Gauging Concerns with Fit and Size of Garments among Young Consumers in Online Shopping

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ABSTRACT

The purpose of this study was to develop scales to quantitatively measure the domain of concerns with fit and size of garments among young consumers (college students) in online shopping. Using an initial pool of items created through focus group interviews, a series of exploratory and confirmatory factor analyses were performed to finalize the pool of items and to establish the construct, discriminant, and criterion validity of the finalized measures and reliability of the dimensions. Consumers' concerns with fit and size of garments included multiple interrelated dimensions; five factors with 21 items were identified as the final sets of the scale. The dimensions include concerns with overall appearance, concerns with unavailability of size, concerns with projecting a correct impression, concerns with the inability to try on in online shopping, and concerns with imagining fit/size in online shopping. The scale developed in this study covers concerns with fit and size of garments among young female consumers. Therefore, the findings of this study may not be generalized to other consumer groups. Fit and size of garments is one of the main issues in apparel purchase decisions and the most important concern in online apparel shopping. Therefore, the findings of this study provide online apparel retailers with valuable insights into consumers' concerns with fit and size of garments, which will lead retailers to better merchandising and marketing strategies and allow them to influence consumers' perceptions and behaviors in online shopping environments.

Keywords: Young consumers, garment sizing, online shopping

INTRODUCTION

Fit and size of garments are important criteria in apparel shopping (Eckman, Damhorst, & Kadolph, 1990; Hsu & Burns, 2002) because those components are directly related to the physical comfort of the wearer as well as to how the clothed body is viewed by the public, a factor which influences the wearer's body image and self-esteem (Rudd & Lennon, 1994; 2001). However, in the current U.S. Fashion Industry, fit and size problems are common issues among consumers, both men and women, due in large part to retailers' use of

different sizing systems (e.g., vanity sizing) that have not been standardized (Clifford, 2011). These issues have become even more serious as the U.S. population has grown more diverse (Clifford, 2011) and have created frustration and confusion among consumers because the same size can be different from store to store depending on the stores' own specifications to create patterns (Binkley, 2012).

The body-related characteristics of apparel such as fit or softness directly influence consumers' consumption experience with the garment (Rosa, Garbarino, & Malter, 2006). Therefore, in online apparel shopping, fit and size issues may be even more of a problem because of the lack of experiential information (i.e., inability to try for size and fit), increasing consumers' perceived risk. Consumers' uncertainty about fit and size of garments due to different sizing systems used by apparel retailers has contributed to an explosion of product returns online (Burns, 2011). According to a report from the National Retail Federation, variations in sizing contributed to $194 billion in apparel purchases returned in 2010, or more than eight percent of total apparel purchases in the U.S. (Clifford, 2011). Apparel retailers also reported that between 20 and 40 percent of their online sales are returned and the main reason is fit issues (Binkley, 2012). These product returns have caused a problem for apparel online retailers due to the cost of shipping to retain consumers' loyalty ("Sizing up Modern," 2008). Therefore, with increasing online sales, consumers' concerns and perceived risks associated with fit and size of garments have serious implications for the fashion industry.

In order to decrease consumers' perceived risk caused by the inability to try on the garment, e-retailers have implemented various innovative visual technologies such as virtual models. However, in spite of the substantial financial investment of e-retailers, the effect of these technologies on consumers' online shopping experiences is uncertain. For example, Lands' End and Lane Bryant, who once adopted the My Virtual

Model (MVM) technology, removed it from their websites after implementing it for a few years; Lane Bryant reported that their customers no longer used it (Lane Bryant, 2005).

