

**Exploring consumers' fit perceptions and satisfaction with apparel fit in general**

by

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A thesis submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of  
MASTER OF SCIENCE

Major: Apparel, Merchandising, and Design

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2013

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## **ACKNOWLEDGEMENTS**

First and foremost, I would like to take this opportunity to thank God for giving me wisdom and for being my strength and guide in writing of this thesis.

I would like to express my deepest and sincere gratitude to my advisor, Dr. Damhorst, for her constant and invaluable guidance during my master's program. I also want to express my appreciation for her insightful advice and her devotion of time and energy for my thesis on my thesis.

I would also like to thank my committee members, Dr. Lee and Dr. Lorenz, for their helpful suggestions and encouragement to improve my thesis.

In addition, I would also like to thank the Korea Textile Development Institute and the department of Apparel, Events, and Hospitality Managements at Iowa State University for their financial support through scholarships and assistantships during my master's program.

Finally, thanks to my parents for their encouragement and prayers and to my fiancé for his hours of patience, respect and love.

## **ABSTRACT**

The purposes of this study were: (1) to develop an understanding of young consumers' overall apparel fit satisfaction, (2) to explore the meaning of garment fit in general from the consumer perspective, and (3) to qualitatively investigate the factors that may affect clothing fit satisfaction when consumers evaluate their apparel fit.

Five research objectives for this study were established: (1) assess young consumers' overall satisfactions with apparel fit in general, (2) assess young consumers' perceptions of apparel fit in general, (3) identify possible factors that young consumers consider in determining whether they are dissatisfied/satisfied with fit, (4) identify the consequences of dissatisfaction with apparel fit, and (5) identify gender differences in consumers' perceptions and satisfaction regarding apparel fit.

This study used a qualitative-dominant mixed methods design, which consisted mainly of the qualitative, focus group phase with a limited collection of quantitative data prior to the group interviews. For both quantitative and qualitative phases, a convenience sample of 94 potential volunteers were recruited; 66 of the undergraduate students (70 percent) participated in a survey and focus group interview.

In the quantitative phase, a paper-based survey was used to measure overall satisfaction with fit in general; it consisted of four items borrowed from earlier consumer satisfaction studies, including questions about participants' personal background (i.e., gender, age, ethnic background, status of international student, class standing, and academic major). The results revealed that young female and male consumers were somewhat satisfied with fit in general (research objective 1).

In the qualitative phase, focus group interviews were used to explore possible dimensions of consumers' perception of fit and to gain a deeper understanding of consumers' experience and thoughts regarding apparel fit. For consumers' perception of fit, five themes were identified: physical fit, aesthetic fit, functional fit, social context, and social comfort. Physical fit, aesthetic fit, and functional fit were shaped in separate or overlapping ways depending on social context. Social comfort was achieved when three-dimensional fit played a successful role in social context (research objective 2). Other possible factors found to affect fit satisfaction were inconsistent size, fit alteration, price, physical comfort related to fit, and psychological comfort related to fit (research objective 3). Consequences of ill-fitting clothing were a decision not to buy the item, to find an alternative item, or to consider other possibilities to fit the items (research objective 4).

In the mixed phase, both quantitative and qualitative data were analyzed to compare the difference between young female and male consumers' fit perceptions, attitudes, and overall fit satisfaction in general. The results showed no gender differences in overall fit satisfaction; however, fit perceptions between male and female participants was different in detail, in terms of the degree of concern with physical, aesthetic, and functional fit and the examples of social situations in which they cared about fit (research objective 5).

## CHAPTER 1. INTRODUCTION

Clothing fit has been shown to be the most important element for consumers in determining their overall satisfaction with garments (Pisut & Connell, 2006; Yu, 2004). Previous researchers have noted that consumers' dissatisfaction with apparel fit is influenced by the unavailability of certain size categories that are not offered by manufacturers (Brown, 1992; LaBat & DeLong, 1990; Workman, 1991). Although consumers' dissatisfaction with fit has a negative impact on purchasing decisions (Alexander, Connell, & Presley, 2005; Anderson et al., 2001; Crane, 2004; Gardyn, 2003; Giovis, 2007), meeting the needs of every person in terms of fit preference is difficult for apparel companies because ready-to-wear clothes are made for consumers with normatively proportioned bodies. As a reflection of this difficulty, the NPD Group (2010) found that 62% of women could not find clothing that fit well, and 57% of women did not fit into today's standard sizes. Thus, the difficulty of finding a good fit frequently reduces satisfaction with garments among consumers because very few consumers are built like the normative body form (Alexander et al., 2005). In addition, the NPD Group (2010) reported that inconsistency of fit within brands was one of the more significant complaints by women shoppers.

Fit problems, which often cause consumers to return apparel they have purchased (Anderson et al., 2000) or avoid purchasing apparel after trying it on in the store, have continuously arisen due to an incongruent relationship between the garment and the human body (Huckabay, 1992). Ill-fitting garments make consumers feel uncomfortable and may inspire negative thoughts about their bodies and appearance (Kinley, 2010;

Rasband & Liechty, 2006). Conversely, well-fitting garments give consumers positive outcomes, such as higher confidence, enhanced self-esteem, and improvement of psychological and social well-being (Alexander et al., 2005; Anderson et al., 2000).

Because clothing fit is strongly connected to consumers' mental states, which in turn influence apparel shopping behavior, consumers' satisfaction with clothing fit has been extensively studied by many researchers in the textiles and clothing area over the past three decades. Most of the studies have focused on female consumer demographics, such as age, weight, height, and body type (Alexander et al., 2005; Feather et al., 1997; Frost, 1988; Goldsberry et al., 1996; Hogge & Baer, 1986; Huck et al., 1997; Jones & Giddings, 2009; Klerk & Tselepis, 2007; Shim & Bickle, 1993) and psychographics, such as fit preference and concerns with fit and size of garments (Alexander et al., 2005; Brown, 1992; Kim & Damhorst, 2010).

Because fit is a primary evaluation attribute of clothing (LaBat & DeLong, 1990; Eckman, Damhorst, & Kadolph, 1990) and a primary factor of comfort in clothing (Frost, 1988; Sontag, 1985), many researchers in the textiles and clothing area have tried to fully understand the concept of clothing fit, which is affected by fashion, culture, industrial norms and individual perceptions of fit (Yu, 2004). Fit is broadly defined as consideration of the general relationship of clothing to the body in terms of size and contour (Chen, 2007; Rasband & Liechty, 2006). According to Le Pechoux and Ghosh (2002), clothing fit is determined by visual evaluation and perceptions of pressure on the body of the wearer as well as (in some cases) by visual evaluation of an external assessor (Le Pechoux & Ghosh, 2002). For example, a wearer judges the fit of a garment based

on both visual and tactile information but may also receive and pay attention to comments about fit from another individual (Ashdown & DeLong, 1995).

### **Purpose**

The principle aim of this study was to enhance understanding of consumer satisfaction with apparel fit in general (i.e., the perception of clothing fit in general which is achievable when purchasing apparel in the marketplace). The general perceptions of clothing fit satisfaction may be affected by multi-dimensional factors, all of which come into play when consumers evaluate whether or not garment fit meets their expectations during and after purchasing garments. This study sought to refine the concept of apparel fit and satisfaction with fit in general as laid out in existing studies, to qualitatively investigate consumers' perceptions of apparel fit and the factors that may affect fit satisfaction, and to develop an understanding of consumers' overall satisfaction with fit.

Frost (1988) defined consumer satisfaction with clothing fit as a combination of the consumer's physical comfort, psychological comfort, and overall appearance. The term "satisfaction with clothing fit" has been used to refer to the degree to which consumers were satisfied with the fit of specific garments on specific parts of their bodies, such as thigh, hip, waist, and bust/chest (LaBat & DeLong, 1990). Many researchers have concentrated on female consumers' demographic characteristics such as age (e.g., older vs. younger) (Alexander et al., 2005; Goldsberry et al., 1996; Hogge & Baer, 1986; Klerk & Tselepis, 2007; Shim & Bickle, 1993) and body size (e.g., petite, tall, or plus-sized) (Jones & Giddings, 2009), or have examined satisfaction with the fit of specific garment categories (e.g., pants, jacket, or blouse) (Feather et al., 1997; Frost,

1988; Huck et al., 1997). Because clothing is an extension of the body that often reflects one's body image (Kaiser, 1985), numerous studies have concentrated on apparel fit in relation to body image. However, limited information on consumers' satisfaction with apparel fit in general has made it difficult to fully understand why consumers are or are not dissatisfied with apparel fit. Therefore, there is a need to explore the experience that consumers have in relation to fit when shopping for clothing, what factors they consider when evaluating fit, and what factors make them satisfied or dissatisfied.

Due to the lack of a valid scale by which to measure overall apparel fit satisfaction in general, most researchers have relied on post-purchase experience measurements of consumers' satisfaction with garments and apparel shopping. Although overall satisfaction with fit of garments is important in understanding the apparel purchase process, a reliable and consistent scale of apparel fit satisfaction has not been developed to date. Therefore, it is necessary to define a scale which measures individuals' overall satisfaction with apparel fit across their experience with clothing purchases and acquisitions.

In addition, although clothing fit may consist of functional, expressive, and aesthetic aspects (Lamb & Kallal, 1992), none of the abovementioned researchers have focused on understanding consumers' fit satisfaction with garments in general across multiple dimensions. Thus, the purpose of this study is (1) to develop an understanding of consumers' overall apparel fit satisfaction, (2) to explore the meaning of garment fit in general from the consumer perspective, and (3) to qualitatively investigate the factors that may affect clothing fit satisfaction when consumers evaluate their apparel fit.

This study provides theoretical contributions to consumer behavior research by



conceptualizing consumers' definition of apparel fit and by finding the dimensions of key drivers of apparel fit satisfaction in general. Ultimately, a scale of overall apparel fit satisfaction could be useful in the examination of both antecedents and consequences of apparel shopping. This study provides retailers and apparel marketers with information about what concerns consumers have and what factors they consider with regards to fit when they evaluate apparel; this information could help apparel producers and retailers maximize consumer satisfaction with apparel fit, while consumers benefit by having access to improved fit-related information. Also, the data could be helpful in building a quantitative survey for future research.

## **CHAPTER 2. LITERATURE REVIEW**

### **Overview**

This chapter reviews the conceptual foundations of apparel fit and satisfaction with apparel fit to refine the concept of fit and satisfaction with fit. The chapter begins by introducing the concept of apparel fit in general, then compares in detail designers,' researchers,' and consumers' concepts of apparel fit. Second, the concept of comfort is introduced and distinguished from fit. Third, existing research on satisfaction with apparel fit in the clothing and textile industry is presented, and overall satisfaction with apparel fit in general is defined by incorporating consumer satisfaction/dissatisfaction theory. Lastly, the chapter concludes with a summary and statement of the research questions.

### **The Concept of Apparel Fit**

Apparel fit has long been of interest in clothing research because it is considered a crucial element of clothing quality and customer satisfaction (Song & Ashdown, 2010). Due to the various characteristics of apparel, many researchers have defined apparel fit in multiple dimensions (Brand, 1964; Brown & Rice, 2001; Eckman et al., 1990; LaBat, 1987; Laing & Sleivert, 2002; Outling, 2007). LaBat (1987) broadly defined clothing fit as the relationship of clothing to the body, combining the visual analysis of fit and the physical evaluation of comfort. Frost (1988) noted apparel fit that contains “visual as well as physical satisfaction of the garments and it’s function on the body” (p. 2). Brown and Rice (2001) defined fit as “how well the garment conforms to the three-dimensional

human body” (p. 153). A few studies have defined two dimensions of apparel fit: aesthetic fit, which relates to the appearance of the garment in relation to the body, and functional fit, which relates to the comfort and performance of the garment due to the fit (Brand, 1964; Eckman et al., 1990; Outling, 2007).

“Good fit” has also been defined diversely, depending on fashion trends, standardized sizes in the fashion industry and individuals’ perceptions of fit (Fan, Yu & Hunter, 2004), because clothing fit is a complex property affected by fashion, style, and many other factors (Efrat, 1982). Although a well-fitted garment is difficult to define because of factors that affect individual preference (Song & Ashdown, 2010), many researchers have focused on fit, viewing it from various designer-mediated perspectives (Ashdown, Loker, Schoenfelder, & Lyman-Clarke, 2004; Ashdown & O’Connell, 2006; Frost 1988; Loker, Ashdown, & Schoenfelder, 2005). A few researchers have focused on fit from the consumer perspective (Alexander, Connell, & Presley, 2005; Anderson et al., 2000; Chattaraman & Rudd, 2006; Pisut & Connell, 2007; Plutt, 2011). Therefore, this paper presents two perspectives: designer-mediated and consumer.

### **Apparel Fit from Designer-Mediated Perspectives: Fit Test and Analysis**

Fit can be measured by a set of criteria know as a standard of fit (Ledbetter & Lansing, 1981; Leichty, Pottberg, & Rasban, 1986). When fit is evaluated in the traditional manner by using fit models, judges who have worked as technical designers in the apparel industry assess the fit of garments by observing them on a live model (Ashdown & O’Connell, 2006; Kadolph, 1998) or by using three-dimensional scan fit analysis (Ashdown et al., 2004; Bye & McKinney, 2010; Loker et al., 2005). During the

test, the judges ask the model to walk, sit, and go through a normal range of body motions while wearing the garment (Ashdown et al., 2004). The judges use a standard of fit, which is defined as a set of physical characteristics of a fitted garment (Frost, 1988), to evaluate whether the garment looks good on the body in terms of line, balance, and grain of the fabric.

Certain elements of a garment are crucial to determining the fit of clothing (Erwin & Kinchen, 1974; Song & Ashdown, 2010). Erwin and Kinchen (1974) identified five criteria: ease, line, grain, balance, and set. *Ease* is defined as the amount of space between the garment and the body: a tight-fitting garment has less ease, while a loose-fitting garment has more ease (Branson & Nam, 2007; Erwin & Kinchen, 1974). Erwin and Kinchen (1974) also noted two different types of ease -- functional ease and design ease. Functional ease refers to the amount of fabric that allows for body movement, and design ease is defined as the amount of fabric needed to demonstrate the design of the garment (Erwin & Kinchen, 1974). *Line* is associated with the seams of a garment. Vertical seams should be vertical to the floor and parallel to the center of the body (Erwin & Kinchen, 1974). *Grain* refers to the relationship between fabric, pattern, and wearer; the grain of the fabric when the garment is worn should be either parallel to or perpendicular to the floor, or at a 45-degree angle if cut on the bias (Erwin & Kinchen, 1974). *Balance*, for a symmetrical garment, means having the same distance from the right and left sides of the body to the center (Erwin & Kinchen, 1974). *Set* indicates the smoothness of the fabric on the body, with an absence of wrinkling and pulling of the garment (Erwin & Kinchen, 1974).

Recently, Ashdown et al. (2004) developed a method of visual fit assessment

using a three-dimensional (3D) scanner. Ashdown and Loker (2010) showed that a 3D body scanner could capture three-dimensional images of participants that could be used for visual analysis of some aspects of fit, thus contributing to the fit assessment process. Numerous studies have compared the results of live model fit analysis and 3D scan analysis (Ashdown & Loker, 2010). Because 3D body scanning is more cost effective, less time consuming, and more accurate in measuring the body of the scanned person than purely visual methods, researchers have tended to use it to perform measurements or automated analyses of the body surface (Ashdown et al., 2004; Ashdown & Loker, 2005; Ashdown & Loker, 2010; Ashdown, Loker, & Rucker, 2006). However, several studies reported flaws in the 3D scan, including missing areas, trouble dealing with body posture and movement, inaccurate surface texture and inaccurate measurements (Zhang, Zhang, & Xiao, 2010).

In addition to external observers, wearers can also be used to analyze fit. Huck et al. (1997) proposed a wearer acceptability scale to evaluate how wearers felt and how they perceived the fit and comfort of their clothing after completing exercises (e.g., standing erect, kneeling, etc.). The scale consists of thirteen pairs of adjectives that measure a garment wearer's acceptance of fit using a 9-point scale. The scale measures ease of movement in three different body parts (arms, legs, and torso), feelings while wearing clothing (e.g., comfortable, acceptable, tired), usability (e.g., easy to put on and move in), attitude (e.g., like/dislike), amount of fit (e.g., loose/tight, crotch too far from body), satisfaction with fit, and fabric properties (e.g., flexible/stiff).

Other studies have used both a wearer/user and an external assessor to analyze fit: the wearer/user offers feedback on how the garment feels and functions while the

professional observer (e.g., designer or researcher) examines how the garment looks to others (Ashdown, 2000; Ashdown & Loker, 2010; Laing & Sleivert, 2002). The wearer/user examines visual appeal and perceptions of pressure on his or her body (i.e., comfort and ease of movement) (Ashdown & Loker, 2010). The external assessor judges static fit (i.e., the relationship between garment size and body size), dynamic fit (i.e., whether a garment allows the wearer to perform common tasks without interference or resistance), and product styling/design ease (Laing & Sleivert, 2002).

Similarly, other researchers have stated that well fitted apparel needs to conform to the human body (Brown & Rice, 2001), to move easily with enough room (Fan et al, 2004; Shen & Huck, 1993), and to fit without wrinkles (Fan et al, 2004; Shen & Huck, 1993). Song and Ashdown (2010) also noted that well fitted clothing should have three features: wearing ease (to allow for body movement), design ease (to create a desired visual effect, silhouette, and style), and no undesirable wrinkles (Song & Ashdown, 2010).

### **Apparel Fit from Consumers' Perspectives: Fit Preference and Concerns with Fit and Size of Garments**

For consumers, size/fit and comfort of apparel are the two most important evaluative criteria when purchasing ready-to-wear (Eckman, Damhorst, & Kadolph, 1990; Hsu & Burns, 2002). According to Frost (1988), consumers perceive clothing fit from two perspectives: (1) the visual, when looking in a mirror or looking down at themselves, and (2) the tactile, when feeling the clothing as they wear it. LaBat (1987) stated that consumers' perceptions of fit of ready-to-wear clothing could be examined

from two points of view -- nominal and operational. Nominal fit is the degree to which the clothing differs from the body. Operational fit is evaluated by using standards and concepts of fit.

Operational fit has not been examined by researchers, while nominal fit has been extensively used in studies of fit preferences to shed light on consumers' subjectively preferred fit in terms of both the degree of difference between clothing and body and consumers' objective physical body dimensions and shape (Alexander, Connell, & Presley, 2005; Anderson et al., 2000; Pisut & Connell, 2007; Plutt, 2011). Fit preference is individually defined by each consumer as to how they want a particular garment to conform to the shape of their bodies (Manual, Connell, & Presley, 2012).

Two different scales have been developed to measure consumers' preferred fit: (1) a "fit preference" scale (Anderson et al., 2000) and (2) an "aesthetic attribute preference scale" (Chattaraman & Rudd, 2006). Most studies have used the fit preference scale, which measures consumers' preferred fit using line drawings representing six separate garment categories (jackets, skirts, dresses, tops, jeans, and pants) and three different fits (fitted, semi-fitted, or loosely fitted) (Alexander, Connell, & Presley, 2005; Anderson et al., 2000). The aesthetic attribute preference scale, by contrast, contains two illustrations (the top half of a woman's body and the lower half of a woman's body) with a seven-point semantic differential scale at seven preference measurement sites (top length, top silhouette, sleeve length, neckline, bottom length, bottom silhouette, and waist) (Chattaraman & Rudd, 2006). Only one researcher has used this scale, in a published study that measured plus-sized women's clothing fit preference (Plutt, 2011). Previous studies on fit preference have reported that consumers'

fit preference is affected by many factors, such as body image, body cathexis, and personal comfort preference (LaBat, 1987; Pisut & Connell, 2007); social message (LaBat, 1987); aesthetics (Pisut & Connell, 2007); and current fashion trends, age, gender, body shape, and lifestyle (Brown & Rice, 1992).

**Concerns with fit and size of garments.** Concerns with fit and size of garments, as initially introduced by Kim (2008), are defined as “the subjectively determined expectation and amount of risk perceived by a shopper in relation to the fit and size of the garment in contemplating a particular purchase decision” (Kim, 2008). Using focus group interviews, Kim (2008) developed a scale of garment fit and size concerns in multiple distinct but interrelated dimensions in the contexts of offline shopping (concerns with body image and overall appearance, concerns with product performance, concerns with unavailability of size, concerns with projecting a correct impression, and concerns with uncertainty about the sizing system) and online shopping (concerns with overall appearance, concerns with unavailability of size, concerns with projecting a correct impression, concerns with inability to try on in online shopping, and concerns with imagining fit/size in online shopping) (Kim, 2008). Kim and Damhorst (2010) further investigated the relationships between body dissatisfaction, concerns with fit and size of garments, enduring and situational apparel involvement, and purchase intentions in an online shopping context (Kim & Damhorst, 2010). The results of their study indicated a positive relationship between body dissatisfaction and all five dimensions of concern with fit and size of garments, meaning that consumers with higher body dissatisfaction are likely to have higher concerns with fit and size of garment in an online shopping context (Kim & Damhorst, 2010). However, only two dimensions of concern with fit and



size of garments (concerns with overall appearance and concerns with imagining fit/size) were negatively related to enduring apparel involvement and purchase intentions in online shopping (Kim & Damhorst, 2010).

### **Comfort and Fit of Clothing**

With respect to clothing, Sontag (1985) examined physical comfort, psychological comfort, and overall appearance for four different types of garments (ideal insulated clothing, thermal underwear, undershirt/mid-length brief, and tights) among women aged 60 to 80. She found that the concept of comfort consists of three dimensions: (1) physical, (2) psychological, and (3) social. *Physical comfort* is “a mental state of physical well-being expressive of satisfaction with physical attributes of a garment such as air, moisture, [and] heat transfer properties, and mechanical properties such as elasticity, flexibility, bulk, weight, texture, and construction” (Sontag, 1985, p.10). *Psychological comfort* is “a mental state of psychological well-being expressive of satisfaction with desired affective states such as femininity, sophistication, or having fun” (Sontag, 1985, p.10). *Social comfort* is “a mental state of social well-being expressive of the appropriateness of one’s clothing to the occasion of wear, satisfaction with the impression made on others or with the degree of desired conformity of dress to that of one’s peers” (Sontag, 1985, p.10).

Similar to Sontag’s study, Branson and Sweeney (1991) proposed a model for clothing comfort with two dimensions -- physical and social-psychological (Branson & Sweeney, 1991). They noted that the physical dimension variables in the study were either measurable, such as core and skin temperature, or could be enumerated in terms of

sex, age, weight, height, physical condition (Branson & Sweeney, 1991). The social-psychological dimension variables are less obvious and include personal attributes and background characteristics that influence the individual and his or her decisions, such as body image and cathexis (Branson & Sweeney, 1991).

In the textiles and clothing field, both researchers and consumers often use the terms “fit” and “comfort” interchangeably (Frost, 1988). According to Frost (1988), some participants reported approximately the same meaning for the two terms: “the proper degree of fitness on the body” (Frost, 1988). Half of the participants regarded comfort and fit as having the same meaning or made only a slight distinction between comfort and fit, with fit being only the visual appearance of the garment on the body (Frost, 1988). Ashdown and DeLong (1995) noted that fit was determined by a personal judgment based on both how the garment looks on the body and how comfortable the consumer feels in the garment – that is, in terms of both visual presentation and tangible qualities (Ashdown & DeLong, 1995).

