inability to examine and try the product and uncertainty of the apparel quality. Non-catalog shoppers perceived greater risk on financial, social, functional, and time risks, as compared to catalog shoppers. Kwon et al. (1991) suggested that information about the product such as
descriptions of the item (e.g., front and back opening, enlarged view, style, fabric) and brand name should be clearly presented to reduce risk. Money-back guarantees and clear return policies would also be helpful for decreasing perceptions of risk when shopping from catalogs.

Perceived risks of television shopping for apparel were studied by Kim and Lennon (2000) and Stanforth et al. (2001). The amount of product or service information perceived while watching television shopping programs was negatively related to perceived risk and positively related to purchase intentions (Kim & Lennon, 2000). According to Stanforth et al. (2001), the previous experience of purchasing apparel via shopping channels affects perceived risk. Even though there is an inability to touch, feel, or try on the garment, apparel shoppers who have a positive experience with television apparel purchasing do not perceive it to be as risky as non-apparel shoppers do. This may be because their confidence in judging quality increases. It is possible that the confidence and excitement of television shoppers who purchase apparel from television shopping programs may encourage future apparel purchases.

**Perceived risk in Internet shopping**

Similar to other in-home shopping methods such as telephone, catalog, or television shopping, Internet shopping may be affected by perceived risk. Liang and Huang (1998) described uncertainty in Internet shopping as two kinds: product uncertainty and process uncertainty. Product uncertainty comes from the received product which may not meet the customer’s expectation at ordering. Process uncertainty occurs when the customer may not have complete confidence in the transaction process. The aggregated effect of these two types of uncertainties may influence Internet shopping
acceptance. Vijayasarathy and Jones (2000) found that people perceived Internet shopping as riskier than print catalog shopping. The consumer risk was an important factor that influenced intention to shop online. Jarvenpaa and Todd (1997) also indicated that about 55 percent of study participants had negative comments about Internet shopping with regards to risk.

Previous studies showed that prior experience with Internet shopping drove or inhibited Internet shopping (Moreno & McCormack, 1998; Yoh, 1999). Yoh (1999) found that people who had prior experience were willing to purchase apparel through the Internet with confidence. In other words, perceived risk of Internet shopping may be negatively related to prior experience of Internet shopping.

Purchase intention

Purchase intention represents “what we think we will buy (Blackwell, Miniard, & Engel, 2001, p.283).” There are two types of purchase intentions: repurchase intentions and shopping intentions. Repurchase intentions reflect whether we anticipate buying the same product or brand again. Shopping intentions indicate where we plan on making our product purchases. Both internal and external information search may increase consumers’ intentions to shop or to repurchase on the Internet, which generally leads to the purchase stage of decision making (Blackwell et al., 2001).

Purchase intention in in-home shopping

Purchase intention for apparel in in-home shopping has been examined in several studies. Shim and Drake (1990) examined the relationships among purchase intention, attitudes, and beliefs in mail order shopping. Higher level of intention to purchase
apparel was related to positive beliefs about and more favorable attitudes toward mail
order purchasing of apparel. Individual characteristics (e.g., age, income, marital status),
social influences (e.g., influence by other people), and situational influences (e.g., time
pressure, local shopping behavior, and planned shopping) were also different between
those who have a high level of intention to purchase apparel through mail order and those
who have a low level of intention. Those who had greater purchase intention for apparel
via mail order were more likely a) to be younger, b) to have higher household income, c)
to be married, d) to have preschool children, e) to have higher self-confidence, and f) to
have prior experience shopping for apparel via mail order, compared to those who had
lower purchase intention. They also tended to be influenced by other people who are
important to them. Time pressure for shopping, dissatisfaction with local shopping
facilities, and less enjoyment of going to large shopping centers were related to purchase
intention for apparel via mail order (Shim & Drake, 1990).

In television shopping, purchase intention for apparel has been studied by
Stanforth et al. (2001) and Kim and Lennon (2000). Stanforth et al. (2001) found that
consumers who had purchased from television shopping programs had greater intention
to purchase apparel from television shopping programs compared to those who had not
purchased apparel in the past. In addition, among consumers who had purchased from
television shopping channels, purchase intent for non-apparel products (e.g., gift for a
business associate or a family member) was higher for those who had purchased apparel
in the past. The relationship between purchase intention and the perceived amount of
information in television shopping programs was found in a study by Kim and Lennon
(2000). The amount of product or service information perceived while watching
television shopping programs was positively related to purchase intention. People who perceived a greater amount of information in television shopping programs had greater purchase intentions than people who perceived a lower amount of information in television shopping programs (Kim & Lennon, 2000).

**Purchase intention in Internet shopping.**

Purchase intention in the Internet shopping context was studied in Park and Stoel (2002) and Yoh (1999). According to Park and Stoel (2002), both internal (e.g., brand familiarity, prior shopping experience) and external (e.g., website information) information search may increase consumers’ intentions to shop or to repurchase on the Internet, which generally leads to the purchase stage of decision making. Previous experience with purchasing apparel from the Internet affected purchase intentions. People who had previous experience shopping on the Internet had higher intentions to purchase than those who did not have previous experience. Brand familiarity also played an important role in shopping from the Internet. Consumers who were more familiar with a website’s brand were more likely to intend to purchase than consumers who were less familiar with a website’s brand. Finally, the amount of product information provided on the website may influence purchase intention in Internet shopping. Consumers exhibited a stronger intention to purchase from Internet websites that had a greater amount of information available than from those which had a lesser amount of information available (Park & Stoel, 2002).

Yoh (1999) also found that prior experience with the Internet, beliefs about Internet apparel shopping, and attitude toward Internet apparel shopping positively influenced apparel buying intentions through the Internet. Consumers who had more
prior experience with the Internet and positive beliefs about and attitudes toward Internet apparel shopping had greater intentions to purchase apparel through the Internet than do consumers who had less prior experience with the Internet. In addition, consumers who perceived higher social acceptance of Internet apparel shopping had greater purchase intentions for apparel through the Internet compared to those who perceived less social acceptance of Internet apparel shopping.

In summary, purchase intention has been studied in the catalog, television, and Internet shopping context. Individual characteristics (Shim & Drake, 1990), situational factors (Shim & Drake, 1990), the amount of information (Kim & Lennon, 2000), and prior experience (Park & Stoel, 2002; Yoh, 1999) influenced purchase intention.

Theoretical Framework

The innovation-decision process model (Rogers, 1995) was selected as a theoretical framework for this study.

A model of the innovation-decision process

Rogers (1995) proposed a model of the innovation-decision process that describes how individuals make a decision to adopt or reject an innovative product (e.g., Digital camera), idea (e.g., family planning), or practice (e.g., Internet apparel shopping). Many innovative products, ideas, or practices involve new hardware and/or software components of technology. The new technology (e.g., Internet, CAD program software, Digital camera) often creates uncertainty about its expected consequences in the mind of potential adaptors. Therefore, the innovation-decision process illustrates how individuals seek and process information in order to decrease uncertainty about the innovation.
According to Rogers (1995), when there is a new product or idea introduced in the market, consumers pass from awareness-knowledge of an innovation, to forming an attitude or feeling toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision. The model consists of five distinguishable stages: (a) knowledge, (b) persuasion, (c) decision, (d) implementation, and (e) confirmation. The first stage, *knowledge*, occurs when an individual is exposed to the innovation (e.g., Internet apparel sites, product display) and gains some understanding of how it functions. Awareness-knowledge of an innovative product, idea, or practice can occur through media exposure such as Internet or television. Prior conditions (e.g., previous practice, felt needs/problems, personal innovativeness, norms of the social systems), consumer personality variables (e.g., impulsivity), and communication channels (e.g., Internet apparel websites) will influence how a person receives and interprets the knowledge. In this stage, individuals tend to expose themselves to ideas that are relevant to their interests and needs (Rogers, 1995).

In the *persuasion* stage, individuals develop favorable or unfavorable attitudes or feelings toward the innovation. While the knowledge formation stage is cognitive, the mental activity in this stage is affective. In other words, the main type of thinking at the persuasion function is feeling. Once the individual knows about a new idea in the knowledge stage, he or she can begin to form feelings toward it in the persuasion stage. Persuasion is related to perceived risks and consequences of adopting and using the new product. Because all innovations may carry some degree of uncertainty or risk for the individual who is typically unsure of the new idea’s results, when he or she considers a new product or a new shopping method (e.g., Internet shopping), he or she must weigh
the potential gains from adoption against the potential losses. Thus, in the persuasion stage, favorable or unfavorable feelings toward the innovation may influence perceptions of risk about using a new idea or product and lead to a subsequent behavior of adoption or rejection (Rogers, 1995).

In the third stage, decision, individuals who engage in the innovative decision process are supposed to make their decision whether they accept or reject the innovation. The acceptance or the rejection of the new product or idea is primarily based on the cognitive and affective state built through the knowledge and persuasion stages. The decision to accept or reject the new product or idea can be made through mental exercise (e.g., intention). If consumers obtain a positive affective state from the innovation in the persuasion stage, consumers’ intention to accept will be greater (Rogers, 1995).

In the implementation stage, consumers put an innovation to use. Individuals can actually take behavioral actions to use the product. In Internet shopping, consumers will make an actual purchase using the Internet. In the last stage, confirmation, individuals seek support for the innovative decision already made. People reinforce their decisions with supportive information. However, when they are exposed to conflicting information about the innovation, they may reverse the decision to avoid a state of dissonance or to reduce it if it occurs. This stage continues after the decision to adopt or reject for an indefinite period in time (Rogers, 1995).

**Application for the present study**

In the current study, the innovation-decision process model is adopted to explain the relationships among product presentation, mood, impulsivity, perceived risk, and purchase intention. Following the innovation-decision process model, the innovation is
considered to be Internet apparel shopping from the websites on which the product is visually displayed on the screen in various ways (static vs. moving, large vs. small). In this context, product purchase from the Internet apparel sites may be associated with uncertainties (Liang & Huang, 1998). The first three stages of the innovation-decision process model – knowledge, persuasion, and decision – explain how consumers seek and process information in order to cope with the uncertainties of Internet apparel shopping. The first three stages also can explain (1) how consumers build their product awareness-knowledge based on visual information (e.g., static/moving product display, large/small size of product image) on Internet apparel shopping sites, (2) how the consumers develop their attitudes or affective states toward the product which is visually displayed on the screen to reduce perceptions of risk in Internet apparel shopping, and (3) how consumers reach a decision whether to accept or reject the product from the Internet, based on positive or negative attitudes.

In the first stage, knowledge, Internet apparel shoppers may expose themselves to the Internet apparel sites and find product information based on their product interests and needs. People may seek visual (e.g., product display) or verbal (e.g., product description) product information to reduce perceptions of risk in Internet apparel shopping. Characteristics of the product display, such as product movement on a human model and a large size product image influence the consumers’ knowledge formation about shopping for apparel on the Internet.

In the second stage, persuasion, information presented on screen in various ways (stationary vs. moving and large vs. small size image) persuades and affects consumers’ feelings. Visual information provided in new (moving/large size product display) or
existing (static display/small size product display) display methods may affect consumers’ feelings or mood positively or negatively. Reduction of perceived risk by positive mood in the persuasion stage may lead decision makers to purchase apparel from the Internet. At the same time, the affective states may influence perceived risk of purchasing apparel from the Internet. Therefore, in the third stage, decision, consumers will make decisions to accept or reject (or to purchase or not to purchase) shopping for apparel on Internet shopping sites.

In addition, the model of innovation-decision process has emphasized the importance of consumer personality variables in relation to perceived risks associated with an innovation. According to Murray (1938), impulsivity is defined as a consumers’ personal tendency to respond quickly and without deliberation. Impulsive individuals have difficulty in restricting their own behaviors and tend to take risks (Barrett & Patton, 1983). In the Internet shopping context, impulsivity as a consumer personality trait may influence perceptions of risk in the persuasion stage. Therefore, in the current study, impulsivity as a consumer personality variable will be examined in relation to perceptions of risk in Internet shopping.

In conclusion, the main thesis developed using the innovation-decision process model is that positive mood of a consumer generated by product display (e.g., static/moving, large/small product display) on the Internet may lead the consumer to a product purchase decision. The next section contains an explanation of the innovation-decision process model and a detailed literature review for the additional relationships among product presentation, mood, impulsivity, perceived risk, and purchase intention. Empirical studies investigating relationships between product presentation and perceived
risk, between product presentation and purchase intention, between mood and purchase intention, and so on will be discussed.

Hypotheses Development

Hypothesis 1. Product presentation and mood

The importance of mood in marketing has been studied in relation to store environment (e.g., product display and layout, customer service, interaction with sales personnel) (Spies, Hesse, & Loesch, 1997; Swinyard, 1993). Consumers may experience a wide range of subjective moods or feeling states while searching for, choosing, and using products, as well as while interacting with service providers (Cohen & Areni, 1991; Ruth, Brunel, & Otnes, 2002).

Bitner (1992) studied the relationship between mood and store environment. The customers’ mood improved more frequently in stores which were kept in good condition. Careful layout of the store environment such as outstanding signs and information tables helped people to orientate, to find their way, and to evoke a positive feeling.

According to Spies et al. (1997), customers’ mood improved in a pleasant store environment and deteriorated in less pleasant stores. A pleasant store environment (e.g., bright colored walls, a well-structured route with no crossings and possible shortcuts, and many striking signs in different colors) influenced customers’ mood. In other words, a salient visual confrontation through a prominent store display of a product or by various promotional marketing stimuli (e.g., clearance rack, sales sign) resulted in strong feeling states such as “good,” “happy,” “satisfied,” and “wonderful.”
Product presentation in a storefront window or end of an aisle in the store may highlight the product and create a mood. Fiore et al. (2000) examined the effect of product presentation on positive mood and found that products in a display (e.g., garments on a female mannequin with a three-fold dressing mirror, two floral pillows, a white textured throw blanket, two candle holders with white candles, a vase with dried flowers, and lighting) increased affective pleasure compared to products not in a display (e.g., garments hung on a hanger). In the Internet shopping context, Then and DeLong (1999) pointed out that an interesting apparel three-dimensional display may create a pleasant shopping experience while navigating the website. More than sixty percent of their participants preferred displaying apparel on a three-dimensional model. Jeandrain (2001) also found that a three-dimensional presentation created positive mood and thus, could provide an entertaining shopping experience. The realistic stimuli in a three-dimension format was perceived as “funny experience” or “very exciting” by respondents, as compared to static stimuli. Thus, product presentation affects mood.

In the Internet context, movement may be a part of product presentation. Salient moving stimuli may influence mood. Several researchers found that moving objects attract attention (Folk et al., 1992; Johansson, 1973; Maljkovic & Nakayama, 1994; Morrin & Ratneshwar, 2000; Nakayama & Silverman, 1986; Todd & Van Gelder, 1979; Yantis, 1993). Langer (1989) pointed out that when people engaged in a complex task such as tennis or sewing and paid attention to the task, they were likely to be actively involved in the task and tended to enjoy the task more than when people did not pay attention to the task. In other words, attention may influence mood. Consequently, a moving object which captures attention may affect mood. In a similar way, in the
Internet shopping context, the dynamic movement of a product may capture shoppers’ attention and in turn increase positive mood.

Among various product presentations, the size of product images may play an important role in creating positive mood. Kahneman and Treisman (1984) note that a visual attribute of a perceptual object such as object location, color, and shape may influence visual selection and attention in many tasks. Previous research on attention (Folk et al., 1992; Johansson, 1973; Maljkovic & Nakayama, 1994; Morrin & Ratneshwar, 2000; Nakayama & Silverman, 1986; Todd & Van Gelder, 1979; Yantis, 1993) and Blackwell, Miniard, and Engel (2001) emphasize the importance of the size of the stimulus among various attributes of an object in this regard. Empirical studies by Cox (1970) and Finn (1988) found that size of shelf space and size of a print advertisement influenced attention. When products were displayed in a large size shelf or a print advertisement was presented in a large size, people were likely to pay attention. Attention induced by size of stimuli may increase mood. Langer (1989) emphasized the importance of attention on enjoyment of a task. When people paid attention to the task, they tended to have positive feelings and enjoy the task. Therefore, the larger the illustrations or pictures, the more they may capture attention and thus, evoke more positive feelings.

In summary, mood stimulated by a pleasurable store environment has been discussed. A prominent store environment including product presentation (e.g., large image size, three-dimensional product display) or store layout (e.g., colorful signs, information table) may influence consumers’ mood in shopping (Bitner, 1992; Cox, 1970; Finn, 1988; Cohen & Areni, 1991; Jeandrain, 2001; Ruth et al., 2002; Spies et al.,
This can be applied to the Internet shopping context. Using new technology (e.g., CAD), products displayed in a distinctive way may lead to positive moods. By rotating and moving products on screen or having a large size of product image, products may be perceived as more prominent and exciting.

Based on the literature review, it is reasonable to expect that in an Internet context, special features or services are important determinants of consumers’ moods. In particular, positive mood may be evoked by visual product presentations such as a large image, a rotation of a product, or a combination of both. Therefore, hypothesis 1 is developed as follows (also See Figure 2-1).

Hypothesis 1. Product presentation affects mood.

H 1.1. As compared to people exposed to websites with products not in motion,
those exposed to websites with products in motion will exhibit more positive mood.

H 1.2. As compared to people exposed to websites with smaller product images,
those exposed to websites with larger product images will exhibit more positive mood.

H 1.3. Size and movement interact to affect mood.

Hypothesis 2. Product presentation and perceived risk

As discussed earlier in this chapter, the importance of website design has been studied by several researchers (Elliot & Fowell, 2000; Szymanski & Hise, 2000). In particular, site navigation and the checkout process may be problematic when shoppers
lose an item in the shopping basket and move onto another site. Complex page structure and product search may also influence perceptions of risk in Internet shopping.

Product presentation may serve as visual product information. For example, apparel color presented on screen may function as product information, but may not be perceived as accurate enough to make judgments regarding the product. This may increase perceived risk and make shoppers avoid purchasing apparel from the Internet (“New Technologies Enhance Online Apparel Shopping,” 1999). Because visual inspection to check fit, texture, and color is required for apparel selection (Cox & Rich, 1964), a large size image and product movement may be helpful for decision making and provide descriptive and visual product information. Thus, a large image may enable consumers to see well enough to inspect color, texture, and garment details (Allen, 2000; Then & Delong, 1999). Even though there is no empirical literature exploring the direct effect of image size and product movement on perceived risk, it is reasonable to expect that better product presentation (e.g., large size image, product movement, or a combination of both) in websites may increase the confidence in judging apparel quality and thus, reduce perceived risk of shopping from the Internet. Therefore, hypothesis 2 is developed as follows (also See Figure 2-1).

**Hypothesis 2.** Product presentation affects perceived risk.

**H 2-1.** As compared to people exposed to websites with products not in motion, those exposed to websites with products in motion will perceive less risk.
H 2.2. As compared to people exposed to websites with smaller product images, those exposed to websites with larger product images will perceive less risk.

H 2.3. Size and movement interact to affect perceived risk.

**Hypothesis 3. Product presentation and purchase intention**

Sensory proximity such as visual presentation of a product may produce an emotional response when purchasing a product. The manner of product display in a store may increase purchase intention. Consumers who had a good store experience (e.g., clerks were favorable to help product selection, interesting store display) had much more favorable intention to purchase than consumers who had bad shopping experiences. An appealing visual presentation of products may accelerate consumers’ intention to purchase products (Swinyard, 1993).

The importance of visual product presentation for apparel products online has been discussed in the study of Then and Delong (1999). The more that interesting visual display of apparel is available, the more interested the consumer will be in purchasing apparel online. Visual aspects of product presentation such as images of the online product in its closest representation of end use, displayed in conjunction with similar items, and from various angles such as front and back can generate higher purchase intention for consumers and in turn, increase higher selling for e-business (Allen, 2000; Then & Delong, 1999).