In spite of the awareness of fit and sizing issues in the apparel industry, consumers' perceptions regarding these issues have not been widely explored and some of the existing studies are outdated (e.g., Frost, 1988; LaBat & DeLong, 1990). Particularly, the types of concerns consumers have in relation to fit and size of garments have not been investigated. LaBat and DeLong (1990) examined the relationship between body cathexis and satisfaction with fit of apparel. In their study, satisfaction with fit of apparel was measured by the degree to which consumers are satisfied with their various body parts, which might not adequately cover consumers' overall perception concerning fit and size issues. Rosa et al. (2006) investigated the relationship between body esteem and overall concern with fit in online apparel shopping. However, in their study, overall concern with fit was measured by only four items ("Does it give the right impression?," "Does it feel good?," "Does it fit?," "Does it match my style?"), which might not fully capture the domain of concerns with fit and size of garments in online apparel shopping. Therefore, the purpose of this study is to explore the area of concerns with fit and size of garments and develop a scale to quantitatively measure these concerns among young consumers in the online apparel shopping context.

Concerns with fit and size of garments

Apparel purchase decisions are largely influenced by how garments fit and interact with one's body (Eckman et al., 1990; Hsu & Burns, 2002; Rosa et al., 2006). According to Frost (1988), consumers perceive a garment as good-fitting when it conforms loosely to the body, provides comfort, conforms perfectly to the body, and provides maximum positive appearance. Therefore, perceived satisfaction with fit

entails multiple interrelated aspects such as physical comfort, psychological comfort, and appearance (Frost, 1988). Although no research has specifically examined the domain of concerns with fit and size of garments, perceived risk in general has been one of the major concerns in apparel shopping, particularly in online shopping (Case, 2002; Forsythe, Liu, Shannon, & Gardner, 2006; Kwon, Paek, & Arzeni, 1991). Perceived risk is defined as "the nature and amount of risk perceived by a consumer in contemplating a particular purchase decision" (Cox & Rich, 1964, p. 33) and occurs because consumers cannot always be sure that what they purchase will allow them to achieve their buying goals (Cox & Rich, 1964). Researchers (e.g., Forsythe et al., 2006; Kwon et al., 1991; Simpson & Lakner, 1993) have identified multiple dimensions of perceived risk in apparel shopping, including functional or product risk (e.g., size problems, inability to try on clothing, inability to touch and feel items), performance risk (e.g., concerns with style and durability of a garment), social/psychological risk (e.g., concerns with fashion innovation, acceptance, conforming to others), physical risk (e.g., bodily comfort or discomfort), and economic or financial risk (e.g., possible financial loss). Therefore, based on the literature in the area of perceived risk, concern with fit and size of garments is defined in this study 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 & Damhorst, 2010, p. 242) and is assumed to consist of multiple dimensions.

Theoretical Frameworks Associated with Concerns with Fit and Size of Garments

Body Image

Body image is the mental picture that a person has of his/her body (Fallon, 1990) and consists of perceptual and attitudinal dimensions. The perceptual dimension refers to how a person perceives his/her body in terms of size, shape, weight, features, attractiveness, movement, and performance.

The attitudinal dimension encompasses how a person feels about those attributes of his/her body (i.e., self-appraisal and affect) and how these feelings direct behaviors (Rudd & Lennon, 2000; 2001). Therefore, body image is not just a physical construct but a mental image that encompasses a multifaceted construct including cognitions, feelings, and behaviors (Cash & Pryzinsky, 1990). Research has found that body image is associated with the consumption of fashion products such as apparel (Cash & Cash, 1982; Solomon & Douglas, 1985) and influences the perceptions of an individual's public self (i.e., how the dressed body is viewed by others) (Rudd & Lennon, 2001). In addition, apparel is a critical component of an individual's appearance (Stone, 1965), can alter his/her perceived body image, and therefore can increase body satisfaction by camouflaging the figure (Kaiser, 1997). Therefore, consumers' concerns with fit and size of garments may be associated with the perceptual and attitudinal dimensions of body image.

Symbolic Interaction

According to symbolic interaction theory, "the self is established, maintained, and altered in and through communication" (Stone, 1965, p. 19). Stone (1965) suggested appearance and discourse as two different aspects of social communication. Appearance creates identifications of the participants, whereas discourse provides the text of the interaction (i.e., what participants are discussing). Appearance sets the stage for, maintains, and draws up the boundaries of the discourse by defining the limits of meaningful discussion, and thus is the more basic form of social interaction (Stone, 1965). Clothing, as a non-verbal symbol, plays a role in communication of appearance because "we may escape our discursive obligations, but not our clothed appearances" (Veblen, 1954, p. 167).