However, Frost (1988) concluded that fit and comfort of clothing were two separate functions, even though only a few participants mentioned a clear distinction between comfort and fit. The term “fit” refers to the way the garment looks on the body, while “comfort” refers to the way the garment feels on the body (Frost, 1988). Both the wearer and observer can evaluate the garment’s fit, but only the wearer can evaluate the comfort of the garment (Frost, 1988). Frost further noted that the relationship between comfort and fit means that they influence one another in the apparel evaluation process (Frost, 1988). Alexander et al. (2005) also noted that fit contributed to the confidence and comfort of the wearer. This implies that the wearer is likely to feel comfortable and

confident when wearing well-fitted clothing. However, it is necessary to investigate comfort as it relates to fit in order to better understand consumers' perceptions of fit. The present study therefore explores consumers' perceptions of comfort only as it is related to fit, and the effect of comfort on consumer satisfaction with fit when evaluating apparel fit.

### **Apparel Fit Satisfaction**

Studies of consumers' satisfaction with fit have long received great attention in clothing-related research areas, such as product development and apparel design, because consumer fit satisfaction directly affects purchase behavior when shopping for clothing. However, it is difficult, if not impossible, for apparel retailers and merchandisers to meet every consumer's needs due to the many factors that affect satisfaction with apparel fit. LaBat and DeLong (1990) noted both personal and external factors that influence consumers' satisfaction with fit (LaBat & DeLong, 1990). Personal influences are the physical dimensions of the body and body cathexis, which is the positive or negative feeling towards one's own body. Body shape and body cathexis contribute to fit satisfaction, according to comments by participants, reinforcing results of prior research (LaBat, 1997). According to LaBat and DeLong (1990), when a garment does not fit well, women tend to blame their own bodies rather than the article of clothing, which contributes to a negative body image. External influences are current fashion figures and the socially ideal body (LaBat & DeLong, 1990). Body ideals promoted by the fashion industry can affect consumers' physical and psychological comfort, which can cause consumers to have fit problems with ready-to-wear, while the socially idealized body can

affect consumers' psychological and social comfort, causing body dissatisfaction and self-discrepancy from the ideal body (LaBat & DeLong, 1990). Because women are likely to have more interest in and concern with clothing than do men (Kwon, 1997; Minshall, Winakor, & Swinney, 1982; Solomon & Schloper, 1982), the majority of studies have focused on female consumers' fit satisfaction.

Before defining apparel fit satisfaction in general, the studies of female and male consumers' fit satisfaction are introduced, and then theoretical components of consumer satisfaction and dissatisfaction are presented to incorporate them into the definition for this study.

### **Female Consumer Fit Satisfaction and the Body**

Relationships between the body and female consumer's psychological and social well being in relation to clothing fit have been widely studied (Hazen, 1994; Heaton, 2000; Jourard & Secord, 1955). Heaton (2000) noted that changes in their bodies often affect women's psychological, social and emotional well-being. In addition, the appearance of the consumer's body can be enhanced by well-fitted garments, creating the illusion that the individual's body is symmetrical and well proportioned (Hazen, 1998). Jourard and Secord (1955) speculated that satisfaction or dissatisfaction with one's body (body cathexis), could affect a woman's self-image as well as her garment fit assessment and fit preferences. The studies showed that clothing that offers a good fit can improve self-image and body cathexis.

Numerous studies have investigated women's body cathexis and clothing fit satisfaction with respect to different body parts (Feather, Ford, & Herr, 1996; Feather,

Herr, & Ford, 1997; LaBat & DeLong, 1990). LaBat and DeLong (1990) examined 22 body sites commonly associated with fit dissatisfaction, including pant length, crotch area, thigh, buttocks, and hip. The researchers found that respondents' body cathexis and perceptions of how well apparel fit their hips and thighs was lower than their assessment of their bodies and how items fit above the waist (LaBat & DeLong, 1990). Participants had the lowest fit satisfaction with lower body areas, which the researchers attributed to the fact that women on the whole are becoming broader hipped and are therefore experiencing difficulty wearing garments that have been designed for smaller hipped, more hourglass-figured women (LaBat & DeLong, 1990). In contrast, the women in the study showed the highest rate of fit satisfaction with upper body sites, such as the neck, elbow, arm, midriff, and shoulder (LaBat & DeLong, 1990).

Feather et al. (1996) defined fit satisfaction as the extent to which the consumer is satisfied with fit and selection of ready-to-wear in her size. Their study looked at garment fit and uniform design preferences among female college athletes. Similar to LaBat & DeLong (1990), the researchers found that women had a greater degree of fit satisfaction in their upper bodies than in their lower bodies. For street clothing, female athletes indicated the neckline as the body site with which they had greatest fit satisfaction, while the least fit satisfaction was with the hips.

Feather et al. (1997) also compared clothing fit satisfaction with slacks and a blouse between Black and White female athletes. The researchers found that the Black women had higher satisfaction with their upper, lower, and overall bodies than did the White women. However, satisfaction with garment fit was not significantly different between the two groups. The correlations between body cathexis and fit satisfaction were

all significant for upper, lower, and overall body parts. In short, female athletes who tended to rate their body satisfaction higher were also more satisfied with the fit of their clothing.

Overall, most women expressed more dissatisfaction with garment fit in their lower body as opposed to garment fit in their upper body (LaBat & DeLong, 1990; Feather et al., 1996; Feather et al., 1997). Similarly, it has been noted that plus-sized consumers have difficulty in finding clothing with good fit. Throughout the 1990's and 2010's, many studies found that plus-sized women were most dissatisfied with their lower bodies (Chattaraman & Rudd, 2006; Kind & Hathcote, 2000; Otieno, Harrow & Lea-Greenwood, 2005; Plutt, 2011).

Kind and Hathcote (2000) also found that larger-sized women in the United States suffered the most dissatisfaction in shopping for clothing in terms of available sizes, pricing, styles, and fit. The researchers indicated that two of the four body areas which were most difficult to fit for plus-sized women were in the lower body areas (thigh and calf; the other two were abdomen and bust). The plus-sized female consumers in their study commented that the clothing offered by retailers often looked mature, which was perceived by the group as an older look. Kind and Hathcote (2000) indicated that identifying a style as matronly is associated with a loose fit that conceals the body rather than embraces it. The study also revealed that women were most dissatisfied with clothing fit at their abdomen, bust and calf.

Otieno et al. (2005) reported that two-thirds of the plus-sized female participants in their study were unable to find clothing that fit them well. For example, the researchers reported that about 55 percent of women wearing size 16 or larger could not

find clothes that fit them, and nearly 66 percent of this group could not find articles of clothing that they considered well fitting. The researchers found that the most difficult articles of clothing to find for women wearing size 16 and larger were those requiring the greatest degree of fit, such as lingerie, swimwear, and eveningwear. They also found that when plus-sized women were unable to find garments that fit, they felt depressed and less feminine, and experienced negative emotions such as frustration, anger, disappointment, sadness, embarrassment because of their size, and blame toward the retailer.

Chattaraman and Rudd (2006) supported these findings, stating that women had the greatest degree of body dissatisfaction with their thighs, weight, and waist. The researchers determined that the waist was the area with which women had the greatest fit dissatisfaction. They also reported that women are most satisfied with their height, while they are most dissatisfied with their weight.

Plutt (2011) explored how women's attitudes toward their bodies affect clothing fit satisfaction and fit preferences. Respondents were categorized into two groups: non-Hispanic Black and non-Hispanic White women who reported their clothing size as 14 or larger. The non-Hispanic Black respondents indicated higher dissatisfaction with fit at each lower body site than did the non-Hispanic White women. Overall, the sample expressed the greatest dissatisfaction with the abdomen, waist, thighs, and buttocks. The researchers found that the three body sites with the greatest level of fit dissatisfaction were the abdomen, waist, and midriff. In this study, the abdomen and waist were categorized as lower-body sites while the midriff was considered an upper-body site.

Respondents rated the three upper body sites of neckline, calf, and shoulder as having the highest fit satisfaction and four other body sites (wrists, face, shoulders, and

neck) also as having the highest body satisfaction (Plutt, 2011). Interestingly, the non-Hispanic Black participants expressed greater satisfaction with seven upper body sites: arms, wrists, shoulders, neck, face, back, and bust. The study also found that participants were most satisfied with their height and least satisfied with their weight.

Several studies found that older women had the highest dissatisfaction with their bodies and with garment fit (Buckner, 2011; Plutt, 2011; Shim & Bickle, 1993). Shim & Bickle (1993) studied catalog shoppers' satisfaction with fit of ready-to-wear. The researchers used a seven-point scale to examine older women's satisfaction with fit in four different types of ready-to-wear clothing purchased through mail-order catalogs: blouses/sweaters, pants, skirts/dresses, and jackets (Shim & Bickle, 1993). The researchers divided participants into three groups based on height: petite, medium, and tall. The petite group showed the lowest satisfaction with fit across all four types of ready-to-wear, while the medium height group showed the highest level of satisfaction with fit across all four types of ready-to-wear (Shim & Bickle, 1993). Also, the petite group was the least satisfied with general size and fit and their satisfaction with general size and fit was significantly different from the other two groups (Shim & Bickle, 1993).

Buckner (2011) examined older women's fit satisfaction and possible contributing variables with respect to crocheted clothing that they had made themselves. Participants were more satisfied with the fit of their crocheted garments than with the fit of ready-to-wear garments. For example, mean scores of fit satisfaction by body area (i.e., overall, neckline, bust, shoulders, sleeve length, armhole, waist, hip, and overall length) for the most recent garment made and all garments made were greater than 5.5 out of 7. Body shape and body cathexis contributed to fit satisfaction with crocheted garments. In



addition, participants' crochet experience level affected overall fit satisfaction with the most recent garment crocheted.

Plutt (2011) found that women's age was negatively correlated with all three body cathexis variables (i.e., upper body, mid-body, and lower body) as well as fit satisfaction. This means that as age increased, degree of body satisfaction and fit satisfaction decreased. However, only the total upper body cathexis and total lower body cathexis showed significance. For the lower body, among non-Hispanic Black women, as age increased, degree of body cathexis and fit satisfaction decreased, while among non-Hispanic White women, age was negatively correlated with body cathexis only. For the upper body, for non-Hispanic Black women there were negative correlations among age, body cathexis, and total fit satisfaction, whereas among non-Hispanic White women there were no correlations among age, body cathexis, and fit satisfaction toward the upper body.

Thus, Feather et al. (1996), Feather et al. (1997), LaBat and DeLong (1990), and Plutt (2011) all had the same findings: Women demonstrate greater fit dissatisfaction with lower body sites and more fit satisfaction with upper body sites; the abdomen and waist had the highest level of fit dissatisfaction; and the neckline and shoulders had the highest level of fit satisfaction. Because ideal body images in the media emphasize slenderness and many women often have difficulty maintaining slenderness in the hip, upper leg, and tummy areas, this dissatisfaction with fit in lower body areas is not unexpected.

### **Male Consumer Fit Satisfaction and the Body**

The above-mentioned research primarily studied female consumers' perceptions of fit and fit satisfaction. Men's buying behaviors and attitudes towards clothing in general have been found to be significantly different than those of women (Frith & Gleeson, 2004; Gravely, 1999; Liu & Dickerson, 1999; Moore, Doyle & Thomson, 2001). Many researchers have predominantly focused on female populations, not only because women have more varied body types and are more involved in shopping for clothing, but also because men are less interested in clothing (Kwon, 1997; Minshall, Winakor, & Swinney, 1982; Solomon & Schloper, 1982) and are less likely to go shopping for clothing (Crane, 2000; Nelson, 1989). Men also tend to spend less money on clothing (Peters, 1989). However, men's interest in their appearance has dramatically increased over the last three decades (Pope et al., 1999). Bakewell et al. (2006) concluded that young men noticed clothes and were very aware of the concept of fashion as it relates to men (Bakewell et al., 2006).

Despite this documented increase in young men's interest in clothing, only one study has been conducted on fit issues for men aged 20-50, and it focused on their problems and overall satisfaction with business clothing (Sindicich & Black, 2011). The researchers compared men's business clothing fit issues and fit problems across low-end (price expenditure level) and high-end consumers and investigated fit issues (e.g., vertical and circumferential fit issues) that differed between the two groups. In the high-end expenditure group, vertical fit issues were found in shirts, pants, and suits (shirt tail length, sleeve length, pant leg length, jacket length, and jacket sleeve length) in that taller men found parts of their garments too short while shorter men found parts of their

clothing too long. In the low-end expenditure group, however, no significant vertical fit issues were found. In terms of circumference fit issues, both groups reported similar issues in shirts and suits; larger men found parts of their garments too small, while smaller men found parts of their clothing too large (Sindicich & Black, 2011). Fit problems were reported according to specific garment features for shirt (tail length, sleeve length, neck circumference, cuffs circumference, waist circumference, and collar width), pants (leg length, crotch length, hip circumference), and suit jacket (sleeve length, shoulder width, etc.). The study found only one conclusion about overall satisfaction with suits: that men with a bigger chest size were more likely to be dissatisfied with their suit fit (Sindicich & Black, 2011).

### **Consumer Satisfaction and Dissatisfaction**

The past fifty years have seen tremendous research interest in consumer satisfaction/dissatisfaction. Oliver (1981) defined satisfaction as “the summary psychological state resulting when the emotion surrounding disconfirmed expectation is coupled with the consumer’s prior feelings about the consumption experience” (p. 27). Oliver (2010) broadly defined consumer satisfaction as the consumer’s fulfillment response after judging that a product or service can provide a pleasurable level of consumption-related fulfillment. Consumer satisfaction has variously been defined as “an evaluation rendered that the (consumption) experience was at least as good as it was supposed to be,” “the summary psychological state resulting when the emotion surrounding disconfirmed expectation is coupled with the consumer’s prior feelings about the consumption experience,” and “the consumer’s response to the evaluation of the

perceived discrepancy between prior expectations (or some other norm of performance) and the actual performance of the product as perceived after its consumption” (Oliver, 2010, p. 6). Consumer satisfaction is regarded as “the summary-state of a psychological process” which can occur both during consumption and after consumption (Oliver, 2010, p. 6).

### **Definition of Overall Apparel Fit Satisfaction in General**

Thus far, studies on satisfaction with fit from the consumer perspective have focused on the level of fit satisfaction in specific areas of clothing or for specific clothing categories. However, it is necessary to understand how satisfied consumers are with their overall consumption experience with fit as well as with fit in general. The objective of this study is to develop an understanding of young female and male consumers’ overall satisfaction with fit in general. Therefore, the current study defines overall apparel fit satisfaction as the level of satisfaction/dissatisfaction with fit of clothing in general (e.g., t-shirts, blouses, jackets, dresses, pants, skirts, etc.) when consumers evaluate apparel fit.

### **Summary and Research Questions**

Over the past 30 years, numerous studies in fashion design and product development have attempted to use experts’ opinions to assess apparel fit with the goal of finding practical ways to improve physical fit (Ashdown & Loker, 2006; Ashdown & Loker, 2010; Beazley, 1999; LaBat & DeLong, 1990). These studies have received great attention because garment fit has been regarded as a crucial factor in enabling fashion companies to meet consumers’ needs, which of course eventually leads to business success (Plutt, 2011). However, the five criteria of fit (ease, line, grain, balance, and set)

used by experts such as designers and researchers are difficult for consumers to understand and apply when evaluating the fit of a specific garment on one's own body. Additional challenges arise from the fact that consumers' preferences do not always align with expert opinions. Individual body variations coupled with the lack of standardization of sizing systems in the apparel industry add further complexity to understanding consumer perspectives on fit (Buckner, 2011).

To date, there has been minimal research regarding apparel fit from the consumer's perspective as compared to the designer's perspective. Only a few studies have explored consumers' perspectives; these looked at consumers' fit preference in terms of the degree of good fit and style attributes (Alexander, Connell, & Presley, 2005; Anderson et al., 2000; Chattaraman & Rudd, 2006) as well as consumers' concerns with fit and size of garments (Kim & Damhorst, 2010). However, these studies on fit preference have been limited to understanding consumers' perceptions of garment fit. This is because individuals have various fit preferences due to their different body shapes and because their perceptions of fit is affected by many factors, such as personal style preference, fashion trends, body image and satisfaction, and attitudes (Alexander et al., 2005; Ashdown & O'Connell, 2006). As concerns with fit and size of garments may serve as an important antecedent of consumers' intention to shop for clothing in both offline and online shopping contexts, much attention has been directed toward the negative aspects of fit perceptions. However, in spite of the complicated factors that affect perception of fit, no study to date has considered consumers' summary perceptions of fit towards apparel in general. Therefore, both the positive and general aspects of fit perceptions need to be explored.

A few studies defined two dimensions of apparel fit: “aesthetic fit, which relates to the appearance of the garment in relation to the body, and functional fit, which relates to the comfort and performance of the garment due to the fit” (Newcomb & Istook, 2011, p. 391; see also Brand, 1964; Eckman et al., 1990; Outling, 2007). These definitions seem to imply that a consumer might feel uncomfortable with a fitted garment even though it looked beautiful on her (or his) body, meaning that the garment has aesthetic fit but not functional fit, since it results in an uncomfortable feeling. Indeed, Heaton (2000) noted that the average female consumer believes that good fit is found in a garment that is both comfortable and looks good on her body (Heaton, 2000).

However, the dimensions of fit seem not to be limited to only two, because apparel fit also influences the aesthetic, functional, and expressive performance of a garment (Newcomb & Istook, 2012) as well as consumers’ clothing needs that can be categorized in three dimensions: functional, expressive, and aesthetic (Lamb & Kallal, 1992). In addition, when it comes to the consumer’s viewpoint, their needs and desires regarding clothing should be considered within the context of a use-situation (Lamb & Kallal, 1992). Therefore, it is important to understand how consumers think about fit of apparel in general, but it is also necessary to explore consumers’ perceived fit when they wear clothing in specific use-situations.

Some studies have only examined various dimensions of perceived comfort of garments: physical, psychological and social comfort (Branson & Sweeney, 1991; Sontag, 1985). However, even though the concept of fit may be partially related to the concept of comfort (Ashdown & DeLong, 1995), no studies have been conducted on the consumer’s perceptions of fit as it is related to comfort. Studies of apparel fit have not

fully explored what consumers think about apparel fit during and after shopping for clothing. Although environmental attributes – including occasion or situation of wear, opinion of significant others, reference groups, social norms, cultural patterns, historical precedent, and geographic location – have been considered in the social-psychological dimension triad of the clothing comfort model (Branson & Sweeney, 1991), consumers' perceptions of clothing fit related to social-psychological comfort has not been investigated as yet. Therefore, the purpose of the current study was to investigate consumers' perceptions of fit in certain use-situations, which may be related to comfort and in which fit may have differing requirements and meanings.

Understanding consumers' satisfaction with clothing fit is more complex than simply producing properly sized and fitted garments, because clothing fit for consumers has both psychological and social meaning (Entwistle, 2000). Each consumer determines for him or herself what comprises good fit (LaBat & DeLong, 1990). In the process of making a purchasing decision, consumers tend to evaluate fit in terms of quality because fit has multi-dimensional characteristics (Thea & Klerk, 2010).

Most previous studies of satisfaction with fit have only analyzed the relationship between garments and body in terms of specific parts of certain garment types (e.g., sleeves of shirts, or legs of trousers) (Buckner et al., 2011; Feather et al., 1996; Feather et al., 1997; LaBat & DeLong, 1990; Plutt, 2011; Shim & Bickle, 1993). However, consumers' fit satisfaction may not depend solely on the relationship of a garment to parts of the body. Because some aspects of fit involve not just physical comfort (e.g., the relationship between body shape and fabric properties) but also social-psychological comfort (e.g., personal preference, conformity to social ideals, modesty factors, fashion

trends), clothing fit has numerous and complex dimensions (Frost, 1988). Surprisingly, this important theme is often noted but rarely studied in the vast literature on satisfaction with clothing fit.

There has been only one study on consumers' satisfaction with fit of garments, which was related to physical, social-psychological, and aesthetic aspects. Thea and Klerk (2010) proposed a schematic conceptual framework of expectation about clothing fit for early adolescent girls in South Africa. In this framework, the researchers pointed out that functional, aesthetic, and socio-psychological expectations of fit may have an influence on fit evaluation by early adolescent girls, even after purchase. Not only that, knowledge about and experience with clothing (e.g., style/design, fabric, and size), emotional needs (e.g., dominance, body image) and cognitive needs (e.g., significance of brand name, store, brand name, store, price, opinion of others) may also affect early fit evaluation by adolescent girls, even after purchase. Because the present research examines both male and female consumers' satisfaction with fit, Thea and Klerk's conceptual framework specific to early adolescent girls was not adopted. Rather, consumers' perceptions of fit were qualitatively investigated in an exploratory way because their perceptions of fit were regarded as the key antecedents affecting fit satisfaction.

To gain further insights into satisfaction with apparel fit, it is helpful to know the possible dimensions of the factors that consumers may consider when evaluating fit, which ultimately result in consumers' satisfaction with fit. Therefore, the current study investigated the possible factors that may be crucial for consumers in determining their fit satisfaction.



Fit is a highly important consideration in the purchase of apparel. Despite this, no previous studies have examined consumers' overall satisfaction with fit of garments in general. Understanding consumers' overall satisfaction toward apparel in general is important in modeling their overall experience with fit when shopping for and wearing clothing. Overall expectations and experiences with fit in the past may influence consumers' shopping patterns in terms of frequency, types of shopping mode (in-store vs. online), amount spent, etc. Thus, the purpose of this study is to examine how consumers determine that they are satisfied with overall apparel fit in general, incorporating both consumer satisfaction and dissatisfaction.

For the most part, female perception of fit in general and satisfaction with fit towards specific garments have been studied extensively during the past three decades, and both have been identified as a highly-ranked selection criteria for clothing (Hogge, Baer, & Dang-Park, 1988; Liu & Dickerson, 1999). However, there are no comparable studies of male consumers' perception of and satisfaction with apparel fit in general. Only one study examined male consumers' overall satisfaction with fit, and it was limited to satisfaction with business clothing fit only (Sindicich & Black, 2011). Like studies on women's clothing fit, Sindicich and Black considered physical aspects of fit (e.g., garment length, garment width, and use circumstance) for specific body parts in specific garments rather than perceptions of fit in general.

Even though many researchers have argued that men's buying behaviors and attitudes towards clothing are different from those of women (Frith & Gleeson, 2004; Gravely, 1999; Liu & Dickerson, 1999; Moore, Doyle, & Thomson, 2001), no studies have conclusively established gender differences in perceptions and satisfaction with fit.

Prior studies tended to consider fit as a physical and functional component of clothing. The present study assumed that each consumer will have different views regarding apparel fit, so that men and women could have both similar and different perceptions and levels of satisfaction regarding apparel fit. Thus, the present study investigated gender differences in consumers' perceptions and satisfaction regarding apparel fit in general.