The visual aspects of product presentation (e.g., product movement, a large size image) also may serve as product information (as discussed earlier in this chapter).
Information is known to influence consumer purchase intention (Kim & Lennon, 2000) and online sales (“New Technologies Enhance Online Apparel Shopping,” 1999). Because visual inspection to check the fit, texture, and color is required for apparel selection (Cox & Rich, 1964), a large image size and product movement may provide descriptive visual product information and may play an important role in purchase decision making (i.e., by allowing people to inspect detail, color, and texture) (Allen, 2000; Then & Delong, 1999). Even though there is no empirical literature exploring the direct effect of image size and product movement on purchase intention, it seems likely that presenting apparel from various angles (Then & Delong, 1999) either by rotating the product or making a large size image (Allen, 2000) may be helpful for making purchase decisions and thus, may influence purchase decisions. In addition, a combination of product movement and large size may present the optimal impact on purchase decisions. Therefore, hypothesis 3 is developed as follows (also See Figure 2-1).

**Hypothesis 3. Product presentation affects purchase intention.**

*H 3.1. As compared to people exposed to websites with products not in motion,*

those exposed to websites with products in motion will have greater

*purchase intention.*

*H 3.2. As compared to people exposed to websites with smaller product images,*

those exposed to websites with larger product images will have greater

*purchase intention.*

*H 3.3. Size and movement interact to affect purchase intention.*
Hypothesis 4. Mood and perceived risk

A mood state may function to reduce or increase perceptions of risk (Johnson & Tversky, 1983). Individuals who face the difficult task of evaluating unknown risks may cope with the judgmental tasks by consulting their current feelings. In a study by Johnson and Tversky (1983), a depressed and anxious mood was induced by having participants read reports of negative events such as descriptions of a cancer case. People in negative moods evaluated a large number of risks as more threatening than subjects in positive moods. For example, reading about cancer affected judgments of the risk of cancer as well as judgments of the risk of accidents and divorce. People who feel depressed and anxious may conclude that the task they are asked to evaluate is depressing and threatening.

Positive mood generated from buying stimuli or store environment may reduce perceived risk. According to the consumer decision-making model developed by Blackwell, Miniard, and Engel (2001), internal information retrieved from memory (e.g., prior experience, mood, familiarity) or external information collected from peers, family, and market place (e.g., product information, service information) could reduce perceived risk. An empirical study by Cox and Rich (1964) found that telephone shoppers tended to seek more information in order to reduce perceived risk. Schwarz (1990) claimed that when evaluating situations, a positive mood serves as a source of information that sometimes replaces the evaluation of the objective information of the target. If a person feels good, he or she may attribute this positive feeling to characteristics of the present situation and thus evaluate the situation more favorably. In fact, Gorn, Goldberg, and Basu (1993) found the effects of mood states on new-product evaluation. Consistent with
Schwarz (1990)’s claim, people who were in the positive mood states evaluated the new product more favorably than those who were in the negative mood states. Therefore, positive feelings may reduce perceived risk.

Based on the literature, it is reasonable to expect that positive mood in Internet shopping serves as internal information or evaluation criterion for online purchasing. Positive mood also may lead individuals to process product information less systematically or skip the evaluation of detailed product information. Instead, shoppers may simply consult their current feelings to make evaluative judgments about Internet shopping and/or the product online. Thus, when people have a positive mood, their evaluation and judgment of Internet shopping may be favorable, which may reduce perceived risk. In other words, positive mood may reduce perceived risk for shopping for apparel from the Internet. Therefore, hypothesis 4 is developed as follows (also See Figure 2-1).

**Hypothesis 4. There is a negative relationship between mood and perceived risk.**

**Hypothesis 5. Mood and purchase intention**

Shopping from the Internet may be considered a complex task in the sense that Internet shopping is associated with uncertainty of product judgment and evaluation resulting from inaccuracy of color information on screen and/or lack of tactile experience (Liang & Huang, 1998; “New Technologies Enhance Online Apparel Shopping,” 1999; “Online Apparel Shopping Gaining in Popularity,” 2000). Difficulty of making purchase decisions in Internet shopping due to various reasons (e.g., difficulty of tracking past
product search for comparisons, loss of privacy, product returns) also may increase the complexity of the Internet shopping task (Elliot & Fowell, 2000; Jarvenpaa & Todd, 1997; Rowley, 1996). Research has shown that when faced with complex task, mood may be used as heuristic information to make decisions (Kelly, 1972; Schwartz & Clore, 1988). Therefore, in the Internet shopping context, positive moods may increase Internet purchase intentions.

The relationships between consumers’ mood and purchase intention were found in several empirical studies in marketing and psychology. Consumers’ mood may influence their intention to shop or purchase products. Mood states are present in virtually every shopping encounter and are likely to influence what is purchased and when, how much is purchased, how carefully one compares products before making a selection, and even one’s intent to repurchase a brand or product. According to Swinyard (1993), when the consumer was in a good mood during shopping, he or she was more likely to spend extra time shopping in the department and store and to purchase more products. Similarly, Spies et al. (1997) found an effect for store environment on customers’ mood. A pleasant store environment including well-structured store layout and signs improved positive mood. Babin, Dardin, and Griffin (1994) also found that strong positive feeling states such as “good,” “happy,” “satisfied,” and “wonderful” can lead to increased time spent in the store, spending, and judgments of liking for the store. Bitner (1992) also found that positive moods resulted in more favorable evaluations of the store and influenced customers to buy more things. The relationship between consumer moods and purchase intention was also found in the work of Alpert and Alpert (1990). The positive moods
altered by store background music influenced greater purchase intention as compared to the negative moods.

Positive mood also may influence buying products without a plan. According to Consumption Impulse Formation and Enactment (CIFE) model developed by Dholakia (2000), the consumer’s current mood state can influence impulsive consumption. A positive mood state may decrease the degree of perceived risk and make consumers to be less dependent on systematic information processing and more on heuristic information processing (Swartz & Bohner, 1996). Rook and Gardener (1993) also found that over 80 percent of their respondents indicated that a positive mood would contribute to buying without a plan more than a negative mood. In a positive mood, people described an unrestricted feeling with higher energy levels. Similarly, Spies et al. (1997) found that positive mood influenced amount of spontaneous purchases. Customers who were in a positive mood generated from a pleasurable store environment bought more items and spent more money than they initially planned. Based on the literature, it is reasonable to expect that mood may influence purchase intentions. People who have a positive mood may have greater intention to purchase apparel from the Internet than people who have a negative mood. Therefore, based on the literature review, hypothesis 5 is developed as follows (also See Figure 2-1).

**Hypothesis 5. There is a positive relationship between mood and apparel purchase intention.**
Hypothesis 6. Perceived risk and purchase intention

Howard and Sheth (1969) proposed that one of the determinants of purchase intention is confidence, which is the inverse of perceived risk. Bennett and Harrell (1975) suggested that confidence might play an important role in predicting intentions to purchase. Confidence about the brand is positively related to intention. This also means lower perceived risk may be related to higher purchase intention. Kim and Lennon (2000) found support for this relationship in television shoppers. In Internet shopping, Vijayasarathy and Jones (2000) found that consumers’ perceived risk was an important factor that influenced intention to shop online.

According to Elliot and Fowell (2000), consumer experience with Internet shopping drives the growth of Internet shopping. Similarly, Yoh (1999) found that consumers who had more prior experience with the Internet had more positive beliefs and attitudes about Internet apparel shopping, and these beliefs positively influenced intention to purchase apparel through the Internet, compared to those who had less prior experience with the Internet. Their confidence in judging quality of products or in making decisions to purchase products may increase and reduce perceived risk, as consumers have a shopping experience from the Internet. Based on the literature, it is expected that perceived risk may influence purchase intention. People who perceive lower risk of shopping from the Internet may have greater intention to purchase apparel from the Internet compared to people who perceive greater risk. Therefore, hypothesis 6 is developed as follows (also See Figure 2-1).
**Hypothesis 6.** There is a negative relationship between perceived risk and apparel purchase intention.

In the next section, another variable, impulsivity that may affect perceived risk is discussed.

**Hypothesis 7. Perceived risk and impulsivity**

According to Donthu and Garcia (1999), Internet shoppers are considered to be innovators who are risk takers, desiring venturesome, hazardous, rash, and daring events. Similarly, Venkatraman (1991) found that innovators tended to cope with complexity, performance, and economic risk when purchasing new PC products including new models, features, and software. Internet shoppers also tended to be impulsive and less risk averse and to have a more positive attitude toward advertising than non-shoppers (Donthu & Garcia, 1999).

Buyers who have higher impulsivity and purchase on impulse (Beatty & Ferrell, 1997; Dholakia, 2000) are also characterized as risk takers (Rook & Fisher, 1995). They tend to be willing to take more risks than non-impulse buyers who have lower impulsivity. In addition, impulsive consumers are likely to be open and flexible to sudden or unexpected buying ideas (Rook & Fisher, 1995). Therefore, it is reasonable to expect that impulsivity as a personal trait may influence perceived risk in Internet apparel shopping. Those who are more impulsive may perceive less risk when purchasing apparel through the Internet than people who have less impulsivity and may be willing to
Hypotheses 7. There is a negative relationship between impulsivity and perceived risk.

Hypotheses

Based on the literature review in Chapter 2 (See Table 2-1), seven hypotheses were developed (See Figure 2-1). Eight websites were designed to test three hypotheses examining the effect of product presentation (e.g., movement, size) on mood, perceived risk, and purchase intention (See Hypothesis 1, Hypothesis 2, and Hypothesis 3). In addition, the websites were used to test four hypotheses assessing the additional relationships among mood, impulsivity, perceived risk, and purchase intention (See Hypothesis 4, Hypothesis 5, Hypothesis 6, and Hypothesis 7).

Hypotheses

H 1. Product presentation affects mood.

H 1-1. As compared to people exposed to websites with products not in motion, those exposed to websites with products in motion will exhibit more positive mood.

H 1-2. As compared to people exposed to websites with smaller product images, those exposed to websites with larger product images will exhibit more positive mood.
H 1.3. Size and movement interact to affect mood.

H 2. Product presentation affects perceived risk.

H 2.1. As compared to people exposed to websites with products not in motion,
those exposed to websites with products in motion will perceive less risk.

H 2.2. As compared to people exposed to websites with smaller product images,
those exposed to websites with larger product images will perceive less risk.

H 2.3. Size and movement interact to affect perceived risk.


H 3.1. As compared to people exposed to websites with products not in motion,
those exposed to websites with products in motion will have greater purchase intention.

H 3.2. As compared to people exposed to websites with smaller product images,
those exposed to websites with larger product images will have greater purchase intention.

H 3.3. Size and movement interact to affect purchase intention.

H 4. There is a negative relationship between mood and perceived risk.

H 5. There is a positive relationship between mood and apparel purchase intention.

H 6. There is a negative relationship between perceived risk and apparel purchase intention.

H 7. There is a negative relationship between impulsivity and perceived risk.
Figure 2-1: The conceptual model for the effect of product presentation on the Internet shopping behavior.
Researchers | Relationships among variables | Related hypothesis
--- | --- | ---
Allen (2000); Bitner (1992); Cohen & Areni (1991); Jeandrain (2001); Ruth et al. (2002); Spies et al. (1997); Swinyard (1993); Then & Delong (1999) | Product presentation $\rightarrow$ Mood | H₁
Bhatti et al., 2000; Lin & Lu, 2000; Ramsay et al., 1998 | Product presentation $\rightarrow$ perceived risk | H₂
Swinyard (1993); Then & Delong (1999) | Product presentation $\rightarrow$ purchase intention | H₃
Schwarz (1990) | Mood $\rightarrow$ perceived risk | H₄
Spies et al. (1997); Swinyard (1993) | Mood $\rightarrow$ purchase intention | H₅
Bennett & Harrell (1975); Elliot & Fowell, 2000; Howard & Sheth (1969); Yoh (1999) | Perceived risk $\rightarrow$ purchase intention | H₆
Donthu & Garcia (1999); Rook & Fisher (1995); Venkatraman (1991) | Impulsivity $\rightarrow$ perceived risk | H₇

Table 2-1. Research summary supporting hypothesis 1 to hypothesis 7.
CHAPTER 3

METHOD

In chapter 3, a description of procedures and methods used for data collection and analyses is discussed. This research was exempted from IRB review and was assigned protocol number #02E0175 (See Appendix H).

Experiment

According to Keppel (1991), an experiment consists of a carefully worked-out and executed plan for data collection and analysis. Treatment conditions are chosen to focus on particular features of the testing environment. The experimental method is useful to assign participants to the treatment conditions in such a way that differences in behavior between groups can be observed. A well-designed experiment allows the inference of causation. That is, the experiment allows the researcher to infer that the difference observed in the performance of the participants in the experiment is caused by the experimental treatment. Therefore, in this study, an experimental method is used to test the differences of mood, perceived risk, and purchase intention among participants in a given treatment condition.
**Pretest**

The pretest was used to select appropriate multiple stimuli (two pairs of pants) for the main study. There were two main objectives of the pretest. First, the pretest was used to find two similar garment styles for stimuli because various garment styles could affect subjects’ responses (e.g., purchase intent). Since the independent variables of interest in this research were product movement and image size, I wanted to minimize variance due to style. In addition, garments which are not too fashionable or attractive needed to be chosen because the fashionability or attractiveness also could influence purchase intent. Second, in the pretest, perception of image size (large vs. small) was measured to ensure that a large image was perceived as being large and a small image was perceived as being small.

In this study, real garments from retail stores were used to increase reality. A total of nine pairs of khaki pants and nine pairs of blue jeans were carefully selected and purchased from four popular retail stores to reflect target participants’ taste and preference. Pants from The Gap, Banana Republic, Express, and New York & Co. were chosen. The selected clothing items were carefully inspected to ensure that they did not include any logo or a brand name which could reveal brand identity.

Eighteen pairs of pants including nine pairs of blue jeans and nine pairs of khaki pants were worn by a size 6 female human model and were photographed with a digital camera. Using a Computer Aided Design (CAD) program (e.g., Photoshop, Premiere), the researcher controlled the background and clarity of the photographs.
Sixty female students participated in a pretest to select two pairs of pants in terms of garment style. Each participant viewed either eighteen small color photos or eighteen large color photos of the pants and judged garment style and image size of each of the eighteen pairs of pants. Among sixty participants, thirty participants viewed small size images, while the other thirty participants viewed large size images.

For each garment style, participants were asked to rate fashionability, attractiveness, similarity to what participants wear, typicality of each pair of pants compared with the pair of pants most representative of that product category, meaningfulness, and usefulness, using five-point unipolar scales (e.g., fashionable – not fashionable). Eleven adjectives used by Cox and Cox (2002) (fashionable, attractive, similar to what I wear, meaningful, important, significant, useful, functional, practical, typical, not different) were used for garment style ratings.

In the pretest, participants were also asked to rate the size of images to ensure that the large size was perceived as being large and the small size was perceived as being small. Based on Park & Stoel (2002), the dimensions of a small size image were 306 X 186 pixels, while those of a large image were 612 X 372 pixels. Thus, perception of image size (large vs. small) was tested using those two dimensions. Participants rated the size of pictures (“the size of the images on the websites you just browsed was small.”) using a five point Likert type scale with end points 1 (Strongly disagree) and 5 (Strongly agree). Higher scores indicated that people perceived the images to be smaller.

Pretest data were analyzed using descriptive statistics and multivariate and univariate analyses. Based on mean comparisons (See Appendix F), ratings of garment style were consistent across two pairs of khaki pants (Style K and Style Q) (See Table 3-
1). Next, multivariate analysis of variance was used to examine the effects of garment style on garment ratings. Khaki style (style K and style Q) was the independent variable and eleven adjectives (fashionability, attractiveness, similarity to what participants wear, typicality of each pair of pants compared with the pair of pants most representative of that product category, meaningfulness, and usefulness) were the dependent variables in the repeated measures analysis. In this analysis, there was no significant multivariate main effect for khaki style, $F(11, 49) = .924, p = .963$ (See Table 3-2). None of the blue jeans were consistently rated for those respective measures (See Appendix F). Therefore, using stimulus sampling technique, two pairs of khaki pants with a similar garment style were selected as stimuli for the main study to increase external validity. More than one stimulus in a similar garment style allows the researcher to generalize the results across the garment style (in this study, khaki pants). In addition, using two pairs of khaki pants in similar styles also enables the researcher to ensure that any effects found were not due to idiosyncratic characteristics of a single pair of khaki pants (Fontenelle et al., 1985)
<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
<th></th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fashionable</strong></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.28</td>
<td>1.34</td>
<td><strong>Khaki pants style Q</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.15</td>
<td>1.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Attractive</strong></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.20</td>
<td>1.29</td>
<td></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.10</td>
<td>1.45</td>
</tr>
<tr>
<td><strong>Similar</strong></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.58</td>
<td>1.45</td>
<td></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.68</td>
<td>1.41</td>
</tr>
<tr>
<td><strong>Meaningful</strong></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.48</td>
<td>1.00</td>
<td></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.48</td>
<td>1.00</td>
</tr>
<tr>
<td><strong>Important</strong></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.50</td>
<td>1.05</td>
<td></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.50</td>
<td>0.98</td>
</tr>
<tr>
<td><strong>Significant</strong></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.53</td>
<td>1.07</td>
<td></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>2.52</td>
<td>1.05</td>
</tr>
<tr>
<td><strong>Useful</strong></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.08</td>
<td>1.11</td>
<td></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.10</td>
<td>1.05</td>
</tr>
<tr>
<td><strong>Functional</strong></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.27</td>
<td>1.18</td>
<td></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.33</td>
<td>1.10</td>
</tr>
<tr>
<td><strong>Practical</strong></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.22</td>
<td>1.14</td>
<td></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.33</td>
<td>1.13</td>
</tr>
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<td><strong>Typical</strong></td>
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<td>1</td>
<td>5</td>
<td>3.67</td>
<td>1.26</td>
<td></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.65</td>
<td>1.16</td>
</tr>
<tr>
<td><strong>Not different</strong></td>
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<td>1</td>
<td>5</td>
<td>3.70</td>
<td>1.09</td>
<td></td>
<td>60</td>
<td>1</td>
<td>5</td>
<td>3.62</td>
<td>0.98</td>
</tr>
</tbody>
</table>

Table 3-1. Garment ratings for khaki pants style A and khaki pants style B

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Wilks’ Lambda</strong></td>
<td>.924</td>
<td>.368</td>
</tr>
<tr>
<td><strong>F(11, 49)</strong></td>
<td>.963</td>
<td></td>
</tr>
</tbody>
</table>

Table 3-2. Multivariate analysis of variance for khaki pants on dependent variables (fashionability, attractiveness, similarity to what participants wear, typicality of each pair of pants compared with the pair of pants most representative of that product category, meaningfulness, and usefulness)
In the pretest, between subjects’ univariate analysis of variance was used to examine the effect of image size on size perceptions, $F(1, 59) = 71.033, p < .001, \eta^2 = .551$ (See Table 3-4). In this analysis, the independent variable was image size and the dependent variable was size perception. The scores from size perceptions of twenty pairs of pants were summed for a total score for size perception, with a possible range from 20 to 90 ($20 = $largest size$). The average score for size perception of small size image was 75.77, with a range from 55 to 90. The average score for size perception of large image size was 42.17, with a range from 18 to 56 (See Table 3-3). A higher score indicates that image was perceived to be small. $\eta^2$ (Eta squared) represents the percent of variance accounted for by the independent variable in the dependent variable. Image size accounted for 55.1% of the variance in size perception. This amount was tested and found to be significantly different from zero (See Appendix E). The results revealed that there was a difference between small size image and large size on size perceptions.

Therefore, based on the pretests, two pairs of khaki pants with similar styles were selected as stimuli and perceived size of picture (small vs. large) was confirmed.