The concept of "looking-glass self" (Cooley, 1902) explains the process of social interaction through "role-taking," which is an estimation of how other people evaluate oneself (termed "reflexive evaluation" by

Solomon [1983, p. 321]). The self is shaped through one's imaginative processes in relation to others. The self is a reflected self-consisting of three elements: (1) the imagination of a person's appearance to others, (2) the imagination of other people's judgment of that appearance, and (3) some type of self-feeling (Cooley, 1902). One can take a role of a specific other or a generalized other by imagining the responses to one's appearance from some social group such a peer group (Solomon, 1983). Therefore, the presence of others is not necessary in reflexive evaluations; the evaluations may be intrapersonal (e.g., imagined responses of others to the person's appearance) and interpersonal (e.g., direct responses of others to the person's appearance).

What a person is wearing influences his/her self-concept as a social object (Kaiser, 1997) and a good-fitting garment maximize the appearance of the wearer. Therefore, concerns with fit and size of garments may be derived from one's desire to look good and to project a positive impression to specific or generalized others in social interactions. In online apparel shopping, due to the inability to try on for size and fit, consumers may depend on their imaginations to indirectly experience the situations they expect with the product. This imaginary process may include reflexive evaluations and facilitate information processing (e.g., evaluation of the garment with respect to the person's body image). While examining apparel on the website, consumers may picture themselves preening in front of a mirror in a specific garment and imagine how they would look in the garment in the eyes of others. By taking others' role, an individual may estimate appraisals by others. When consumers are engaged in the reflexive evaluation process, they may consider whether the specific garment appropriately reflects their self-image. They may also deliberate whether the garment would properly show their bodies or improve the attractiveness of their bodies. Because the fit and size of the garment are directly related to the body and the holistic impression of appearance (Hsu & Burns, 2002), concerns with fit and size of garments

are more critical in online apparel shopping than in offline shopping.

Body Image Self-Discrepancy

Discrepancies between one's body image (i.e., actual self) and cultural standards (i.e., ideal self) result in negative emotional states such as dissatisfaction and disappointment (Higgins, 1987). According to social comparison theory (Festinger, 1954), individuals continuously compare themselves to others and these comparisons influence their self-evaluations (Jung, Lennon, & Rudd, 2001). Through a continuous self-evaluation process, individuals determine their characteristics, strengths, and capabilities, and develop consistent self-impressions (Festinger, 1954). The comparison process between the actual self and others considered to be ideal results in ideal/self-discrepancy.

In online shopping environments, consumers may imagine a situation by visualizing themselves in the picture on the website to process body-related information (e.g., whether the type of clothing would look good on them in terms of fit, color, or style). When consumers encode the information, the visual stimulus of ideal models wearing the apparel item may facilitate their imaginary information processing. Through the process, consumers may compare their bodies to those of ideal models on the website, and the degree to which individuals perceive that their body image is close to or different from the ideal model will influence their perceived body image self-discrepancy. Research has supported the idea that individuals whose bodies are similar to models or ideal standards do not hold body image self-discrepancy (Bessenoff, 2006). Therefore, in online apparel shopping, consumers' concerns with fit and size of garments may be associated with their perceptions that their bodies are different from those of ideal models, and therefore the garment may look different on their bodies.

Method

Sample and Procedure

This study focused on college female students and used them as a sample in each stage of the scale development process. College students' online spending exceeds that of all other demographic segments in the U.S. ("College Students Spending," 2004) and clothing is one of the most popular product categories among students, particularly female students, in online shopping ("Looking to Reach," 2007). In addition, young women tend to experience more body image problems (e.g., body dissatisfaction) compared to men (Bartky, 1990), and therefore, fit and size issues may be more serious among young female students than male students.