Based on previous research, then, the research questions for the present study were as follows:

- 1) What are consumers' overall satisfactions with apparel fit in general?
- 2) What are consumers' perceptions of apparel fit in general?
- 3) What possible factors do consumers consider in determining whether they are satisfied or dissatisfied with fit?
- 4) What are the consequences of dissatisfaction with apparel fit?
- 5) What are the gender differences in consumers' perceptions, attitudes, and satisfaction regarding apparel fit?

## **CHAPTER 3. METHOD**

### **Overview**

This chapter describes the mixed methods used in this study. Mixed method is defined as “A method [that] focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies” (Creswell & Plano Clark, 2007, p. 5). The current study used a qualitative dominant mixed methods design, which consisted mainly of a qualitative focus group phase with a limited collection of quantitative data prior to the group interviews. The purpose of this approach was to obtain quantitative results as well as probe the participants’ reasoning and thoughts in more depth qualitatively.

During the first phase of the study, information on participants' overall satisfaction with fit in general as well as demographic data on participants' personal backgrounds were measured quantitatively. The quantitative phase was conducted using a paper-based survey, followed by focus group interviews to obtain qualitative data. The quantitative results are helpful in understanding the level to which participants are satisfied/dissatisfied with fit, and enable comparison of qualitative responses between gender groups. However, quantitative results are not sufficient to fully explain what participants think about fit and why they are satisfied or dissatisfied with fit; hence, the need for a qualitative component. The purpose of the qualitative phase was to explore possible dimensions of consumers' perceptions of fit and gain a deeper understanding of consumers' experiences and thoughts regarding apparel fit.

The sections below are organized as follows: the first section explains the sample selection process, the second and third outline the methods used for the quantitative and qualitative phases, the fourth describes the data collection procedure, and the fifth and last explains how the data was analyzed.

### **Sample**

Both the qualitative and quantitative phases of the study used college students for sampling because undergraduate students are generally active shoppers for clothing. The participants were selected from a list of students enrolled in Textiles & Clothing 165 at Iowa State University (ISU) and who volunteered to participate in the study for course credit. Any undergraduate ISU student aged 18 or older was eligible to participate. Students aged 17 or younger (minors) were not allowed to participate in this study; if someone younger than 18 showed up for one of the focus groups, he or she was thanked but informed that they were not allowed to participate. The TC165 class has a large enrollment and registers students from a wide variety of majors at ISU. A total of eight focus group sessions were held, four with female students and four with male students, with 10-12 participants in each group.

### **Quantitative Phase: Paper-Based Survey**

A survey was selected as the tool for this phase for two reasons: First, because no previous studies had investigated fit satisfaction in general, and a survey is a useful initial data-gathering technique to get focus group respondents to begin thinking about the topic. A definition of overall satisfaction with fit in general (i.e., “Overall apparel fit

satisfaction is defined as the level of satisfaction/dissatisfaction with fit of clothing in general--e.g., t-shirts, blouses, jackets, dresses, pants, skirts, etc.--when you evaluate apparel fit.”) was provided to participants, to help them think about general fit satisfaction. Second, a survey is useful in gathering specific information about participants’ personal backgrounds (e.g., age, gender, academic major, etc.). Participants completed the survey before starting the focus group interview.

### **Instruments**

**Overall apparel fit satisfaction.** Overall fit satisfaction was measured using a scale that included four items borrowed from earlier consumer satisfaction studies (Mano & Oliver, 1993; Maloles, 1997; Oliver, 1980; Ryan et al., 1995). Satisfaction with fit was evaluated based on the product and experience when shopping for clothing and on the use-situation as suggested by consumer satisfaction theories (Mano & Oliver, 1993; Oliver, 1980). Product satisfaction was operationalized as a cognitive evaluation of function/performance and the quality of the fashion products purchased (Oliver, 1980), while experience satisfaction was operationalized as the degree of enjoyment and pleasure evoked by the fashion shopping processes (Mano & Oliver, 1993). Thus, the scale included satisfaction with apparel fit and satisfaction with experience regarding apparel fit in general.

For example, the first item was, “Overall, the experience that I have had with clothing fit has been satisfactory,” adapted from “The experience that I have had with mobile Internet service has been satisfactory” created by Fravian et al. (2006). The second item, “Overall, in purchasing clothing, my experience with apparel fit is positive,”

was adapted from “Overall, my experience with my hair dressers is positive” (Maloles, 1997). The third item, “Overall, I am satisfied with apparel fit,” was altered from “I am satisfied with this product,” developed by Mano & Oliver (1993). The fourth item, “Overall, I am pleased with how the clothing I find in stores fits,” was derived from “Overall, in purchasing XYZ’s services, I believe that I would be pleased with XYZ’s services” from Ryan et al. (1995). The items were rated on a 7-point Likert-type scale with endpoints of “strongly disagree” (1) and “strongly agree” (7). The variables were scored such that higher scores reflected higher satisfaction. Because each item in the scale was borrowed from a different study, reliability for the scale is reported in the results section below.

**Demographics.** The survey included items asking respondents for demographic information (see Appendix C). Demographic items included gender, age, ethnic background, status of international student, class standing, and academic major. Age and major were open-ended questions; gender, ethnic background, status of international student, and class standing were closed-ended questions.

### **Qualitative Phase: Focus Group Interviews**

Focus group interviews provide insights into the attitudes, perceptions, and opinions of participants using a non-directive approach (Krueger & Casey, 2000). The words and ideas that are relevant to individuals in the target population should emerge naturally from the focus group discussions, because the group interaction serves as a catalyst to generate unique insights into understanding shared experiences and social norms (Krueger & Casey, 2000). According to Krueger and Casey (2000), focus groups

are appropriate when the goal is to understand differences in perspective between groups of people or to uncover factors that influence opinions or behavior. Thus, focus group interviews were used to investigate consumers' perceptions of fit and possible dimensions of factors that influence satisfaction with fit in general and to investigate differences and similarities between gender groups.

Data was collected during focus group interviews using structured questions developed specifically for the present study. Interview questionnaires were developed to guide the investigation. To generate questions for the interview, a principle suggested by Stewart and Shamdasani (1990) was followed: that more general and important questions should be placed earlier than more specific questions.

Thus, participants were first asked what their overall concerns with fit are when they go shopping. Second, participants were asked to share their perceptions and attitudes about fit, (e.g., what is a good fit or bad fit, what has been their experience with fit, etc.); the purpose of this was to understand what factors they consider when evaluating fit. Third, they were asked about performance of fit in a specific use-situation. Fourth, they were asked how they distinguish fit from comfort. Lastly, the participants were asked how they would react to a hypothetical situation in which a garment did not fit well; the purpose of this was to examine the outcome of consumers' dissatisfaction with fit (see Appendix D). The questions thus moved from general (overall concerns with fit when they go shopping for clothing) to specific (experience with apparel fit, what factors make them personally satisfied and dissatisfied when they evaluate clothing fit).

### **Data Collection Procedure**

After obtaining approval from the Institutional Review Board (IRB) (see Appendix. A), students in the TC 165 class were informed of the opportunity to take part in the survey and the focus group interview. The announcement was also posted on the class Blackboard site, and students were sent an email via the TC 165 Blackboard mail. Those interested in participating in the survey and the focus group interview were asked to respond to the email to sign up for a specific time and date to meet. Participants were randomly selected from the list of volunteers and were informed by a reply email, which included information about the time and place of the scheduled session.

At the beginning of each session, the purpose of the study was stated along with confirmation of confidentiality, anonymity, and voluntary participation. Participants were then asked to complete an informed consent form (see Appendix. C), and the principal researcher provided general information about the survey and the focus group interview. Participants were asked to complete the survey before taking part in the focus group interview. During the focus group interview, questions were asked to investigate consumers' perceptions regarding apparel fit in general (see Appendix. D). The conversations from all group interviews were captured via a digital audio recorder and later transcribed.

To ensure confidentiality, the names of the participants were known only to the researcher. No names were attached to the audiotapes or the transcripts of the interviews, and the transcriber listened to and transcribed the interviews either in a private location or using headphones. The instructor of TC 165 did not have access to the audiotapes or



survey responses. The researcher thus ensured that the instructor of the class did not know which particular students were represented in any of the transcripts.

### **Data Analysis**

For the quantitative phase, descriptive statistics for overall apparel fit satisfaction were calculated from the survey data using SPSS. Descriptive statistics included means, standard deviations, and frequencies of item scores. Also, Cronbach's *alpha* value for overall satisfaction with fit was assessed using the SPSS program to compute reliability or internal consistency among the four indicator items. In assessing the quality of the construct measures, reliability is one of the most important elements (Churchill, 1979). A Cronbach's *alpha* value of .70 or higher was considered as sufficient reliability for an item (Nunnally & Bernstein, 1994).

For the qualitative phase, the audio recordings from each interview were transcribed and then major themes in the data were identified. The purpose of this analysis was to search for themes and patterns that emerged from the focus group interviews. This process required line-by-line analysis to apply open, axial, and selective coding to the transcripts. This analysis allowed the researcher to determine and define valid meanings of data and to identify subthemes and themes through the coding process.

The present study used the constant comparison approach to compare data and themes until sufficient themes were developed to cover the entire dataset (Esterberg, 2002). Because one of the purposes of the focus group interview was to identify the possible dimensions of factors, multiple-meaning statements were divided into a simpler

form of narrative to facilitate the coding process. Then, the statements were reexamined line by line to determine the subthemes.

Trustworthiness of qualitative data was established by enlisting a second coder to apply five main theme categories to all interview transcripts. The reliability component of trustworthiness and the validity of the first researcher's theme development were confirmed through this audit check by the second coder. The two attempts at coding were compared for agreement; disagreements were negotiated between the two coders. The 93.8 % agreement was calculated as follows:

$$\frac{2 * \text{number of agreements} * 100}{(\text{number of coding decisions by coder 1} + \text{number of coding decisions by coder 2})}$$

After analyzing the quantitative data and qualitative data separately by gender, the two datasets were compared between gender groups. Before combining the two datasets, mean scores of overall fit satisfaction were compared by conducting two-tailed t-tests using SPSS. Merging the two datasets made possible the most complete understanding of fit satisfaction from the consumer's perspective. I then investigated whether the results of overall satisfaction with apparel fit from the survey were supported and explained by the explored themes from the focus group interviews for female and male groups. Statistical results were reported and then followed up with specific quotes or information about themes that supported or did not support the quantitative results. This combination of two types of data allowed assessment of criterion validity of the quantitative measure.

## **CHAPTER 4. RESULTS**

### **Overview**

This section reports the results of the survey and focus group interviews and discusses findings. The chapter begins with a description of the participants who took part in this study. Following a report of results from the survey, themes related to research Objectives 1-4 are reported, and quantitative and qualitative data are incorporated to compare the results of gender differences to fulfill research Objective 5.

### **Participants**

From a class of 312 students, a convenience sample of 94 potential volunteers was recruited; from the sample 66 (70 percent) participated in the survey and one of the focus group interviews. A total of eight sessions were conducted over four weeks. Each session had 5 to 11 participants, with approximately equal numbers of male ( $n = 34$ ) and female ( $n = 32$ ) participants (session 1, 10 male participants; session 2, 8 female participants; session 3, 10 male participants; session 4, 5 female participants; session 5, 11 female participants; session 6, 7 male participants; session 7, 8 female participants; and session 8, 7 male participants). On average, each session – including individual completion of the survey and the focus group interview – took 50 minutes.

Table 4.1 presents descriptive statistics of the sample. About half of the participants were male (52 percent) and half female (48 percent). About 83 percent of respondents were aged 18 to 22 with a mean age of 21. In terms of ethnicity, almost all of the participants were Asian (50 percent) or European American (47 percent). The

number of international students (52 percent) was slightly greater than domestic students (48 percent). The students were fairly evenly divided between freshmen, sophomores and juniors, with a slightly higher percentage of seniors (31.8%). About one third of participants were Apparel, Merchandising, and Design majors, followed by finance (20 percent) and engineering (20 percent).

Table 4.1. Descriptive Statistics of Sample Characteristics

	<i>f</i>	<i>%</i>	<i>M</i>	<i>SD</i>
<u>Gender</u>	<i>(n = 66)</i>			
Male	34	51.5		
Female	32	48.5		
<u>Age</u>				
18 years old	15	22.7	20.71	2.59
19 years old	7	10.3		
20 years old	10	15.2		
21 years old	14	21.2		
22 years old	9	13.8		
23 years old	6	9.3		
24 years old	1	1.5		
25 years old	2	3		
26 years old	1	1.5		
27 years old or more	1	1.5		
<u>Ethnicity</u>				
African American/Black	0	0		
Hispanic/Latino American	1	1.5		
Asian (not American)	33	50.0		
Asian American	0	0		
Middle Eastern	0	0		
European/White American	31	47.0		
Native American	0	0		
Other	1	1.5		
<u>International students</u>				
Yes	34	51.5		
No	32	48.5		
<u>Class standing</u>				
Freshmen	16	24.3		
Sophomore	15	22.7		
Junior	14	21.2		
Senior	21	31.8		

Table 4.1. (continued)

	<i>f</i>	<i>%</i>	<i>M</i>	<i>SD</i>
<u>Major</u>				
Apparel, Merchandising, and Design	20	30.3		
Business	27	40.9		
Computer Science	1	1.5		
Design	1	1.5		
Event Management	1	1.5		
Global Resource Systems & Environmental Studies	1	1.5		
Engineering	14	21.2		
Physics	1	1.5		

Participants' status and class levels for each group are presented in Table 4.2. A major difference between female and male groups is that domestic and freshman-sophomore level students are dominant among female groups, while international and junior-senior level students are dominant among male groups.

Table 4.2. Descriptive Statistics of Students' Status and Class Levels

	<u>International students</u>			<u>Class levels</u>		
	Yes	No	Total	Freshman-Sophomore	Junior-Senior	Total
F1	2	6	8	5	3	8
F2	3	5	8	7	1	8
F3	1	4	5	4	1	5
F4	4	7	11	8	3	11
M1	6	4	10	1	9	10
M2	8	2	10	3	7	10
M3	6	1	7	1	6	7
M4	4	3	7	2	5	7
Total	34	32	66	31	35	66

*Note.* F1–F4 = female group #1–#4, M1–M4 = male group #1–#4.

### Research Objective 1: Overall Apparel Fit Satisfaction

Reliability of items measuring overall apparel fit satisfaction was assessed using Cronbach's *alpha* coefficient. As shown in Table 4.3, the Cronbach's *alpha* value for the four items was .912; this indicates a high internal consistency for this factor (Nunnally & Bernstein, 1994).

Table 4.3. Frequency of Ratings of Participants' Fit Satisfaction in General

Overall fit satisfaction in general		<i>f</i>							Total
		1	2	3	4	5	6	7	
1	Overall, the experience that I have had with clothing fit has been satisfactory.	0	2	5	13	24	18	4	66
2	Overall, I am pleased with how the clothing I find in stores fits.	0	1	8	9	25	17	6	66
3	Overall, I am satisfied with apparel fit.	0	2	3	10	30	16	5	66
4	Overall, in purchasing clothing, my experience with apparel fit is positive.	0	1	2	10	23	23	7	66

The mean score of participants' overall satisfaction with fit in general ( $M = 5.08$ ) was about 5 (see Table 4.4). As presented in Table 4.3, a majority of the participants were neutral in satisfaction with fit, as their responses fell in a cluster of scale ratings from 4 to 6 across items. Participants in general were neutral to slightly satisfied with fit in general. Comparing mean scores of overall fit satisfaction between genders, female participants ( $M = 5.13$ ,  $SD = .94$ ) were slightly more satisfied than were male participants ( $M = 5.04$ ,  $SD = 1.06$ ). As shown in Table 4.4, the independent *t*-test indicated no significant difference in the mean scores of overall fit satisfaction in general between genders ( $t = -.39$ ,  $df = 64$ ,  $p = .70$ ).

Table 4.4. Results of Independent t-test for Mean Scores of Overall Fit Satisfaction for Males and Females

	Gender		<i>t</i>	<i>df</i>	<i>p</i>
	Male	Female			
Means scores of overall fit satisfaction in general	5.04 (1.06)	5.13 (.94)	-.39	64	.70
Total		5.08 (.99)			

*Note.* Standard deviations appear in parentheses below means.

Because there were a comparable number of international and domestic students, the difference in fit satisfaction responses across nationalities was examined. There were no significant differences in mean scores of overall fit satisfaction between international ( $M = 5.07$ ,  $SD = .98$ ,  $n = 34$ ) and domestic students ( $M = 5.10$ ,  $SD = 1.02$ ,  $n = 32$ ) ( $t = -.144$ ,  $df = 64$ ,  $p = .886$ ).

The distribution of students according to class standing was fairly equivalent, allowing a check for differences by class standing. The difference in fit satisfaction across class levels of students between freshman and sophomores ( $M = 5.06$ ,  $SD = .98$ ,  $n = 31$ ) and juniors and seniors ( $M = 5.10$ ,  $SD = 1.02$ ,  $n = 35$ ) was not significant ( $t = -.144$ ,  $df = 64$ ,  $p = .886$ ).

### **Research Objectives 2 and 3: Consumers' Perceptions of Apparel Fit and Other Factors that Affect Consumers' Fit Satisfaction**

Responses related to research Objectives 2 and 3 are combined in this section because themes for fit perceptions were highly similar to themes for fit satisfaction.

Consumers' perceptions of apparel fit was assessed using the following questions: What are your major concerns about fit when you purchase clothing? What is good fit in clothing to you? What is bad fit in clothing to you? In general, what are your experiences with apparel fit? When you go shopping, what aspects of clothing pose the most problems with fit? When did clothing fit not perform well? When did clothing not fit well for a social situation you were in?

Five main themes were identified across the interview transcripts:

- Physical fit -- This refers to features of fit that are physically perceived when evaluating fit in terms of the relationship between clothing and body, such as tightness and length.
- Aesthetic fit -- This refers to aesthetic features of fit that are visually perceived and assessed when looking at an individual's dressed body, such as overall appearance related to the body and attractiveness.
- Functional fit -- This refers to features of fit that are perceived when the dressed body is moving for activities, related to restriction or lack of restriction of movement.
- Social context -- This refers to a surrounding social situation, including social feedback from others about fit.
- Social comfort -- This refers to a feeling of well-being resulting from dissatisfaction or satisfaction with fit within a given social context.



### **Fit Perceptions from Consumers' Perspectives**

When participants were asked about good fit and bad fit, five major themes (defined in preceding section) emerged: physical fit, aesthetic fit, functional fit, social context, and social comfort. Furthermore, participants were likely to express those themes when they were asked to give their concerns, problems, and experiences with fit. In addition, when asked about fit performance and fit appropriateness in a social situation, participants reported a variety of individual experiences in which clothing failed to perform in terms of physical fit (i.e., length and width), aesthetic fit (i.e., overall appearance), and functional fit (i.e., restrictiveness/unrestrictiveness), all of which are affected by social context (i.e., social situations and social feedback from others). Social comfort was achieved when all three types of fit were met within any particular social context. When asked about physical fit, numerous participants recounted a negative fit performance – an occasion when clothing was too short, too tight/small, too big/baggy, or otherwise not the right size. Regarding aesthetic fit, a few participants reported an occasion when they felt that their overall appearance was not good. In terms of functional fit, a few participants described an experience when they were uncomfortable moving in their clothing.

**Physical fit.** Physical fit as describe by participants consisted of tightness and length of clothing. Participants unanimously mentioned garment length and tightness when asked what good/bad fit in clothing meant to them. Participants described good fit in clothing as when clothing met their desired tightness and length, depending on individual body characteristics (i.e., height and body build) and clothing type. Numerous

participants also reported their problems with fit when clothing failed to fit proportionally on their body in terms of the tightness-to-length ratio.

***Tightness.*** A majority of participants reported that they considered the level of tightness of a garment in determining whether it was well fitting or not. When evaluating fit, participants were likely to mention the level of tightness of clothing in either a positive or a negative way, depending on individual preferences relating to body part and type of clothing. Positive statements regarding tightness (i.e., tightness as good fit) included somewhat tight, not too tight, not loose, somewhat loose, not too loose, loose, and “not too tight and not too loose.” Negative statements regarding tightness (i.e., tightness as bad fit) included too tight a fit, loose, and too loose. Participants’ preferences regarding level of tightness seemed to differ based on the body part involved as well as on the type of clothing. Quotes are identified by gender (i.e., F for female, M for male) preceding a number that refers to focus group member. For example, F12 refers to female who was the second member in the first female focus group.

F21: Good fitting would be for tops; ones where you can move your arms in, like if you need to reach for something, you can reach for it. Pants, I’d like them tighter fitting at the hips and looser at the bottom.... Bad fit would be... I guess shirts that are too baggy or too tight. When the main part of the shirt fits but then the sleeves are tight – that’s sometimes a problem. I guess when they’re really low-cut or jeans that are too long or too short.

Both good fit and bad fit statements were combined to analyze the results. The response from F21 is typical, in that the appropriate level of tightness described differed based on specific body parts covered and garment types: e.g., F21 preferred a tighter fit

on the hips but a looser fit for pants. Shirts should not be too baggy or too tight; bad fit for shirts was described as when parts (the sleeves) were tight. Other participants also defined bad fit as when one part of a garment was too tight or too loose on specific body parts.

For upper body clothing, several female participants mentioned that they encountered problems due to the ratio between shoulder and chest. F23 and F33 cited two different forms of this problem in tightness:

F23: For me, it's the relation between shoulder and chest size, because my shoulders are a lot broader but I have a smaller chest, so either the shoulders are too tight or the chest is way too big.

F33: I would say tops because I have really small shoulders and big breasts so it doesn't balance out. It either fits or it's too big in certain places, and I have a short torso too, so sometimes it fits weird.

Some participants often mentioned “size” to express how their clothing conformed to their three-dimensional bodies. When asked about good or bad fit, good fitting clothing should be the right size on the body or one size bigger, while bad fitting clothing would be too small or too big on certain parts of body. Thus, statements about size were interpreted as expressions of tightness or looseness if participants reported “small” or “big” to express their clothing fit.

***Length.*** Participants also defined the appropriate length of clothing differently depending on the type of clothing and its fit on specific body parts. The majority of participants reported that the right length of sleeves on their arms and the right length of

pants/jeans on their legs were required for good fit. In addition, participants seemed to have certain preferences in certain pieces of clothing. For example:

F22: With long sleeves, I like them coming right to my hands. Short sleeves, I like it when they're longest, otherwise they come up to my shoulder. Like she said pants I like tight on my waist and then the more like the boot-cut.

M15: Bad fit is when, like for a shirt, if I put it on and usually the arm length is too long, because that's what I usually find. Or when I put on pants, it depends on what brand, but even at the same length, they'll be different, and a lot of times, it's too long.

Some participants mentioned the length of clothing in conjunction with their height. If a participant was tall, clothes that were a good fit had to be long enough for their arms and legs.

M17: For me, the hardest battle with fit is trying to find something that's long enough. I'll get a shirt that'll fit my body but the sleeves will be too short, or the sleeves are the right length but it doesn't even go to my waist. Jeans – I'll buy any jeans that I can find that fit online because I have a special order. So for me it's all length.

