The Effect of the Characteristics of Fabrics and Subjective Sensory Images on the Off-line and On-line Preferences of Women’s Suit Fabrics

This research investigated the influences of structural characteristics such as fabrics, mechanical properties, and subjective sensory images on the off-line and on-line preferences to women’s spring/summer suits fabrics to extract the most effective factor towards preference as well as analyze the preferential off-line and on-line differences to predict the exact texture image on-line. Objective evaluations were done for the measurement of the mechanical properties of fabrics using Kawabata’s Evaluation System and subjective evaluations were done with 109 female subjects who value the off-line and on-line sensory image of suit fabrics. For statistical analysis, factor analysis, cluster analysis, t-test, ANOVA, and regression were used. The results were as follows. The preference scores on-line were generally higher than those off-line. For the structural characteristics of fabrics, differences of thickness were observed according to preference clusters, and the preference increased as thickness was lowered off-line and on-line. For mechanical properties, WC influenced off-line and on-line preferences. Fabrics with low compression energy were preferred; however, the effect of SMD was observed off-line only. In subjective sensory images, the ‘smoothness’ image influenced off-line and on-line preferences the most. All sensory images influenced the off-line preferences; however, the effects of ‘flexibility’ and ‘weight’ were not shown on-line.

Texture image is an important factor for consumer clothing product preferences (especially in women’s wear) and is directly related to the purchase of apparel products; subsequently, fabric and clothing manufacturers need to subdivide, specifically analyze, and design the texture image of clothing fabrics. Texture image is strongly influenced by the various physical-chemical characteristics of fabrics such as fiber, yarn, and fabric that influence consumer preferences to apparel products. In addition, there is a need for further information on-line about fabric characteristics of clothing that have texture images differences (compared to off-line) because of the substantial increase in Internet shopping for apparel products recently.

Consumers perceive and select clothing through visual and tactile senses that interpret the texture of fabric. (Han & Kim, 2006). The texture image consists of sensory and sensibility images. The sensory image is related to the touch sensation of fabrics that can be described by words such as smooth and warm. Sensory image is also very important in consumer preference; subsequently, clothing manufacturers need to analyze and understand consumer preferences in regards to the sensory images of women’s wear fabrics and incorporate preferences into the merchandising and marketing of apparel and fabric products.

Many researchers have examined the various aspects of fabric texture images due to the need for...
further information. First, some studies investigated the relationship between texture image and preference for suit fabrics. The study results of relationships between structural characteristics, texture, and preference of fall/winter women's jacket fabrics showed that the weight of women's jacket fabrics indirectly influenced preferences through texture and sensibility; subsequently, the reduction of fabric weight is an important factor in clothing fabric preference (Roh & Ryu, 2007). In a study on the subjective hand evaluation and preference for men's spring/summer suits fabrics, the 'smoothness' the most influential sensory image on suit fabric preferences (Ryu et al., 2002). Based on men's spring/summer suit research results, fabrics with higher values for “smoothness” and “flexibility” and lower ones for compression energy and fabric count tended to be preferred (Roh & Ryu 2005). The sensory image of men's suit fabrics was mostly influenced by smoothness and density and in sensibility images, ‘classic’ was the most influential factor and ‘conservative’ influenced negatively on preference (Bae & Kim, 2003). In addition, the preferred texture image of woolen fabrics was non-rough and soft, uniformly even-surfaced fabrics and ‘classic’ image influenced the preference and ‘elegance’ image influenced purchasing intentions (Ko et al., 2003). The analysis of men's spring/summer suits fabrics preferences (according to gender and age) showed that the preference of men in their thirties relates to ‘stiffness’, ‘smoothness’, and ‘coolness’; however, it relates to ‘drapability’ in the case of men in their twenties (Ju & Ryu, 2004).

It is important to accurately portray fabric texture on-line, because of the increase in Internet shopping for apparel products. The discord between on-line images and apparel product characteristics is an important problem in Internet shopping (Kim & Cho, 2004), with fabric texture showing the largest differences (Kim & Choi, 2002; Cho et al., 2001). It was difficult to estimate the fabric feel from Internet shopping (Lee & Park, 2004) and most fabrics were evaluated more positively on-line than in person (Kim & Cho, 2007). Consumer discord can affect the degree of satisfaction after purchase; subsequently, more research about and effective method to transmit the characteristics of very thin, dry, and dense on-line is needed. Further studies will make possible to improve the after purchase satisfaction of consumers and reduce product return rates in e-commerce.

This study investigated the effects of structural and mechanical properties, and subjective sensory images on the preference of women's spring/summer suits fabrics off-line and on-line to extract the most effective factor towards preference; in addition, it analyzed the preferential off-line and on-line differences to predict the texture image on-line exactly. This study will improve customer after purchase satisfaction of apparel products in e-commerce.

**METHODS**

**Specimens**

Among the various women's suit fabrics on the market, the 26 kinds of solid fabrics most preferred in a preliminary survey were used as specimens. Structural characteristics that include thickness, weight, density, weave, and CIE color (JS 555, Colour Techno System Co., Japan) were measured and the fabric specifications are presented in Table 1. The mechanical properties of the fabrics (that include tensile, bending, shear, surface, compression properties) were measured using Kawabata's Evaluation System (KES)-FB (KATO TECH) under standard conditions.

**Evaluation of the Preference of Fabrics**

**Subjects** The study subjects were 109 female students majoring in clothing and textiles. The evaluation of subjective sensory images were conducted at C University and H University in Choong Chung Nam-Do and J University in Gyeonggi-Do, Korea, from May to June, 2010.

**Evaluation Procedure** The investigation method presents women's suit fabrics off-line and on-line for the evaluation of sensory images and preference. For the off-line evaluation, 26 kinds of fabrics currently on the market were presented for evaluation, using