<table>
<thead>
<tr>
<th></th>
<th>Small size image</th>
<th>Large size image</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Min.</td>
</tr>
<tr>
<td>Size perception</td>
<td>30</td>
<td>55</td>
</tr>
</tbody>
</table>

Table 3-3. Size perception ratings of small size image and large size image
Table 3-4. Univariate analysis of variance for image size (small vs. large) on size perception. ***p<.001

<table>
<thead>
<tr>
<th>Variables</th>
<th>F (1, 59)</th>
<th>P</th>
<th>% of variance accounted for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image size</td>
<td>71.033</td>
<td>.000</td>
<td>55.1***</td>
</tr>
</tbody>
</table>

**Design and experimental manipulation**

This study employed a 2 X 2 between subjects’ factorial design: Product movement (product in motion vs. product not in motion) X image size (large vs. small). Eight single Web pages were created to closely mimic the design of “true” websites. Eight websites presented two similar pairs of khaki pants for women under the four experimental conditions. Those four treatment conditions consisted of all possible combinations of product movement (product in motion vs. product not in motion) and image size (large vs. small). Products in motion were presented by rotation, while static products (or products not in motion) were presented by front, side, and back viewed altogether in order to provide a consistent amount of visual information.

**Stimulus selection**

**Stimulus sampling.** The technique of stimulus sampling is useful for achieving external validity, so that the results can be generalized across stimuli. Stimulus sampling requires using more than one stimulus in order to ensure any effects found were not due to idiosyncratic characteristics of a single stimulus. (Fontenelle, Phillips, & Lane, 1985). For example, in Stanforth and Lennon (1997), more than one stimulus in each treatment
was used to examine the effect of customer expectations and store policies on retail salesperson service, satisfaction, and patronage. For example, five slides were used to represent one treatment condition for a store selling expensive merchandise which is associated with “high customer expectations”, while another five-slides were used to represent the other treatment condition for a store selling inexpensive merchandise which is associated with “low customer expectations.” Multiple stimuli were selected to represent each treatment condition of customer expectations for stimulus sampling purposes. After seeing five slides, participants were asked to answer the questions in the questionnaire (Stanforth & Lennon, 1997). The dependent variables were measured once after seeing multiple stimuli. The current study used two stimuli for each treatment condition.

Using the stimulus sampling technique, this study employed multiple stimuli to allow for some generalization. Two stimuli were selected from the pretest to be used across four treatment conditions. The two stimuli were similar in terms of garment type (Khaki pants) and garment style (fashionability, similarity).

**Stimulus manipulation for the main study.** Based on the pretest, the two pairs of pants were worn by a size 6 female human model and photographed with a digital camera. Front, side, and back views were captured for static product presentations. For product presentation in motion, the model was smoothly rotated on a round plate by the researcher and videotaped using a digital video camcorder.

Size of pictures for motionless product and product in motion was manipulated to reflect the “real” Internet shopping context. The regular size of a picture, based on the
images that were often found in most apparel websites (Park & Stoel, 2002), was 306 X 186 pixels. The dimensions of an enlarged picture were 612 X 372 pixels. Thus, 306 X 186 pixels (motionless product) and 186 X 306 pixels (product in motion) were used for small size images, while 612 X 372 pixels (motionless product) and 372 X 612 pixels (product in motion) were used for large size images. For motionless product presentation, three images from three different angles (front, side, back) were combined and included within one horizontal image (306 X 186 pixels or 612 X 372 pixels). A vertical image was presented for products in motion by performing a vertical transformation of dimensions (from 306 X 186 pixels for a motionless product to 186 X 306 pixels for a product in motion). The motionless pictures were transferred into the Computer Aided Design (CAD) program (e.g., Photoshop, Premiere) in order to enhance the reality and control for clarity of pictures (e.g., pixels, bytes). For an automatic rotation of an object to be presented on the screen, pictures in motion were also transferred into a Media Player software and a Premiere software and reorganized for the experiment.

Each treatment combination included two pairs of khaki pants of a similar style featured on two websites and one treatment was presented to each group of participants. The manipulations consisted of 1) two static pictures of pants (Front, side, and back views) in small image size, 2) two static pictures of pants (Front, side, and back views) in large image size, 3) two automatic rotation of pants around its Y axis in small size image, and 4) two automatic rotation of pants around its Y axis in large size image. In other words, stimulus presentations in this study were shown in four ways: Motion-small (M-S), motion-large (M-L), motionlessness-small (ML-S), and motionlessness-large (ML-L).
The number of pieces of verbal information associated with the garment item including fiber content, fabric construction, color, price, item care (e.g., machine wash), item quality (e.g., seam type, hem depth), sizing availability, item measurement, country-of-origin (e.g., imported), texture/fabric hand, and quantities available (e.g., in stock) was also controlled and consistent across the eight websites. The product information provided was typical for an online retailer (Park & Stoel, 2002). Some product information which could influence perceptions or judgments was excluded and replaced with neutral information. Because verbal product information on the websites is not a focus of this study, any positive or negative information possibly may function as a confounding variable which may influence the effects. Thus, the effects found may be not due to product presentation but due to verbal product information or combination of both. For example, among different types of country-of-origin, “imported” was selected and held as a constant. Finally, the name of the apparel company and website address were anonymous in order to avoid the familiarity effect which possibly can influence the evaluation of the website and/or the product.

Sample

Two hundred and forty-four female undergraduate students who were taking a Textiles and Clothing class or Physical Activity class participated in this study for extra credit and incentives (e.g., cash win contest). This group is especially likely to be potential Internet shoppers. According to Lee and Johnson (2002), about thirty-two percent of Internet apparel shoppers were under 30. Therefore, it is reasonable to use
student subjects who are between the ages of 18 and 30 in this study to examine the effect of product presentation on their Internet apparel shopping behavior.

**Materials and procedure**

**Experiment procedure**

A laboratory setting was established with computers. The websites were shown in the PowerPoint program. In order to eliminate the effect of speed of picture downloading, Pentium III computers were consistently used. Therefore, the downloading time for static pictures and pictures in motion were consistent and controlled by the researcher and technicians.

Participants were randomly assigned to treatment groups. Before participants were asked to browse the websites, they were asked to read general instructions about the experiment on the computer screen. Then, a scenario was given to participants asking them to browse with the intention of purchasing. The scenario was as follows: “One morning, when you opened the closet, you found that you needed a pair of pants. You decided to spend around fifty dollars to purchase a pair of pants. However, you found that you did not have enough time to travel to the mall because of upcoming midterms. So, you decided to buy some pants from the Internet. Now, visit some apparel shopping sites. Here are two websites for you to visit.”

Next, each group of participants was assigned to browse two websites that each displayed one pair of pants reflecting the same treatment combination (e.g., product in motion and regular image size with two pairs of khaki pants). Participants were instructed to answer the questions in the questionnaire based on the feelings they have
after viewing the products on websites, after browsing the two simulated websites. Participants were asked to look at the screen and check out the products from the websites for one minute per each website and then, to answer the questions in the questionnaire. The browsing time was reasonably assigned based on the investigator’s observations and estimations of the website browsing time.

**Instrument**

Questionnaires included a one-page informed consent sheet. In the informed consent sheet, the purpose and the significance of this research were clearly explained to encourage students to participate in the experiment. In addition, the importance of participation was emphasized. The researcher also emphasized an ethical commitment not to release individual responses. Finally, the information about the researcher’s affiliation and status in the Department of Consumer and Textile Sciences at the Ohio State University was provided to increase credibility of the researcher and the experiment (See Appendix C).

In the first section of the questionnaire, participants were asked to rate their current mood, which is defined as premood in this study. In the second section, Internet shopping experience including product category, the amount of money spent on purchase, the number of purchases made, and impulse buying was assessed. In the third section of the questionnaire, the descriptive scenario was given. Next, participants were asked to browse two websites in a given amount of time and answer the questions regarding mood (which is defined as postmood in this study), perceived risk, and purchase intention. For manipulation checks, questions about perceptions of product movement and image size, the amount of information presented, and perceptions of garment style (e.g., fashionable,
attractive, similar to what I wear, etc) were assessed. At the end of the questionnaire, participants answered questions about their impulsivity and were asked to recall the information that they saw on the websites. They were also asked to provide demographic information.

**Scales for hypotheses**

Participants were asked about their experiences buying apparel from the Internet. Two questions, “Have you ever purchased clothing from the Internet? If so, please list the product items that you purchased from the Internet” (fixed response) and “Have you ever purchased clothing from the Internet even though it was not on your original plan to purchase?” (yes or no) were elicited. Four apparel product categories including baby’s clothing, children’s clothing, women’s wear, and men’s wear (Burns & Bryant, 2002) were the fixed response answers used. People were also asked how much they spent on clothing via the Internet in the last six months.

For the manipulation check, one item regarding perception of the size of images was measured using a five-point scale with end points strongly disagree (1) and strongly agree (5). Four items including “active,” “dynamic,” “static,” and “passive” were also used to assess the perception of product movement. Garment attractiveness, fashionability, similarity, typicality, meaningfulness, and usefulness were also obtained using five point unipolar scales (e.g., fashionable – not fashionable) (Cox & Cox, 2002) (See Appendix C).

*Impulsivity* as a personal trait was measured using the Consumer Impulsiveness Scales (CIS) developed by Puri (1996). The Likert-type scale from 1 (Usually would describe me) to 5 (Seldom would describe me) was used with twelve impulsivity items.
The unipolar Consumer Impulsiveness Scale consists of twelve adjectives measuring people’s chronic values toward impulsivity: “impulsive,” “careless,” “self-controlled,” “extravagant,” “farsighted,” “responsible,” “restrained,” “easily tempered,” “rational,” “methodical,” “enjoy spending,” and “a planner” (See Table 3-5). The overall reliability from the previous study by Puri (1996) was 0.82.

*Mood* was measured using the Joy and Distress subscales from the Differential Emotions Scale developed by Izard (1972). Participants were instructed to indicate the extent to which each word described them using a Likert type scale ranging from 1 (Very slightly/not at all) to 5 (very strongly). Three adjectives from the Joy scale including “happy,” “joy,” and “delighted” and three adjectives from the Distress scale including “discouraged,” “sad,” and “downhearted,” were used to indicate positive and negative mood level of Internet apparel shoppers (See Table 3-5). Reported reliabilities for the measures of Joy and Distress were 0.80 and 0.90 respectively (Izard, 1972).

A twenty-four item *perceived risk* scale, developed for television shopping by Kim and Lennon (2000) and revised for online shopping by Park and Stoel (2002) was used (See Table 3-2). Reliabilities for the three dimensions by Kim and Lennon (2000) in a television shopping context were as follows: Uncertainty about apparel products ($\alpha = 0.91$) (e.g., The size will not fit you), negative attitudes toward television shopping ($\alpha = 0.87$) (e.g., You will have hard time returning or exchanging it), and uncertainty about consequences ($\alpha = 0.74$) (e.g., It will be harmful to your health). Using revised items to reflect the Internet shopping context, Park and Stoel (2002) found four dimensions. Reliabilities for the four dimensions in Internet shopping context were found in Park and Stoel (2002) as follows: Physical risk ($\alpha = 0.83$) (e.g., It will not look good on you),
functional risk ($\alpha = 0.85$) (e.g., There will be something wrong with the apparel purchased), social/psychological risk ($\alpha = 0.80$) (e.g., Your friends will think you look funny when you wear it) and economic/financial/privacy risk ($\alpha = 0.79$) (e.g., You will feel that you just threw away a lot of money). Overall reliability for perceived risk was 0.91 (Park & Stoel, 2002) (See Table 3-5).

Three items were used to assess purchase intention toward purchasing products found via Internet apparel shopping (Okechuku & Wang, 1988) using a five point Likert-type scale from 1 (Unlikely) to 5 ( Likely). Items were revised to reflect the Internet apparel shopping context. For example, “Would like to try this product?” had been changed to “How likely is it that you would try clothing from the websites that you saw today?” The overall reliability in the previous study by Okechuku and Wang (1988) was 0.82 (See Table 3-5). In addition, four items of purchase intention for using the Internet to shop for apparel developed by Kim and Lennon (2000) in television shopping context and revised to reflect Internet shopping context by Park and Stoel (2002) also were used to measure purchase intention in this study. For example, “how likely is it that you will shop for apparel via television shopping when you buy apparel in the upcoming year?” was changed to “how likely is it that you will shop for apparel from the Internet when you buy apparel in the upcoming year?” The items were answered on a 1 (unlikely) to 5 (likely) Likert-type scale. Reliability for purchase intention from the previous study by Kim and Lennon (2000) in television shopping context was 0.90 and reliability from Park and Stoel (2002) in Internet shopping context was 0.84.

Attention was measured in order to assess whether there is another possible explanation to the effect of product presentation on mood. To measure attention, a free
recall was used to assess the number of pieces of information remembered. For this task, participants were asked to write down as much of the information about the products they saw as they could remember. This was a modification of a recall measure developed by Lee and Sternthal (1999) who asked participants to write down as many of the brand names as they could remember after exposure to a list of twenty five brand names.

**Demographic information**

Demographic information was elicited from the participants in the last part of the questionnaire. Age, ethnicity, and major were assessed. Participants were asked to fill in the blank or check the response for their demographic information. For ethnic background, six options were used, including African American, Caucasian American, Hispanic/Hispanic American, Native American, Asian American, and other.
<table>
<thead>
<tr>
<th>Scales</th>
<th>Items</th>
</tr>
</thead>
</table>
| Mood (Izard, 1972)            | 1. happy  
|                               | 2. joyful  
|                               | 3. delighted  
|                               | 4. discouraged  
|                               | 5. sad  
|                               | 6. downhearted  |
| Impulsivity (Puri, 1996)      | 1. Impulsive  
|                               | 2. Careless  
|                               | 3. Self-controlled  
|                               | 4. Extravagant  
|                               | 5. Farsighted  
|                               | 6. Responsible  
|                               | 7. Restrained  
|                               | 8. Easily tempted  
|                               | 9. Rational  
|                               | 10. Methodical  
|                               | 11. Enjoy spending  
|                               | 12. A planner  |
| Purchase intention (Kim & Lennon, 2000; Okechuku & Wang, 1988; Park & Stoel, 2002) | 1. How likely is it that you would try clothing from the websites that you saw today?  
|                               | 2. How likely is it that you would buy clothing items if you happened to see them from the websites that you saw today?  
|                               | 3. How likely is it that you would actively seek out clothing items from the websites that you saw today in order to purchase them?  
|                               | 4. How likely is it that you will buy the apparel item from the websites that you saw today in the next 12 months?  
|                               | 5. How likely is it that you will shop for apparel from the websites that you saw today when you buy apparel in the upcoming year?  
|                               | 6. How likely is it that you will buy apparel from the websites that you saw today when you find something you like?  
|                               | 7. You will probably buy an apparel item from the websites that you saw today for yourself in the upcoming year. |

Table 3-5. Scales for the hypotheses (continued)
Table 3-5. Continued

<table>
<thead>
<tr>
<th>Scales</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived risk (Kim &amp; Lennon, 2000; Park &amp;</td>
<td>1. The color will not be what you thought it would be.</td>
</tr>
<tr>
<td>Stoel, 2002)</td>
<td>2. The size will not fit you.</td>
</tr>
<tr>
<td></td>
<td>3. There will be something wrong with the apparel purchase (e.g.,</td>
</tr>
<tr>
<td></td>
<td>broken button, damaged fabric)</td>
</tr>
<tr>
<td></td>
<td>4. You will want to return it.</td>
</tr>
<tr>
<td></td>
<td>5. You will want to exchange it for another item</td>
</tr>
<tr>
<td></td>
<td>6. You will not like it</td>
</tr>
<tr>
<td></td>
<td>7. It will not look good on you.</td>
</tr>
<tr>
<td></td>
<td>8. Your friends will think you look funny when you wear it.</td>
</tr>
<tr>
<td></td>
<td>9. You will not be able to match it with your current clothing.</td>
</tr>
<tr>
<td></td>
<td>10. You will not feel comfortable wearing it in public.</td>
</tr>
<tr>
<td></td>
<td>11. You will have to pay for an alteration (i.e., lengthen or shorten</td>
</tr>
<tr>
<td></td>
<td>the hem)</td>
</tr>
<tr>
<td></td>
<td>12. It will be harmful to your health (chemical agent-allergic</td>
</tr>
<tr>
<td></td>
<td>reaction).</td>
</tr>
<tr>
<td></td>
<td>13. You will feel that you just threw away a lot of money.</td>
</tr>
<tr>
<td></td>
<td>14. You will feel that you just wasted time shopping via the</td>
</tr>
<tr>
<td></td>
<td>internet.</td>
</tr>
<tr>
<td></td>
<td>15. You will not feel comfortable giving your credit card number</td>
</tr>
<tr>
<td></td>
<td>when you order.</td>
</tr>
<tr>
<td></td>
<td>16. The construction quality will be poor (e.g., poorly done</td>
</tr>
<tr>
<td></td>
<td>stitches).</td>
</tr>
<tr>
<td></td>
<td>17. It will not be durable when cleaned (e.g., color changes, shape</td>
</tr>
<tr>
<td></td>
<td>change)</td>
</tr>
<tr>
<td></td>
<td>18. You will not wear the item.</td>
</tr>
<tr>
<td></td>
<td>19. You will find the very same item at the store with a lower</td>
</tr>
<tr>
<td></td>
<td>price.</td>
</tr>
<tr>
<td></td>
<td>20. You will have a hard time trying to return the item or exchange</td>
</tr>
<tr>
<td></td>
<td>it.</td>
</tr>
<tr>
<td></td>
<td>21. If you return the item, you will not be able to get a full refund.</td>
</tr>
<tr>
<td></td>
<td>22. You will lose money if you purchase this apparel item (e.g.,</td>
</tr>
<tr>
<td></td>
<td>because it costs more than it should to keep it in good shape,</td>
</tr>
<tr>
<td></td>
<td>because you will not be able to wear after one season.)</td>
</tr>
<tr>
<td></td>
<td>23. There will be something wrong with this apparel, or it will not</td>
</tr>
<tr>
<td></td>
<td>function properly (e.g., a raincoat will not be waterproof).</td>
</tr>
<tr>
<td></td>
<td>24. It will affect the way others think of you.</td>
</tr>
<tr>
<td></td>
<td>25. It will be a risky purchase.</td>
</tr>
</tbody>
</table>

Table 3-5. Scales for the hypotheses (continued)
CHAPTER 4

ANALYSIS OF RESULTS

General Analysis Information

Data were analyzed using SPSS. Descriptive statistics, multiple regression analyses, multivariate analyses of covariance, and univariate analyses of covariance were calculated. Descriptive statistics were used to describe each variable including demographics, postmood, impulsivity, perceived risk, and purchase intention. Multiple regression analysis was used to determine the relationship between impulsivity and perceived risk and the relationship between postmood and perceived risk. Multiple regression analysis was also used to determine the relationship between postmood and apparel purchase intention and the relationship between perceived risk and apparel purchase intention. To determine the existence of any product presentation differences on postmood, perceived risk, and purchase intention, multivariate analysis of covariance (MANCOVA) was performed, adjusting for the effect of premood as a covariate.
Preliminary Analyses

Reliability analyses

Using reliability analysis (i.e., Cronbach’s alpha), reliabilities for premood and postmood were 0.81 (N = 244) and 0.76 (N = 244), respectively. Reliability for perceived risk was 0.88 (N = 244). Reliability for apparel purchase intention was 0.89 (N = 244). Reliability for the twelve impulsivity items was 0.59. Due to the low reliability for impulsivity, principal component factor analysis with varimax rotation was performed for data reduction to select reliable items for impulsivity. Four factors with eigenvalues equal to or greater than 1.0 were generated (See Appendix F). Among four factors, only one factor including adjectives “self-controlled,” “responsible,” “rational,” and “a planner” was reliable to use for hypotheses testing (α = 0.73) (N = 244).