The scale development process was based on Churchill's (1979) widely used method for multiple-item instrument development. According to Churchill (1979), the first step of scale development is to identify the conceptual specification of the construct and identify how the domain is operationalized through a review of literature. The second step in the procedure is to generate items that capture the domain as specified. Churchill (1979) suggested that focus group interviews can be advantageous for generating items. Because the domain of concerns with fit and size of garments has not been explored, the first and second steps of scale development were accomplished through a series of focus group interviews. The following sections cover the procedure of the scale development and results including: (1) the development of the initial pool of possible items through focus group interviews, (2) scale purification consisting of exploratory factor analysis to reduce the initial pool to a more parsimonious set of items and confirmatory factor analyses to finalize the pool of items and to establish the construct and criterion validity of the finalized measure as well as reliability of the dimensions, and (3) discussion of the final scale.

Qualitative Inquiry and Initial Scale Development

To generate the initial pool of items, five sessions of focus group interviews were conducted. A total of 21 female students who had purchased apparel online participated in the interviews and were given class credits as an incentive. Each interview was conducted for 40 minutes. Participants were mostly Caucasian Americans (79%) and between 18 and 22 years old (86%). In the interviews, they were asked to describe the types of issues with fit and size of garments they have experienced in online shopping. As a result of the focus group interviews, the initial pool of 62 items was generated. Prior to purifying the measures using additional data, the items were examined in terms of wording and readability by three independent panels.

Scale Purification
Exploratory Factor Analysis

A convenience sample of 120 female college students participated in the pilot study and the response rate was 49 percent. The average respondent was 20 years old with a range of 20-22. Most of them were Caucasian American (91%) and had purchased apparel online (97.5%). Participants were asked to rate each item according to the degree to which they believed that each item reflected concerns with fit and size of garments in online shopping using a 5-point Likert scale (strongly disagree [1]; strongly agree [5]; not applicable [NA]1). Four different versions of the questionnaire were created, randomizing the order of the questions to avoid the order bias that might be caused by respondents' tiredness due to a long questionnaire.

Principle components factor analyses with varimax rotation were separately performed using 62 items in the online shopping context. In the online shopping context, seven factors with 32 items were extracted through the initial solution. Thirty items were eliminated due to low factor loadings (< .50), cross loading issues, and

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1 The 'NA' (not applicable) responses were re-coded as missing data.

lack of clarity of the meaning, which influenced the reliability of the corresponding factor. Although seven factors were yielded, the objective of the pilot test was to produce a parsimonious set of items; therefore, based on the screen plot, 4- and 5-factor solutions were tested and compared with each other. As a result, eight items were eliminated due to cross-loading and low factor loading issues and the 5-factor solution with 24 items was considered to be the most parsimonious, maintaining important information addressed by the initial pool of items. The reliability (Cronbach's *alpha*) of

each factor exceeded .70 (.79-.90) (see Table 1).

Confirmatory Factor Analysis

A random sample of 3000 was drawn from all female students enrolled in a large Midwest university. A web-based survey was used to collect data. A total of 464 responses were collected resulting in a 15.5 percent response rate. After incomplete responses were removed, 385 usable responses remained. The average respondent was 22 with a range of 16-61 years old. Most respondents (83%) were Caucasian American.

Table 1. Results of Exploratory Factor Analysis for the Concerns with Fit and Size of Garment Items in Online Shopping

	Factor loading	Eigenvalue	Percent of variance	Cronbach's *alpha*
Factor 1: Concerns with Overall Appearance		3.99	16.62	.90
1. The garment may not look good on me.	.81			
2. The garment may not look nice on me.	.79			
3. I may feel uncomfortable in the garment.	.58			
4. The garment may not fit well.	.73			
5. The size of garment may not fit me.	.69			
Factor 2: Concerns with Unavailability of Size		3.82	15.92	.88
1. I may not find my size in the website.	.86			
2. I may not find the exact size I am looking for in the website.	.77			
3. The website may not carry my size.	.85			
4. My body may not fit the garments selling in the website.	.75			
5. I may not find a garment that fits my body.	.72			
Factor 3: Concerns with Projecting a Correct Impression		3.75	15.63	.87
1. The garment may reveal the parts of my body, such as stomach or muffin top, that I want to hide.	.68			
2. The garment may not give other people a positive impression about me.	.87			
3. The garment may not give other people the right impression about me.	.85			
4. I may look weird in the garment.	.54			
5. The garment may be too revealing.				
6. I may not project the self image that I want to show other people when wearing the garment.	.68			
Factor 4: Concerns with Inability to Try on in Online Shopping		2.84	11.83	.79
1. The fit of the garment may be different from what I see on the website.	.67			