When asked about their fit-related concerns, participants were likely to name specific kinds of clothing as particular concerns, such as shirts and jeans/pants. Participants' concerns tended to be related to their body characteristics, such as height. For example:

F42: Mine's the same – jeans – it's hard to find, if you're tall and thin, jeans that fit that are hard because sometimes they're too short.

M41: For me, since I'm tall, I want the sleeves and the pant lengths to be long enough because it's hard to find clothes that are made for tall people.

M45: I'm kind of tall too, and a lot of times, shirts won't be long enough; I'd be between medium and large, but if I get large, I feel like I'm swimming in the t-shirt.

As exemplified in these responses from F42, M41, and M45, taller participants tended to be concerned about pants and sleeves being long enough. Participants also expressed specific concerns with the length of sleeves on shirts and legs on pants/jeans, stating that it was hard to find the right length and the right width for their arms and legs. Conversely, shorter participants would like to have short enough pants and shirts. For example, F21 mentioned, "If shirts are too short, I usually don't like that. Pants being short enough, except about shorts, because my legs are too short to wear long so I guess something short enough."

Interestingly, F23 gave an example of how her preference on pants length differed based on the garment's style:

F23: Length. I want my pants to be long enough but I guess it depends on the style of pants, like for how long you want, because if I want really wide-legged jeans, I want them to be all the way down, but for skinny jeans, I want them to be shorter. Length of sleeves too – I want my sleeves a little bit longer, and I think most people do.

The length-width ratio was also reported when asked about problems with fit, which were reported differently for different clothing types and by gender. Female participants were likely to report problems with certain garments (i.e., jeans, dresses,

skirts, jackets, shirts, and tops) and body parts (e.g., shoulders, chests, armpits, waist, legs, knees, thighs, etc.). A majority of the female participants stated that jeans were the most difficult to fit properly because the waist size and leg length were not usually both right for their body. Female participants stated that they were often unable to find jeans with both the desired tightness on particular parts of their body and the right length. For example:

F23: My major concerns with jeans are usually like too short and the waist is way too big when you buy the longer ones, so it's hard finding any jeans that fit.

F41: I always want my jeans to fit really well. I think I'm the pickiest about jeans. I want them to be tight in the right areas and not baggy, and the right length as well.

F47: Jeans – I'm always concerned about the way they fit. When I buy them, a lot of times, I feel like they're tighter around my thighs and bigger in the waist. They have to be the right length.

According to F23, F41, and F47, finding the right tightness in both the waist and thighs along with the right length was difficult.

As with the female participants, numerous male participants reported having the same types of fit problems as female participants in terms of length-to-width ratio. However, the specifics were different because men have different body characteristics than women.

M12: My biggest problem would be length-to-width ratios – if I find a shirt that fits me pretty well around, circumference wise, but it'll be a little too long or a little too short.

M15: The three things that I have most trouble with are arm length or sleeve length, especially in dress shirts. And leg length, pants are really hard for me because I can't wear too tight ones because I have a big butt, so it's hard to find the right comfort in jeans. If I find the right width, I can't find the right length; if I can find the right length, I can't find the right width.

M24: Being a larger size than the majority of people, I usually have trouble finding it where it's either for somebody who's taller than I am or it'll fit in the back in the shoulders but it won't fit length-wise. It depends on the clothing.

M12 and M15 mentioned common difficulties in finding an appropriate fit of shirts in terms of length-to-width ratios, while M15 reported his difficulty finding pants and jeans with the correct length and width. According to M24, because he has a larger body size than the majority of people, he has a hard time finding a good fit in clothing. When the clothing fits properly on some parts of his body in terms of tightness, it does not fit correctly in terms of length.

Participants' cultural background had an influence on fit perceptions.

International students tended to have a hard time finding the right length and width of clothing in the U.S. M15 expressed fit problems with the length of sleeves and pants and width of shoes in the U.S. Similarly, M35 reported difficulties because clothes in the U.S. tended to be too large while shoes tended to be too big:

M15: When I was in Korea, I don't have a problem with sleeve length but when I came here, I realized that Asian men have short arms, I guess, because here, they make the sleeves all long, so that's the experience I've had with fit. The same goes for pants, and the shoes even come out differently – I think in Asia they

come out a little wider because people have wider feet. So I was able to find a lot of wide-fit shoes because I like playing soccer, but when I came here, nobody sells wide-fit shoes. It's hard to find and you have to go online and buy it from a foreign website. Otherwise, with general clothing, what I've experienced with body fits are different so they make the clothes differently, so it's getting harder for me to find the right fit as I tend to move between sizes because of that.

M35: I can't find my size in the US clothes and shoes – it's always larger in the store, especially the shoes. Sometimes, I buy kid's shoes. I would like the clothes to shrink and get smaller so they will fit me.

**Aesthetic fit.** Aesthetic fit involves a garment's overall appearance related to body proportions, which affects perceptions of attractiveness and which is often highly related to fashion trends. Participant responses indicated that good fit in clothing was determined by whether the clothing looked good in general, showed their body in a positive way and looked attractive. Conversely, bad fit in clothing was defined as when the clothing looked bad or showed the body in a negative way. Among participants who cared about fit-related appearance, most participants tended to use the word “look(s)” preceded or followed by an adjective (e.g., nice, good/better, flattering, trim/thinner/skinny) to express good fit in clothing. For bad fit in clothing, participants also tended to use “look(s)” followed by one or more negative adjectives (i.e., chubby/bigger/ginormous, short/shorter/smaller, dumb, not good, weird, goofy).

Numerous participants reported that inadequate tightness had a negative impact on aesthetic fit. Respondent F22 mentioned that jeans that were ill fitting on her thighs created a bad appearance: “With jeans, sometimes they're too big, like at the thigh,



sometimes they don't look good.” Furthermore, M16 expressed negative appearance (i.e., looking shorter) as a consequence of inadequate tightness: “Whenever I choose pants, I care about the tightness, because if it is too baggy, then I'll just look shorter.” M46 stated, “I also want it to fit my body and if the clothes are too big or too small, it looks stupid.”

***Overall appearance.*** Numerous participants stated that they consider overall appearance as a factor of aesthetic fit, which is often related to the body. Often physical fit was cited as a factor that influenced aesthetic fit. Some participants mentioned their desire for tightness of clothing and a good appearance at the same time, often in connection with a certain body part. As expressed by M11, aesthetic fit was demonstrated by looking good (i.e., overall appearance) and looking trim (i.e., attractiveness):

M11: I would say something that's somewhat loose, not skin-tight; something that's loose but still looks good on you and makes you look trim and fit, so not skin-tight where your muscles are popping out or your belly is hanging out, but definitely loose enough so you can still see your body definition.

For M11, good fit was defined as clothes that were somewhat loose and not too tight, and which made him look good. M11 also described inappropriate tightness (“skin-tight”) as causing unintended emphasis of certain body parts, such as muscles or belly popping or hanging out. Similarly, other participants expressed the opinion that too-tight clothing could look bad if it caused unintentional body exposure, such as showing their stomach. Conversely, if the clothing is too loose, it can also look bad on one's body. For example, on someone with a bigger build, clothing that is too loose can make them look bigger or

chubby. However, on someone who is short, clothing that is too loose can make them look shorter or smaller.

When asked about bad fit in clothing, inappropriate length of clothing was cited as a factor that makes the wearer look bad. The following narrative illustrates a commonly cited negative appearance due to the length of clothing:

M45: For me, finding pants are kind of hard because I wear size 30 [waist] and 34 length, and they don't make that very often, so a lot of times when I buy 30-32, I feel like they're really short and you look dumb.

According to M45, pants that were not long enough on his legs had a negative influence on his appearance.

Fashion trends were seen as a factor that affects aesthetic fit. Participants reported that their desired fit was clothing that made them look thin, which is related to ideal body image and current styles in fashion. Some participants defined bad fit in clothing as when clothing makes them look larger or fatter, while two participants expressed the opinion that good fit is when clothing makes them look thinner. For example, F43 and F44 respectively stated "I think better fit makes you look thinner" and "Yeah, just thinner and maybe it makes you look skinny."

Fashion trends were also an important factor for participants in terms of the visual aspects of fit. If a garment fit is not currently in style, they thought that it was a bad fit. For example:

M16: I think it can be personal, but whenever I grab my old clothes from the closet from like three years ago and try them on, if it looks bad because of the fit and it's not in the trend now, then I feel bad about it.

M16 defined bad fit as when the fit of a garment was not currently in style. This example shows that participants' consideration of the visual aspects of clothing fit is influenced by fashion trends. However, according to F13, “flowy” clothing fit well on her because it did not make her worry about showing more intimate parts of her body, regardless of whether or not it was fashionable to reveal those body parts:

F13: A lot of flowy clothing is in right now, as far as loose shirts and stuff, so I like wearing that stuff because it fits well and you don't have to worry about whether or not you're going to show your stomach or something like that.

Similarly, one example of bad fit was reported by F312 as being when clothing looked overly sexy: “Sometimes, skirts that are too short look too sexy.”

A few female participants mentioned good fit in clothing as being when clothing flattered them. According to F48, a good fit is one that makes her attractive by fitting correctly on her body: “If it's flattering on you. It has to fit your body right or it's just not cute.”

**Functional fit.** Participants reported that good fit in clothing would not restrict their movement in activities and that they would feel physically comfortable moving about while wearing it. For instance:

M37: Good fit means clothes can help you do daily activities more comfortably and more easily.

M22: A good fit doesn't restrict your movement, so you feel comfortable when you move around in the clothing.

F32: I like them [flowy clothing] because it's less confined so I feel like I can like do more things and be comfortable and it's more versatile - for throughout the day and night.

These responses indicate that the definition of good/bad fit is closely related to whether participants are able to move easily when engaging in their daily activities, and whether they feel physically comfortable and unconfined.

For some participants, the tightness of clothing was related to the functional aspects of fit. To move comfortably, clothing has to be neither too loose nor too tight. Participants liked to feel comfortable when moving.

Although length often seemed to affect aesthetic fit, only tightness was related to functional fit. This is captured in M12's response:

M12: Tight enough where it looks fit to you and not baggy but loose enough where you can move around comfortably in every direction and still feel okay.

M12 mentioned physical fit, functional fit, and aesthetic fit, which means that his preference for level of tightness of clothing was related to feeling physically comfortable and having a good appearance. Similarly, F38 expressed her preference for tightness in pants in terms of what happens when sitting down; she cited fit problems with pants that she always needed to pull up. She also preferred clothing fit that was in the current fashion trend:

F38: I think pants that aren't too tight when you sit down, because when you sit down, usually pants feel tighter. And then I have like the problem where on your back, the pants, there's always a gap, so I always have to keep pulling up my

pants, so any pants that you don't have to do that is good. I do not like tight shirts at all, so I like the style right now, how they're really loose and soft.

When studying or working out, participants preferred functionally fitting clothing which made them feel physically comfortable when moving (i.e., sitting, standing, walking, exercising). When going out, they tended to emphasize the aesthetic aspects of fit related to physical fit of clothing. If they were going to a special occasion, physical fit and aesthetic fit were both considered:

M15: What fits would be what's comfortable for me, but it depends on what I'm doing too; what I wear if I'm going out and what I wear for playing basketball would be a lot different. For example, if I go out, I tend to wear a lot tighter clothes to show my body definition, but conversely, if I'm working out or studying, I wouldn't wear those kinds of clothes because those aren't the most comfortable clothes for me.

When asked about the factors that affect fit satisfaction, a few participants mentioned three-dimensional characteristics of fit even though most participants appeared to consider only one or two dimensions. F47 considered all three dimensions – physical, aesthetic, and functional fit – as factors.

F47: I think when it flatters the right things and hides the things you don't want to show, I think that's good fit. Not too tight, not too loose; too tight where it's uncomfortable, but too loose where you're drowning in your clothes.

**Social context.** Participants were likely to mention all three types of fit -- physical, aesthetic, and functional -- as elements that they considered in determining fit.

However, social situations and social feedback from others were a crucial determinant of fit success.

***Social situation.*** M15 mentioned that physical and aesthetic fit were subject to change based on social situation:

M15: I think you just have to wear the right thing in the right moment. It has to physically fit well, but also you have to be in the right situation, like I don't want to wear a very nice fitting suit to this interview, for example. I would definitely stand out. You don't want to be wearing your nice fitting, comfortable pajamas to a job interview, so I think it's not all about finding what's physically fitting, but also what's socially fitting in that situation.

For both good and bad fit of clothing, participants tended to state that their desired fit differed depending on where they were going (e.g., going out with friends versus a special occasion).

F311: I think for me, it depends on the occasion and what look you're going for. If I am just going to class, I like to wear comfy clothes, but if it's a more special occasion I buy something different.

F42: If it's comfortable and it fits you right, and it's not too long or not too short, and it's appropriate for the occasion.

F47: Going off what she said, I think good fit depends on the occasion too. I don't like to go out in something loose and baggy. Depends on the occasion and how you like things to fit.

As the above responses demonstrate, physical fit, aesthetic fit, and functional fit tended to be presented and weighted differently depending on the social situation. When it comes

to fit appropriateness for the occasion, female participants were more likely to describe their desired fit in terms of length and tightness.

The majority of responses about fit performance in a social situation also incorporated those three dimensions of fit into the social context. In other words, most participants reported that the desired fit performance in terms of physical, aesthetic, and functional fit differed based on the social situation or occasion they were in. They were likely to mention negative experiences with fit in relation to a class, a job interview or a sporting event, most of which arose from comparing themselves with other people present at the time. When considering fit for a certain social situation, participants tended to talk about two related but separate terms: comfort and fit. For example, M31 explained that he preferred a different fit in different situations:

M31: I just try to go with the flow; I don't try to stand out too much in my fit or my style, so usually, if I'm at a sporting event, I'm dressed up just like everyone else. To go to a Cyclone football game, I've got just regular comfortable fitting clothes, or if I'm at a formal event, I've got a suit on and it still feels fit and comfortable for that situation. For class, I just wear whatever. I don't think it's really necessary to dress up for class unless you're trying to impress girls. It's a mix of fit and comfortable.

Similarly, most participants felt that comfortable clothing that looked good was appropriate for class, and that not being too dressed up or down compared to other students in the class was important. However, if they had to do a presentation for a class, they tended to wear more formal clothing, such as a suit, even though it might be

physically uncomfortable. Many respondents mentioned sacrificing comfort for better fitting clothing for a formal event, as M47 did:

M47: For a job interview, I'd go more fit than comfort, just to make you look a little better...you can sacrifice the comfort at least for half an hour.

Interestingly, female participants were likely to mention clothing for special occasions as an example of social context affecting their definition of fit. F47 stated that an overly low-cut dress was not appropriate for a funeral, and that she considered the occasion when buying clothing:

F47: If I have a black dress but it's too low cut and I can't wear it to a funeral. I had to shop for the occasion. When you buy clothes, you have an occasion. When I'm wearing this, I would wear it to class; I wouldn't wear it to a party.

At the end of the interview, participants were asked about any other factors that might affect their fit satisfaction/dissatisfaction. Themes that emerged from the responses were consistent with the three dimensions of fit perceptions (physical fit, aesthetic fit, and functional fit) in social contexts:

F21: I would say length is most important, because I look for tops that are a little longer. I don't really like short ones because you have to wear a cami underneath so it's more work. And I'm usually concerned about the length of pants.

F23: I'd say tight versus loose because I tend to like my clothes a little tighter, so I care about how my jeans fit – I want them to be pretty tight.

M33: The first one would have to be the size, and then the material, how soft it is. How comfortable it makes you feel.



F17: I would say if I find it aesthetically pleasing, that's a big factor. If it looks good and if it's really nice, I'm going to wear it a lot. And like durability.

Sometimes, when I was in high school, I cared about social situations, like, I'm not going to go to a career fair wearing fish net tights with short shorts. But then you get to the point where you know who you are and you just don't care what people think about you, but you know what's appropriate and what's inappropriate.

***Social feedback from others.*** A few participants were concerned about social feedback, or what others said and thought (e.g., verbal feedback and the imagined judgment of others). Because social feedback appeared as an antecedent of social comfort, it is presented in the next section on social comfort.

**Social comfort.** A socially comfortable feeling was expressed as a consequence of positive social feedback and whether clothing was adequate to a social situation. One form of social feedback was verbal comments from others regarding physical fit (e.g., tightness) and aesthetic fit (e.g., looking good), which were the most frequently mentioned.

In addition to verbal social feedback, participants also mentioned the imagined judgment of others when assessing physical fit. For physical fit, participants mentioned concerns about creating an inappropriate impression on others as a factor that affected social comfort. F21 cited explicit comments by others about the tightness of clothing as well as what she imagined others to be thinking:

F21: Tightness. People can look at you and say, “Those pants are way too tight,” then you’re not comfortable in them. Usually I don’t like them too tight, like to the point where people can notice they’re too tight.

Similarly, F24 mentioned being concerned about the imagined judgment of others regarding her low neckline, which caused her to feel socially uncomfortable.

F24: I went to my cousin’s wedding and my neckline was too low, so I was very uncomfortable. The whole family was there, so I didn’t want to make a bad impression either.

F22 offered a slightly different point of view about how social norms affect her social comfort as related to physical fit. She stated that too low a neckline was not acceptable in society, and that she would not feel psychologically comfortable wearing it:

F22: I think what society expects you to wear, like sometimes with neckline, it might supposed to be a big v-neck with a top underneath it and it fits right but you don’t think it’s comfortable if you don’t wear a top underneath it because it’s not the norm in society.

For aesthetic fit, participants tended to state that their comfort level with clothing fit is affected by others’ comments about their overall appearance. A few participants stated that they felt socially comfortable when they received compliments from other people, even when they themselves did not feel that the clothing had the right fit or was physically comfortable. According to M15 and M22, positive comments from others referred to “looking good,” which is related to aesthetic aspects of fit.

M15: I have some clothes that don’t give me the right comfort or fit, but if people tell me it looks good, I don’t care if it’s uncomfortable; I just forget about it and I

just feel good. Even if it's not comfortable, if people tell me it looks good, I'll feel good for those 30 minutes.

M22: If the clothing fits, it gives you physical comfort. But if it doesn't really fit, but people say you look pretty good, you feel comfortable about yourself.

A few participants identified a relationship between fit and social comfort in terms of the social situation. Social comfort was determined by the appropriateness of fit for a certain social situation. For example, F32 and M37 stated that certain clothing is appropriate for a job interview or presentation because it bestows confidence about the situation; they tended to consider confidence and social comfort as the deciding factor, even though the fit might be less physically comfortable:

F32: I would feel more uncomfortable walking in a suit or being in it all day, but professionally, it can increase your confidence, going into an interview.

M37: I think comfort is the feeling about wearing the clothes, whereas fit is more focused on the situation. If you have a presentation or job interview, you will wear shoes that might not be comfortable but it fits the situation.

### **Other Factors that Affect Fit Satisfaction**

In addition to the four dimensions of consumers' perceptions of fit, discussed above, many other factors were found to have an effect on fit satisfaction, both before purchasing clothing (i.e., during shopping for clothing) and after purchasing clothing (i.e., in a use-situation). Different factors were mentioned as the antecedents of fit satisfaction depending on the time at which participants evaluate fit. Before purchasing clothing, participants were likely to cite inconsistent size and price as factors that affect

their fit satisfaction. However, different themes emerged after purchase, when considering clothing in a use-situation. Fit alteration had a negative impact on fit satisfaction after purchasing the clothing. In a use-situation, in addition to three-dimensional fit, comfort-related fit (i.e., physical comfort and psychological comfort) was found to influence fit satisfaction.

**Inconsistent size.** Several participants reported problems due to inconsistency of sizes in terms of tightness and length among brands. For example:

M47: I'd say dress clothes, because the pant sizes are often different than jeans.

Also we were talking earlier about dress shirts...the sleeve length will be different depending on who makes the clothes and a lot of shirts are baggy. Yes, I have problems with fit, I just think it's more prevalent with dress clothes.

**Price.** Interestingly, price was seen as an important factor in participants' experiences with fit, subsequently affecting fit satisfaction. If the garment was cheap, participants did not expect that it would fit well. However, if the garment was expensive, better fit on their body was expected. As mentioned by F13, better fitting clothing required paying a higher price:

F13: It's unfortunate that it seems like the more money you spend, the better the fit because the better the quality. But US college kids don't have as much money to spend on a name brand. So it seems like you might find something that fits at like Forever 21, but in those cases, 90% of what you try on will be too small or too thin or too short.

**Fit alteration.** The possibility of a change in fit after laundering or wearing was also named as a factor that negatively affected fit satisfaction. This may be considered as

an after-purchase use-situation. F11, for example, reported a negative example of fit performance when an item of clothing shrank after laundering. Conversely, M47 recounted a negative fit performance when a garment stretched after wearing:

F11: When you buy a shirt and you wash it and it becomes a cropped shirt all of a sudden.

M47: Sometimes I've had shoes fit well and then after you wear them for a while they become more uncomfortable or fit differently...maybe because of the wear...they stretch.

**Comfort versus fit.** When asked about comfort, many participants were likely to express in general terms that comfort was seen as both an antecedent and a consequence of well-fitting clothing. In other words, good fit resulted in feelings of comfort, and feelings of comfort meant that clothing was deemed to fit well. According to F22, M11, and M29, well fitting clothing offered comfort while ill-fitting clothing delivered discomfort.

F22: I think if you have the right fit, then you can be comfortable in it, because [if] you have too big of a neckline and something's going to be pulling on it all day, you're not going to be comfortable.

M11: If it fits well in your opinion, then you should have some sort of comfort.

M29: In my opinion, there is no difference between fit and comfort. I think if it doesn't fit, it means that it's not comfortable.

Even though some participants addressed the relationship between fit and comfort in interactive ways, other participants considered fit as entirely separate from comfort.

When comparing fit and comfort, both M13 and F45 said that visual appeal was included

in fit, as distinguished from comfort. This meant that looking good was not necessarily related to comfort, but it was related to fit.

M13: Comfort is the major part of fit. Fit also includes whether clothes look cool or ugly, but comfort is a major part of fit.

F45: It depends on the look. Comfortable clothes don't always mean good looking, but if it fits your body shape, it's good looking.

A few other participants also addressed the point that fit is not the same as comfort. They were likely to provide examples of clothing being uncomfortable even though it fit well. F46 mentioned that her prom dress fit well but was also uncomfortable. Furthermore, she expressed a connection between uncomfortable but well-fitting clothing and special occasions:

F46: I don't think fit and comfort are the same thing at all. I think fit is the way it forms on your body. For example, my prom dress last year fit me the way it was supposed to but it was really uncomfortable, and I wouldn't wear uncomfortable clothes every day but for special occasions.

Interestingly, the details mentioned by participants differed widely; individuals clearly have different personal preferences towards clothing due to differences in individual body characteristics. F32, for example, mentioned her friend's preference for low-rise jeans as distinct from her own.

F32: I think what people are comfortable wearing is different. I don't like the low-rise jeans either, but I have friends that only buy them.