Demographic characteristics of participants

The mean age of participants (N=244) was 22 years, with a range of 18 to 55 years. All participants were female college students. About 70 percent of participants consisted of Caucasian Americans (70.5%). Other participants were Asian/Asian American (12.7%), African American (11.5%), Hispanic American (2.5%), Native American (0.4%), and other (2.5%) (See Table 4-1). Approximately 66 percent of participants were majoring in Textiles and Clothing, whereas 34 percent were non-Textiles and Clothing students (See Table 4-1).
<table>
<thead>
<tr>
<th>Demographics</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (n = 243)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 20</td>
<td>22</td>
<td>9.0%</td>
</tr>
<tr>
<td>20 – 24</td>
<td>196</td>
<td>80.7%</td>
</tr>
<tr>
<td>25 – 30</td>
<td>19</td>
<td>7.8%</td>
</tr>
<tr>
<td>over 30</td>
<td>6</td>
<td>2.5%</td>
</tr>
<tr>
<td>Total</td>
<td>243</td>
<td>100%</td>
</tr>
<tr>
<td>Ethnic background (n = 244)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>28</td>
<td>11.5%</td>
</tr>
<tr>
<td>Caucasian American</td>
<td>172</td>
<td>70.5%</td>
</tr>
<tr>
<td>Hispanic/ Hispanic American</td>
<td>6</td>
<td>2.5%</td>
</tr>
<tr>
<td>Native American</td>
<td>1</td>
<td>0.4%</td>
</tr>
<tr>
<td>Asian/Asian American</td>
<td>31</td>
<td>12.7%</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>2.5%</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
<td>100%</td>
</tr>
<tr>
<td>Major (n = 244)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Textiles &amp; Clothing</td>
<td>160</td>
<td>66%</td>
</tr>
<tr>
<td>Non-Textiles &amp; Clothing</td>
<td>84</td>
<td>34%</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 4-1. Demographics of participants  *Note: Different Ns are due to missing information.

Participants’ Internet shopping behavior

Among participants in this study, 78 percent of participants had purchased some products from the Internet. About 53 percent of participants had purchased clothing from the Internet. About 37 percent of participants made unplanned apparel purchases from the Internet. Among those apparel purchasers (N = 130), the type of clothing purchased from the Internet was as follows: 95 percent purchased women’s clothing; and 3 percent purchased men’s clothing (See Table 4-2).
The amount of money spent on clothing bought via the Internet in the previous six months was as follows; 20 percent of participants had not spent money on clothing bought via the Internet; 47 percent spent less than $100; 32 percent spent $100 to $500; and none of the participants spent more than $500 (See Table 4-2).

About 23 percent of the participants who had purchased clothing from the Internet had not purchased any clothing items in the previous six months. Nearly 21 percent of them had purchased one clothing item and 39 percent had purchased two to four clothing items from the Internet in the previous six months. Approximately 16 percent purchased five to seven clothing items. Only 2 percent purchased more than ten clothing items (See Table 4-2).
<table>
<thead>
<tr>
<th>Table 4-2. Participants’ Internet shopping behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Any purchasing experience from the Internet (n=244)</strong></td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

| **Apparel purchasing experience from the Internet (n=244)** | Frequency | Percent  |
| Yes | 130 | 53.3% |
| No | 114 | 46.7% |
| Total | 244 | 100% |

| **The type of clothing purchased from the Internet (n=87)** | Frequency | Percent  |
| Baby’s clothing | 1 | 1.1% |
| Children’s clothing | 0 | 0% |
| Women’s clothing | 83 | 95.4% |
| Men’s clothing | 3 | 3.4% |
| Total | 87 | 100% |

| **The amount of money spent on clothing bought via the Internet in the previous six months (n=130)** | Frequency | Percent  |
| None | 26 | 20.0% |
| $1 - $25 | 10 | 7.7% |
| $25 - $50 | 17 | 13.1% |
| $51 - $75 | 15 | 11.5% |
| $76 - $100 | 20 | 15.4% |
| $101 - $150 | 12 | 9.2% |
| $151 - $200 | 13 | 10.0% |
| $201 - $300 | 9 | 6.9% |
| $301 - $400 | 5 | 3.8% |
| $401 - $500 | 3 | 2.3% |
| More than $500 | 0 | 0% |
| Total | 130 | 100% |

| **The number of apparel items bought on the Internet in the previous six months (n=130)** | Frequency | Percent  |
| None | 30 | 23.1% |
| One item | 27 | 20.8% |
| 2-4 items | 50 | 38.5% |
| 5-7 items | 21 | 16.2% |
| 8-10 items | 0 | 0% |
| More than 10 items | 2 | 1.5% |
| Total | 130 | 100% |

| **Apparel impulse buying experience from the Internet (n=244)** | Frequency | Percent  |
| Yes | 89 | 36.5% |
| No | 155 | 63.5% |
| Total | 244 | 100% |
Manipulation Checks

In the present study, four treatments were manipulated in terms of image size (small vs. large) and product movement (products in motion vs. products not in motion). Manipulation checks were performed to determine if participants would perceive different image sizes and product movements. Participants were assigned to browse only one of four treatment combinations (small size image/products in motion, small size image/products not in motion, large size image/products in motion, and large size image/products not in motion) and then, participants were asked to rate image size and product movement in the questionnaire.

Image size

Participants were asked to assess their perception of image size for the manipulation check (The size of the images on the websites you just browsed was small). The average score for small size images was 3.30, with a range of 1 to 5 (1 = largest size). The average score for large size images was 2.44, with a range of 1 to 5 (See Table 4-3). A higher score indicates that people perceived a smaller image size. Based on the mean comparisons, people who were exposed to the websites with smaller image sizes perceived the image size to be smaller, while people who were exposed to the websites with larger image sizes felt the image size to be larger. In order to test for significant differences in size perceptions (between large size images and small size images), univariate analysis of variance was performed. The results revealed a main effect for image size on size perceptions, $F(1, 243) = 46.211, p < .001, \eta^2 = 0.16$ (See Table 4-4). Image size accounted for 1.6% of the variance in size perception. This amount was tested and found to be significantly different from zero (See Appendix E). In this
analysis, the independent variable was image size (small size vs. large size) and the dependent variable was perceptions of size. There was a difference between large size images and small size images on size perceptions. Therefore, the size of images on the websites was successfully manipulated.

<table>
<thead>
<tr>
<th>Image size</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>118</td>
<td>1</td>
<td>5</td>
<td>3.30</td>
<td>1.02</td>
</tr>
<tr>
<td>Large</td>
<td>126</td>
<td>1</td>
<td>5</td>
<td>2.44</td>
<td>0.93</td>
</tr>
</tbody>
</table>

Table 4-3. Participants’ perceptions of product image size

<table>
<thead>
<tr>
<th>Variable</th>
<th>$F(1, 243)$</th>
<th>p</th>
<th>% of variance accounted for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product image size</td>
<td>46.211</td>
<td>.000</td>
<td>1.6***</td>
</tr>
</tbody>
</table>

Table 4-4. Univariate analysis of variance for product image size on size perception (The size of images on the websites you just browsed was small). ***p<.001

**Product movement**

Four items tapped participants’ perceptions of movement. Participants indicated their level of agreement that the websites browsed were active, dynamic, static, and passive. Perceptions of static and passive were reverse scored and scores on the four items were summed as used as the measure of perceived movement. The average score for products in motion was 13.63, with a range of 5 to 20. The average score for products
not in motion was 11.14, with a range of 4 to 20 (See Table 4-5). A higher score indicates that people tended to perceive products in motion. Based on the mean comparisons, people who were exposed to the websites with products in motion perceived the products to be moving, while people who were exposed to the websites with products not in motion perceived the products to be stationary. In order to test the significant differences in product movement perceptions between products in motion and products not in motion, univariate analysis of variance was performed. The results revealed a main effect for product movement on movement perception, $F (1, 243) = 43.700, p < .001, \text{Eta}^2 = 15.3\%$ (See Table 4-6). Product movement accounted for 15.3% of the variance in movement perception. This amount was tested and found to be significantly different from zero (See Appendix E). In this analysis, the independent variable was product movement (products in motion vs. products not in motion) and the dependent variable was movement perception. There was a difference in perception of movement between products in motion and products not in motion. Therefore, product movement on the websites was successfully manipulated.

<table>
<thead>
<tr>
<th>Product movement</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>No movement</td>
<td>118</td>
<td>4</td>
<td>20</td>
<td>11.14</td>
<td>3.00</td>
</tr>
<tr>
<td>Movement</td>
<td>126</td>
<td>5</td>
<td>20</td>
<td>13.63</td>
<td>2.89</td>
</tr>
</tbody>
</table>

Table 4-5. Participants’ perceptions of product movement
Table 4-6. Univariate analysis of variance for product movement on a summed score of movement perception items (active, dynamic, static, and passive).

<table>
<thead>
<tr>
<th>Variable</th>
<th>F(1, 243)</th>
<th>p</th>
<th>% of variance accounted for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product movement</td>
<td>43.700</td>
<td>.000</td>
<td>15.3***</td>
</tr>
</tbody>
</table>

**Dependent Variables**

**Mood**

In this study, mood was assessed twice, before and after the treatment was given to the participants. Before participants browsed the websites, they were asked to assess their current mood, which is identified as *premood*. After participants browsed the websites, they were asked to assess their mood again, which is identified as *postmood*.

The mood scale consisted of six items: Discouraged, happy, sad, delighted, downhearted, and joyful. Scores from three negative mood items, “discouraged,” “sad,” and “downhearted,” were reversed to be consistent with those from other positive mood items. The same benchmarks were used to measure premood and postmood. Scores from six items were summed for the overall mood score, with a possible range of 6 to 30. The average score for premood was 23.44, with a range of 9 to 30. The average score for postmood was 21.83, with a range of 10 to 30. A higher score indicates positive mood (See Table 4-9).
Premood

Premood was measured to examine if the participants had different moods before they received the treatment (product presentation in this study). The effect of any treatments on dependent variables should not be contaminated by the participants’ pre-existing mood. According to Pham (1998), pre-existing mood among participants can influence behavioral intentions. People who were in a good pre-existing mood expressed more favorable behavioral intentions than did subjects who were in a bad pre-existing mood. Thus, the examination of the differences in pre-existing mood among the participants may be essential. First, comparisons of pre-existing mood between two groups who were exposed to the websites with either smaller product images or larger product images were made to ensure that there was no pre-existing difference in mood. Also, comparisons of pre-existing mood between two groups who were exposed to the websites with either products in motion or products not in motion were made to ensure that there was no pre-existing difference in mood. This allows the researcher to control for the potential contaminating effect of pre-existing mood on the dependent variables (postmood, perceived risk, and purchase intention).

The average score for premood among participants who browsed the websites with smaller product images was 23.29 (SD = 3.96), with a range of 15 to 30. The average score for premood among participants who browsed the websites with larger product images was 23.58 (SD = 4.15), with a range of 10 to 28 (See Table 4-10). Visual inspection of the cell means suggests that the premood mean was slightly different for each group. Independent groups t-test was performed to assess possible differences between the two groups on premood. The results revealed no difference in premood
between people who were exposed to the websites with larger images and those who were exposed to the websites with smaller images, $t(242) = -0.561, p = 0.58$ (See Table 4-7).

The average score for premood among participants who browsed the websites with products in motion was 23.18 (SD = 4.20), with a range of 9 to 30. The average score for premood among participants who browsed the websites with products not in motion was 23.72 (SD = 23.72), with a range of 9 to 30 (See Table 4-10). Visual inspection of the cell means suggests that there was a slight difference in premood between people exposed to the websites with products in motion and people exposed to the websites with products not in motion. Independent groups t-test was performed to assess possible pre-existing mood (so-called premood) differences between the two groups (people who saw the websites with product movement and people who saw the websites with products without movement). The results revealed that there was no difference in premood between people who were exposed to websites with products in motion and people exposed to websites with products not in motion, $t(242) = 1.049, p = 0.30$ (See Table 4-8). Thus, there were no pre-existing differences in premood across the treatment groups.

<table>
<thead>
<tr>
<th>Source</th>
<th>Small images (n = 118)</th>
<th>Large images (n = 126)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premood</td>
<td>23.29</td>
<td>23.58</td>
<td>-.561</td>
<td>.58</td>
</tr>
</tbody>
</table>

Table 4-7. Independent groups t-test for premood in image size difference
<table>
<thead>
<tr>
<th>Source</th>
<th>No movement (n = 116)</th>
<th>Movement (n = 128)</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premood</td>
<td>23.72</td>
<td>23.18</td>
<td>1.049</td>
<td>.30</td>
</tr>
</tbody>
</table>

Table 4-8. Independent groups t-test for premood in product movement

**Postmood**

The average score for postmood among participants who browsed the websites with products in motion was 22.98, with a range of 15 to 30. The average score for postmood among participants who browsed the websites with products not in motion was 20.55, with a range of 10 to 28 (See Table 4-10). Visual inspection of the cell means suggests that participants exposed to the websites with products in motion appear to exhibit more positive postmood, compared to those exposed to the websites with products not in motion.

The average score for postmood among participants who browsed the websites with smaller product images was 21.41, with a range of 15 to 30. The average score for postmood among participants who browsed the websites with larger product images was 22.31, with a range of 10 to 28 (See Table 4-11). Visual inspection of the cell means suggests that participants exposed to the websites with larger product images appear to exhibit more positive mood than those exposed to the websites with smaller product images.
**Perceived risk**

Participants were asked to assess perceived risk. Scores from twenty-five items were summed for the overall perceived risk score, with a possible range of 24 to 125. A higher score indicates greater perceived risk. The average score for perceived risk was 81.83, with a range of 44 to 125 (See Table 4-9).

The average score for perceived risk among participants who browsed the websites with products in motion was 79.41, with a range of 45 to 125. The average score for perceived risk among participants who browsed the websites with products not in motion was 84.51, with a range of 44 to 124 (See Table 4-10). Visual inspection of the cell means suggest that compared to those exposed to the websites with products not in motion, participants exposed to the websites with products in motion appear to exhibit less perceived risk.

In different sizes of images on websites, the average score for perceived risk among participants who browsed the websites with smaller product images was 82.72, with a range of 45 to 125. The average score for perceived risk among participants who browsed the websites with larger product images was 81.00, with a range of 44 to 124 (See Table 4-11). Visual inspection of the cell means suggest that participants exposed to the websites with larger product images appear to exhibit less perceived risk than those exposed to the websites with smaller product images.

**Apparel purchase intention**

Apparel purchase intention was measured using seven items. Scores from those items were summed for the overall purchase intention score, with a possible range of 7 to
35. The average score for apparel purchase intention was 17.10, with a range of 7 to 34 (See Table 4-9).

Among participants who browsed the websites with products in motion, the average score for apparel purchase intention was 18.13, with a range of 7 to 34. Among those who browsed the websites with products not in motion, the average score for apparel purchase intention was 15.97, with a range of 7 to 32 (See Table 4-10). Visual inspection of the cell means suggest that compared to those exposed to the websites with products not in motion, participants exposed to the websites with products in motion appear to have greater apparel purchase intention.

The average score for apparel purchase intention among participants who browsed the websites with smaller product images was 16.49, with a range of 9 to 34. Among participants who browsed the websites with larger product images, the average score for apparel purchase intention was 17.67, with a range of 9 to 32 (See Table 4-11). Visual inspection of the cell means suggest that participants exposed to the websites with larger product images appear to exhibit greater apparel purchase intention than those exposed to the websites with smaller product images.

**Impulsivity**

Participants were asked to answer questions assessing impulsivity as a personal trait. The twelve impulsivity items were factor analyzed. Principle component factor analysis with varimax rotation was used for data reduction of the impulsivity scale in this study. Four factors with eigenvalues equal to or greater than 1.0 were generated. Following procedures advocated by Stevens (1996), two loadings (careless, methodical)
with eigenvalues less than 1.0 were excluded, out of 12 impulsivity items. Among the four factors, one factor including four items (self-controlled, responsible, rational, a planner) whose reliability was higher than 0.7 ($\alpha = 0.73$) was used to measure impulsivity. Scores from the four items were summed for the overall impulsivity score, with a possible range of 4 to 20. The average score for impulsivity among participants was 8.41, with a range of 4 to 20 (See Table 4-9). This score indicates a low level of impulsivity among participants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premood</td>
<td>244</td>
<td>9</td>
<td>30</td>
<td>23.44</td>
<td>4.05</td>
</tr>
<tr>
<td>Postmood</td>
<td>244</td>
<td>10</td>
<td>30</td>
<td>21.83</td>
<td>3.94</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>244</td>
<td>44</td>
<td>125</td>
<td>81.83</td>
<td>14.43</td>
</tr>
<tr>
<td>Apparel purchase intention</td>
<td>244</td>
<td>7</td>
<td>34</td>
<td>17.10</td>
<td>6.19</td>
</tr>
<tr>
<td>Impulsivity</td>
<td>244</td>
<td>4</td>
<td>20</td>
<td>8.41</td>
<td>2.94</td>
</tr>
</tbody>
</table>

Table 4-9. Participants’ overall ratings for mood (premood and postmood), perceived risk, apparel purchase intention, and impulsivity.
<table>
<thead>
<tr>
<th></th>
<th>No movement (n = 116)</th>
<th>Movement (n = 128)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>Max.</td>
</tr>
<tr>
<td>Mood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premood</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Postmood</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>44</td>
<td>124</td>
</tr>
<tr>
<td>Apparel purchase intention</td>
<td>7</td>
<td>32</td>
</tr>
</tbody>
</table>

Table 4-10. Ratings for mood (premood and postmood), perceived risk, and apparel purchase intention in different product movements (movement vs. no movement).

<table>
<thead>
<tr>
<th></th>
<th>Small (n = 118)</th>
<th>Large (n = 126)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>Max.</td>
</tr>
<tr>
<td>Mood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premood</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>Postmood</td>
<td>10</td>
<td>28</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>44</td>
<td>124</td>
</tr>
<tr>
<td>Apparel purchase intention</td>
<td>7</td>
<td>32</td>
</tr>
</tbody>
</table>

Table 4-11. Ratings for mood (premood and postmood), perceived risk, and apparel purchase intention in different product image sizes (small vs. large).
Recall

Based on the literature, movement or image size may attract attention (Folk et al., 1992; Johansson, 1973; Maljkovic & Nakayama, 1994; Morrin & Ratneshwar, 2000; Nakayama & Silverman, 1986; Todd & Van Gelber, 1979; Yantis, 1993) and in turn, influence mood (Langer, 1989). It is possible that product presentation may create positive mood indirectly. In an indirect way, product presentation may first capture attention and then, attention may influence mood. Thus, it is necessary to examine the possible effect of product movement and image size on attention in order to provide an alternate explanation to the effect of product presentation on mood, although I did not hypothesize this relationship.

Attention was measured using a free recall of the information as in previous studies (Alba & Chattopadhyay, 1986; Lee & Sternthal, 1999; Morrin & Ratneshwar, 2000). According to Alba and Chattopadhyay (1986), activation of a brand or product in memory influences recall. In Morrin and Ratneshwar (2000), salient pleasant scents increased attention and memory primarily for unfamiliar brand names. People recalled more unfamiliar brand names when pleasant scents captured their attention.

Participants were asked to recall the pieces of information they remembered from the websites. The number of pieces of information recalled for each participant was counted (Lee & Sternthal, 1999). Inaccurate and incorrect information recalled was excluded from counting. The average number of pieces of information recalled among participants was 2.39, with a range of 0 to 8 (See Table 4-12).

Among participants who browsed the websites with products in motion, the average number of information recalled was 2.14, with a range of 0 to 8. Among those
who browsed the websites with products not in motion, the average number of pieces of information recalled was 2.71, with a range of 0 to 8 (See Table 4-13). Visual inspection of cell means suggest that compared to those exposed to the website with products not in motion, participants exposed to the websites with products in motion appear to recall less information.

The average number of pieces of information recalled among participants who browsed the websites with smaller product images was 2.8, with a range of 0 to 8. Among participants who browsed the websites with larger product images, the average number of pieces of information recalled was 2.03, with a range of 0 to 8 (See Table 4-14). Visual inspection of the cell means suggest that participants exposed to the websites with larger product images appear to recall less information than those exposed to the website with smaller product images.

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Min.</th>
<th>Max.</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall (the number of pieces</td>
<td>244</td>
<td>0</td>
<td>8</td>
<td>2.39</td>
<td>1.87</td>
</tr>
<tr>
<td>of information)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4-12. Participants’ recall of the information.
<table>
<thead>
<tr>
<th></th>
<th>No movement (n = 116)</th>
<th>Movement (n = 128)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>Max.</td>
</tr>
<tr>
<td>Recall (the number of pieces of information)</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 4-13. Participants’ recall in product movement (movement vs. no movement).