2. The garment on the website may look different when I try it on at home.	.66		
3. The garment may fit differently on me that it fits on the model.	.66		
4. Depending on brand, the garment fit may be different.	.66		
5. The garment may not fit all body shapes and sizes.	.69		
Factor 5: Concerns with Imagining Fit/Size in Online Shopping		2.41	10.06	.79
1. Shopping in the website, I may have a hard time picturing myself wearing the garment.	.76		
2. I may have a hard time imagining the fit of the garment shopping in the website.	.76		
3. My guess about the garment fit may not be correct when shopping in the website.	.59		

A total of 24 items concerning fit and size of garments were tested in the online shopping context. In the questionnaire, participants were first asked to read a statement defining the online shopping context on which their answers would be based (e.g., "Imagine that you visit an apparel store website to buy your new summer clothes"). Two items measuring the general concern with fit and size of garments in online shopping were created for this study to test criterion validity (e.g., "In general, I am concerned about the fit and size of the garment when shopping for apparel online"). The items were measured using a 5-point Likert-type scale (strongly disagree [1]; strongly agree [5]).

To finalize the concerns with fit and size of garments in online shopping, a measurement model was tested using the five latent variables and 24 indicators generated from the exploratory factor analysis. The χ^2 goodness-of-fit statistics for the best fit model was significant ($\chi^2 = 1223.24$, $df = 242$, $p < .001$). Although based on NFI (.93), CFI (.94), and IFI (.94), the model was considered a well-fitting model, RMSEA (.10) value indicated an unacceptable fit. Therefore, the modification indexes were examined for respecification of the model for fit improvement. Based on the suggestion of Anderson and Gerbing (1988), if correlating the errors of two indicators appeared to improve the model fit, one of the items was removed. Therefore, two items were removed to improve the model fit. In addition, one item was removed due to a low SMC (.39) to improve the variance of the factor. Therefore, another confirmatory factor analysis was performed with five latent variables and 21 indicators. The χ^2 goodness-of-fit statistics for the best fit model was significant ($\chi^2 = 772.61$, $df = 179$, $p < .001$). Although the model showed mediocre fit based on RMSEA (.90), based on NFI (.94), CFI (.95), and IFI (.95), the model was considered a good fit.

All path coefficients (λ's) from the factors to their indicators were consistently positive and statistically significant at $p < .001$. No excessively large or small standard errors were detected, indicating the stability of the estimates. All of the factor covariance (or correlation) estimates (φ's) were statistically significant at $p < .001$, which indicates that all factors address the facets of concerns with fit and size of garments in the online shopping context. The standard errors observed from the factor correlation suggest the stability of the estimates. All of the error variance estimates were consistently positive. Therefore, it was concluded that all parameters were within an acceptable range. Reliability of items was assessed in two ways: (1) Cronbach *alpha* coefficients and (2) construct reliability suggested by Fornell and Larcker (1981). The reliability values for items within all of the factors exceeded the

cutoff point of .70 (Nunnally & Bernstein, 1994) (see Table 2), indicating high internal consistency among the items within each factor.