**Physical comfort related to fit.** Several participants mentioned physical comfort related to fit as being influenced by physical fit or functional fit. For example, tightness

in physical fit was seen as an antecedent that caused physical comfort. However, some participants gave examples of physically ill-fitting clothing that nevertheless made them feel comfortable. For example, M24 mentioned that too-loose clothing could be comfortable even though – or perhaps because – it was not well fitted. Furthermore, tight clothing may not be comfortable even though it fits well. M24, F21 and F37 all stated that roomy clothing would be comfortable despite a lack of perfect fit, indicating that fit and comfort were not the same thing:

M24: Usually, when something is comfortable, it fits well or at least it fits loosely. There are exceptions like pants that are too loose – I don't like holding my pants up all day – but usually, if it fits well it's comfortable. Sometimes, things that are meant to fit tighter, even though they might fit the way they're supposed to, they're still not comfortable to wear around.

F21: A big sweatshirt would be comfortable but it doesn't fit you right, like if it's too long. If it has an elastic waist that could be tight, it fits well but you're always thinking about it. Low-cut tops – it might fit but you're always pulling it up.

F37: I think comfy is something that doesn't fit - it's bigger, so it's not the perfect fit. But if you're buying a t-shirt, you want it to hug your body but not restrict it.

Although M15 mentioned large clothing that does not fit but is still comfortable, he also expressed the idea that differences in fit and comfort are dependent on the situation.

Higher levels of comfort were preferred at home:

M15: For me I look at it differently because for example, because I go between sizes small and medium, if I want to really find something comfortable I'm going to wear at home, I would even wear a large t-shirt because that gives me the most

comfort but it doesn't give me any fit. So if I'm at home, I don't care about fit and it's all about comfort. My pajamas are usually medium or maybe even large, while the t-shirt I'm wearing inside right now is a small. Comfortable clothes don't have to necessarily fit but I do think clothes that do fit have to have a certain level of comfort to them.

M110 conveyed similar sentiments as he talked about comparing comfort to fit.

According to him, comfort results from clothing that is well fitting both physically and functionally. For example, he preferred very loose fitting clothing for sleep and a tighter fit for going out or playing sports. Similarly, F46 conveyed that she would endure physically uncomfortable clothing for special occasions:

M110: I think comfort is derived from how well it fits and shapes your body based on the scenario that you're in. If you're going to sleep, you want something that's very loose fitting on your body, something that's more comfortable. Same way with sports or if you go out, you want more of a sport-type fit.

F46: I don't think fit and comfort are the same thing at all. I think fit is the way it forms on your body. For example, my prom dress last year fit me the way it was supposed to but it was really uncomfortable, and I wouldn't wear uncomfortable clothes every day but for special occasions.

**Psychological comfort related to fit.** Participants reported that the right fit resulted in psychological comfort. Participants expressed psychological comfort in two ways: (1) feeling good and (2) feeling comfortable. Often participants regarded psychological comfort as both an antecedent and a consequence of confidence.



Numerous participants stated that one consequence of well-fitting clothing was confidence, which meant or led to psychological comfort. For example:

F42: A lot times, if it fits you right, it makes you confident, and that makes you comfortable too.

M21: If it fits well, you feel good, and if you feel good, it's in your body language – you project more confidence. If it doesn't fit well, you're uncomfortable and you're scrumming around.

M22: If it fits well, you can stand straight; you can feel the confidence in you and you can give presentations well, but if it doesn't fit, it makes you sweat and people might think you're nervous.

Self-judgment of the aesthetic aspects of fit seemed to play an important role in confidence. F48 stated that looking good made her confident: “F48: If you know you look good in something, you'll feel more confident wearing it.”

### **Strategies for Achieving Good Fit**

Strategies for achieving good fit were also explored and the following factors were found to have a positive impact on fit satisfaction: (1) buying certain brands of clothing that participants have previously experienced as providing good fit, (2) buying one-size-bigger clothing to accommodate shrinkage and size changes after washing, and (3) trying clothing on before buying it.

**Fit knowledge of certain brands.** A majority of participants reported generally positive experiences with apparel fit when they knew which brands of clothing fit them well, and they were likely to exhibit brand loyalty in those cases:

F13: I got good experiences with going back to the same brand, so I have my few stores or few name brands that I always go to because they're always consistent.

F21: Good, because I think I've found the stores that have the sizes that I fit into for pants and shirts, or that have the different options, so I shop at the same stores because I know that the stuff is going to fit.

F31: You've got to find a store that you know their sizes; then it's easier, otherwise it's really frustrating to try on and try on and it doesn't fit. Because some stores, small will be for like high schoolers, but in other stores, small will fit me. So it depends on the stores.

F46: I would say that by now, there are a couple of brands that I know are going to fit me really well, so within those brands, I have a good experience, there are some stores that I just know are not going to fit right because I'm shorter. I always get Hudson jeans because I know they are going to fit me really well, but if I went to Abercrombie, they might not fit me.

M12: I like to shop at Kohl's. I'll go there and try everything I buy but usually I'll find one brand that I like in a certain size, and if it fits me right then I'll maybe go out and get two or three of those in different colors.

M26: I have trouble finding the right size for me because same sizes for different brands are different so I usually buy clothes from the same brand.

However, F14 expressed difficulty in finding jeans that fit well on certain body parts (i.e., waist, thighs, and calves), which she cited as a reason to go to a certain trusted brand:

F14: For tops and dresses, I can usually find something that fits, but for jeans, I usually have to go to the same store or expensive stores, because usually they're too big on my waist but tight on my thighs and calves.

Other participants cited bad experiences with fit that were dependent on brand. F41 expressed that a certain brand was not a good fit for her:

F41: Bad, because I feel like I usually take in six things into the dressing room but I maybe get one. I feel like people at Forever 21 hate me because I take in so much stuff and I never actually buy it.

**Purchase of one-size-larger clothing.** A few female participants stated that they preferred to buy larger size clothing. Two reasons for favoring one-size-bigger clothing were given. F32 stated that she preferred larger-size clothing for reasons of comfort, because it was less confining and allowed freer movement. F33 liked to buy larger-size clothing because she predicted that it would shrink after washing.

F32: For me, I am more casual; I don't like my jeans fit too tight or clothes to be too tight so usually if I think it fits well I usually buy size bigger which is weird, but that's what I do. I like them because it's less confined so I feel like I can like do more things and be comfortable and it's more versatile - for throughout the day and night.

F33: I do the same thing. If it fits that size fits, for some reason, I always buy a size bigger because it always seems to shrink.

A few participants mentioned concerns with shrinkage of clothing when laundered. The concerns seemed to be related to the material (e.g., cotton, wool). As a

consequence of these concerns, consumers chose to buy larger clothing than they usually wear. For example:

F37: I am concerned about whether or not it is going to shrink. I always look to see what it's made out of, whether or not to get a larger size if it is going to shrink in the wash.

M37: I think it depends on the material for clothes. For shirts, they get smaller after you wash and dry them, especially in the U.S., so I prefer to get larger ones because after you wash them, they become uncomfortable.

Tall participants were also concerned about fit when they wash their clothes, due to shrinkage.

F 31: I'm really tall, so it's hard for me to buy jeans. I usually get extra-long because they'll shrink in the wash too, and I don't have to stand on the end of my jeans trying to lift them up.

M41: The biggest problem I have is just buying clothes with long sleeves and the sleeves are never long enough. When you buy them, they shrink up and the sleeves will get too short, or pant lengths are too short, or the body is too short.

**Trying garments on.** Participants tended to have positive experiences with fit after trying clothing on, which may have a positive influence on fit satisfaction. Overall good experiences were based on the opportunity to try on a garment before purchase to see whether it fits:

M41: I usually don't buy things without trying them on because most of the time when I try things on, the fit is not good so I usually won't buy anything without

trying it. I won't buy it unless I'm satisfied with it so once I buy it I would be satisfied.

M25 addressed the need to try on garments because different brands may have the same size designation but different measurements:

M25: If I'm buying some clothing, I must try it on and find what size is good for me. For different brands, they have different styles even if it's the same size, so you have to try it on.

Some male participants mentioned preferring offline shopping over online shopping due to the ability to try on clothing.

M110: When it comes to apparel fit, I've always found it a lot easier to buy it at the store because you can try it on to see if it fits or not, whereas if you buy it online, you waste money if it's the wrong fit.

M210: Usually, I have a good experience with fit if I try the clothes on but if you're ordering it online and you can't try it on, shirt sizes vary so much between brands, which can turn out bad sometimes.

#### **Research Objective 4: Consequence of Ill-fitting Clothing**

When asked about the most important criteria in purchasing clothing, a majority of the participants named fit as the most important factor. Physical fit (i.e., correct size), aesthetic fit (i.e., overall appearance), and functional fit (i.e., unrestrictiveness/restrictiveness) or physical comfort related to fit were features that participants commonly cited regarding fit as an important factor.

The consequence of trying on clothing and finding that it did not fit well was a decision not to buy the item. Several reasons to avoid buying ill-fitting clothing were: (1) poor appearance, (2) bad feelings, such as a decrease in confidence and comfort, and (3) waste of money. For example, M35 named fit as the most important factor for him because ill-fitting clothing resulted in poor appearance:

M35: I will not buy clothes if they don't fit, because if they are too big or small, they look weird. So fit is the most important.

Another reason participants gave was that wearing ill-fitting clothing made them uncomfortable:

M17: Fit is really important for me because if you're wearing something that doesn't fit correctly, you're not going to be confident or comfortable. I feel like fit sets the tone for everything else.

Female participants cited one reason that was not given by male participants. F18 cited a higher sensitivity to price as having a significant influence on perceptions of fit and therefore affecting her buying intentions. Similarly, numerous female participants stated that they would not buy clothing that did not fit well because they did not want to waste their money on clothing that would not be worn.

F47: If it doesn't fit right, it's not comfortable, and I'm not going to wear it. I don't really want to waste the money on it, so it's the biggest thing when I consider buying something; if it doesn't fit, I won't buy it.

When asked about the consequences of clothing that did not fit but that met other desirable criteria (e.g., color, fabric, and style), a majority of participants stated that they would not buy an item of clothing if they were not satisfied with fit. Among that

majority, a few female participants stated that they would not buy an item of clothing if it was too expensive:

F18: Depends how expensive it is too, because if it's really expensive and it doesn't fit me, I won't buy it, because I won't wear it.

Other participants stated that they would decide to buy clothing depending on its price: if the clothing was cheap, participants were likely to tolerate ill-fitting clothing; however, if the clothing was expensive, participants' expectations of a good fit increased.

F11: I'm okay with buying a really cheap shirt and only wearing it once, where if I went to Express and spent a lot of money there, I'd plan on wearing it all the time.

As mentioned above, one reported consequence of purchasing ill-fitting clothing was that the item was rarely or never worn, imagining or predicting this consequence had a negative effect on buying decisions while shopping for clothing.

F31: If it doesn't fit right and it's in my closet but it's really cute, I ask myself, "Would I really wear that?" and I say, "No," then I won't buy it, so you have to feel comfortable in the clothes that you wear.

F47: If it doesn't fit right, it's not comfortable, and I'm not going to wear it. I don't really want to waste the money on it, so it's the biggest thing when I consider buying something; if it doesn't fit, I won't buy it.

Some participants stated that, if they chose not to buy an ill-fitting item, they would attempt to find other options, such as asking a salesperson about other sizes available in that store or other stores, or searching for alternative clothing in offline or online retail stores:

F21: Usually I wouldn't buy it, or I would just look for something similar to it in another store and see if that would fit better. So I guess I'd always keep looking for that shirt but something similar to it.

M27: I would ask them to check the system to look for another size, or if they don't have it, I'd try another size. If not, give up.

As mentioned above, one risk of purchasing ill-fitting clothing was the possibility of never wearing it, as stated by F41 and F28:

F41: Sometimes I still buy it if I like it, but it won't ever get used.

M28: If I really like it, maybe I will buy it, but it depends. I might buy it but not wear it for a long time.

Although many participants regarded fit as the most important factor when shopping for clothing, a few participants addressed other factors, such as style, design, color, and brand or logo, that might make them buy an ill-fitting item. For example:

M33: I think fit is important but when I go shopping, the first time I see the clothes, I see if it's cool or not; first you see if the colors fit you and if the style is good, then you try to find the size and see whether it fits or not. If I like the clothes but the size doesn't fit me, I won't choose it. So fit is important but it's not the first thing I think about.

Often a variety of factors were named as considerations when determining whether to purchase clothing, including the item's physical fit (e.g., size) and functional fit (e.g., restriction of movements). The possibility of having the clothing tailored by others, self-tailoring, or coordinating with other accessories (e.g., belts), were also cited as factors that made participants consider buying a garment. A few participants stated that they



might buy it and then give it as a present to friends or relatives if the price was cheap or reasonable. Comments made by a shopping companion (e.g., mother or friends) were influential for a few participants, who said that they ended up buying ill-fitting clothing when their shopping companion made positive comments about it.

### **Research Objective 5: Gender Comparison on Fit Perceptions, Attitude, and Overall Satisfaction with Fit in General**

For this objective, quantitative data from the survey and qualitative data from the focus group interviews were merged to compare male and female perceptions, attitudes, and satisfaction regarding fit. For qualitative data analysis, the results of fit in four dimensions (physical, aesthetic and functional fit, and social context) were organized so as to compare by groups in each gender. Male and female participants from all of the groups commonly expressed fit in terms of these four dimensions. Going to class and going out were commonly mentioned by both women and men as social situations which require a different fit, but male and female participants also reported considering different social situations: male participants mentioned job interviews, church, and sporting events, while female participants mentioned special occasions (e.g., prom, wedding, funeral, family reunion).

Although the mean differences between male and female participants' overall fit satisfaction were statistically insignificant (see page 43), the gender differences in overall fit satisfaction can be explained by the qualitative results for three questions (concerns, problems, and experiences with fit). Male and female participants reported different

negative aspects of fit in the physical, aesthetic, and functional dimensions. Male participants were more likely to report negative aspects of fit than female participants.

Although all four groups of male participants (M1, M2, M3, and M4) were concerned with physical fit in terms of length and tightness, one group of female respondents (F1) reported concerns with both length and tightness while two other groups of female respondents (F2 and F3) were concerned only with tightness in relation to physical fit. Two of the groups of male participants (M1 and M2) and one group of female participants (F2) reported concerns with aesthetic fit (i.e., overall appearance). With respect to functional fit, three groups of male respondents (M1, M2, and M4) expressed concerns with functional fit (i.e., movement), while none of the female participants mentioned concerns with functional fit.

When asked about their problems with fit, issues with physical fit (length and tightness) and functional fit were reported by M1, M2, M3, and F3. Two other groups expressed problems with physical fit in terms of tightness as well as length (M4 and F1). One group of female participants mentioned that they had problems with physical fit in terms of tightness (F2). Problems with aesthetic fit were mentioned by one female group (F1) but not by any group of male respondents.

Regarding experience with fit, only the physical aspect of fit was expressed by both male and female participant groups: tightness was mentioned only by two groups of male participants (M2 and M3) and by two groups of female participants (F2 and F3). Tightness and length were reported by both male (M1 and M4) and female participants (F1 and F4). One group of female participants (F1) reported negative experiences with aesthetic fit.

## **CHAPTER 5. DISCUSSION AND CONCLUSION**

### **Overview**

The purpose of the current study was to develop an understanding of consumers' overall satisfaction with fit in general; to qualitatively investigate consumers' fit perceptions; and to explore factors that may affect consumers' fit satisfaction when they evaluate garment fit. Previous researchers have focused heavily on apparel fit from the designer's and researcher's perspectives, while this study explored clothing fit from the consumers' perspective. The research objectives were to assess and identify the following:

- (1) Overall fit satisfaction in general
- (2) Perceptions of fit
- (3) Factors that may affect fit satisfaction
- (4) Consequences of ill-fitting clothing
- (5) Gender comparison of fit perceptions, attitudes, and overall fit satisfaction in general

To understand consumer satisfaction regarding clothing fit, this study explored the possible factors that consumers might use to evaluate whether clothing fit is satisfactory. Fit perceptions from the expert's viewpoint has been examined to find practical ways to improve physical fit (Ashdown & Loker, 2006; Ashdown & Loker, 2010; Beazley, 1999; LaBat & DeLong, 1990). However, few studies have been published to date that investigate consumers' perceptions of fit (i.e., fit preference and concerns with fit and size of garments). Furthermore, most extant research has focused

heavily on women's satisfaction with fit as it relates to cathexis with various parts of the body, which in turn is related to age (Alexander et al., 2005; Goldsberry et al., 1996; Hogge & Baer, 1986; Klerk & Tselepis, 2007; Shim & Bickle, 1993), body size (e.g., petite, tall, plus-sized) (Jones & Giddings, 2009), and specific garment categories (e.g., pants, jacket, blouse) (Feather et al., 1997; Frost, 1988; Huck et al., 1997). In addition, no studies have compared perceptions/attitudes and satisfaction regarding fit in general between young male and female consumers.

The present study employed qualitative focus group interviews with 66 participants to explore fit perceptions and other factors that affect fit satisfaction from the consumers' perspective. A quantitative, paper-based survey was also administered before the focus group sessions to examine gender differences in overall fit satisfaction.

### **Research Objective 1: Overall Fit Satisfaction In General**

The results from the quantitative survey indicated that participants are somewhat satisfied with apparel fit in general. Gender, nationality, and class standing did not differentiate student responses to these items. In previous studies, many researchers have investigated female fit satisfaction on particular body areas or with particular garments, and have found that most women were dissatisfied with fit in their lower body (LaBat & DeLong, 1990; Feather et al., 1996; Feather et al., 1997). However, this study investigated both female and male consumers' overall satisfaction with fit in general. Thus, the results of the present study are not consistent with the results of previous studies.

## **Research Objective 2 and 3: Consumer Perceptions of Fit and Other Factors that Affect Consumer Satisfaction/Dissatisfaction with Fit**

### **Perceptions of Fit**

Factors of fit perceptions were explored when asking about good or bad fit; concerns, experiences, or problems with fit; and fit performance in social situations. Participants mentioned that good fit in clothing is related to appropriate length and desired tightness on their body; conversely, participants stated that bad fit occurs when clothing is not the right length or tightness on their body. Preferences for tightness or looseness varied with social situation or context. In general, greater looseness was seen as a better fit for situations requiring physical activity; greater tightness was preferred for social situations in which attractive appearance was more important than physical movement. In general, physically uncomfortable clothing that impeded movement was linked to perceptions of poor fit, as was clothing that produced a negative visual appearance. Definitions of good or bad fit also differed based on the area of the body considered and on the type of garment (e.g., pants, shirts, tops); these in turn are often affected by fashion trends and nationality. Overall, the focus group interviews revealed that young adult consumers consider four dimensions when evaluating apparel fit: physical fit (i.e., length and tightness), aesthetic fit (i.e., overall appearance, which is often related to how fashionable they are or how attractive they feel they are to others), functional fit (i.e., restrictiveness/unrestrictiveness when performing a certain activity), and social context (i.e., social situation and feedback from others). The dimensions and their relationships are presented in Figure 5.1. Physical, aesthetic, and functional fit were

shaped in separate or overlapping ways depending on social context (i.e., appropriateness of fit for a certain occasion or situation, and feedback from others). Assessments and perceptions of fit are made within social context; therefore, social context surrounds the three other dimensions of fit. All three dimensions of fit play a role in interacting with social context. When any of the three aspects of fit within social context are satisfied, then social comfort may be achieved; however, satisfying all three aspects of fit at the same time may result in highest levels of social comfort.

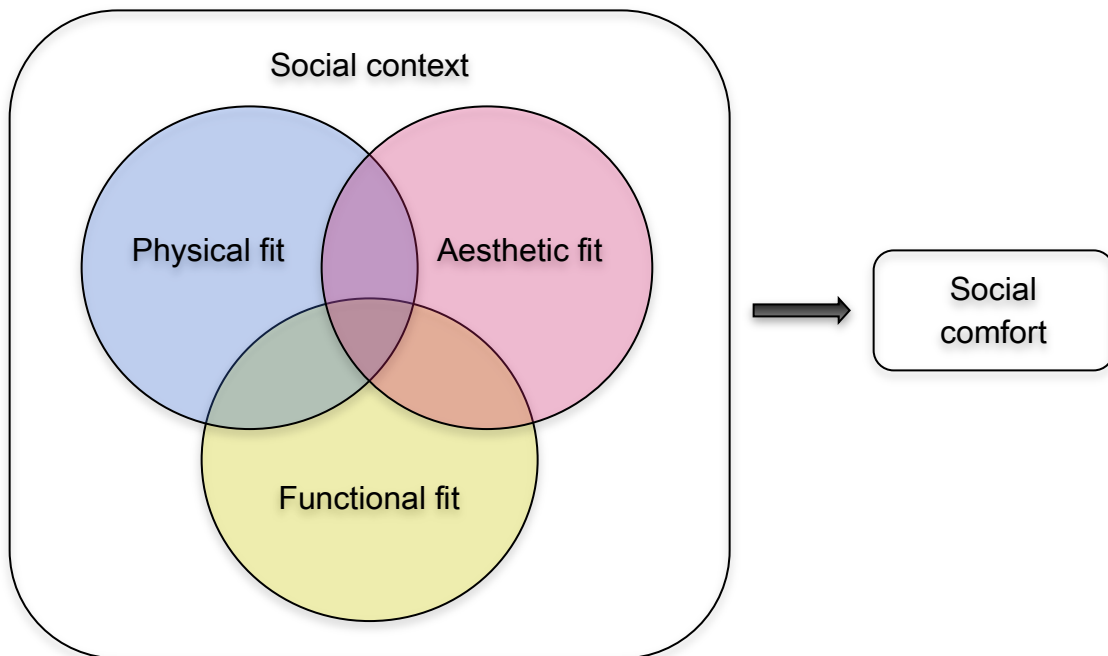


Figure 5-1. Proposed conceptual model for fit perceptions from consumer perspective

The proposed conceptual model illustrates the interrelationships of the three dimensions of fit perception -- physical, aesthetic, and functional. These interrelationships have been well explained in previous conceptual definitions of clothing

fit, which contend that clothing fit is the relationship of clothing to the body, combining the visual analysis of fit and the physical evaluation of comfort (LaBat, 1997). In this study, consumer discussions of fit reflected the same dimensions proposed by other researchers. Individuals perceive fit when looking in a mirror or down at themselves and when feeling clothing on the body (Frost, 1988). To fit well, clothing must conform to the human body (Fan et al, 2004; Brown & Rice, 2001) and move easily with the body (Fan et al, 2004; Shen & Huck, 1993).

Focus group responses about degree of tightness and length were associated with specific body parts. Aesthetic fit was relevant when evaluating fit by looking at oneself. Functional fit was related to whether a wearer could move comfortably when performing daily activities (e.g., sitting, standing, exercising) while wearing the garments. Each participant's individual perception of fit was shaped by different weighting of the dimensions of social context, which result in an overall level of social comfort. For example, some participants only expressed their perception of fit in one dimension, while others addressed more than one dimension.

**Physical fit.** Physical fit refers to features of fit that are physically perceived when evaluating fit in terms of the relationship between clothing and body, such as tightness and length. Participants' preferences for physical fit were distinctly different, showing consistency with prior research on fit preferences (Alexander, Connell, & Presley, 2005; Anderson et al., 2000; Pisut & Connell, 2007; Plutt, 2011). This is because physical fit is strongly correlated with individual body characteristics, such as height and build, which differ depending on ethnic background (i.e., nationality in this study).