<table>
<thead>
<tr>
<th></th>
<th>Small (n = 118)</th>
<th>Large (n = 126)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Min.</td>
<td>Max.</td>
</tr>
<tr>
<td>Recall (the number of pieces of information)</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 4-14. Participants’ recall in different product image sizes (small vs. large).

**Hypotheses Testing**

**Hypotheses 1 to 3**

Hypotheses 1 to 3 were tested using multivariate analysis of covariance. The covariate in each case was the measure of premood. The independent variables were product image size (small vs. large) and image movement (product in motion vs. product not in motion). The dependent variables were postmood, perceived risk, and apparel purchase intention. A probability level of .05 was set. Bonferroni’s test was used to adjust for multiple comparisons, when post hoc comparisons across product size and
movement were performed. In this analysis, the covariate was significantly related to the dependent variables, $F(3, 237) = 21.57, p < .001$. After the effects of the covariate were removed, a significant multivariate main effect for product image movement on the dependent variables was found ($F(3, 237) = 14.00, p < .001$). There was no significant multivariate effect of product image size on the dependent variables ($F(3, 237) = 1.17, p = .32$). Product image size and movement interacted to affect the dependent variables ($F(3, 237) = 3.71, p < .05$) (See Table 4-15).

Univariate analyses of covariance (ANCOVAs) were calculated to determine which dependent variables contributed to the significant multivariate effect with pre-mood as a covariate.

<table>
<thead>
<tr>
<th></th>
<th>Wilks’ Lambda</th>
<th>$F(3, 237)$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premood</td>
<td>.786</td>
<td>21.570</td>
<td>.000***</td>
</tr>
<tr>
<td>Size</td>
<td>.985</td>
<td>1.166</td>
<td>.323</td>
</tr>
<tr>
<td>Movement</td>
<td>.849</td>
<td>13.999</td>
<td>.000***</td>
</tr>
<tr>
<td>Size*Movement</td>
<td>.955</td>
<td>3.711</td>
<td>.012*</td>
</tr>
</tbody>
</table>

Table 4-15. Multivariate analysis of covariance for product presentation (product image size and movement) on dependent variables (postmood, perceived risk, and purchase intention).

*p<.05, **p<.025, ***p<.001
Product presentation and mood

Hypothesis 1. Product presentation affects mood.

Hypothesis 1-1. As compared to people exposed to websites with products not in motion, those exposed to websites with products in motion will exhibit more positive mood.

After adjusting for premood, univariate analysis of covariance was performed to test Hypothesis 1-1. There was a significant main effect for product movement on postmood, $F(1, 243) = 37.480$, $p < .001$, $\eta^2 = .136$ (See Table 4-18). In this analysis, the independent variable was product movement and the dependent variable was postmood. $\eta^2$ represents the percent of variance in the dependent variable accounted for by the independent variable. Product movement accounted for 13.6% of the variance in postmood. This amount was tested and found to be significantly different from zero (See Appendix E). The results revealed that people who were exposed to websites with products in motion ($M = 22.98$, $SD = 3.63$) exhibited more positive mood compared to people exposed to websites with products not in motion ($M = 20.55$, $SD = 3.90$) (See Table 4-16). Therefore, Hypothesis 1-1 was supported.

Hypothesis 1-2. As compared to people exposed to websites with smaller product images, those exposed to websites with larger product images will exhibit more positive mood.

As stated above, there was no significant multivariate effect of product image size on the dependent variables (Wilks’ Lambda = .985, $F(3, 237) = 1.17$, $p = .32$, $\eta^2 = .015$) (See Table 4-18). Therefore, Hypothesis 1-2 was not supported.
Hypothesis 1-3. Size and movement interact to affect mood.

After adjusting for premood, univariate analysis of covariance was performed to test Hypothesis 1-1. There was no significant interaction effect for image size and product movement on mood, $F(1, 243) = 0.032, p = .859, \eta^2 = .000$ (See Table 4-18). In this analysis, the independent variables were image size and product movement and the dependent variable was mood. Therefore, Hypothesis 1-1 was not supported.

Product presentation and perceived risk

Hypothesis 2. Product presentation affects perceived risk.

Hypothesis 2-1. As compared to people exposed to websites with products not in motion, those exposed to websites with products in motion will perceive less risk.

After adjusting for premood, univariate analysis of covariance was performed to test Hypothesis 2-1. There was a main effect for product movement on perceived risk, $F(1, 243) = 7.364, p < .01, \eta^2 = .030$ (See Table 4-18). In this analysis, the independent variable was product movement and the dependent variable was perceived risk. Eta squared ($\eta^2$) represents the percent of variance accounted for by the independent variable in the dependent variable. Product movement accounted for 3% of the variance in perceived risk. This amount was tested and found to be significantly different from zero (See Appendix E). The results revealed that people who were exposed to websites with products in motion ($M = 79.41, SD = 14.35$) exhibited less perceived risk as
compared to those exposed to websites with products not in motion (M = 84.51, SD = 14.10) (See Table 4-13). Therefore, Hypothesis 3.1 was supported.

Hypothesis 2.2. As compared to people exposed to websites with smaller product images, those exposed to websites with larger product images will perceive less risk.

As stated above, there was no significant multivariate effect for product image size on postmood, perceived risk, and apparel purchase intention (Wilks’ Lambda = .985, $F (3, 237) = 1.17$, $p = .32$, $Eta^2 = .015$) (See Table 4-18). Therefore, Hypothesis 2.2 was not supported.

Hypothesis 2.3. Size and movement interact to affect perceived risk.

After adjusting for premood, univariate analysis of covariance was performed to test Hypothesis 2.3. There was no significant interaction effect for image size and product movement on perceived risk, $F(1, 243) = 2.654$, $p = .105$, $Eta^2 = .011$ (See Table 4-18). In this analysis, the independent variables were image size and product movement and the dependent variable was perceived risk. Therefore, Hypothesis 2.3 was not supported.

Product presentation and purchase intention

Hypothesis 3. Product presentation affects purchase intention.

Hypothesis 3.1. As compared to people exposed to websites with products not in motion, those exposed to websites with products in motion will have greater purchase intention.
After adjusting for premoood, univariate analysis of covariance was performed to test Hypothesis 3-1. There was a main effect for product movement on apparel purchase intention, $F(1, 243) = 6.950$, $p < .01$, $Eta^2 = .028$ (See Table 4-18). In this analysis, the independent variable was product movement and the dependent variable was apparel purchase intention. Eta squared ($Eta^2$) represents the percent of variance accounted for by the independent variable in the dependent variable. Product movement accounted for 2.8% of the variance in purchase intention. This amount was tested and found to be significantly different from zero (See Appendix E). The results revealed that people who were exposed to websites with products in motion ($M = 18.13$, $SD = 6.21$) exhibited greater apparel purchase intention compared to those exposed to websites with products not in motion ($M = 15.97$, $SD = 5.99$) (See Table 4-16). Therefore, Hypothesis 3-1 was supported.

**Hypothesis 3-2.** As compared to people exposed to websites with smaller product images, those exposed to websites with larger product images will have greater purchase intention.

As stated above, there was no significant multivariate effect for product image size on the dependent variables (Wilks’ Lambda = .985, $F (3, 237) = 1.17$, $p = .32$, $Eta^2 = .015$) (See Table 4-18). Therefore, Hypothesis 3-2 was not supported.

**Hypothesis 3-3.** Size and movement interact to affect purchase intention.

After adjusting for premood, univariate analysis of covariance was performed to test Hypothesis 3-3. There was a significant interaction effect for image size and product movement...
movement on apparel purchase intention, $$F(1, 243) = 9.943, p < .01, \text{Eta}^2 = .040$$ (See Table 4-18). In this analysis, the independent variables were image size and product movement and the dependent variable was apparel purchase intention. Eta squared ($$\text{Eta}^2$$) represents the percent of variance accounted for by the independent variables in the dependent variable. The combination of image size and product movement accounted for 4.0% of the variance in mood. This amount was tested and found to be significantly different from zero (See Appendix E). People who were exposed to websites with larger product images that were in motion ($$M = 19.76, \text{SD} = 5.40$$) exhibited the greatest apparel purchase intention, followed by people exposed to websites with smaller product images and products not in motion ($$M = 16.67, \text{SD} = 5.86$$), people exposed to websites with smaller product images and products in motion ($$M = 16.33, \text{SD} = 6.58$$), and people exposed to websites with larger product images and not product movement ($$M = 15.31, \text{SD} = 6.09$$) (See Table 4-17). The results revealed that image size and product movement interact to affect apparel purchase intention. Therefore, Hypothesis 3.3 was supported.

Bonferroni test was performed for post hoc multiple comparisons to examine the difference of purchase intention among four treatment combinations of image size and product movement. The results revealed a significant difference of purchase intention between people who saw large images with movement and those who saw large images without movement (Mean difference = 4.46, $$p < .001$$) (See Table 4-19). People who browsed the websites presenting large images with movement showed greater purchase intention than those who browsed the websites presenting large images without movement. A significant difference of purchase intention was also found between people who saw large images with movement and those who saw small images with movement.
Those who saw the websites presenting larger images with movement exhibited greater purchase intention than those who saw the websites presenting small images with movement. Last, the results revealed a significant difference of purchase intention between people who saw large images with movement and people who saw small images without movement (Mean difference = 3.09, p< .05) (See Table 4-19). People rated greater purchase intention for the websites presenting larger images with movement than the websites presenting smaller images without movement. No significant difference of purchase intention was found in other comparisons.

<table>
<thead>
<tr>
<th>Product movement</th>
<th>Product image size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No movement</td>
</tr>
<tr>
<td></td>
<td>n = 116</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>20.55 (3.90)</td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>84.51 (14.10)</td>
</tr>
<tr>
<td>Apparel purchase intention</td>
<td>15.97 (5.99)</td>
</tr>
</tbody>
</table>

Table 4-16. Means and standard deviations for product presentation on postmood, perceived risk, and apparel purchase intention.
<table>
<thead>
<tr>
<th>Source</th>
<th>Dependent variables</th>
<th>$F$ (1, 243)</th>
<th>$p$</th>
<th>% of variance accounted for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premood</td>
<td>Postmood</td>
<td>58.837</td>
<td>.000</td>
<td>.198</td>
</tr>
<tr>
<td></td>
<td>Perceived risk</td>
<td>.035</td>
<td>.852</td>
<td>.000***</td>
</tr>
<tr>
<td></td>
<td>Purchase intention</td>
<td>.221</td>
<td>.638</td>
<td>.001**</td>
</tr>
<tr>
<td>Size</td>
<td>Postmood</td>
<td>2.288</td>
<td>.132</td>
<td>.009**</td>
</tr>
<tr>
<td></td>
<td>Perceived risk</td>
<td>.688</td>
<td>.408</td>
<td>.003**</td>
</tr>
<tr>
<td></td>
<td>Purchase intention</td>
<td>1.853</td>
<td>.175</td>
<td>.008**</td>
</tr>
<tr>
<td>Movement</td>
<td>Postmood</td>
<td>37.480</td>
<td>.000</td>
<td>.136</td>
</tr>
<tr>
<td></td>
<td>Perceived risk</td>
<td>7.364</td>
<td>.007</td>
<td>.030*</td>
</tr>
<tr>
<td></td>
<td>Purchase intention</td>
<td>6.950</td>
<td>.009</td>
<td>.008**</td>
</tr>
<tr>
<td>Size *</td>
<td>Postmood</td>
<td>.032</td>
<td>.859</td>
<td>.000***</td>
</tr>
<tr>
<td>Movement</td>
<td>Perceived risk</td>
<td>2.654</td>
<td>.105</td>
<td>.011**</td>
</tr>
<tr>
<td></td>
<td>Purchase intention</td>
<td>9.943</td>
<td>.002</td>
<td>.040*</td>
</tr>
</tbody>
</table>

Table 4-18. Univariate analysis of covariance for product presentation (image size and product movement) on dependent variables (mood, perceived risk, and purchase intention).

*p<.05, **p<.025, ***p<.001
<table>
<thead>
<tr>
<th></th>
<th>Small/No movement</th>
<th>Small/Movement</th>
<th>Large/No movement</th>
<th>Large/Movement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small/No movement</td>
<td>-</td>
<td>-.34</td>
<td>-1.36</td>
<td>3.09*</td>
</tr>
<tr>
<td>Small/Movement</td>
<td>-</td>
<td>-</td>
<td>-1.02</td>
<td>3.43**</td>
</tr>
<tr>
<td>Large/No movement</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4.46***</td>
</tr>
</tbody>
</table>

Table 4-19. Bonferroni post hoc comparisons for purchase intention.
*** p< .001, **p<.01, *p<.05

**Hypotheses 4 and 7**

**Relationship of perceived risk to impulsivity and mood**

*Hypothesis 4. There is a negative relationship between mood and perceived risk.*

*Hypothesis 7. There is a negative relationship between impulsivity and perceived risk.*

Stepwise multiple regression analysis was used to determine the relationship of perceived risk to impulsivity and mood. In this analysis, the independent variables were impulsivity and mood and the dependent variable was perceived risk. Results of the analysis revealed that only mood, one of the independent variables, was significantly related to perceived risk, $F (1, 142) = 5.284, p < .05$ (See Table 4-20). Mood accounted for 2.1% ($\eta^2 = .021$) of the explained variance in perceived risk. The negative beta value indicates the nature of the relationship between the two variables of mood and perceived risk, $\beta = -.146$, $p < .05$ (See Table 4-20). Higher scores on mood are related to lower scores on perceived risk. This means that people who have a more positive mood are likely to feel less perceived risk on purchasing apparel from the Internet. However,
no significant relationship between impulsivity and perceived risk was found in this analysis (See Table 4-20).

Therefore, Hypothesis 4 was supported and Hypothesis 7 was not supported by this analysis.

<table>
<thead>
<tr>
<th>Model</th>
<th>SS</th>
<th>MS</th>
<th>F (1,142)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>1080.455</td>
<td>1080.455</td>
<td>5.284</td>
</tr>
<tr>
<td>Residual</td>
<td>49487.655</td>
<td>204.494</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50568.111</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ R^2 = .021, \ *p < .05 \]

**Coefficients**

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>( \beta )</th>
<th>( b )</th>
<th>( t )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood</td>
<td>-.146</td>
<td>-.535</td>
<td>-2.299</td>
<td>.022*</td>
</tr>
</tbody>
</table>

Table 4-20. Stepwise multiple regression analysis for a relationship between mood and perceived risk. \( *p < .05 \), \( \beta \): Standardized regression coefficient, \( b \): Unstandardized regression coefficient.

**Hypotheses 5 and 6**

**Relationship of apparel purchase intention to mood and perceived risk**

*Hypothesis 5. There is a positive relationship between mood and apparel purchase intention.*
**Hypothesis 6.** There is a negative relationship between perceived risk and apparel purchase intention.

Stepwise multiple regression analysis was used to determine the relationship of apparel purchase intention to mood and perceived risk. In this analysis, the independent variables were mood and perceived risk and the dependent variable was apparel purchase intention. Both independent variables were significantly related to apparel purchase intention. Results of the analysis revealed that mood and perceived risk accounted for 13.2% (Eta² = .132) of the explained variance in apparel purchase intention.

A significant positive relationship between perceived risk and apparel purchase intention was found, F (1, 142) = 20.606, p < .001 (See Table 4-21). This variable accounted for 7.8% (Eta² = .078) of the explained variance in apparel purchase intention. The second variable entered into the prediction equation was mood, F (1, 141) = 18.307, p < .001 (See Table 4-21). These two variables accounted for 13.2% (Eta² = .132) of the explained variance of apparel purchase intention. Based on the standardized weights of the variables, perceived risk was the more important of the two variables, β = - .246, p < .001 (See Table 4-21). The negative beta value indicates the nature of the relationship between the two variables of perceived risk and apparel purchase intention (See Table 4-21). Higher scores on perceived risk are related to lower scores on apparel purchase intention. The second related variable was mood, contributing 5.4% to the variance in apparel purchase intention, β = .234, p < .001 (See Table 4-21). The positive beta value indicates the nature of the relationship between two variables of mood and apparel purchase intention. Higher scores on mood are related to higher scores on apparel purchase intention. Thus, perceived risk and mood variables were related to apparel purchase intention.
purchase intention, indicating that people who felt less perceived risk and more positive mood were likely to have greater apparel purchase intention. Therefore, both hypotheses 5 and 7 were supported by this analysis.

Model

<table>
<thead>
<tr>
<th>Model</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>730.252</td>
<td>1</td>
<td>730.252</td>
<td>20.606</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>8576.186</td>
<td>242</td>
<td>35.439</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>9036.439</td>
<td>243</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Regression</td>
<td>1227.407</td>
<td>2</td>
<td>613.704</td>
<td>18.307</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>8079.031</td>
<td>241</td>
<td>33.523</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>9036.439</td>
<td>243</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model 1 $R^2 = .078$, Model 2 $R^2 = .132$, *p < .001

Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Independent variables</th>
<th>β</th>
<th>b</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perceived risk</td>
<td>-.280</td>
<td>-.120</td>
<td>-4.539</td>
<td>.000*</td>
</tr>
<tr>
<td>2</td>
<td>Perceived risk</td>
<td>-.246</td>
<td>-.106</td>
<td>-4.054</td>
<td>.000*</td>
</tr>
<tr>
<td></td>
<td>Mood</td>
<td>.234</td>
<td>.367</td>
<td>3.851</td>
<td>.000*</td>
</tr>
</tbody>
</table>

Table 4-21. Stepwise multiple regression analysis for relationships between perceived risk and purchase intention and between mood and purchase intention. *p < .001, β: Standardized regression coefficient, b: Unstandardized regression coefficient.

Additional analyses

Testing mediating relationships

The results of hypotheses testing showed that product movement influenced mood and mood influenced purchase intention (See Figure 3-1). The results of hypotheses testing also showed that product movement influenced perceived risk and perceived risk
influenced purchase intention (See Figure 3-1). It is possible that mood and perceived risk may be mediating a relationship between product movement and purchase intention (See Figure 3-1). Thus, there may be a direct relationship between product movement and purchase intention and/or an indirect relationship through mood. For example, product movement may have a direct relationship with purchase intention and/or indirect relationship with purchase intention. The indirect relationship may occur when mood and/or perceived risk are mediating. Possible sequences of variables in the indirect relationship would be 1) product movement → mood → purchase intention, 2) product movement → perceived risk → purchase intention, and/or 3) product movement → mood → perceived risk → purchase intention (See Figure 3-1). Therefore, the purpose of this analysis was to examine if any variables (e.g., mood, perceived risk) were mediating the relationship of product movement and purchase intention. This analysis may suggest the possible sequence of the relationships examined in the hypotheses testing and provide alternate explanations to the direct relationships among product movement, mood, perceived risk, and purchase intention.
According to Baron and Kenny (1986), in order to test for mediation, the three following regression equations must be calculated: 1) regressing the mediator on the independent variable; 2) regressing the dependent variable on the independent variable; and 3) regressing the dependent variable on both the independent variable and on the mediator. Separate coefficients for each equation should be estimated and tested. In this analysis, hierarchical or stepwise regression or the computation of any partial and semi partial correlations do not need to be calculated. Following Baron and Kenny (1986), three criteria were used to establish mediation: 1) the independent variable must affect
the mediator in the first equation (Independent variable → mediator), 2) the independent variable also must affect the dependent variable in the second equation (Independent variable → dependent variable), and 3) the mediator must affect the dependent variable in the third equation (Mediator → dependent variable). If these conditions all hold in the prediction direction, then the effect of the independent variable on the dependent variable must be less in the third equation than in the second. Perfect mediation may hold if the independent variable has no effect when the mediator is controlled.