In order to establish construct validity of the scale, convergent and discriminant validity of the factors was examined. Convergent validity refers to "the extent to which it [a scale] correlates highly with other methods designed to measure the same construct" (Churchill, 1979, p. 70). If each factor loading is in the anticipated direction and magnitude and is significant at $p < .50$, each scale is considered to display convergent validity (Krause, Scannell, & Calantone, 2000). SMC was examined to assess the convergent validity; high SMCs (SMC > .50) are indications of convergent validity (Anderson & Gerbing, 1988). In addition, variance of each dimension was calculated as suggested by Fornell and Larcker (1981); if the variance is less than .50, the variance due to measurement error is larger than the variance explained by the construct. Consequently, the validity of the individual indicators and the construct may be problematic. In the measurement model with five latent variables and 21 indicators, all of the path coefficients from the five factors to their corresponding indicators were statistically significant at $p < .001$. However, six of the SMCs among 21 indicators were lower than .50. In addition, the variances of one out of five dimensions were lower than .50 (see Table 2). With few exceptions, all correlation coefficients between items within the same factor were greater than those of items from other factors. All of the path coefficients from the five factors to their corresponding indicators were statistically significant at $p < .001$. However, six of the SMCs among 21 indicators were lower than .50. In addition, the variances of one out of five dimensions were lower than .50 (see Table 2). Therefore, the convergent validity of items should be interpreted with caution.

Discriminant validity refers to the uniqueness of the constructs and can be assessed using a chi-square difference test between each pair of constructs (unconstrained model [one-factor] and constrained model [two-factor]). A statistically significant chi-square difference ($p < .001$) between two models indicates two distinct constructs (Anderson & Gerbing, 1988). A series of chi-square tests revealed that two factor models yielded a significantly better fit compared to the one-factor model for all of the ten possible pairs of dimensions.

Criterion validity is established when a measure has "an empirical association with some criterion or 'gold standard'" (DeVellis, 2003, p. 50) and can be assessed by either concurrent or predictive validity (Nunnally & Bernstein, 1994). Concurrent validity, which indicates criterion validity through concurrent evidence, is demonstrated when a new measure highly correlates with another existing scale that measures the same or related construct. In the preliminary test, concurrent validity was assessed by comparing correlations between summated scores of all indicators of each concern with fit and size of garments factor and the criterion variable scores (i.e., the summated scores of the general fit and size of garments items). All of the correlation coefficients were significant ($p < .01$), establishing the criterion validity of the measure. Predictive validity is assessed when a scale predicts a criterion measure that is expected to occur as a result of the construct addressed by the scale. To determine the predictive validity of the scale, data were collected on 21 items measuring concerns with fit and size of garment and purchase intention using a web-based survey. Purchase intention was measured using seven items borrowed from Park and Stoel (2005), which use a 7-point Likert scale (very unlikely [1]; very likely [7]). A random sample of 3000 was drawn from female students enrolled in a large Midwest university. A total of 230 data were used for the analysis and the response rate was 13 percent. The average respondent was 25 with a range of 19-59 years old. Most respondents (80%) were Caucasian American. Predictive validity was ascertained using correlations between summated scores of all indicators of each dimension of concerns with fit and size of garments and purchase intention scores. As a

result of factor analysis, one dimension was found for the purchase intention items and reliability was .95. The results showed that all concerns with fit and size of garments dimensions were significantly negatively correlated with purchase intention (-.145 ~ -.297) at the .01 level and therefore predictive validity of the scale was established.

Table 2. Results of Confirmatory Factor Analysis for Concerns with Fit and Size of Garments in the Online Shopping Context with 5 Latent Variables and 21 Indicators