***Tightness.*** Both male and female participants regarded tightness as a factor influencing perception of physical fit. This partially supports the findings of Pisut and Connell (2007) that young female consumers prefer different levels of tightness (fitted, semi-fitted, loosely-fitted) depending on the garment (i.e., jacket, dress, skirt, top, jeans, pants). However, consumers' subjective preferred fit in terms of the degree of tightness varied more (i.e., somewhat tight, not too tight, not loose, somewhat loose, not too loose, loose, not too tight and not too loose) and depended on body area considered. This indicates that consumers' preference for tightness is individually different, dependent not only on type of clothing but also on how the garment fits different areas of the body. Thus, the finding of the current study implies that previous fit preference studies are of limited usefulness in explaining consumers' fit perception on tightness.

***Length.*** Length was also one of the fit evaluation factors frequently mentioned during the focus groups. Height was strongly related to perceptions of garment length. Taller consumers were concerned about whether clothing was long enough for their arms and legs, while shorter consumers preferred clothing that was not too long. This result implies that it is necessary to include preferred length of garments in addition to desired degree of tightness when investigating consumers' perceptions and assessments of fit.

***Aesthetic fit.*** Aesthetic fit refers to features of fit that are visually perceived when looking at an individual's clothed body, such as overall appearance on the body and attractiveness. The focus group participants considered fit to be related to whether clothing looked good on their body and appeared attractive to others. Aesthetic fit was often related to fashion trends or personal motivations. This study shows a partial consistency with previous studies regarding the concept of aesthetic fit, which relates to



the appearance of the garment in relation to the body (Brand, 1964; Eckman et al., 1990; Outling, 2007).

***Overall appearance.*** Overall appearance was considered in both positive and negative ways, and was sometimes related to consumers' body image. For example, participants expressed that a good fit was when clothing (1) revealed their body definition or body curves in an attractive or socially appropriate way, (2) hid flaws of their body, and/or (3) made them appear thinner or taller. Conversely, bad fit was when clothing (1) emphasized unintended body parts (e.g., large belly) or (2) made the person look wider or fatter. These results parallel previous findings by Kim (2008) who found that clothing fit was closely related to perceptions of and attitudes about one's own body. Interestingly, not once in the present study did consumers use the terms of line, balance, grain, and set, which are the criteria of fit evaluation developed and used by researchers and designers (Erwin & Kinchen, 1974; Song & Ashdown, 2010). These concepts may shape perceptions and assessment, but are not part of the language used by consumers.

Attractiveness was also considered when consumers thought about aesthetic fit -- whether the garment was flattering or looked good to others. Attractiveness in this study was defined as a visually pleasing fit that gives a good impression to others. Ashdown & Loker (2010) explored designers' and researchers' tests for fit that focused on how a garment looks to others, but no studies to date have investigated aesthetic fit as perceived by others from the consumers' perspective. This implies that attractiveness in aesthetic aspects of fit must necessarily be regarded as an important factor for consumers when evaluating apparel fit.

**Functional fit.** Functional fit refers to features of fit that are tangibly perceived when an individual moves their clothed body to perform certain activities. Functional fit was found to be an important dimension from the consumers' perspective, considering whether clothing was comfortable to move in. Consumers' definition of fit in the functional dimension is similar to "functional ease," which is defined by Erwin & Kinchen (1974) as the amount of fabric allowed for body movement. Although participants in the current study defined their preferred level of functional fit differently depending on the activity they were engaged in, consumers usually wanted to feel physically comfortable when performing their daily activities (e.g., sitting, walking, exercising, etc.). This implies that consumers consider desired functional fit for each activity, instead of thinking about a single consistent amount of ease (i.e., functional ease).

Relationships among themes were also found. Physical fit was likely to affect aesthetic and functional fit. Excessive tightness or looseness affected aesthetic fit and functional fit. For example, clothing that was too tight or too loose provoked the negative perceptions of functional and aesthetic fit, because it restricted movement uncomfortably as well as presenting a bad appearance; this is consistent with prior studies (Kinley, 2010; Rasband & Liechty, 2006). Conversely, adequate tightness (e.g., loose enough but not baggy) resulted in good functional fit (e.g., performance for a certain activity) and aesthetic fit (e.g., body definition showing), also consistent with prior studies (Kinley, 2010; Rasband & Liechty, 2006).

**Social context.** Social situations and social feedback (this includes both explicit verbal feedback regarding participants' appearance as well as the imagined or inferred

judgment of others) were included in the concept of social context. Results implied that young consumers tend to desire different fits in the physical, aesthetic, and functional dimensions based on social situation. In addition to social situation, verbal comments from others on their overall appearance and their imagined image as seen by others were also cited as important and influential factors for young consumers when evaluating fit. Positive comments from others and the imagined favorable judgment of others were shown to positively affect young consumers' fit satisfaction. Thus, young consumers' fit perceptions as explored in the current study falls into four dimensions, which are often strongly interrelated to each other. For example, physical fit is related to aesthetic and functional fit, and the importance of each dimension is subject to change in certain social situations or as a result of feedback from others.

**Social comfort.** Social comfort refers to a feeling of well-being within a social context that results from satisfaction or dissatisfaction with fit. Results reveal that clothing that is appropriately fitted for a given social situation results in the wearer feeling socially comfortable and confident. In other words, social comfort is achieved when the three types of fit coincide with appropriateness of fit in a given social situation. In addition, feedback from others and imagined self-image were also found to positively influence social comfort. This is consistent with the concept of social comfort defined by Sontag (1985) as “a mental state of social well-being expressive of the appropriateness of one's clothing to the occasion of wear, satisfaction with the impression made on others or with the degree of desired conformity of dress to that of one's peers” (p. 10).

### **Other Factors that Affect Fit Satisfaction**

In addition to physical comfort and psychological comfort, other factors which may affect consumer fit satisfaction were related to the time of occurrence: during shopping for clothing vs. after shopping for clothing (e.g., a situation where the clothing was worn). During shopping for clothing, inconsistency of size and price affected consumer fit satisfaction. After purchasing clothing, results indicated that social feedback and fit alteration (e.g., shrinkage during laundering) affected consumer fit satisfaction.

**Comfort related to fit.** Participants tended to use the word “comfort” to express their generally positive feelings related to fit and did not distinguish between physical and psychological comfort. However, participants compared fit to comfort in two different ways: as having no relationship or as having a causal relationship. This result is inconsistent with Frost (1988) who found that consumers often use the terms “fit” and “comfort” interchangeably, to mean the proper degree of fitness on the body. Participants who did distinguish between fit and comfort mentioned that fit comprised only the visual appearance of the garment when worn, which is similar to previous findings (Ashdown & DeLong, 1995; Frost, 1988). For those who mentioned a causal relationship between comfort and fit, comfort was seen both as an antecedent and a consequence of well-fitting clothing. In other words, a good fit resulted both in, and from, a comfortable feeling. This finding is also consistent with Kinley (2010) and Rasband & Liechty (2006), who found that ill-fitting garments make consumers feel uncomfortable.

***Physical comfort related to fit.*** Physical comfort related to fit is defined as a

feeling of physical well-being resulting from satisfaction with fit. Results show that physical comfort related to fit is achieved when the consumer is satisfied with physical and functional fit, including aspects such as tightness, length, size, and freedom of movement. Participants desired different levels of comfort depending on the activity in which they engaged or planned to engage in (e.g., going out, sleeping, exercising, etc), which is consistent with Sontag (1985). Physical comfort related to fit is thus considered a consequence of physical and functional fit.

***Psychological comfort related to fit.*** Psychological comfort related to fit is defined as a feeling of mental well-being resulting from satisfaction with fit. According to results of this study, psychological fit is achieved when the consumer is satisfied with aesthetic fit (including aspects such as overall appearance and attractiveness) and physical comfort related to fit (which in turn is affected by physical fit and functional fit, as described in the preceding paragraph). Results indicate that participants regard psychological comfort as a consequence of feeling good or confident, as well as a consequence of well fitting clothing. This result is supported by Alexander et al. (2005) who found that fit contributed to the confidence and comfort of the wearer. Psychological comfort related to fit includes social comfort, which is affected by social situations and social feedback from others. For example, compliments on an individual's overall appearance resulted in a psychologically comfortable feeling even in cases where clothing did not actually fit well.

**Inconsistent size.** Participants frequently reported that different brands offered a different physical fit in terms of size. This implies that consumers are likely to have a negative experience when inconsistency of size across brands causes fit dissatisfaction.

**Price.** The participants expressed that they are likely to spend more money on well-fitting clothing. Furthermore, they are likely to expect a higher quality of fit with more expensive clothing; conversely, they tend to expect a lower quality of fit with cheaper clothing. This result implies that consumers will be more dissatisfied with ill-fitting clothing if it is expensive and less dissatisfied with ill-fitting clothing if it is cheap.

**Fit alteration.** Lack of persistence of fit had a negative impact on consumer satisfaction with fit. Fit alteration after washing or while wearing the garment was found to be an antecedent to consumer fit dissatisfaction.

### **Strategies for Achieving Good Fit**

Participants had various strategies for achieving a good fit when shopping for clothing. These included buying certain brands, choosing garments one size bigger than usual, or buying clothing only after trying it on. Those strategies were derived from their prior experiences.

**Fit knowledge of certain brands.** Participants were likely to be loyal to certain brands which provide them with a perfect or nearly perfect fit. If they know that a brand's clothing will fit their body, they are likely to have a positive experience with fit, causing a higher satisfaction with fit.

**Purchase of one-size-larger clothing.** Based on previous experience, consumers sometimes try to get a good fit in clothing by presuming a later use-situation. For example, one-size-larger clothing was often desired due to the potential for shrinkage after washing. Furthermore, many participants wore a larger size of clothing to distinguish comfort from fit, stating that comfortable clothing might not fit perfectly on

their body.

**Trying garments on.** Participants preferred trying garments on before purchase in order to ensure a good fit. The inability to try garments on when shopping online was cited as having a negative impact on consumers' experiences with fit. Conversely, the ability to try garments on in brick-and-mortar stores positively affected consumers' fit experience.

#### **Research Objective 4: Consequences of Ill-fitting Clothing**

One consequence of clothing that did not fit well was that consumers chose not to buy the clothing, attempted to find other options by asking a salesperson about availability of other sizes in the store or at other locations, or looked for alternative clothing in other stores. This was true even when the garment met consumers' other criteria (e.g., color, fabric, style). However, if participants rated the other criteria as much more important, the consumer would sometimes buy the garment anyway; this was determined by the degree to which physical fit (e.g., size), functional fit (e.g., easy movements), and/or price (e.g., not too expensive or cheap) were acceptable. These responses indicate that a majority of consumers will not buy clothing that does not fit well on their body, but that some consumers will buy ill-fitting clothing if they are strongly influenced by other factors. This implies that although clothing fit is the most important single factor influencing clothing purchase decisions, a strong enough combination of other factors can sometimes override a lack of fit.

## **Research Objective 5: Gender Comparison of Fit Perceptions, Attitudes, and Overall Satisfaction with Fit in general**

### **Fit Perceptions and Attitudes**

Male and female participants' discussed the same five themes (i.e., physical fit, aesthetic fit, functional fit, social context, and social comfort), but the results revealed distinct gender differences toward all four dimensions of fit (physical, aesthetic, and functional fit, and social context). For example, male participants reported more concerns with physical and functional fit than did female participants, perhaps reflecting the agonic, action orientation emphasized for men (Kaiser, 1997). Only female participants cited attractiveness as a factor of aesthetic fit, again reflecting socialization to gender role norms, in this case a hedonic role (Kaiser, 1997). Gender differences were also found in the manner in which social situations drove participants to define fit. For example, male participants mentioned desired fit in social situations in terms of job interviews, church, and sporting events, as distinguished from going to class and going out. However, female participants reported special occasions (e.g., prom, wedding, funeral, family reunion) as opposed to going to class and going out. This finding implies that both male and female consumers are likely to consider not only physical fit but aesthetic and functional fit, which are affected by what they are doing and where they are going. The different nature of the social situations mentioned by male participants (competitive social situation) from female participants (family/emotional social situation) may reflect traditional gender role definitions (Kaiser, 1997).



### **Overall Fit Satisfaction in General**

Independent t-test analysis revealed no significant gender differences in the mean scores of overall fit satisfaction in general, although fit satisfaction for males was slightly lower than for females (see Table 4.4). This indicates that female and male consumers are not differently satisfied with overall fit. Although some studies have argued that gender differences exist in buying behaviors and attitudes (Frith & Gleeson, 2004; Gravely, 1999; Liu & Dickerson, 1999; Moore, Doyle & Thomson, 2001), the findings in this study suggest no differences in fit satisfaction in general between genders. However, the quantitative measure was not sensitive to contextual and dimensional differences of fit.

### **Implications**

The present study provides theoretical implications for understanding the four factors that young consumers employ in evaluating fit, which are physical, aesthetic, and functional fit, and social context. As shown by the results of this study, physical, aesthetic, and functional fit play a significant role, either in combination or by one of them weighted as more important depending on social context; this means that fit perceptions from the consumers' perspective needs to be viewed in multiple dimensions. However, many previous studies have examined fit satisfaction in terms of physical fit alone, which is not sufficient to fully understand perceived fit from the consumers' perspective. Furthermore, although many studies have considered consumer fit satisfaction as an important factor when shopping for clothing, only a few studies have investigated consumers' fit preferences that affect fit satisfaction (Kinley, 2010; Plutt,

2011). Thus, qualitatively investigating all possible dimensions of factors that affect fit satisfaction from the consumers' empirical viewpoint provides an understanding of the entire spectrum of fit satisfaction: (1) factors of fit perceptions (i.e., physical, aesthetic, functional fit, and social context), and (2) other factors (i.e., physical comfort related to fit, psychological comfort related to fit, inconsistent size, price, and fit alteration). The latter fall into two dimensions according to whether consumers consider the factor before or after purchasing the clothing. During shopping for clothing, consumers tend to consider inconsistent size and price. However, fit alteration, physical comfort related to fit, and psychological comfort related to fit affect consumer satisfaction with fit after purchasing clothing.

In addition to considering the antecedents of fit, identifying the consequences of ill-fitting clothing by exploring consumers' responses towards ill-fitting garments also contributes to an understanding of fit satisfaction. According to the results of this study, young consumers tend to make a decision not to buy ill-fitting garments based on their belief that the garments will result in a poor appearance, cause bad feelings, and be a waste of money. This is partially consistent with Kinley (2010) and Rasband & Liechty (2006) who found that ill-fitting garments make consumers feel uncomfortable and cause them to think negatively about their body and appearance. However, the possibility of tailoring a garment or coordinating with other accessories made participants consider buying ill-fitting garments if they were satisfied with other factors (i.e., style, design, color, and brand/logo). Retailers or marketers potentially could sell clothing that does not fit perfectly by offering custom tailoring or suggesting attractive accessories.

This research is valuable because it is the first to explore strategies for achieving

good fit from young consumers' perspectives. These fit strategies, such as knowledge of how certain brands fit, purchase of one-size-larger clothing, and trying garments on, could be employed as a marketing tactic. For example, retailers and marketers could provide information regarding a garment's degree of fit difference from competing brands and the predicted degree of fit difference after laundering. In addition, e-retailers could provide a virtual model on their websites to enable young consumers to "try on" garments before purchasing.

This research also brings increased conceptual clarity to the concepts of "comfort" and "fit." Comfort related to fit was found to have two dimensions, physical and psychological, which subsequently affect consumer fit satisfaction. Physical comfort related to fit results from physical and functional fit. Psychological comfort related to fit is affected by aesthetic fit as well as physical comfort related to fit within social context. This implies that comfort and fit are interrelated and affect each other, and that both play an important role in consumer fit satisfaction.

Identifying the four dimensions of fit in consumer fit perceptions has useful implications for product developers and designers interested in developing ways to increase consumer satisfaction. For example, product developers and designers can better satisfy consumers' fit desires by asking target consumers which dimensions of fit (i.e., physical, aesthetic, and functional fit) they consider more when shopping for their brands. If target consumers are satisfied with physical fit but dissatisfied with functional fit, marketers can focus more on designing clothing that makes consumers feel more comfortable in relevant activities and can display clothing in retail stores or online that highlights functional fit for various activities. Information about target consumers' fit

preferences in certain social situations could also be applied to develop new marketing strategies, such as categorizing clothing according to social contexts and offering recommendations for proper fit.

Findings on difference in overall fit satisfaction between genders indicates no distinguishable difference in satisfaction with fit regarding ready-to-wear in general, implying that men today are as satisfied with clothing fit as are women. Furthermore, results relating to young consumers' overall fit satisfaction imply that there needs to be an improvement of fit in apparel.

Considering the multiple factors that affect consumer fit satisfaction, marketers and retailers need to take into account all aspects of perceived fit rather than focusing solely on physical fit. In addition, inconsistent sizing among brands and fit alteration would benefit from targeted marketing strategies in order to maximize consumer fit satisfaction.

### **Strengths, Limitations, and Future Research**

In this study, the adopted scale of overall fit satisfaction demonstrated validity via triangulation of methods conducted through both qualitative and quantitative data. Thus, the scale is useful for consumer fit satisfaction research. However, the qualitative findings indicate that the overall measure does not reveal consumers' intricate dimensional considerations of fit within social context.

The sample in this study consisted of male and female undergraduate students who participated in a focus group interview and survey. The participants were voluntary and were drawn from students enrolled at Iowa State University during the specific

semesters the study was conducted. Because of this highly specific and limited sample of participants, caution is needed when generalizing the findings to other consumer groups.

Furthermore, the international students in the sample tended to be male. A more balanced representation of international and domestic male and female students at each grade level as well as matched for academic major would provide greater generalizability and comparability.

This study qualitatively investigated young consumers' perceived fit in four dimensions. Although Ashdown & Loker (2010) examined fit evaluation based on the physical relationship between body and clothing at various locations on the body by using various measurements of appearance, comfort, and ease of movement, there have been no studies that specifically measure consumers' perceived fit in multiple dimensions. Thus, future research may develop a quantitative scale to measure the degree of consumers' multi-dimensional fit perceptions. This may be used to investigate the relationship between fit perceptions in four dimensions and overall fit satisfaction as well as its effect on social comfort to test the proposed conceptual model from the qualitative phase of this study.

As fit preference varied based on age, ethnicity, and personal preference (Ashdown & Loker, 2010), future research might investigate the differences in fit perceptions, attitudes, and fit satisfaction among ethnicities and among different age groups. This type of study would be beneficial for marketers and merchandisers in the United States, as it would increase understanding of how to ensure that diverse consumers, who define the emerging US market, will be satisfied with fit.

Strategies for getting good fit, which were newly explored in this study, are clearly an important factor in consumer satisfaction with fit and need to be adjusted within the current ready-to-wear system. Older consumers may have more experience with fit from their previous years of apparel shopping. Therefore, future research should investigate fit strategies for the older population based on their previous shopping experience. Identifying effective fit strategies would enable merchants and retailers to help consumers get a better fit by suggesting possible fit strategies. In addition, online apparel shopping is more limited than offline apparel shopping because consumers cannot touch and try on the garments before purchasing. In fact, online apparel shopping has already become a major form of retailing; understanding consumers' fit strategies for getting good fit via online apparel shopping could be a vital tool for e-retailers. Thus, future research should investigate fit strategies for online shopping and its effect on fit satisfaction and future intention to buy garments through a website.

## APPENDIX A: IRB HUMAN SUBJECT REVIEW

**IOWA STATE UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY

Institutional Review Board  
Office for Responsible Research  
Vice President for Research  
1138 Pearson Hall  
Ames, Iowa 50011-2207  
515 294-4566  
FAX 515 294-4267

**Date:** 9/6/2012

**To:** Eonyou Shin  
31 MacKay Hall

**CC:** Dr. Mary Lynn Damhorst  
1068 LeBaron Hall

**From:** Office for Responsible Research

**Title:** Consumers' Satisfaction with Apparel Fit in General

**IRB ID:** 12-427

**Study Review Date:** 9/6/2012

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

- (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures with adults or observation of public behavior where
  - Information obtained is recorded in such a manner that human subjects cannot be identified directly or through identifiers linked to the subjects; or
  - Any disclosure of the human subjects' responses outside the research could not reasonably place the subject at risk of criminal or civil liability or be damaging to their financial standing, employability, or reputation.

The determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as described in the IRB application.** Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of review is to determine if the project still meets the federal criteria for exemption.

Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

**Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form.** A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit all research involving human participants for review. **Only the IRB or designees may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.

Please be aware that **approval from other entities may also be needed**. For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. **An IRB determination of exemption in no way implies or guarantees that permission from these other entities will be granted.**

Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or [IRB@iastate.edu](mailto:IRB@iastate.edu).



IRB ID:

# **INSTITUTIONAL REVIEW BOARD (IRB)** **Application for Approval of Research Involving Humans**

Title of Project: Consumers' satisfaction with apparel fit in general		
Principal Investigator (PI): <b>Eonyou Shin</b>		Degrees: Bachelor of Science
University ID: <b>565526962</b>	Phone: 515-708-4557	Email Address: <b>eshin@iastate.edu</b>
Correspondence Address: 3602 Grayhawk Ave, Unit 104, Ames, Iowa, 50010		
Department: Apparel, Educational Studies, & Hospitality Management		College/Center/Institute: College of Human Science
PI Level: <input type="checkbox"/> Tenured, Tenure-Eligible, & NTER Faculty <input type="checkbox"/> Adjunct/Affiliate Faculty <input type="checkbox"/> Collaborator Faculty <input type="checkbox"/> Emeritus Faculty <input type="checkbox"/> Visiting Faculty/Scientist <input type="checkbox"/> Senior Lecturer/Clinician <input type="checkbox"/> Lecturer/Clinician, w/ Ph.D. or DVM <input type="checkbox"/> P&S Employee, P37 & above <input type="checkbox"/> Extension to Families/Youth Specialist <input type="checkbox"/> Field Specialist III <input type="checkbox"/> Postdoctoral Associate <input checked="" type="checkbox"/> Graduate/Undergrad Student <input type="checkbox"/> Other (specify: )		
<b>FOR STUDENT PROJECTS (Required when the principal investigator is a student)</b>		
Name of Major Professor/Supervising Faculty: <b>Mary Lynn Damhorst</b>		
University ID: 05532157017	Phone: 515-294-9919	Email Address: <b>mldmhrst@iastate.edu</b>
Campus Address: 1068 Lebaron Hall		Department: Apparel, Educational Studies, & Hospitality Management
Type of Project (check all that apply): <input checked="" type="checkbox"/> Thesis/Dissertation <input type="checkbox"/> Class Project <input type="checkbox"/> Other (specify: )		
Alternate Contact Person:		Email Address:
Correspondence Address:		Phone:

## **ASSURANCE**

- I certify that the information provided in this application is complete and accurate and consistent with any proposal(s) submitted to external funding agencies. Misrepresentation of the research described in this or any other IRB application may constitute non-compliance with federal regulations and/or academic misconduct.
- I agree to provide proper surveillance of this project to ensure that the rights and welfare of the human subjects are protected. I will report any problems to the IRB. See [Reporting Adverse Events and Unanticipated Problems](#) for details.
- I agree that modifications to the approved project will not take place without prior review and approval by the IRB.
- I agree that the research will not take place without the receipt of permission from any cooperating institutions, when applicable.
- I agree to obtain approval from other appropriate committees as needed for this project, such as the IACUC (if the research includes animals), the IBC (if the research involves biohazards), the Radiation Safety Committee (if the research involves x-rays or other radiation producing devices or procedures), etc.
- I understand that approval of this project does not grant access to any facilities, materials, or data on which this research may depend. Such access must be granted by the unit with the relevant custodial authority.
- I agree that all activities will be performed in accordance with all applicable federal, state, local, and Iowa State University policies.