In this study, regression analyses were used to examine if mood and perceived risk were mediating between product movement and purchase intention. In this analysis, the independent variable was product movement and dependent variable was purchase intention. Mood and perceived risk were mediators. Following Baron and Kenny (1986), three regressions were performed: 1) regressing mood and perceived risk on product movement (Product movement → mood, Product movement → perceived risk), 2) regressing purchase intention on product movement (Product movement → purchase intention), and 3) regressing purchase intention on product movement, mood, and perceived risk (Product movement, mood, perceived risk → purchase intention).

Results of the regression analyses satisfied the first criterion that both mood and perceived risk were significantly related to product movement. First, a simple regression analysis was used to determine the relationship between product movement and mood. In this analysis, the dependent variable was mood and the independent variable was product movement. A significant positive relationship between mood and product movement was found, $F(1, 242) = 25.51, p < .001$ (See Table 4-22). The positive beta value indicates the nature of the relationship between product movement and mood, $\beta = .31, p < .001$ (See
Table 4-22. A simple regression analysis for a relationship between product movement and mood. ***p< .001, β: Standardized regression coefficient, b: Unstandardized regression coefficient.
Model

<table>
<thead>
<tr>
<th>Model</th>
<th>SS</th>
<th>MS</th>
<th>F (1,242)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1584.24</td>
<td>1584.24</td>
<td>7.83</td>
<td>.006**</td>
</tr>
<tr>
<td>Residual</td>
<td>48983.87</td>
<td>202.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50568.11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

R² = .031, **p < .01

Coefficients

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>β</th>
<th>b</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product movement</td>
<td>-.18</td>
<td>-5.10</td>
<td>-2.80</td>
<td>.006**</td>
</tr>
</tbody>
</table>

Table 4-23. A simple regression analysis for a relationship between product movement and perceived risk. **p < .01, β: Standardized regression coefficient, b: Unstandardized regression coefficient.

Results of the regression analyses satisfied the second criterion that product movement was significantly related to purchase intention. A simple regression analysis was used to determine the relationship between product movement and purchase intention. In this analysis, the dependent variable was purchase intention and the independent variable was product movement. A significant positive relationship between purchase intention and product movement was found, F(1, 242) = 7.55, p < .01 (See Table 4-24). The positive beta value indicates the nature of the relationship between product movement and purchase intention, β = .17, p < .01 (See Table 4-24).

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>β</th>
<th>b</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product movement</td>
<td>.17</td>
<td>2.15</td>
<td>2.75</td>
<td>.006**</td>
</tr>
</tbody>
</table>

R² = .07, **p < .01

Then, results of the regression analyses satisfied the third criterion that purchase intention was significantly related to mood and perceived risk but not to product movement. Multiple regression analysis was used to determine the relationship of purchase intention to mood, perceived risk, and product movement. In this analysis, the independent variables were mood, perceived risk, and product movement and the dependent variable was purchase intention. The significant relationships of purchase intention to perceived risk and mood was found, F(1, 242) = 12.56, p < .001 (See Table 4-25). The beta value indicates the nature of the relationship between mood and purchase intention, β = .22, p < .01 (See Table 4-25), between perceived risk and purchase intention.
intention, $\beta = -.34, p < .001$ (See Table 4-25). In this analysis, perfect mediation of two mediators holds because the independent variable (product movement) has no effect when two mediators (mood and perceived risk) are controlled. Based on the results from the three regression analyses, mood and perceived risk are mediating the relationship between product movement and purchase intention.

<table>
<thead>
<tr>
<th>Model</th>
<th>SS</th>
<th>MS</th>
<th>F (1,242)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1263.00</td>
<td>421.00</td>
<td>12.56</td>
<td>.000***</td>
</tr>
<tr>
<td>Residual</td>
<td>8043.43</td>
<td>33.51</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9306.44</td>
<td>33.51</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$R^2 = .14$, ***$p < .001$

**Coefficients**

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>$\beta$</th>
<th>$B$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood</td>
<td>.22</td>
<td>.34</td>
<td>3.39</td>
<td>.001**</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>-.24</td>
<td>-.10</td>
<td>-3.87</td>
<td>.000***</td>
</tr>
<tr>
<td>Product movement</td>
<td>.07</td>
<td>.81</td>
<td>1.03</td>
<td>.304</td>
</tr>
</tbody>
</table>

Table 4-25. Multiple regression analysis for the relationships of purchase intention to mood, perceived risk, and product movement. **$p< .01$, ***$p<.001$, $\beta$: Standardized regression coefficient, $b$: Unstandardized regression coefficient.

Next, regression analyses were performed to determine if perceived risk is mediating the relationship between mood and purchase intention (Mood $\rightarrow$ perceived risk $\rightarrow$ purchase intention) (See Figure 3-2). In the indirect relationship of mood and purchase intention, it is possible that perceived risk is mediating the relationship of mood
and purchase intention. Thus, three regressions were performed to check for mediation. In this analysis, mood was the independent variable and purchase intention was the dependent variable. Perceived risk was a mediating variable.

Results of the regression analyses satisfied the first criterion that mood was significantly related to perceived risk. A simple regression analysis was used to determine the relationship between mood and perceived risk. In this analysis, the dependent variable was perceived risk and the independent variable was mood. A significant negative relationship between mood and perceived risk was found, $F(1, 242) = 5.28, p < .05$ (See Table 4-26). The negative beta value indicates the nature of the relationship between mood and perceived risk, $\beta = -.15, p < .05$ (See Table 4-26).

Figure 3-2. Relationships among mood, perceived risk, and purchase intention.
Results of the regression analysis satisfied the second criterion that mood was significantly related to purchase intention. A simple regression analysis was used to determine the relationship between mood and purchase intention. In this analysis, the dependent variable was purchase intention and the independent variable was mood. A significant positive relationship between mood and purchase intention was found, $F(1, 242) = 18.97, p < .001$ (See Table 4-27). The positive beta value indicates the nature of the relationship between mood and perceived risk, $\beta = .27, p < .001$ (See Table 4-27).
Table 4-27. A simple regression analysis for a relationship between mood and purchase intention. ***p < .001, β: Standardized regression coefficient, b: Unstandardized regression coefficient.

Results of the regression analyses also satisfied the third criterion. Multiple regression analysis was used to determine the relationship of purchase intention to mood and perceived risk. In this analysis, the independent variables were mood and perceived risk, and the dependent variable was purchase intention. A significant relationship of purchase intention to perceived risk and mood was found, $F(1, 242) = 18.31, p < .001$ (See Table 4-28). The beta value indicates the nature of the relationship between mood and purchase intention, $\beta = .23, p < .001$, between perceived risk and purchase intention, $\beta = -.25, p < .001$ (See Table 4-28). In this analysis, both perceived risk and mood were significantly related to purchase intention. Thus, the analysis suggests that perceived risk may not be a perfect mediator. However, perceived risk functions as a mediator in the
relationship between mood and purchase intention because the effect of mood on purchase intention was less in the third regression than in the second regression. The coefficient from the second regression \( Y = 7.87 + 0.42X_1 \), where \( X_1 = \text{mood} \) was greater than the one from the third regression \( Y = 17.73 + 0.37X_1 - 0.11X_2 \), where \( X_1 = \text{mood} \) and \( X_2 = \text{perceived risk} \). Therefore, based on the results from the three regression analyses, perceived risk was a mediator in the relationship of mood and purchase intention.

**Model**

<table>
<thead>
<tr>
<th>Model</th>
<th>SS</th>
<th>MS</th>
<th>F (1,242)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>1227.41</td>
<td>613.70</td>
<td>18.31</td>
<td>.000***</td>
</tr>
<tr>
<td>Residual</td>
<td>8079.03</td>
<td>33.52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9306.44</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( R^2 = .13, ***p < .001 \)

**Coefficients**

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>( \beta )</th>
<th>b</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mood</td>
<td>.23</td>
<td>.37</td>
<td>3.85</td>
<td>.000***</td>
</tr>
<tr>
<td>Perceived risk</td>
<td>-.25</td>
<td>-.11</td>
<td>-4.05</td>
<td>.000***</td>
</tr>
</tbody>
</table>

Table 4-28. Multiple regression analysis for the relationships of purchase intention to mood and perceived risk. ***p<.001, \( \beta \): Standardized regression coefficient, b: Unstandardized regression coefficient.
The effect of product presentation on recall

It is possible that movement per se did not affect the variables but rather that attention as a result of movement had those effects. In the research literature, image size and product movement influence attention (Cox, 1970; Finn, 1988; Folk et al., 1992; Johansson, 1973; Kahneman & Treisman, 1984; Maljkovic & Nakayama, 1994; Morrin & Ratneshwar, 2000; Nakayama & Silverman, 1986; Todd & Van Gelder, 1979; Yantis, 1993) and in turn, can influence mood (Langer, 1989). Salient moving objects or large images may capture attention and increase positive mood. Therefore, the effect of product presentation on attention may explain the effect of product presentation on mood.

In this study, because product movement captures attention during browsing, people might not have attended to other product and/or customer service information available through the website. Thus, people who were exposed to the websites with movement may recall less information (except visual information), as compared to people who were exposed to the static websites. This rationale may also apply to the websites presenting different sizes of images. Because large images capture more attention during browsing, people may not attend to other product and/or customer service information available on the website. On the contrary, because small images capture less attention, people may have more opportunity to look at other information available on the website, and thus, recall more. People who were exposed to the websites presenting large images may recall less information (except visual information) than people who were exposed to the websites presenting small images. In other words, more attention to the product image may result in less recall of other product information.
A free recall measure, “List and describe what you saw on the websites” was used to assess attention in terms of the number of pieces of information remembered after browsing the websites. Then, the number of pieces of information recalled was counted. Inaccurate or incorrect information recalled was excluded. Visual information related to product presentation (e.g., interesting rotation of the products) on screen was also eliminated.

To determine whether the effect of product presentation was due to increased attention, recall data were analyzed using univariate analysis of variance. There was a significant main effect for image size on recall, $F(1, 243) = 11.013, p < .01, \eta^2 = .044$ (See Table 4-30). Eta squared ($\eta^2$) represents the percent of variance in the dependent variable accounted for by the independent variable. Image size accounted for 4.4% of the variance in recall. This amount was tested and found to be significantly different from zero (See Appendix E). In this analysis, the independent variable was image size and the dependent variable was recall. The results revealed that people who were exposed to websites with larger images ($M = 2.03, SD = .16$) recalled less information than people exposed to websites with smaller images ($M = 2.8, SD = .17$) (See Table 4-29).

There was a significant main effect for product movement on recall, $F(1, 243) = 6.407, p < .05, \eta^2 = .026$ (See Table 4-30). In this analysis, the independent variable was product movement and the dependent variable was recall. Eta squared ($\eta^2$) represents the percent of variance in the dependent variable accounted for by the independent variable. Product movement accounted for 2.6% of the variance in recall. This amount was tested and found to be significantly different from zero (See Appendix E). The results revealed that people who were exposed to websites with products in
motion (M = 2.12, SD = .16) recalled less information than people exposed to websites with products not in motion (M = 2.71, SD = .17) (See Table 4-29).

However, the results revealed no significant interaction effect for image size and product movement on recall $F(1, 243) = .700, p = .40$, $\eta^2 = .003$ (See Table 4-30). In this analysis, the independent variables were image size and product movement and the dependent variable was recall.

<table>
<thead>
<tr>
<th></th>
<th>Small/ No movement n = 57</th>
<th>Small/ Movement n = 61</th>
<th>Large/ No movement n = 59</th>
<th>Large/ Movement n = 67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall</td>
<td>3.0 (1.86)</td>
<td>2.6 (2.09)</td>
<td>2.42 (1.93)</td>
<td>1.64 (1.31)</td>
</tr>
</tbody>
</table>

Table 4-29. Interaction means and standard deviations for product presentation on recall

<table>
<thead>
<tr>
<th>Source</th>
<th>$F(1, 243)$</th>
<th>p</th>
<th>% of variance accounted for</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>11.013</td>
<td>.001**</td>
<td>.044</td>
</tr>
<tr>
<td>Movement</td>
<td>6.407</td>
<td>.012*</td>
<td>.026</td>
</tr>
<tr>
<td>Size * Movement</td>
<td>.700</td>
<td>.404</td>
<td>.003</td>
</tr>
</tbody>
</table>

Table 4-30. Univariate analysis of variance for product presentation (image size and product movement) on recall. *p<.05, **p<.01
CHAPTER 5

DISCUSSION AND CONCLUSIONS

Despite an increased interest in online shopping for apparel and apparel-related products, few empirical studies have been conducted about various psychological and marketing factors in the context of Internet apparel buying behavior. Although several Internet shopping studies have emphasized the importance of creating pleasurable shopping experiences on Internet shopping sites, none of the studies has empirically tested the effect of product presentation on mood, perceived risk, and purchase intention. Therefore, the purpose of the study was to investigate the effect of product presentation on mood, perceived risk, and purchase intention. The size of product images and product movement on screen may influence mood, perceived risk, and purchase intention. In addition, the additional relationships among mood, perceived risk, and purchase intention (e.g., mood and perceived risk, perceived risk and purchase intention, mood and purchase intention) were investigated to provide details regarding the effect of product presentation on mood, perceived risk, and purchase intention. The mediating relationships among variables (product movement, mood, perceived risk, and purchase intention) supported in the hypotheses testing were also examined to provide a more complete explanation of the relationship between product movement and purchase intention. Product information
recall was also used to provide a possible alternate explanation for the effect of product presentation on mood. Finally, impulsivity as a personal trait was examined in relation to perceived risk.

To analyze the effect of product presentation (product image size and product movement) on mood, perceived risk, and purchase intention, 2 (Image size: Large vs. small) X 2 (Product in motion vs. product not in motion) multivariate analyses of covariance (MANCOVAs), with postmood, perceived risk, and purchase intention serving as dependent variables and premood serving as a covariate were used. Univariate analysis of covariance was also performed to determine which dependent variables contributed to the multivariate effect. Stepwise multiple regression analysis was used to determine the relationship between impulsivity and perceived risk and the relationship between mood and perceived risk. Stepwise multiple regression analysis was also used to determine the relationship between mood and apparel purchase intention and the relationship between perceived risk and apparel purchase intention. Finally, additional regression analyses were performed to determine if mood and perceived risk are mediating the relationship of product movement and purchase intention. In addition, univariate analysis of variance was performed to examine the effect of product presentation on recall and provide an alternate explanation for the effect of product presentation on mood.

**Discussion**

In this study, over three-quarters of the participants had previously purchased products using the Internet. In addition, more than half of participants had purchased
apparel using the Internet. Approximately 95 percent of the apparel purchasers had bought women’s clothing. Characteristics of the respondents in this study suggest that female college students between the ages of 18 and 30 use the Internet for shopping. This is consistent with Lee and Johnson (2002) who found that more than 50 percent of Internet apparel shoppers were from 21 to 30 years old.

The present study examined: (1) the differences in mood, perceived risk, and purchase intention between people who were exposed to the websites with products in motion and people who were exposed to the websites with products not in motion) (Hypotheses 1-1, 2-1, and 3-1), (2) the differences in mood, perceived risk, and purchase intention between people who were exposed to the websites with large size product image and people who were exposed to the websites with small size product image (Hypotheses 1-2, 3-2, and 3-2), (3) the relationship between mood and perceived risk (Hypothesis 4), (4) the relationship between mood and apparel purchase intention (Hypothesis 5), (5) the relationship between perceived risk and apparel purchase intention (Hypothesis 6), and (6) the relationship between impulsivity and perceived risk (Hypothesis 7). The present research shows: (1) main effects for product movement on mood, perceived risk, and apparel purchase intention (Hypotheses 1-1, 2-1, and 3-1), (2) an interaction effect for product movement and image size on apparel purchase intention (Hypotheses 3-3), (3) a negative relationship between mood and perceived risk (Hypothesis 4), (4) a positive relationship between mood and apparel purchase intention (Hypothesis 5), and (5) a negative relationship between perceived risk and apparel purchase intention (Hypothesis 6). Seven hypotheses (Hypotheses 1-1, 2-1, 3-1, 3-3, 4, 5, and 6) were supported, while six hypotheses (Hypotheses 1-2, 1-3, 2-2, 2-3, 3-2, and 7) were not
supported. In addition, mediating relationships were found among product movement, mood, perceived risk, and purchase intention. Specifically, the present research shows that mood and perceived risk are mediating the relationship between product movement and purchase intention. Main effects for image size and product movement on recall were found in additional data analysis which was performed to provide an alternate explanation to the effect of product presentation on mood.

**Product presentation and mood**

**Product movement and mood**

There was a main effect for product movement on mood. People who were exposed to websites with products in motion exhibited more positive moods than people who were exposed to websites with products not in motion. This suggests that when the product is presented on the screen with movement (rotation in this study), people are more likely to feel delighted, happy, and joyful, compared to when the product is presented without movement. As predicted, product movement on the screen may have a great impact on mood and stimulate excitement. This supports the model of innovation-decision process and previous literature (Folk et al., 1992; Johansson, 1993; Langer, 1989; Maljkovic & Nakayama, 1994; Morrin & Ratneshwar, 2000; Nakayama & Silverman, 1986; Todd & Van Gelder, 1979; Yantis, 1993) that consistently found a relationship between object movement and mood.

The results from the additional analysis may support the possible sequence of the effect of product movement on attention and mood studied by the researchers (Folk et al., 1992; Johansson, 1993; Langer, 1989; Maljkovic & Nakayama, 1994; Morrin &
Ratneshwar, 2000; Nakayama & Silverman, 1986; Todd & Van Gelder, 1979; Yantis, 1993). There was a main effect for product movement on recall. People who were exposed to the websites with movement may recall less information (except visual information), as compared to people who were exposed to the static websites. This means that products with movement captured more attention than products without movement. In other words, people might not have attended to other product and/or customer service information available on the website while they attended to product movement. This explains that people who were exposed to websites with product movement paid more attention to the movement and thus, exhibited more positive moods than people exposed to websites without movement. Product movement may influence attention and in turn influence mood.

Product movement on websites may be a new display method. Because most apparel shopping sites have used static product displays which only show front and/or back views (Park & Stoel, 2002), Internet shoppers are most likely to have encountered only static product displays online. Thus, a new display method of product using movement may capture more attention and create more excitement and entertainment for shoppers. In addition, products in motion may create more reality for shoppers as compared to stationary products. Product rotation around the Y-axis may be similar to the way shoppers try on the garment and rotate their body in front of the mirror in the fitting room to see if the garment fits well. The results suggest that the ability to check all views via product rotation increases positive mood experienced while shopping via the Internet.
Product image size and mood

No significant main effect for product image size on mood was found. There was no significant difference in mood between people who were exposed to websites with smaller product images and people who were exposed to websites with large product images. Both groups exhibited similar degrees of mood.

Based on the literature (Cox, 1970; Finn, 1988; Langer, 1989), it was expected that when products were presented in a large size, people were likely to pay attention and thus, attention may increase mood. The larger the product images, the more they may capture attention and thus, evoke more positive feelings. However, the findings in this study were not consistent with previous literature. Even though there was a main effect for image size on recall, no differences in mood across participants exposed to small images versus large images were found. In this study, image size influenced attention, but not mood. Although people were more likely to pay attention to the large image than the small image and thus, recall less information that was available on the websites, their mood was not increased. This can be explained by innovativeness of image size. According to the model of innovation-decision process, innovative product presentation persuades and affects consumers’ feeling. Although large images might be large enough to capture attention while browsing, this may not be innovative enough to increase positive moods. Because size of images was based on those that are available on the present Internet shopping sites (Park & Stoel, 2002), people may also have seen enlarged product images on the Internet similar in size to those used in this study. Large images from the current prevailing Internet shopping sites may not be perceived to be innovative enough to satisfy shoppers and provide a pleasurable shopping experience.
Interaction of product movement and image size to mood.

No significant interaction effect for size and movement on mood was found. Websites with combinations of different sizes (small vs. large) and movement (movement vs. no movement) did not influence feelings. It was expected that the combined effect of image size and product movement would influence mood, but in this study no interaction effect of image size and product movement on mood was found.