	Standardized Factor loading	Cronbach *alpha* value	Construct reliability [a]	Variance [b]
Factor 1: Concerns with Overall Appearance				
1. The garment may not look good on me.	.96	.90	.91	.77
2. The garment may not look nice on me.	.94			
3. The garment may not fit well.	.72			
Factor 2: Concerns with Unavailability of Size		.88	.88	.60
1. I may not find my size in the website.	.80			
2. I may not find the exact size I am looking for in the website.	.75			
3. The website may not carry my size.	.78			
4. My body may not fit the garments selling in the website.	.78			
5. I may not find a garment that fits my body.	.77			
Factor 3: Concerns with Projecting a Correct Impression		.88	.88	.61
1. The garment may reveal the parts of my body, such as stomach or muffin top, that I want to hide.	.62			
2. The garment may not give other people a positive impression about me.	.93			
3. The garment may not give other people the right impression about me.	.93			
4. I may look weird in the garment.	.66			
5. I may not project the self image that I want to show other people when wearing the garment.	.71			
Factor 4: Concerns with Inability to Try on in Online Shopping		.79	.79	.43
1. The fit of the garment may be different from what I see on the website.	.69			
2. The garment on the website may look different when I try it on at home.	.75			
3. The garment may fit differently on me that it fits on the model.	.63			
4. Depending on brand, the garment fit may be different.	.53			
5. The garment may not fit all body shapes and sizes.	.68			
Factor 5: Concerns with Imagining Fit/Size in Online Shopping		.79	.80	.64
1. Shopping in the website, I may have a hard time picturing myself wearing the garment.	.74			

| 2. I may have a hard time imagining the fit of the garment shopping in the website. | .83 |
| 3. My guess about the garment fit may not be correct when shopping in the website. | .71 |

[a.] $\rho = (\sum \lambda)^2 / (\sum \lambda)^2 + \sum \varepsilon$, as $\varepsilon = 1\text{-SMC}$ (Fornell & Larcker, 1981)

[b.] $\rho = \sum \lambda^2 / \sum \lambda^2 + \sum \varepsilon$, as $\varepsilon = 1\text{-SMC}$ (Fornell & Larcker, 1981)

Discussion

The purpose of this study was to develop scales measuring concerns with fit and size of garments in the online apparel shopping context. Five dimensions of concerns with fit and size of garments emerged in the online shopping context (see Table 2). As suggested by previous literature related to the fit of the garment and consumers' perception (e.g., Frost, 1988) and perceived risk in online apparel shopping (e.g., Forsythe et al., 2006), this study found that concerns with fit and size of garments comprised distinct multiple dimensions. Two out of five dimensions (concerns with inability to try on in online shopping and concerns with imagining fit/size in online shopping) were associated with the inability to try on products in online shopping. These dimensions revealed that despite apparel retailers' efforts to reduce consumers' perceived risks using various advanced technologies (e.g., enlargement, pan-function, multiple views, and videos), imagining the fit and size of garments was identified as consumers' major concern in online shopping.

Concerns with overall appearance were related to consumers' uncertainties about whether the garments they buy would improve their appearances (e.g., "looks good on me," "fits me well"). The fit and size of garment plays an important role in enhancing an individual's dressed body and therefore may be closely related to perceptions of and attitudes about one's own body. Concerns with unavailability of size items included concerns about not finding a size when shopping for apparel. This finding shows that concerns with unavailability of size may not be limited to consumer groups with specific body sizes (i.e., petite or big sizes). These types of concerns could not only be related to consumers' body image and inaccurate and inconsistent sizing systems used by apparel retailers, but may also be associated with stockout situations that consumers with varied body sizes may have experienced. Stockouts affect store image components such as customer service, value, convenience, product variety, and availability (Schary & Christopher, 1979) and, influence purchase intention (Faircloth, Capella, & Alford, 2001) as well as future patronage intention toward the store (Zinn & Liu, 2001). In apparel online shopping, Kim (2004) found that stockouts influence consumers' feelings about the store, both satisfaction and dissatisfaction. Therefore, concerns with unavailability of size due to stockouts have important implications for apparel retailers.

Concerns with projecting a correct impression consisted of concerns about how other people look at the self and whether the individual sees him/herself projecting an appropriate image to others. According to Schlenker and Leary (1982), social anxiety occurs when individuals are motivated to make a preferred impression on actual or imagined others, but are not sure that they can project the impression and therefore imagine negative evaluations from others. Therefore, these types of concerns may be derived from consumers' desire to give other people a positive impression and to avoid negative impressions of them when wearing garments they buy. This finding shows that the congruency between self-image and garment fit is an important concern for apparel consumption. Concerns with uncertainty about the sizing system consisted of concerns about whether the sizing system of a store/brand is accurate or the sizing system is consistent throughout different stores/brands. Although different sizing systems (e.g., vanity sizing) are designed to sell more clothes, create a preferred store image, and

increase customer loyalty (Rickey, 2007), those practices may make it difficult for consumers to determine their sizes in different stores, a problem which increases perceived risk and concerns related to fit and size of garments in apparel shopping.