Signature of Principal Investigator \_\_\_\_\_ Date \_\_\_\_\_

Signature of Major Professor/Supervising Faculty \_\_\_\_\_ Date \_\_\_\_\_  
(Required when the principal investigator is a student)

- I have reviewed this application and determined that departmental requirements are met, the investigator(s) has/have adequate resources to conduct the research, and the research design is scientifically sound and has scientific merit.

Signature of Department Chair \_\_\_\_\_ Date \_\_\_\_\_

For IRB Use Only	Full Committee Review: <input type="checkbox"/>	Review Date:
	EXPEDITED per 45 CFR 46.110(b): Category Letter	Approval/Determination Date:
	Approval Not Required: <input type="checkbox"/>	Approval Expiration Date:
Not Research: <input type="checkbox"/>	EXEMPT per 45 CFR 46.101(b):	
No Human Subjects: <input type="checkbox"/>	Not Approved: <input type="checkbox"/>	Risk: Minimal <input type="checkbox"/> More than Minimal <input type="checkbox"/>

IRB Reviewer's Signature	Kerry A. Agnited	September 6, 2012
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### Research Involving Humans Study Information

Please provide answers to all questions, except as specified. Incomplete forms will be returned without review.

#### PART A: KEY PERSONNEL

List all members and relevant qualifications of the project personnel and define their roles in the research. Key personnel include the principal investigator, co-principal investigators, supervising faculty member, and any other individuals who will have contact with the participants or the participants' data (e.g., interviewers, transcribers, coders, etc.). This information is intended to inform the committee of the training and background related to the specific procedures that each person will perform on the project. For more information, please see [Human Subjects – Persons Required to Obtain IRB Training](#).

NAME	Interpersonal contact or communication with subjects, or access to private identifiable data?	Involved in the consent process?	Contact with human blood, specimens, or other biohazardous materials?	Other Roles in Research	Qualifications (i.e., special training, degrees, certifications, coursework, etc.)	Human Subjects Training Date
✓ Eonyou Shin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Principal researcher	B.S. , Fashion Marketing and Textile Design	09/12/2010
✓ Mary Lynn Damhorst	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Supervisor	PhD, Communication MS, Consumer Sciences; teach qualitative methods	07/12/2000 <sup>29</sup>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
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Please complete additional pages of key personnel as necessary.

#### PART B: FUNDING INFORMATION AND CONFLICTS OF INTEREST

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>1. Is the project federally funded?</b>
If <b>Yes</b> , please provide the complete name(s) of the funding source(s); please do not use acronyms.	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>1.a. Attached is a complete copy of the federal grant proposal from which the study is funded.</b>
If <b>No</b> and proposal is not available, please explain why. <b>This is an exploratory study for a Masters thesis</b>	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>2. Do or will any of the investigators or key personnel listed on this application have a conflict of interest management plan in place with the Office of Vice President for Research &amp; Economic Development?</b>

#### PART C: GENERAL OVERVIEW – PURPOSE, EXPECTED BENEFITS, & TIMEFRAME

<b>1. Research Objectives</b> – Briefly explain in language <i>understandable to a layperson</i> the purpose and specific aim(s) of the study.	
The purpose of this study is (1) to develop an understanding of consumers' overall apparel fit satisfaction, (2) to explore the meaning of garment fit in general from consumer perspectives, and (3) to qualitatively investigate the factors that affect clothing fit satisfaction when consumers evaluate their apparel fit.	
<b>2. Broader Impacts/Significance</b> – Explain in language <i>understandable to a layperson</i> why this research is important, and how the information gained in this study is expected to advance knowledge, and/or serve the good of society.	
This study will provide retailers and apparel marketers with information concerning what types of concerns and factors consumers consider about fit when they evaluate apparel; the information will help apparel producers and retailers to maximize consumer's satisfaction with apparel fit. Consumers will eventually benefit by the improvement of fit-related information when shopping. Also, the data will be helpful in building a quantitative survey for future research.	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>3. Benefits to Participants</b> – Are there any expected direct benefits to research participants from participation in the research? <b>Note:</b> Monetary compensation is <i>not</i> considered to be a benefit of participation in research.

If Yes, please describe the expected benefits to participants.

<p><b>4. Timeframe</b> – Approximately what date do you anticipate beginning recruitment of participants for your study?  <b>Note:</b> Research activities, including recruitment of participants, may not commence until IRB approval has been granted.</p>
The researcher will begin recruitment of participants in any time of September after IRB approval is granted.
<p><b>5. Timeframe</b> – How long do you anticipate it will take to complete all data collection with all participants (specify in months or years)?</p>
By October 2012, all data collection with all participants will be completed.

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**PART D: PARTICIPANT SELECTION**

<p><b>1. How many individuals do you plan to include in the study (including those involved in screening procedures)?</b>  Up to 70 undergraduate students will be included in this study.</p>
<p><b>2. Inclusion Criteria</b> – Describe the specific characteristics of persons that will be included in your study, and provide justification for these requirements.</p> <p>Any undergraduate ISU students, who are age 18 or older, who are taking TC165 in the Department of Apparel, Educational Studies, and Hospitality Management in Fall 2012, and who are interested in taking part in the focus group interview. This is because undergraduate students are active in shopping for clothing.</p>
<p><b>3. Exclusion Criteria</b> – Describe the characteristics of persons who will not be allowed to participate in your study, and provide justification for their exclusion.</p> <p>Students 17 years or younger will not be allowed to participate in this study. If someone younger than 18 shows up for the focus groups, he or she will not be allowed to participate.</p>
<p><b>4. Do you intend or is it likely that your study will include any persons from the following vulnerable populations? (Check all that apply.)</b></p> <p><input type="checkbox"/> Children (any persons under age 18; including ISU students who may be under age 18)  Specify age range:</p> <p><input type="checkbox"/> Prisoners</p> <p><input type="checkbox"/> Persons with impaired decision-making capacity, such as those with dementia or severe cognitive impairment, those declared incompetent, persons in life-threatening situations, etc.</p> <p><input type="checkbox"/> Wards of the State</p> <p><input type="checkbox"/> Persons who are institutionalized</p> <p><input type="checkbox"/> Pregnant women or fetuses</p> <p><input type="checkbox"/> Neonates</p> <p><input type="checkbox"/> Educationally disadvantaged</p> <p><input type="checkbox"/> Economically disadvantaged</p>

<input checked="" type="checkbox"/> Students in a class taught by the researchers <input type="checkbox"/> Employees or subordinates of the researchers <input type="checkbox"/> Other vulnerable population, given the setting of your research; please describe:	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>5. Will ISU students or other college students be asked to participate in your study?</b>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If Yes, do you plan to <b>include</b> college students who may be under age 18?
If <b>No</b> (i.e., students under 18 will be <b>excluded</b> from your study), please describe how you will ensure ISU students under 18 do not participate in the study. After completion of the demographic survey before beginning the focus group, a check will be made of ages listed. If a participant is under 18, he or she will be asked to leave the focus group. Their questionnaire data will be destroyed. They instead can choose to participate in many other optional, non-research activities for extra credit in TC165.	
If <b>Yes</b> (i.e., students under 18 will be <b>included</b> in your study), please be sure to describe the parental consent and minor assent processes in Part K.	

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**PART E: RECRUITMENT PROCEDURES**

<b>1. How will you identify or search for potential participants? (Check all that apply.)</b>  <input type="checkbox"/> Review of public records (e.g., voter lists, utilities lists, phone directory, ISU directory, etc.) <input type="checkbox"/> Review of private records (e.g., medical records, student records, other private records) <input type="checkbox"/> Purchased mailing lists <input type="checkbox"/> Personal contacts/knowledge <input type="checkbox"/> "Snowball" sampling <input type="checkbox"/> Participant responses to posted advertisements (electronic or hardcopy) or flyers <input checked="" type="checkbox"/> Other; please describe: <b>Convenience sample from a TC class</b>
<b>2. Please describe the details of how each of the methods checked in #1 above will be implemented.</b>  The principal investigator will contact the instructors of a TC 165 class in the Apparel, Merchandising, and Design program. The undergraduate students who are taking the course will be identified for potential participants for the current study by using convenience sampling technique.
<b>3. What methods will you use to contact potential participants? (Check all that apply.)</b>  <input checked="" type="checkbox"/> Letter or email <input type="checkbox"/> Phone call <input type="checkbox"/> Posting flyers <input checked="" type="checkbox"/> Posting announcement on website (Check all that apply.) <input type="checkbox"/> ISU Department of Psychology SONA system <input type="checkbox"/> ISU Office of the Vice President for Research and Economic Development <input type="checkbox"/> ISU Departmental/Research Project websites <input checked="" type="checkbox"/> Other; please describe: <b>ISU Blackboard</b>  <input type="checkbox"/> Distribution of email or advertisement via Listserves or online bulletin-boards <input type="checkbox"/> Television or radio advertisements <input checked="" type="checkbox"/> Personal or verbal announcement, such as in a class, meeting, etc.

<input type="checkbox"/> Informal, personal communication <input type="checkbox"/> Other; please describe:	
4. Please describe the details of how each of the methods checked in #3 above will be implemented.	
<p>Convenience sample: After the principal researcher gets an approval for data collection from the instructors of the classes in Apparel, Merchandising, and Design program, participants will be alerted in class regarding the opportunity to take part in the survey and the focus group interview. Also, the announcement will be posted on the class BlackBoard. If participants are interested in participating in the survey and the focus group interview, they will be asked to sign up for a specific time to meet. The researcher will remind participants by sending an email about the focus group time and place. Participants will be asked to provide their email address when they sign up for the meeting of data collection.</p>	
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. Attached are copies of any letters, emails, phone/verbal scripts, flyers, announcements, or advertisements that will be used. Please know the IRB must review final and complete copies of all materials used to contact or recruit subjects. For verbal processes, a script or list of points to be covered during the discussion must be provided. <i>Materials are not reviewed because the study is exempt. (ex) 9/10/2012</i>
If <b>No</b> , please explain why:	

## PART F: SCREENING PROCEDURES

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1. Will participants be asked to provide any information about themselves (e.g., medical history, personal characteristics) for screening purposes prior to enrollment in the study?  If <b>Yes</b> , please describe:
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	2. Will participants be asked to take part in any interventions (e.g., fasting, blood draws, etc.) for screening purposes prior to enrollment in the study?  If <b>Yes</b> , please describe:
3. If <b>Yes</b> to question 1 and/or 2, please describe how you will obtain the informed consent of participants PRIOR to their participation in screening activities.	

## PART G: COMPENSATION

☒ Yes    ☐ No

1. Will participants receive any of the following types of compensation for their participation in your research? (Check all that apply.)

- ☐ Money (cash or check)
- ☐ Gift cards
- ☐ Gifts
- ☐ Reimbursement for expenses (i.e., costs of travel to lab, child care, meals, etc.)
- ☐ Course credit (including extra credit)
- ☒ Other; specify: **extra credit in TC165**

2. If Yes, please answer questions 2a through 2d. *This information should also be provided in the informed consent document.*

2a. Describe the specific amount of compensation to be provided (i.e., in monetary terms, points for course credit, value of gifts, etc.).  
**Participants will receive 15 points for the optional activity grade component of the class**

2b. Explain how compensation will be provided if the participant withdraws prior to completion of the study. **Note:** Completion of all study procedures cannot be a requirement for research participants to receive compensation.  
**If the participant withdraws prior to completion of the study, she/he will be offered an alternative activity for extra credit.**

2c. If course credit is given, describe alternative ways students can earn the same amount of credit and how these alternatives are *genuinely comparable* to participation in the study in terms of time and effort.  
**The student can read a study related to apparel fit and will highlight major ideas in the article.**

2d. If the study involves multiple visits, sessions, or time-points, how will compensation be prorated (e.g., how much will be provided per visit/session/time-point)?  
**The current study does not involve multiple visits, sessions, or time-points.**

**Note:** Compensation plans must be in accordance with policies set forth by the ISU Controller's Department. For more information, please see <http://www.controller.iastate.edu/>.

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#### PART H: RESEARCH PLAN

1. **Research Procedures** – Using *layperson's terminology*, please describe in detail your plans for collecting data from participants. Include a description of *all procedures, tasks, or interventions* participants will be asked to complete during the research (e.g., random assignment, any conditions or treatment groups into which participants will be divided, mail survey or interview procedures, observation protocols, sensors to be worn, amount of blood drawn, etc.).

**Note:** When referencing attached documents (i.e., surveys, interview protocols, copies of stimuli, instructions for tasks, etc.), please ensure that each attachment is clearly labeled and clearly referenced in



this section.

**Convenience sample:** Participants will be alerted in class and on Blackboard to sign up for participation in a focus group. They will be asked to sign up for any of the focus group times they could attend. Five sessions of focus group interviews will be conducted. Each session will have 6-10 participants who will be selected randomly from the list of volunteers for that session. The researcher will inform the selected participants by email. Participants who were not selected randomly will be informed of non-selection; there are a large number of other optional extra credit activities for which they may sign up and get credit.

**Paper-based survey and focus group interview protocol:** Two different types of data will be collected during the research sessions. Participants will be asked to complete a paper-based survey first, and then the focus interview will be conducted.

At the beginning of the session, the principal researcher will ask participants to complete an informed consent form.

Then, the principal researcher will provide general information about the short survey and the focus group interview. Participants will be asked to complete the paper-based survey before the focus group interview. Participants will be asked to report their overall satisfaction with apparel fit and their personal and background information.

For the focus group interview, questions will be asked to investigate consumers' perception of fit of garments in general. During the focus group interview, participants will first be asked what their overall concerns with fit are when they go shopping for clothing. Then, participants will be asked about their experience with apparel fit and what factors make them satisfied and dissatisfied with fit when they evaluate clothing fit.

The conversation from the focus group interview will be audiotaped and later transcribed.

#### RESEARCH INVOLVING DECEPTION OR INCOMPLETE DISCLOSURE

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	2. Will participants be <i>deceived or misled</i> about anything during the study? If Yes, please answer questions 2a through 2d in <a href="#">Appendix A</a> . If No, please skip to question 3.
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	3. Do you plan to <i>intentionally withhold</i> information from participants, such as the full purpose of the study, a full description of procedures, etc.? If Yes, please answer questions 3a through 3d in <a href="#">Appendix A</a> . If No, please skip to question 4.

#### RESEARCH INVOLVING EXISTING DATA OR INFORMATION FROM RECORDS

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	4. Does the research involve the collection or study of currently existing data or information to be gathered from records, such as the following? (Check all that apply.) <input type="checkbox"/> Student/educational records <input type="checkbox"/> Medical records (If checked, submit the <a href="#">Application for Use of Protected Health Information</a> .) <input type="checkbox"/> Data collected for a previously conducted study <input type="checkbox"/> Information from government databases, such as the US Census, Iowa Dept. of Public Health records, etc.
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- ☐ Samples from specimen/tissue banks  
☐ Other; please describe:

If **Yes**, please answer questions 4a through 4g in **Appendix B**.  
 If **No**, please skip to question 5.

## RESEARCH INVOLVING OBSERVATION

- ☐ Yes ☒ No 5. Does the research involve collection of data from observation of people's behaviors or activities, including verbal responses?  
 If **Yes**, please answer 5a through 5d in **Appendix C**.  
 If **No**, please skip to question 6.

## RESEARCH INVOLVING INTERNATIONAL RESEARCH

- ☐ Yes ☒ No 6. Will the research take place in an international setting?  
 If **Yes**, please answer 6a through 6c in **Appendix D**.  
 If **No**, please skip to question 7.

## RESEARCH INVOLVING INVESTIGATIONAL DRUGS, DEVICES, DEXA/CT SCANS, X-RAYS, OR HUMAN CELLS OR TISSUES

- ☐ Yes ☒ No 7. Does this project involve an investigational new drug (IND)? Number:
- ☐ Yes ☒ No 8. Does this project involve an investigational device exemption (IDE)? Number:
- ☐ Yes ☒ No 9. Does this project involve DEXA/CT scans or X-rays?
- ☐ Yes ☒ No 10. Does this project involve human blood components, body fluids, or tissues?
- ☐ Yes ☒ No 11. Does this project involve human cell or tissue cultures (primary or immortalized)?
- If you answered **Yes** to either question 10 or 11 and the cells, body fluids, etc., have not been documented to be free of blood-borne pathogens, personnel handling these substances are required to take Blood-borne Pathogens Training annually.
- Blood-borne Pathogens training is on-line via the EH&S website:  
<http://www.ehs.iastate.edu/cms/default.asp?action=article&ID=426>
- If you have any questions, contact EH&S at (515) 294-5359.

## PART I: DATA ANALYSIS

1. Describe how the data will be analyzed (e.g., statistical methodology, statistical evaluation, statistical measures)

used to evaluate results).

For the questionnaire data, descriptive statistics for the background information and measure of overall apparel fit satisfaction will be calculated using SPSS.  
For the focus group interview transcripts, qualitative analysis techniques will be used to find major themes in the content.

#### PART J: CONSENT PROCESS

According to federal regulations, participants can only be included in research if they, or their legally authorized representative, provide legally-effective informed consent. In some cases, the IRB can waive this requirement.

##### 1. Consent for Adult Participants

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A. Will you obtain the informed consent of all participants?
<i>Consent materials are not reviewed because the study is exempt. (K) 9/16/2012</i>		
If A is Yes, please answer the following questions:		
<p>1. <b>Describe the process you will use to inform participants about the study.</b> The general purpose and procedures of the study will be explained in announcements to class. The consent form will be provided to participants before taking part in the paper-based survey and the focus group interview.</p> <p>2. <b>Who, in general, will obtain informed consent from participants (i.e., explain the study, collect signed forms, etc.)?</b> Please do not list actual names of study staff; rather, describe their role such as "the principal investigator," "research assistants," etc. The principal investigator will explain the study and collect signed consent forms from participants.</p> <p>2.a. What training have they received or will they receive regarding how to appropriately obtain informed consent? The principal investigator will receive training from her graduate advisor about obtaining informed consent.</p> <p>3. <b>Information given to participants must be in a language understandable to them. Please describe the measures you are taking to ensure the information is understandable (e.g., translation into another language, using commonly understood terminology, assessing reading level of the consent form, etc.).</b> Information given to participants will include commonly understood terminology. Also, participants in this study will be expected to use English without any difficulties because they are qualified to enroll in ISU.</p> <p>3.a. If translation is required, please provide the name of the person(s) who conducted the translation(s) and his/her qualifications for doing so. Translation is not required.</p> <p>4. <b>When will informed consent be obtained in relation to beginning data collection?</b> The informed consent form will be distributed and signed at the beginning of the data collection session.</p>		

<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>5. Will participants sign a consent form to document the consent process? <b>Note:</b> Signatures must be handwritten by the participant; typing one's name on a form does not constitute a legally valid signature according to federal regulations. If <b>No</b>, please explain why.</p>
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>6. Does anyone involved in the study have a supervisory, evaluative, or other position of "power" over participants? If <b>Yes</b>, please describe the measures you are taking to minimize any coercion or undue influence (real or perceived). Participation is not required by students; they have many other extra credit opportunities from which to select. The instructor of TC165 (the major advisor for this project) will only assist and will not run the dialogue portion of the focus groups. There is no grading of responses. The survey data will be collected and recorded by the principal investigator. The instructor will not have access to the completed questionnaires.</p>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p>7. Are any participants likely to be unable to provide consent for themselves, such as those who have severe cognitive impairments, dementia, are in life-threatening situations, cannot communicate, etc.? If <b>Yes</b>, please describe plans to obtain consent from the participant's legally authorized representative.</p> <p>7.a. To the extent possible, given the condition of the participant, how will you ensure they agree to take part in the research? There will be no participants who cannot provide consent by themselves.</p>
If <b>A</b> is <b>No</b> , (i.e., you will NOT obtain informed consent from all participants), please answer the following:	
<p>8. Please provide strong and compelling justification for why you cannot carry out your study if you had to obtain informed consent. <b>Note:</b> The fact that obtaining consent would be inconvenient or time consuming is <b>not</b> considered to be sufficient justification.</p> <p>9. Please explain why participants' rights and welfare will not be adversely affected if you do not obtain their consent.</p>	

2. Parent/Legal Guardian Consent and Child Assent (applies when participants are under age 18 or are considered to be children in the country where the research takes place)

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	A. Does your study involve children?
If <b>A</b> is <b>Yes</b> , please complete the questions in <u>Appendix E</u> .	