Product presentation and perceived risk

Product movement and perceived risk

There was a main effect for product movement on perceived risk. As expected, there was a difference in perceived risk between people exposed to the websites with products in motion and those exposed to the websites with products not in motion. People who were exposed to websites with products in motion exhibited less perceived risk than people who were exposed to websites with products not in motion. This suggests that product movement decreases perceived risk of shopping from the Internet.

The importance of website design and product display on screen has been emphasized by the press and researchers (Elliot & Fowell, 2000; Szymanski & Hise, 2000; “New Technologies Enhance Online Apparel Shopping,” 1999). Accurate and descriptive visual information presented on websites may decrease perceived risk. In this study, a product rotated on the Y-axis on screen may increase reality and provide more descriptive information to shoppers. Therefore, product movement may decrease perceived risk.
Based on the results of mediating relationship test, it is likely that mood is mediating the relationship between product movement and perceived risk. People who were exposed to the websites with product movement may have more positive moods and in turn feel less perceived risk compared to those who were exposed to the website with product not in motion. It seems that perceived risk can be directly influenced by product movement as discussed earlier. In addition, mood induced by product movement may influence perceived risk. Thus, there may be an indirect relationship between product movement and perceived risk.

Product image size and perceived risk

The results revealed no significant difference in perceived risk between people exposed to websites with smaller product images and those exposed to websites with larger product images. People tended to perceive similar amounts of risk from websites presenting smaller images vs. larger images.

Based on previous literature (Allen, 2000; Then & Delong, 1999), it was expected that larger images on websites might increase confidence in judging apparel quality and thus, reduce perceived risk of shopping on the Internet. However, size of image did not influence perceptions of risk in this study.

Based on the results, it is possible that image size may not be an important factor that influences perceived risk in Internet shopping. Both small and large images with consistent amount of clarity may provide a similar amount of information to make evaluation or judgment about the product featured on screen. If the image is clear enough to inspect the product details regardless of image size (large or small), perceptions of risk may be similar.
In this study, two image sizes (small vs. large) were relative. We defined the dimensions of a small size as 306 X 186 pixels for stationary product and 186 X 306 pixels for moving product based on the previous literature (Park & Stoel, 2002). The small size image used may be large enough to show the product details. If the size could be adjusted in a different way (the small size image was smaller and the large size image was larger), there might be a possibility of an effect for image size on perceived risk.

**Interaction of product movement and image size to perceived risk**

Results revealed no interaction effect for size and movement on perceived risk. Websites with combinations of different sizes (small vs. large) and movement (movement vs. no movement) did not influence perceived risk. It was expected that the combined effect of image size and movement might influence perceptions of risk, but this study found no interaction effect on perceived risk.

**Product presentation and purchase intention**

**Product movement and purchase intention**

Results revealed a main effect for product movement on purchase intention. People who were exposed to websites with products in motion had greater purchase intention than people who were exposed to websites with products not in motion. This was consistent with Swinyard (1993) who found that an appealing visual display of products accelerated consumers’ intention to purchase products.

Product rotation enables shoppers to see the product from various angles. Furthermore, this may simulate the experience of trying garments on in traditional retail stores. In a traditional retail setting, shoppers may try on clothing and rotate their body to
see how the clothing fits their bodies. Because fitting may be a great concern for apparel shoppers (Then & Delong, 1999), product rotation may be a viable online substitute for trying on garment. Therefore, product rotation may influence purchase intention and thus, increase a chance of purchasing apparel from the Internet.

Results of testing mediating relationships indicated that mood and/or perceived risk are mediating the relationship between product movement and purchase intention. It is possible that people who were exposed to the websites with product in motion had greater positive moods, less perceived risk, and in turn greater purchase intention than people who were exposed to websites with products not in motion. It may be reasonable to articulate that positive moods and less perceived risk induced by product movement influenced purchase intention.

**Product image size and purchase intention**

No significant main effect for image size on purchase intention was found. People who were exposed to websites with larger product images had similar amounts of purchase intention compared to people who were exposed to websites with smaller product images. This is not consistent with Allen (2000) and Then and Delong (1999) who suggested that a large size image might influence purchase decisions.

Based on the results in this study, product image size may not be an important determinant for apparel purchase intention. Because the small size image manipulated in this study may be clear and large enough to inspect the garments, intention to purchase apparel was similar across the websites presenting either small size images or large size images. Visual product presentations with both large and small size images may enable people to perform similar level of visual inspection to check the fit, texture, and color.
Interaction of product movement and image size on purchase intention

There was an interaction effect for size and movement on purchase intention. People who were exposed to the websites with large size images with product movement exhibited greater purchase intention than other groups who were exposed to the websites with small size images with product movement, the websites with large size images without product movement, or the websites with small size images without product movement.

Several interesting observations can be made by multiple comparisons of four treatment conditions (small images with movement, small images without movement, large images with movement, and large images without movement). Small images with movement influenced purchase intention less than small images without movement. However, when the image size gets larger, the influence on purchase intention may be reversed. When large images were presented with movement, people exhibited greater purchase intention than when large images were presented without movement. That is, when movement is combined with large images rather than small images, it positively influenced purchase intention. However, when a small image moved, it decreased purchase intention. Perhaps, people may not be able to inspect the product well when a small image is rotating. Even though product movement (or rotation in this study) may provide more information, people may have difficulty inspecting garment details in a small image due to rotation speed. When the product rotates on a Y-axis with a certain speed, larger product images may be helpful for catching garment details, compared to smaller product images. Thus, product movement with larger size images may influence
greater purchase intention among other combinations of image size and product movement.

Another interesting observation may come from the comparisons among large images without movement and other combinations. Purchase intent was significantly greater when participants viewed websites with large moving images as compared to large static images. Because this study used a student human model who may not have “perfect” body proportions similar to a professional fit model, the garment fit may not be ideal on some areas of her body and was more obvious, when large image was presented without product movement. This appearance of poor fit could decrease purchase intention in this study.

**Mood and perceived risk**

There was a significant relationship between mood and perceived risk. In this study, people who had a more positive mood were likely to perceive less risk to be associated with shopping from the Internet. When people shop on the Internet, mood may influence perceptions of risk. If people are in a good mood, they may perceive less risk. Positive mood was elicited using different types of product presentation such as image size and product movement.

Following Blackwell et al.’s (2001) notion, mood may be considered as internal information and might explain a reduction in perceived risk. Because this study limited the amount of information presented on the websites, people were unable to engage in external information search. Thus, people may have relied on internal information (mood) rather than external information for making a judgment on shopping from the
Internet. This enabled the researcher to avoid the mediating effect of external information on perceived risk.

The relationship between mood and perceived risk in this study also is consistent with Johnson and Tversky (1983) and Gorn et al. (1993) who found that positive moods functioned to reduce perceptions of risk. If shoppers feel good, they may evaluate the shopping environment and the product more favorably.

**Mood and apparel purchase intention**

Results revealed a significant positive relationship between mood and apparel purchase intention. In this study, people who have more positive moods are likely to have greater intention to purchase apparel from the Internet. This suggests that when people are in a good mood, their intention to purchase apparel from the Internet may be greater as compared to when people are not in a good mood.

The results of this study are consistent with the findings of Swinyard (1993) and Bitner (1992), who found that consumers who were in a good mood during shopping were likely to spend more time and money for shopping.

Another possible explanation to this relationship can be provided. Results of testing mediating relationships indicated that perceived risk was mediating in the relationship of mood and purchase intention. People who had a greater positive mood may have lower perceived risk and in turn, have greater purchase intention compared to those who had lower positive mood. It is reasonable to articulate that mood may influence purchase intention directly or indirectly though perceived risk.
Perceived risk and apparel purchase intention

There was a negative relationship between perceived risk and apparel purchase intention. People who perceived less risk in shopping for apparel over the Internet had a greater intention to purchase apparel on the Internet than those who perceived more risk. There is an extensive literature linking perceived risk and purchase intention (Howard & Sheth, 1969; Kim & Lennon, 2000). This research confirmed that relationship in the context of Internet shopping. This also supports the work of Vijayasarathy and Jones (2000) who found that consumer’s perceived risk was an important determinant of intention to shop online. When people perceive less risks in the Internet, their intention to purchase the product online (e.g., shopping from the Internet) may be greater.

Impulsivity and perceived risk

The results revealed no significant relationship between impulsivity and perceived risk. People who were less impulsive perceived similar amounts of risk as compared to those who were more impulsive. This suggests that the degree of impulsivity as a personal trait may not influence perceived risk of shopping on the Internet. This is not consistent with Rook and Fisher (1995), who found that buyers who have higher impulsivity were likely to take more risks than buyers who have lower impulsivity.

In this study, the average score for impulsivity among participants was 8.41, with a range of 4 to 20 (See Table 4-6), which indicates a low level of impulsivity. It may not be appropriate to make comparisons among people who have a lower level of impulsivity. In addition, standard deviations of 2.94 indicates that there is little variation of scores among participants in terms of impulsivity. This means that there may not be a
difference of impulsivity among participants. Thus, another measure of impulsivity might have been more sensitive. Social desirability bias may be a cause of the lower impulsivity scores. Social desirability bias is defined as the tendency of subjects to respond to the personality or self-description statements in a culturally acceptable manner (Crowne & Marlowe, 1960). It seems reasonable to assume that participants in this study gave favorable or socially desirable responses in the impulsivity items whose meaning may be associated with negative connotation in the society (e.g., impulsive, careless). In addition, one item, “easily tempered” was incorrectly worded in the questionnaire. The original item used in Puri (1996) was “easily tempted.” This also may cause lower reliability of the responses.

Conclusions and Implications

For online apparel shoppers, the present study provides evidence of a difference in mood as function of product movement between the websites presenting products in motion versus those presenting products not in motion. The findings showed that people who were exposed to the websites with products in motion exhibited more positive moods such as joy and delight than people who were exposed to the websites with products not in motion. This suggests that product movement may provide a pleasurable experience for shoppers browsing and/or purchasing apparel online. Even though a purchase may not be made on the first visit, shoppers may remember and revisit a website presenting product movement to make a future purchase. Therefore, e-tailers are advised to use product movement to attract shoppers to browse or revisit the site to make a
purchase. In this study, product movement on a website captured attention, may have stimulated interest in a product, and affected purchase intention.

The present study also revealed a main effect for product movement on perceived risk. People who were exposed to websites with products in motion exhibited less perceived risk, compared to people who were exposed to the websites with products not in motion. This suggests that if the site presents product movement or rotation, consumers’ perceptions of risk on shopping from the site may decrease. E-tailers’ use of a new display method may help customers decrease their concern about the uncertainties of online product purchase. Product rotation may create a reality similar enough to that of traditional retail stores to increase purchase intention. Product rotation on the Internet may simulate the experience of trying on clothing for fit in the retail store by allowing in-store shoppers to check all views when wearing the clothing. A website display with rotating clothing may help provide similar information with movement. Thus, product movement may substitute for a fitting experience in the retail setting and clearly provides more information. The product-revolving around its Y-axis may be helpful for shoppers to check details and thus reduce any associated perceived risk of purchasing apparel from the Internet.

The present study also showed an indirect relationship between product movement and perceived risk. It is possible that mood is mediating the relationship between product movement and perceived risk. Greater positive moods induced by product movement may decrease perceived risk. Thus, it may be essential for e-tailers to create positive mood using product movement in order to reduce the amount of perceived risk in the Internet shopping sites. The newness of product presentation using movement
may provide pleasurable experience of Internet shopping and this positive mood may reduce perceived risk.

The present study revealed another main effect for product movement on apparel purchase intention. The results showed that people who were exposed to websites with products in motion had a greater intention to purchase apparel from the Internet, compared to those who were exposed to the websites with products not in motion. According to Then and Delong (1999), the more interesting the visual display, the more interested the consumer may be in purchasing apparel online. In addition, the ability to view various angles of garments may serve as product information and in turn, may generate higher consumer purchase intention. Thus, product movement may generate higher online sales for e-tailers.

It is also possible that product movement may indirectly influence purchase intention. Mood and/or perceived risk may function as a mediator between product movement and purchase intention. Because people feel excitement or pleasure from product movement and perceive less risk, their mood and perceived risk may influence purchase intention. Thus, product movement may play an important role in advancing e-business for apparel. Product movement may contribute to improve Internet shopping environment because it influences not only purchase intention but also mood and/or perceived risk which may be the vital factors in Internet shopping.

However, the present study failed to reveal main effects for product image size on mood, perceived risk, or purchase intention. Size of image may not be a major concern in shopping on the Internet. If the image is clear enough to see the details of a garment, shoppers’ perceived risk and purchase intention may not be affected by size of image.
In addition, there were no interaction effects for image size and product movement on mood and perceived risk. When size and product movement combined together, no effect for image size and movement on mood and perceived risk was found. There was no difference on mood and perceived risk among four different treatment conditions (small image with movement, small image without movement, large image with movement, large image without movement). However, there was an interaction effect for image size and movement on purchase intention. Even though there was no difference regarding mood and perceived risk, purchase intentions for four combinations of image size and movement were different. People who were exposed to larger images with movement had greater purchase intentions, compared to small image with movement, small images without movement or large images without movement. This suggests that it would be advantageous for e-tailers to provide product movement with larger images for product display on their websites. Purchase intention was greater when product movement was combined with a larger size image, as compared to with a smaller size image. When the product is moving or rotating with a certain speed, larger images may provide a better view to inspect the product details better than smaller images.

The findings in this study also provide evidence that there is a relationship between mood and perceived risk. People who have more positive moods are likely to perceive less risk when shopping on the Internet compared to those who have less positive moods. The present study also revealed a positive relationship between mood and apparel purchase intention. As expected when people are in a good mood, their intention to purchase apparel on the Internet is greater. Mood may serve as information that is used to evaluate situations. In an Internet shopping situation, positive moods may
cause shoppers to evaluate the situation positively and in turn, reduce perceived risk. Therefore, it is important for e-tailers to create a pleasurable online shopping environment that will create positive mood. E-tailers may need to investigate pleasurable and favorable elements of website design stimulating a shopper’s mood. Based on the previous literature (Allen, 2000; Bhatnagar, et al., 2000; Lohse & Spiller, 1998; Szymanski & Hise, 2000), better product display, ease of searching for products, a back function that takes shoppers to the last product that shoppers saw, or background music similar to traditional retail settings may improve the Internet shopping environment and possibly generate positive moods. Products should be clearly featured on the screen with accurate color. Then, shoppers may be favorable to the Internet shopping site or the product itself and in turn, their risk perceptions will be reduced and purchase intention may be greater.

It was expected that more impulsive people would perceive less risk compared to people who are less impulsive. However, the results revealed no relationship between impulsivity and perceived risk. There are three possibilities to justify the results. First, impulsivity as a personal trait may not influence perceptions of risk in Internet shopping. Both impulsive shoppers and non-impulsive shoppers may perceive similar degree of risks. This may be due to the higher degree of risks in the Internet shopping environment such as the security of transaction, loss of private information, accuracy of color on the screen, which may not be presented in other in-home shopping methods (e.g., catalog, television). In fact, Vijayasarathy and Jones (2000) found that Internet shopping was perceived to be riskier than catalog shopping. Because the nature of Internet shopping involves a high amount of perceived risk, impulsivity as a personal trait may not be
powerful enough to reduce perceptions of risk. Second, due to social desirability, participants may give favorable responses to those negative items measuring impulsiveness such as “impulsive,” and “careless.” This may explain the low mean score of impulsivity in the data. In addition, one item, “easily-tempered” was misworded in the questionnaire. The correct item was “easily-tempted.” This incorrect item also may influence lower reliability. Finally, another measure of impulsivity might have been more sensitive.

Finally, the present study revealed a negative relationship between perceived risk and apparel purchase intention. When people perceive less risk in Internet shopping, their purchase intention is greater. Internet shopping may be avoided due to uncertainties and negative consequences. If people feel confident about their judgments in shopping on the Internet, they may intend to purchase products. Thus, it is important for e-tailers to make the shopping environment less risky to help shoppers reduce perceived risk and make purchase decisions with confidence. The greater amount of information may be helpful to reduce perceived risk and in turn, to increase purchase intention (Kim & Lennon, 2000). Sufficient information through detailed verbal product information (e.g., zipper, closure, cuff, inseam) and accurate visual information on the screen (e.g., color, clothing from various angles) can be available to reduce perceived risk. In particular, the accuracy of color on screen may be a great concern for apparel products (“New Technologies Enhance Online Apparel Shopping,” 1999). In addition, e-tailers may guarantee the privacy and security of transaction information on the websites which may inhibit shopping from the Internet (Elliot & Fowell, 2000; Moreno & McCormack, 1998; Settle, 2000; Seckler, 1999), so that shoppers may be comfortable with processing their
transactions when they make purchases. To secure private and financial information, e-tailers should not reveal or sell any consumer information (e.g., e-mail address, phone number) for any commercial purposes.

This study is valuable because it examined empirically the effects for product presentation on mood, perceived risk, and purchase intention. The study added valuable empirical findings to the literature on the relationship between product movement and mood, perceived risk, and purchase intention. Because the past literature on movement focused on theory building in psychology, it may be important to test the effect for movement in a real shopping situation. Thus, this study is valuable in the sense that the effect for movement was studied in the Internet shopping context.

This study provides evidence that the innovative-decision process model may be related to the Internet shopping context. Following Rogers’s innovation-decision process model, in the first stage, knowledge, consumers may build their product awareness-knowledge based on products displayed with movement on Internet apparel sites. Product information presented visually through motion display may reduce perceptions of risk in Internet apparel shopping. In the next stage, persuasion, visual information presented on screen with product movement may evoke consumers’ affective states. Visual information provided using a new method (large image with product movement) may influence consumers’ mood positively. Then, consumers’ positive mood may reduce perceptions of risk in shopping on the Internet. In the third stage, decision, consumers who are in a positive mood and/or perceive less risk in apparel shopping from the Internet may have greater intention to purchase apparel on the Internet.
This study also contributes to knowledge about website design for online apparel shopping. Because visual information on the Internet relies on product presentation on screen and does not enable shoppers to physically inspect products, it is important to have more detailed and accurate product presentation available on screen. Products revolving around a Y-axis may simulate a shopping experience at retail stores in terms of trying on garments. Product rotation allows shoppers to see all possible views of a garment. At the same time, website designers should be aware of the download time of images and control the acceptable download time when product movement is presented.

**Limitations**

Although a laboratory experiment has numerous advantages such as uniformity of procedures, manipulation of selected variables, and control of environmental circumstances and other extraneous variables (Touliatos & Compton, 1988), its limitations are as follows in this study: Participants were homogenous in terms of age, they were not real Internet shoppers, and the situation was simulated.

**Limited subject age**

Participants in this study were ages 18 to 30. Although the previous literature supports the appropriateness of subject selection in terms of age, the results of this study may not be generalizable to age groups older than 30. Therefore, this study may only contribute to website development which targets younger consumers. On the other hand, as consumers get older and their vision becomes less clear, larger on-screen images may be even more important.
**Internet shopping experience**

Among participants in this study, only 50 percent had experience shopping for apparel on the Internet which means that about half the participants have not had any experience. There may be a difference between those who already have had some experience purchasing apparel over the Internet and those who have had not in the amount of interest and attention to the experimental task. Previous experience may lead to prejudice about Internet apparel shopping and may influence perceptions and behavior on Internet shopping sites. Those who were satisfied with their previous experience may respond to the experiment more favorably and carefully compared to those who were not satisfied with it.

**Not a real shopping situation**

Because the nature of a lab experiment is highly controlled by the researcher, the real-life quality of natural conditions may be sacrificed (Touliatos & Compton, 1988). In this study, although a scenario describing a potential purchasing situation is given to increase the reality of the experiment, participants may not perceive the task as a real shopping situation. Several factors related to the experimental procedure such as sitting in a computer lab for a limited amount of time and following the instructions given by the researcher may reduce reality in the shopping situation. In addition, motivations to participate in an experiment (e.g., extra credit, drawings) may also decrease reality.