Two of the items for concerns with inability to try on in online shopping (i.e., "Depending on brands, the garment fit may be different," "The garment may not fit all body shapes and sizes") appeared to be related to concerns with uncertainty about the sizing system. Concern with imagining the fit/size in online shopping included concerns that consumers have to make a guess when imagining the fit of the garment and risk that their guess may not be correct, a problem which may result in financial and time losses when returning and perhaps re-ordering the product. Consumers were concerned that the fit of the garment may be different on them than on the model because of a discrepancy between their bodies and that of the model. Therefore, this finding provides an important implication to online apparel retailers; it may help consumers to imagine the fit of the garment when retailers have models with different body sizes wearing the same style. In addition, retailers may help consumers estimate the fit and size of garments by showing the model's body size along with the garment size (e.g., "Model shown is 5'7" wearing U.S. size small"). The use of the advanced personalized model (i.e., avatar), integrating consumers' body scan data, may also help consumers to imagine the fit and size of garments in online shopping.

The significance of the scales developed in this study can be discussed in three points. First, this is the first study that explored the domain of concern with fit and size of garments and identified items quantitatively measuring the domain in online apparel shopping. Considering that fit and size of garments are key considerations in apparel purchase decision and the biggest concern in online apparel shopping ("More than a Quarter," 2005), this study provides apparel retailers important evidence that understanding consumers' concerns with fit and size of garments will ultimately lead

retailers to better merchandising and marketing strategies, and allow them to influence consumers' perceptions and behaviors in online apparel shopping environments. In addition, the scale of concerns with fit and size of garments developed in this study will fill a gap in the literature, providing researchers with a measure that can be tested in various contexts of study.

The scale developed in this study is for a particular consumer group (young female consumers). Throughout the process of the scale development, the characteristics of the samples were maintained to address this specific type of target consumers. Research has shown that young adult women were the most dissatisfied with their bodies of any age group (Cash, Winstead, & Janda, 1986) and women between the ages of 19 and 30 had the most difficult time finding clothes that fit their bodies (Catan, 2008). Therefore, the findings of this study may not be generalizable to other consumer groups and concerns related to fit and size of garments may be different among consumers in different age groups; for example, middle-aged women may have different types of concerns with fit and size due to a change in metabolism during their middle-aged years. Therefore, future research may investigate concerns with fit and size of garments among middle-aged women. In addition, the scale developed in this study should be tested using a sample including various age groups.

In addition, males' perceptions or concerns with fit and size of garments may be different from those of females. Researchers have provided substantial evidence that men and women hold different attitudes toward the body (e.g., Bartky, 1990). Research shows that physical characteristics influence body satisfaction among female college students, but not among male students (Çatikkaş, 2011). Therefore, it can be assumed that women are more conscious of fit and size of garments than men are. However, considering the explosive growth of the menswear industry these days ("Designers Hilfiger," 2011), for future research, it is worth investigating concerns

with fit and size of garments among male consumers.

Finally, the scale of concerns with fit and size of garments was developed in online shopping context. According to a report by the Aberdeen Group, about 51 percent of retailers use at least two shopping channels (Shankar & Winer, 2005). In addition, multi-channel consumers tend to be more loyal and profitable (Aaronson, 2008). As a result, the top 50 retailers have continuously made efforts to integrate Internet and store operations ("Internet Retailer Best," 2004). In order to increase the effectiveness of the online operation, apparel retailers need to understand the types of concerns with fit and size of garments in online shopping. Therefore, the findings of the present study are especially important for multi-channel apparel retailers to improve the quality of merchandising related to fit and size and the way they display product information in the online shopping environment.

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