PART K: RISKS

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1. Are there any foreseeable risks or discomforts to participants from taking part in your research?
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<p>If <b>Yes</b>, please answer <b>Yes</b> or <b>No</b> to items 1.a through 1.g below. Indicate whether the following types of risks/discomforts are foreseeable. When <b>Yes</b>, please describe the risks/discomforts and explain how each will be mitigated or minimized</p>	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>1. a.</b> Physical Risks (e.g., injury, bruising from a blood draw, pain, side-effects from drugs administered, allergic reactions, etc.)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>1.b.</b> Psychological Risks (e.g., emotional discomfort from answering questions, stress or anxiety from procedures, mood alterations, viewing offensive or “shocking” materials, etc.)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>1.c.</b> Social Risks (e.g., harm to reputation, embarrassment, or stigmatization if participation becomes known, disruption of personal or family relationships, etc.)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>1.d.</b> Economic Risks (e.g., loss of money, loss of employment, etc.)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>1.e.</b> Legal Risks (e.g., criminal liability if information about participants’ illegal behaviors is collected)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>1.f.</b> Informational Risks (e.g., harm if information collected about the participant were disclosed or overheard, such as embarrassment, retribution, stigmatization, disruption of personal relationships, legal liability, etc.)
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>1.g.</b> Other Risks, given the setting of your research
<p>If <b>No</b> (<i>i.e., there are no foreseeable risks or discomforts to participants</i>), please explain why you believe this is the case: I believe there are no foreseeable risks or discomforts to participants because they will be asked about overall satisfaction with apparel fit and their perception and experience of apparel fit in general. The principal investigator will clearly explain before the survey and the focus group interview and inform that they can discontinue anytime if participants feel any risks or discomforts.</p>	

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**PART L: PRIVACY AND CONFIDENTIALITY**

<p><b>1.</b> Describe how participants’ privacy will be protected during recruitment and data collection (e.g., discussions/procedures will be conducted in private locations, messages regarding the research will not be left on answering machines without permission of participant, documents or recordings will be kept secure, etc.).</p>
<p>For both paper-based survey and the focus group interview, information obtained will be kept strictly</p>

<p>confidential.</p> <p>From the paper-based survey, participants' responses will be located in the locked cabinet and participants will not include email addresses and names on the survey. No identifying numbers will be applied that can in any way be linked with participant names.</p> <p>From the focus group interview, the conversation will be audio-taped and transcribed and will not be associated with or labeled with participants' names or personal information.</p> <p>Both the data from the survey and the audio-tapes from the focus group interview will be destroyed after the data is transcribed and recorded. The interviews will be transcribed in either a private room, or the transcriber (the principal investigator) will wear earphones while listening to the tapes.</p>	
<p><b>2. Please answer the following questions to describe the methods you will employ to maintain confidentiality and security of the data at all points in the research process (e.g., during data collection, during analysis, etc.):</b></p>	
<p><b>2a. Who will have access to the data and study records?</b> Only the principal researcher will have access to the original data. The advisor will have access to the transcribed and recorded data, in which no identifying information is available.</p> <p><b>2b. Describe how/where physical copies of data and study records will be stored (e.g., in cabinets, desks, shelves, etc.).</b> The physical copies of data from the paper-based survey and the audio tapes from the focus group interview will be stored in the principal investigator's personal cabinet. Also, all the electronic data, the coded data from the survey and the transcribed data from the focus group interview will be stored separately in the secure folders on the principal investigator's personal USB driver and laptop.</p> <p><b>2c. Describe security measures in place to maintain security of physical/paper data or study records (e.g., how access will be controlled, locks, etc.).</b> The paper data from the survey will be placed and locked in the personal cabinet. Only the principal investigator can have the key for the cabinet.</p>	
<p><b>2d. Describe how/where electronic data will be stored (e.g., a desktop computer, laptop, portable drive, shared drive, etc.).</b> The electronic data will be stored and locked in the principal investigator's personal portable drive and laptop. Only the principal investigator can have access to the folders by entering the password.</p> <p><b>2e. Describe the measures in place to maintain security of electronic data (e.g., encryption, password-protection, firewalls, using university controlled systems, etc.).</b> For security of electronic data, the principal investigator will use password-protection to access data.</p>	
<p><input checked="" type="checkbox"/> <b>Yes</b>    <input type="checkbox"/> <b>No</b></p> <p><b>2f. Will any identifiers or identifiable information (e.g., names, social security numbers, addresses, phone numbers, exact dates of birth, etc.) be collected with the study data? If Yes, please answer the following:</b> Participants' ISU student email addresses will be collected when they sign up for the meeting time for the survey and the focus group interview.</p> <p><b>2f.a. Why is it necessary to collect identifiers?</b> ISU student email addresses and names will only be used to inform participants of the place, date, and time for the survey and the focus group interview and to give them participation points. Names will be signed on the consent forms. The addresses and names will in no way be recorded with or</p>	

linked to any of the data.	
<p><b>2f.b.</b> When will identifiers be separated or removed from the data? The list of student email addresses and names on consent forms will be separated from the data and never require removal.</p> <p><b>2f.c.</b> Please describe any coding systems you will use to maintain confidentiality of identifiable data (e.g., plans to replace names with ID codes or pseudonyms). The principal investigator will use pseudonyms for transcribed data from the focus group interview.</p>	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p><b>2f.d.</b> Will you create a "key" linking identifiers with any ID codes or pseudonyms?</p> <p>If <b>Yes</b>, how will you maintain control of the key and ensure the key is kept secure?</p> <p>When will the key be destroyed?</p>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p><b>2g.</b> Have you or will you obtain a Federal Certificate of Confidentiality for this study? If <b>Yes</b>, please submit a copy of the certificate materials with this application. <b>Note:</b> Certificates of Confidentiality are designed to protect identifiable research records against forced disclosure (e.g., subpoena). Certificates can be sought from the National Institutes of Health in certain circumstances. Visit the <a href="#">Certificates of Confidentiality Kiosk</a> for more information.</p>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p><b>2h.</b> Will the data be shared or submitted to a repository or registry, such as the Clinical Trial Registry Databank (ClinicalTrials.gov), the Database of Genotypes or Phenotypes, or via other data sharing agreements? If <b>Yes</b>, please describe</p>
<p><b>3.</b> What specific steps will you take to ensure participants are not identifiable (directly or indirectly via "deductive disclosure") when research results are reported?</p>	
<p>Any information received will not be associated with participants in any written reports; results will be published in summary form only when research results are reported. Direct quotes of verbal content of interviews will be reported with pseudonyms.</p>	

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**PART M: REGISTRY PROJECTS**

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>1. Does this project establish a registry or databank?</b>
<p><b>Note:</b> To be considered a registry or databank: (1) the individuals whose data are in the registry/databank might be contacted in the future; and/or (2) the names and/or data pertaining to the individuals in the registry/databank might be used by investigators other than the one maintaining the registry/databank.</p>	
<p>If <b>Yes</b>, please answer the following questions:</p>	
<p><b>1.a.</b> What information/data will be included in the registry?</p>	
<p><b>1.b.</b> What is the reason for establishing a registry (i.e., how will data from the registry be used)?</p>	
<p><b>1.c.</b> Who will be involved in establishing and providing oversight of the registry?</p>	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p><b>1.d.</b> Will the data in the registry be available to anyone other than the investigator(s) who maintain the registry?</p>



## APPENDIX

The sections in this appendix are color-coded to correspond with the colored sections in the main application. Please complete the items in the appendix only if directed to do so in the main application. Please ensure all questions in the main application and any necessary appendices have been addressed before sending to the IRB for review

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### A. RESEARCH INVOLVING DECEPTION OR INCOMPLETE DISCLOSURE

<b>Continuation from Part H: #2:</b>
<p><b>2a.</b> Please explain in detail how persons will be deceived or misled.</p> <p><b>2b.</b> Please provide strong and compelling justification for why it is scientifically necessary to deceive or mislead participants in order to conduct the research and why a non-deceptive methodology is not possible.</p> <p><b>2c.</b> Please explain the steps you will take to ensure participants' rights and welfare are not adversely affected by deceiving or misleading them.</p> <p><b>2d.</b> Please describe the process you will use to "debrief" participants and explain the ways they were deceived or misled during the study. A copy of the information to be provided during debriefing must be attached.</p>
<b>Continuation from Part H: #3:</b>
<p><b>3a.</b> Please explain in detail what information will be withheld.</p> <p><b>3b.</b> Please provide strong and compelling justification for why it is scientifically necessary to intentionally withhold information from participants in order to conduct the research.</p> <p><b>3c.</b> Please explain the steps you will take to ensure participants' rights and welfare are not adversely affected by withholding information from them.</p> <p><b>3d.</b> Please describe the process you will use to "debrief" participants and explain the information that was withheld. A copy of the information to be provided during debriefing must be attached.</p>

Continue to Part H: #4 (Existing Data)

## B. RESEARCH INVOLVING EXISTING DATA OR INFORMATION FROM RECORDS

Continuation from Part H: #4:	
<p><b>4a.</b> What is/are the source(s) of the data/records?</p>	
<p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>	<p><b>4b.</b> Are the data/records <b>publicly</b> available, without restriction?</p>
<p><b>4c.</b> Describe the specific information or content that will be obtained from the data/records.</p>	
<p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>	<p><b>4d.</b> Is the use of the data/records subject to any restrictions, such as the following? (Check all that apply.)</p> <p><input type="checkbox"/> FERPA—The Family Educational Rights and Privacy Act (applies to student records)</p> <p><input type="checkbox"/> HIPAA—The Health Insurance Portability and Accountability Act (applies to medical records) – <i>If checked, submit the <u>Application for Use of Protected Health Information</u>.</i></p> <p><input type="checkbox"/> Institutional policies (for personnel records or other private records)</p> <p><input type="checkbox"/> Confidentiality provisions promised to the persons whose data you will obtain, such as those described in previously signed informed consent documents</p> <p><input type="checkbox"/> Other; please describe:</p>
<p><b>4d.1.</b> If Yes, please describe how you will meet or address those restrictions when obtaining the data.</p>	
<p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>	<p><b>4e.</b> Will any of the following identifiers be included with the information you obtain from these records? (Check all that apply.)</p> <p><input type="checkbox"/> Names:    <input type="checkbox"/> First Name Only    <input type="checkbox"/> Last Name Only    <input type="checkbox"/> First and Last Name</p> <p><input type="checkbox"/> Phone/fax numbers</p> <p><input type="checkbox"/> ID codes that can be linked to the identity of the participant (e.g., student IDs, medical record numbers, account numbers, study-specific codes, etc.)</p> <p><input type="checkbox"/> Addresses (email or physical)</p> <p><input type="checkbox"/> Social security numbers</p> <p><input type="checkbox"/> Exact dates of birth</p> <p><input type="checkbox"/> IP addresses</p> <p><input type="checkbox"/> Photographs or video recordings</p> <p><input type="checkbox"/> Other; please specify:</p>
<p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>	<p><b>4f.</b> Is there a reasonable possibility that participants' identities could be ascertained from any combination of information in the data? If Yes, please describe:</p>
<p><input type="checkbox"/> Yes    <input type="checkbox"/> No</p>	<p><b>4g.</b> Will you obtain the permission/consent of the persons to whom the data/records pertain to use their information in your research?</p> <p><b>4g.1.</b> If Yes, please describe this process.</p>

**4g.2.** If **No**, please provide **strong** justification for why obtaining permission/consent is not necessary or not possible. **Note:** The fact that obtaining consent would be inconvenient or time consuming is **not** considered to be sufficient justification.

☐ Attached

**4g.3.** If access to the data/records is subject to any restrictions, please attach documentation from the record-holder indicating that you may have access to the data/records without the written consent of the participant.

Continue to Part H: #5 (Observation)

## C. RESEARCH INVOLVING OBSERVATION

Continuation from Part H: #5:	
	5a. Please describe the specific behaviors or activities that will be observed.
	5b. How will you record information during observation (e.g., field notes, audio/video, etc.)?
<input type="checkbox"/> Yes <input type="checkbox"/> No	5c. Will any identifying information about participants be recorded during the observations? If <b>Yes</b> , please describe:
<input type="checkbox"/> Yes <input type="checkbox"/> No	5d. Will participants give informed consent to be observed? If <b>No</b> , please provide <b>strong</b> justification for why obtaining permission/consent is not necessary or not possible. <b>Note:</b> The fact that obtaining consent would be inconvenient or time consuming is <b>not</b> considered to be sufficient justification.

Continue to Part H: #6 (International Research)

**D. RESEARCH INVOLVING INTERNATIONAL RESEARCH**

Continuation from Part H: #6:
<p><b>6a.</b> Please describe the experience, knowledge, or other qualifications the investigators have related to conducting the research in this international setting(s).</p> <p><b>6b.</b> Please describe the specific steps you are taking to ensure the research is conducted in accordance with the local norms and customs, cultural expectations, language needs, etc., in the international setting(s).</p> <p><b>6c.</b> Please describe the specific steps you are taking to ensure the research is conducted in accordance with any policies, laws, or governmental requirements in each country where the research will take place.</p>

Continue to Part H: #7 (Investigational Drugs, Devices, Etc.)

## E. CONSENT PROCESS FOR CHILDREN INVOLVED IN RESEARCH

Continuation from Part J: #2:

Parent/Legal Guardian Consent and Child Assent (applies when participants are under age 18 or are considered to be children in the country where the research takes place)

According to federal regulations, children can only be enrolled in research if their parent(s) or legal guardian(s) have given consent, unless the IRB waives this requirement. Children must also agree to participate in the research to the extent such agreement is possible, given the child's age, communication abilities, etc.

<input type="checkbox"/> Yes <input type="checkbox"/> No	B. Will you obtain the informed consent of the parent/legal guardian for all children included in the study?
If B is Yes, please answer the following questions:	
<p>1. Describe the process you will use to inform parents or legal guardians about the child's participation in the study (i.e., how you will make contact with parents/guardians, what will be shared with them, etc.).</p> <p>2. Who, in general, will obtain informed consent from parents/legal guardians (i.e., explain the study, collect signed forms, etc.)? Please do not list actual names of study staff; rather, describe their role such as "the principal investigator," "research assistants," etc.</p> <p>2. a. What training have they received or will they receive regarding how to appropriately obtain informed consent?</p> <p>3. Information given to parents/legal guardians must be in a language understandable to them. Please describe the measures you are taking to ensure the information is understandable (e.g., translation into another language, using commonly understood terminology, assessing reading level of the consent form, etc.).</p> <p>3.a. If translation is required, please provide the name of the person(s) who conducted the translation(s) and his/her qualifications for doing so.</p> <p>4. When will parental consent be obtained in relation to beginning data collection with children?</p> <p>5. How will you ensure that all children have the consent of their parent/legal guardian before including them in the study?</p>	
<input type="checkbox"/> Yes <input type="checkbox"/> No	6. Will parents sign a consent form to document the consent process? Note: Signatures must be handwritten by the parent; typing one's name on a form does not constitute a

legally valid signature according to federal regulations.

If **No**, please explain why.

If **B** is **No**, (i.e., you will NOT obtain informed consent from all parents/legal guardians), please answer the following:

7. Please provide strong and compelling justification for why you cannot carry out your study if you had to obtain parent/guardian consent. Note: The fact that obtaining consent would be inconvenient or time consuming is **not** considered to be sufficient justification.
8. Please explain why participants' rights and welfare will not be adversely affected if you do not obtain parent/guardian consent.

The goal of the assent process is to ensure children are informed about the study and freely agree to take part. The process for obtaining assent from children must be appropriate for the age and development of the children involved in the study; in some cases, true assent may not be possible (such as with infants). Documentation of assent may not be appropriate for children who cannot read or write. Additionally, multiple assent processes may be necessary to ensure both younger and older children are adequately informed.

☐ Yes ☐ No

C. Will you obtain assent for all children included in the study?

If **Yes**, please answer the following questions:

If **C** is **Yes**, please answer the following questions:

1. Describe the process you will follow to obtain the assent (i.e., "affirmative agreement") of each child.
2. Who, in general, will obtain assent from each child (i.e., explain the study, collect signed forms, etc.)? Please do not list actual names of study staff; rather, describe their role such as "the principal investigator," "research assistants," etc.
  - 2.a. What training have they received or will they receive regarding how to appropriately obtain assent, given the age range and developmental status of the children?
3. What steps are you taking to ensure information about the study is presented to children in a language understandable to them (e.g., translation, simplified language, assessing reading level of any assent document, etc.)?
4. When will assent be obtained in relation to beginning data collection?

5. How will you know that children have given assent (i.e., agreed to take part in the study)? (Check all that apply.)

- ☐ Children will sign an assent document following a verbal overview of the study (*applicable for children who can read and understand an assent document*).
- ☐ Children will verbally indicate their agreement to participate (*applicable for children too young to read, who cannot read, or where a verbal process is most appropriate, given the age and ability of the children*).
- ☐ Other indication of assent (Please describe)

If C is **No**, (i.e., you will NOT obtain assent from all children), please answer the following:

6. Please provide strong and compelling justification for why you cannot carry out your study if you had to obtain the children's assent. **Note:** The fact that obtaining assent would be inconvenient or time consuming is **not** considered to be sufficient justification.
7. Please explain why the children's rights and welfare will not be adversely affected if you do not obtain their assent.

Continue to Part K (Risks)



**Checklist for Attachments**

Listed below are the types of documents that should be submitted for IRB review. Please check and attach the documents that are applicable for your study:

- ☐ Federal grant application (only for federally funded research)
- ☒ Recruitment fliers, phone scripts, or any other documents or materials participants will see or hear
- ☒ A copy of the informed consent document or letter of introduction containing the elements of consent
- ☐ A copy of the assent form, if minors will be enrolled
- ☒ Data-gathering instruments (including surveys, interview questions, focus group protocols, cognitive tests, observation protocols, etc.)
- ☐ When applicable, copies or detailed descriptions of stimuli participants will be exposed to, instructions for testing, investigator's brochures, etc.

The original signed copy of the application form and one set of accompanying materials should be submitted for review in hard copy to the Office for Responsible Research 1138 Pearson, or electronically to [IRB@iastate.edu](mailto:IRB@iastate.edu).

## **APPENDIX B: CONSENT FORM**

### **INFORMED CONSENT DOCUMENT**

**Title of Study:** Consumers' satisfaction with apparel fit in general

**Investigators:** Eonyou Shin, Master student  
Apparel Merchandising and Design Program  
Iowa State University  
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515-708-4557  
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Dr. Damhorst  
Apparel Merchandising and Design Program  
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1068 LeBaron Hall  
Ames, IA 50010  
515-294-9919  
Email: [mldmhrst@iastate.edu](mailto:mldmhrst@iastate.edu)

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

### **INTRODUCTION**

The purpose of this study is (1) to develop an understanding of consumers' overall apparel fit satisfaction, (2) to explore the meaning of garment fit in general from consumer perspectives, and (3) to qualitatively investigate the factors that affect clothing fit satisfaction when consumers evaluate their apparel fit. You are being invited to participate in this study because you are a student enrolled in a TC165 class in Apparel, Merchandising, and Design program. You should not participate if you are under age 18.

### **DESCRIPTION OF PROCEDURES**

If you agree to participate, you will be asked to take part in the survey and the focus group interview. First, you will be asked to complete the paper-based survey first, and then the focus interview will be conducted. For the paper-based survey, you will be asked to report your overall satisfaction with apparel fit and your personal background information for 5 minutes. For the focus group interview, you will be asked how you think about apparel fit and what factors make you satisfied and dissatisfied with fit when

you evaluate clothing fit. It will last for approximately about an hour. The conversation from the focus group interview will be audiotaped and later transcribed.

### **RISKS**

There are no foreseeable risks from participating in this study.

### **BENEFITS**

If you decide to participate in this study there will be no direct benefit to you. It is hoped that the information gained in this study will benefit retailers and apparel marketers by improving the understanding concerning what types of concerns and factors consumers consider about fit when they evaluate apparel; the information will help apparel producers and retailers to maximize consumers' satisfaction with apparel fit. Consumers will eventually benefit by the improvement of fit-related information when shopping. Also, the data will be helpful in building a quantitative survey for future research.

### **COSTS AND COMPENSATION**

You will not have any costs from participating in this study. You will be compensated for participating in this study. If you participate, you will get 15 points class credits. However, if you are below the age of 18 or do not want to participate in the survey and the focus group interview, you can read a study related to apparel fit and comfort and will highlight major ideas in the articles as an alternative for earning extra credit. Also, you can choose to participate in many other optional, non-research activities for extra credit in TC 165.

### **PARTICIPANT RIGHTS**

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide to not participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled. You can skip any questions that you do not wish to answer for both the survey and the focus group interview.

### **CONFIDENTIALITY**

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

For both paper-based survey and the focus group interview, information obtained will be kept strictly confidential. From the paper-based survey, participants' responses will be located in the locked cabinet and participants will not include email addresses and names on the survey. No identifying numbers will be applied that can in any way be linked with participant names.

From the focus group interview, the conversation will be audio-taped and transcribed and will not be associated with or labeled with participants' names or personal information.

The interviews will be transcribed in either a private room, or the transcriber (the principal investigator) will wear earphones while listening to the tapes.

The physical copies of data from the paper-based survey and the audio tapes from the focus group interview will be stored in the principal investigator's personal cabinet. Also, all the electronic data, the coded data from the survey and the transcribed data from the focus group interview will be stored separately in the secure folders on the principal investigator's personal USB driver and laptop. Both the data from the survey and the audio-tapes from the focus group interview will be destroyed after the data is transcribed and recorded. If the results are published, your identity will remain confidential.

### **QUESTIONS OR PROBLEMS**

You are encouraged to ask questions at any time during this study.

- For further information about the study, please contact Eonyou Shin, (515)708-4557; Mary Lynn Damhorst, [mldmhrst@iastate.edu](mailto:mldmhrst@iastate.edu)
- If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, [IRB@iastate.edu](mailto:IRB@iastate.edu), or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

\*\*\*\*\*  
\*

### **PARTICIPANT SIGNATURE**

Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document, and that your questions have been satisfactorily answered. You will receive a copy of the written informed consent prior to your participation in the study.

Participant's Name (printed) \_\_\_\_\_

---

(Participant's Signature)

---

(Date)

## APPENDIX C: QUESTIONNAIRE (QUANTITATIVE PHASE)

### Overall apparel fit satisfaction survey

The questions below address your overall apparel fit satisfaction and background information.

<u>Overall apparel fit satisfaction</u> Overall apparel fit satisfaction is defined as the level of satisfaction/dissatisfaction with fit of clothing in general (e.g., t-shirts, blouses, Jackets, dresses, pants, skirts, etc.) when you evaluate apparel fit. Please read the following statements and select ONE answer that best reflects your opinion.								
<div style="display: flex; justify-content: space-between; padding: 5px;"> <span>Strongly disagree</span> <span>-----Neutral-----</span> <span>Strongly agree</span> </div>								
1	2	3	4	5	6	7		
What is your overall satisfaction with apparel fit?      Level of agreement								
	1	2	3	4	5	6	7	
1. Overall, the experience that I have had with clothing fit has been satisfactory.	1	2	3	4	5	6	7	
2. Overall, I am pleased with how the clothing I find in stores fits.	1	2	3	4	5	6	7	
3. Overall, I am satisfied with apparel fit.	1	2	3	4	5	6	7	
4. Overall, in purchasing clothing, my experience with apparel fit is positive.	1	2	3	4	5	6	7	
<u>General background information</u> Please fill in blank or check the response.								
1. Are you male? _____ female? _____								
2. What is your age? _____								
3. What is your ethnic background? (Please check all that apply.) <div style="display: flex; justify-content: space-between;"> <div>           ___ African American /Black            ___ Hispanic/Latino American            ___ Asian/Asian American            ___ Middle Eastern         </div> <div>           ___ European/White American            ___ Native American            ___ Other         </div> </div>								
4. Are you an international student? ___ Yes ___ No								
5. What is your class standing? ___ Freshmen      ___ Sophomore      ___ Junior      ___ Senior ___ Graduate (MA, MS, MFA, MBA, PHD)								
6. What is your major? _____								

## **APPENDIX D: INTERVIEW QUESTIONS (QUALITATIVE PHASE)**

### **Apparel fit satisfaction focus group interview**

#### **[Opening questions]: Overall Concerns of Clothing Fit.**

What are your major concerns about fit when you purchase clothing?

#### **Perception of Apparel Fit**

1. What is good fit in clothing to you?  
What kind of criteria tell you that fit is good in apparel?
2. What is bad fit in clothing to you?  
What kind of criteria tell you that fit is bad in apparel?
3. In general, what are your experiences with apparel fit?  
Bad or good? Please give some examples as to why?
4. When you go shopping, what aspects of clothing give you the most problem with fit?
5. Is fit an important factor to you when shopping for clothing?  
Why or why not?

#### **Performance — Apparel Fit Satisfaction**

Think about clothing that you have purchased in the last two years. Can you remember when it did not perform well? Tell me about the example. Why did it not perform well? Please explain.

#### **Situation**

Think about clothing that you have purchased in the last two years. Can you remember when it did not fit well for a social situation you were in?

#### **Comfort and fit**

How is comfort related to fit?  
Are there any psychological aspects of comfort related to fit?

#### **[Scenario]: Outcome**

Think about a situation that might occur; a hypothetical situation: When you are shopping for clothing, you find a garment that you really like -- you like the color, fabric, and style. But for some reason, the garment does not fit well. What do you do?

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