**Limitations of impulsivity scale**

Impulsivity scale should have been tested in the pretest to examine the reliability. However, due to the high reliability found in the previous study by Puri (1996), the pretest for this scale was excluded in this study. This may have lead to lower reliability
in this study and no significant relationship between impulsivity and perceived risk. One item, “easily-tempered” should have been corrected to “easily tempted” when the instrument was prepared for the main study. In addition, because this study employed the Internet shopping context, it would be appropriate to use an impulsivity scale which reflects the shopping context.

**Recommendations for Future Study**

Various elements of website design can be investigated in relation to mood, perceived risk, and purchase intention. This study only focused on product presentation comparing image size and product movement regardless of downloading time. However, in a real situation, as image size gets larger and/or the product moves, downloading time gets longer. Thus, downloading time may influence mood, perceived risk, and purchase intention. In future studies, downloading time can be investigated in addition to image size and product movement.

The amount of information should be clearly defined. Not only quantity of the information, but also importance of information to shoppers may influence perceived risk and purchase intention in Internet shopping. Internet apparel shoppers may often place more weight on particular information such as price, fiber content, and item care and disregard some information such as availability for a gift (e.g., how/whether item is good as gift) when making a purchase decision. Therefore, the importance of information available rather than the number of pieces of information available may influence the amount of perceived risk and purchase intention. In fact, Park and Stoel (2002) found no relationship between the number of pieces of information available and perceived risk.
In relation to perceived risk, time risk may be another possible topic for the future study. Immediate consumption after purchasing product may be expected in purchase decisions. However, delivery from the warehouse may delay immediate consumption activity. Internet shopping may be avoided for this reason. Thus, this should be considered as a risk in Internet shopping. In order to investigate time risk, appropriate measures should be advanced.

Comparisons of demographics, motivations, and risk perceptions among Internet apparel shoppers, television apparel shoppers, catalog apparel shoppers, and retail apparel shoppers can be made. Previous literature has focused on Internet shoppers rather than differences between Internet shoppers and other shopper groups. For example, there may be differences of age, sex, income, education, occupation, and risks perceptions between Internet shoppers and retail shoppers.
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NJ: Lawrence Erlbaum Associates.


APPENDIX A. Pretest sample questionnaire
Dear Participants:

I am a doctoral student of Textiles and Clothing in the department of Consumer and Textile Sciences at the Ohio State University. The purpose of this research is to investigate the characteristics of Internet shopping to gain a better understanding of the Internet shopping phenomenon.

The information you can provide is very important to me. This study is concerned with group data and not with your individual responses. Therefore, all of your responses will remain confidential.

Please, understand that your participation in this research is entirely voluntary; there will be no repercussions for non-participation. You may discontinue participation at any time. I realize your time is at a premium. I greatly appreciate your help and you may expect to take 5 to 10 minutes to participate and respond to the questionnaire. Do not write your name anywhere. After you complete this questionnaire, please return it to me.

Sincerely,
Ji Hye Park, Ph. D Candidate
Dept. of Consumer and Textile Sciences
Ohio State University
(614) 688-4234 (graduate office)
park.321@osu.edu (e-mail)

Sharron J. Lennon, Ph. D
Professor
Dept. of Consumer & Textile Sciences
Ohio State University

Leslie Stoel, Ph. D
Assistant professor
Dept. of Consumer & Textile Sciences
Ohio State University
Image 17.

1. The size of the picture above is small
   The clothing shown in the picture is
   The clothing shown in the picture is
   The clothing shown in the picture is
   The clothing shown in the picture is
   The clothing shown in the picture is
   The clothing shown in the picture is
   The clothing shown in the picture is
   The clothing shown in the picture is
   The clothing shown in the picture is
   The clothing shown in the picture is
   The clothing shown in the picture is

2. Fashionable 1 2 3 4 5 Not fashionable
3. Attractive 1 2 3 4 5 Not attractive
4. Similar to what I wear 1 2 3 4 5 Not similar to what I wear
5. Meaningful 1 2 3 4 5 Not meaningful
6. Important 1 2 3 4 5 Not important
7. Significant 1 2 3 4 5 Not significant
8. Useful 1 2 3 4 5 Not useful
9. Functional 1 2 3 4 5 Not functional
10. Practical 1 2 3 4 5 Not practical

When compared with the garment most representative of that product category, clothing shown in the picture is

11. Typical 1 2 3 4 5 Not typical
12. Different 1 2 3 4 5 Not different
Image 17.

1. The size of the images on the websites you just browsed was small
<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>
   The clothing shown in the picture is
   2. Fashionable | 1 | 2 | 3 | 4 | 5 | Not fashionable |
   3. Attractive  | 1 | 2 | 3 | 4 | 5 | Not attractive   |
   4. Similar to what I wear | 1 | 2 | 3 | 4 | 5 | Not similar to what I wear |
   5. Meaningful | 1 | 2 | 3 | 4 | 5 | Not meaningful   |
   6. Important  | 1 | 2 | 3 | 4 | 5 | Not important    |
   7. Significant | 1 | 2 | 3 | 4 | 5 | Not significant  |
   8. Useful     | 1 | 2 | 3 | 4 | 5 | Not useful       |
   9. Functional | 1 | 2 | 3 | 4 | 5 | Not functional   |
   10. Practical | 1 | 2 | 3 | 4 | 5 | Not practical    |

When compared with the garment most representative of that product category, clothing shown in the picture is

   11. Typical | 1 | 2 | 3 | 4 | 5 | Not typical |
   12. Different | 1 | 2 | 3 | 4 | 5 | Not different |
APPENDIX B. Consent for participation in social and behavioral research
Consent for participation in social and behavioral research

You are invited to participate in a study of Internet apparel shopping. The purpose of the research is to investigate the characteristics of Internet shopping to gain a better understanding of the Internet shopping phenomenon. We hope to learn whether you use Internet shopping for clothing and your plans for use of Internet apparel shopping in the future.

If you decide to participate, the researcher will lead an experimental session focusing on consumer shopping behavior via the Internet. This is estimated to take 10 to 15 minutes.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. The information will be released only in the form of “responses of faculty, staff, and undergraduate students in a midwestern university.”

Your decision whether or not to participate will not prejudice your present or future relations with the Ohio State University. If you decide to participate, you are free to discontinue participation at any time without prejudice. If you have any questions, please call Ji Hye Park at 688-4234 in the department of Consumer & Textile Sciences.

You will be offered a copy of this form to keep.

Sincerely,

Ji Hye Park, Ph. D Candidate  
Dept. of Consumer and Textile Sciences  
Ohio State University  
(614) 688-4234 (graduate office)  
park.321@osu.edu (e-mail)

Sharron J. Lennon, Ph. D  
Professor  
Dept. of Consumer & Textile Sciences  
Ohio State University

Leslie Stoel, Ph. D  
Assistant professor  
Dept. of Consumer & Textile Sciences  
Ohio State University
I consent to participating in research entitled:
“Internet apparel shopping: A theoretical investigation of the effect of product presentation on apparel purchase.”

Sharron Lennon, Leslie Stoel, or Ji Hye Park has explained the purpose of the study, the procedures to be followed, and the expected duration of my participation.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have been answered to my full satisfaction. Furthermore, I understand that I am free to withdraw consent at any time and to discontinue participation in the study without prejudice to me.

Finally, I acknowledge that I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: ________________________   Signed: ________________________

(Participant)
APPENDIX C. Experiment sample questionnaire
Dear Participants:

I am a doctoral student of Textiles and Clothing in the department of Consumer and Textile Sciences at the Ohio State University. The purpose of this research is to investigate the characteristics of Internet shopping to gain a better understanding of the Internet shopping phenomenon.

The information you can provide is very important to me. This study is concerned with group data and not with your individual responses. Therefore, all of your responses will remain confidential.

Please, understand that your participation in this research is entirely voluntary; there will be no repercussions for non-participation. You may discontinue participation at any time. I realize your time is at a premium. I greatly appreciate your help and you may expect to take 10 to 15 minutes to participate and respond to the questionnaire. Do not write your name anywhere. After you complete this questionnaire, please return it to me.

Sincerely,
Ji Hye Park, Ph. D Candidate
Dept. of Consumer and Textile Sciences
Ohio State University
(614) 688-4234 (graduate office)
park.321@osu.edu (e-mail)

Sharron J. Lennon, Ph. D
Professor
Dept. of Consumer & Textile Sciences
Ohio State University

Leslie Stoel, Ph. D
Assistant professor
Dept. of Consumer & Textile Sciences
Ohio State University
Section 1. In this section, I would like you to tell me how you feel now. Circle the number of your response using the following system.

<table>
<thead>
<tr>
<th>Feeling</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discouraged</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Happy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Delighted</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Downhearted</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Joyful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Section 2. Please, fill in the blank or check the response which best answers the questions that follow.

7. Have you ever purchased anything from the Internet?
   Yes _____ No _____

   7-a. If yes, please, list the products that you have purchased from the Internet.
   _____________________________________________________________

8. Have you ever purchased CLOTHING from the Internet?
   Yes _____ No _____

   8-a. If yes, please, circle what clothing you have purchased from the Internet
   Baby’s clothing
   Children’s clothing
   Women’s wear
   Men’s wear

   8-b. Rounding off to the nearest dollar, how much have you spent on clothing via the Internet in the last six months?
<table>
<thead>
<tr>
<th>None</th>
<th>$76 - $100</th>
<th>$301 - $400</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1 - $25</td>
<td>$101 - $150</td>
<td>$401 - $500</td>
</tr>
<tr>
<td>$26 - $50</td>
<td>$151 - $200</td>
<td>$501 - $1000</td>
</tr>
<tr>
<td>$51 - $75</td>
<td>$201 - $300</td>
<td>More than $1000</td>
</tr>
</tbody>
</table>

171
8-c. How many apparel items have you bought on the Internet in the last six months?
  _____ None
  _____ One item
  _____ 2-4 items
  _____ 5-7 items
  _____ 8-10 items
  _____ More than 10 items

9. Have you ever purchased clothing from the Internet even though you did not originally plan to when you started browsing?
   Yes _____   No _____

Section 3. Please, read the scenario carefully.

Imagine yourself in the following situation.

One morning, when you opened the closet, you found that you needed a pair of pants. You decided to spend around fifty dollars to purchase a pair of pants. However, you found that you did not have enough time to travel to the mall because of upcoming midterms. So, you decided to buy some pants from the Internet. Now, turn on the computer and visit some apparel shopping sites. Here are two websites for you to visit.

***************************************************************************
You will spend 1 minute browsing each website.
Please, do not move on to the next page until you browse the two websites.
***************************************************************************
Section 4. In this section, I would like you to tell me how you feel after seeing the clothing items. I am interested in your reactions to the clothing items, not how you would describe the items. Please tell me how strongly you felt each of these feelings while you were browsing the websites. Circle the number of your response using the following system.

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Very Slightly</th>
<th>Very Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discouraged</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Happy</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Sad</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Delighted</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Downhearted</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Joyful</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Section 5. Please, circle the response which best answers the questions that follow.

The product presentation shown on the websites was

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad</td>
<td>1 2 3 4 5 Good</td>
<td></td>
</tr>
<tr>
<td>Unfavorable</td>
<td>1 2 3 4 5 Favorable</td>
<td></td>
</tr>
<tr>
<td>Disagreeable</td>
<td>1 2 3 4 5 Agreeable</td>
<td></td>
</tr>
<tr>
<td>Unpleasant</td>
<td>1 2 3 4 5 Pleasant</td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>1 2 3 4 5 Positive</td>
<td></td>
</tr>
<tr>
<td>Dislike</td>
<td>1 2 3 4 5 Like</td>
<td></td>
</tr>
</tbody>
</table>

22. Active
23. Dynamic
24. Static
25. Passive

26. The size of the images on the websites you just browsed was small

27. The websites you just browsed contained much information
**The pants shown in the picture are**

28. Fashionable 1 2 3 4 5 Not fashionable
29. Attractive 1 2 3 4 5 Not attractive
30. Similar to what I wear 1 2 3 4 5 Not similar to what I wear
31. Meaningful 1 2 3 4 5 Not meaningful
32. Important 1 2 3 4 5 Not important
33. Significant 1 2 3 4 5 Not significant
34. Useful 1 2 3 4 5 Not useful
35. Functional 1 2 3 4 5 Not functional
36. Practical 1 2 3 4 5 Not practical

*When compared with the garment most representative of that product category, clothing shown in the picture is*

37. Typical 1 2 3 4 5 Not typical
38. Different 1 2 3 4 5 Not different

---

**Section 6. In this section, you will be asked about your clothing shopping behavior on the Internet. Please, circle the number of your response using the following system.**

*Buying a pair of pants from the websites that you saw today is risky because*

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>39. The color may not be what you thought it would be.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>40. The size may not fit you.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>41. There may be something wrong with the apparel purchased (e.g., broken button, damaged fabric).</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>42. You may want to return it.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>43. You may want to exchange it for another item.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>44. You may not like it.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>45.</td>
<td>It may not look good on you.</td>
</tr>
<tr>
<td>46.</td>
<td>Your friends may think you look funny when you wear it.</td>
</tr>
<tr>
<td>47.</td>
<td>You may not be able to match it with your current clothing.</td>
</tr>
<tr>
<td>48.</td>
<td>You may not feel comfortable wearing it in public.</td>
</tr>
<tr>
<td>49.</td>
<td>You may have to pay for an alteration (i.e., lengthen or shorten the hem)</td>
</tr>
<tr>
<td>50.</td>
<td>It may be harmful to your health (chemical agent-allergic reaction).</td>
</tr>
<tr>
<td>51.</td>
<td>You may feel that you just threw away a lot of money.</td>
</tr>
<tr>
<td>52.</td>
<td>You may feel that you just wasted time shopping via the internet.</td>
</tr>
<tr>
<td>53.</td>
<td>You may not feel comfortable giving your credit card number when you order.</td>
</tr>
<tr>
<td>54.</td>
<td>The construction quality may be poor (e.g., poorly done stitches).</td>
</tr>
<tr>
<td>55.</td>
<td>It may not be durable when cleaned (e.g., color changes, shape change)</td>
</tr>
<tr>
<td>56.</td>
<td>You may not wear the item.</td>
</tr>
<tr>
<td>57.</td>
<td>You may find the very same item at the store with a lower price.</td>
</tr>
<tr>
<td>58.</td>
<td>You may have a hard time trying to return or exchange the item.</td>
</tr>
<tr>
<td>59.</td>
<td>If you return the item, you may not be able to get a full refund.</td>
</tr>
<tr>
<td>60.</td>
<td>You may lose money if you purchase this apparel item (e.g., because it costs more than it should to keep it in good shape, because you will not be able to wear after one season.)</td>
</tr>
<tr>
<td>61.</td>
<td>There may be something wrong with this apparel, or it may not function properly (e.g., a raincoat will not be waterproof).</td>
</tr>
<tr>
<td>62.</td>
<td>It may affect the way others think of you.</td>
</tr>
<tr>
<td>63.</td>
<td>It may be a risky purchase.</td>
</tr>
</tbody>
</table>
64. How likely is it that you would try the clothing from the websites that you saw today?  
   - Very unlikely (1)  - Somewhat unlikely (2)  - Sometimes likely (3)  - Somewhat likely (4)  - Very likely (5)

65. How likely is it that you would buy clothing items if you happened to see them from the websites that you saw today?  
   - Very unlikely (1)  - Somewhat unlikely (2)  - Sometimes likely (3)  - Somewhat likely (4)  - Very likely (5)

66. How likely is it that you would actively seek out clothing items from the websites that you saw today in order to purchase them?  
   - Very unlikely (1)  - Somewhat unlikely (2)  - Sometimes likely (3)  - Somewhat likely (4)  - Very likely (5)

67. How likely is it that you would buy the apparel item from the websites that you saw today in the next 12 months?  
   - Very unlikely (1)  - Somewhat unlikely (2)  - Sometimes likely (3)  - Somewhat likely (4)  - Very likely (5)

68. How likely is it that you would shop for apparel from the websites that you saw today when you buy apparel in the upcoming year?  
   - Very unlikely (1)  - Somewhat unlikely (2)  - Sometimes likely (3)  - Somewhat likely (4)  - Very likely (5)

69. How likely is it that you would buy apparel from the websites that you saw today when you find something you like?  
   - Very unlikely (1)  - Somewhat unlikely (2)  - Sometimes likely (3)  - Somewhat likely (4)  - Very likely (5)

70. How likely is it that you would buy an apparel item from the websites that you saw today for yourself in the upcoming year?  
   - Very unlikely (1)  - Somewhat unlikely (2)  - Sometimes likely (3)  - Somewhat likely (4)  - Very likely (5)

---

**Section 7.** Read each of the following adjectives carefully and indicate how well they would describe you. Please, circle the number on the scale next to the adjective.

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<tr>
<th>Adjective</th>
<th>Usually would describe</th>
<th>Sometimes would describe</th>
<th>Seldom would describe</th>
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</thead>
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<td>71. Impulsive</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>72. Careless</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>73. Self-controlled</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>74. Extravagant</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75. Farsighted</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>76. Responsible</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>77. Restrained</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>78. Easily tempered</td>
<td>1 2 3 4 5</td>
<td></td>
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</tr>
<tr>
<td>79. Rational</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80. Methodical</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>81. Enjoy spending</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A planner

83. List and describe what you saw on the websites.
   1) __________________________________
   2) __________________________________
   3) __________________________________
   4) __________________________________
   5) __________________________________
   6) __________________________________
   7) __________________________________
   8) __________________________________
   9) __________________________________
  10) __________________________________

Section 8. Please, fill in the blank or check the response which best answers the questions that follow.

83. Age ______
84. Sex _____ Female      _____ Male
85. Ethnic background
   ____ African American
   ____ Caucasian American
   ____ Hispanic/ Hispanic American
   ____ Native American
   ____ Asian/ Asian American
   ____ other
86. Major _________________________________
87. I shop for clothing on the Internet because

88. I would buy more clothing on the Internet, if
APPENDIX D.  Sample manipulated websites
Small size image without product movement
Large size image without product movement
APPENDIX E. Eta^2 Test
Percentage of variance accounted for by the independent variable on dependent variable were tested for significance using a formula developed by Pedhazur (1997).

\[
F = \frac{R^2/k}{(1-R^2)/(N-k-1)}
\]

(With k and N-k-1 are df, where k = number of independent variables; N = sample size)
Appendix F. Garment style ratings
<table>
<thead>
<tr>
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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
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<td>3.02</td>
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Garment style ratings for nine pairs of blue jeans
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<th></th>
<th>J</th>
<th>K</th>
<th>L</th>
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<td>3.03</td>
<td>3.08</td>
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<td>2.78</td>
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Garment style ratings for nine pairs of khaki pants
APPENDIX E. Factor analysis for impulsivity scale
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Factor analysis for impulsiveness scale
APPENDIX H. Institutional review board information

The protocol for this study was reviewed on May 6, 2002 and deemed to be exempt from full committee review. The protocol number is #02E0175.
TITLE PAGE - APPLICATION FOR EXEMPTION
FROM REVIEW BY THE INSTITUTIONAL REVIEW BOARD
The Ohio State University, Columbus OH 43210

Principal Investigator
Name: Sharron J. Lennon
Phone: 202-4384
E-mail: lennon.2@osu.edu
Signature: Sharron J. Lennon
Date: 5/6/02

Co-Investigator
Name: Leslie Stoel
Phone: 888-8594
E-mail: stoel.1@osu.edu
Signature: Leslie Stoel
Date: 5/6/02

Co-Investigator
Name: Ji Hye Park
Phone: 888-4234
E-mail: park.321@osu.edu
Signature: Ji Hye Park
Date: 5/6/02

Protocol Title
Internet apparel shopping: A theoretical investigation of the effect of product presentation on apparel purchase

Source of Funding
Department

For Office Use Only

Approved. Research has been determined to be exempt under these categories:

Disapproved. The proposed research does not fall within the categories of exemption. Submit an application to the appropriate Institutional Review Board for review.

Date of determination: 5/6/02
Signature: Office of Research Risk Protection

Protocol Number: 02EO175