AN ABSTRACT OF THE THESIS OF

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This study included the development of Textile Knowledge Inventory (TKI) measuring objective Textile Knowledge (TK) and two experiments. From a conceptual analysis, 38 preliminary true-false questions were initially generated. Through item analysis using item-to-item correlation (Cross Product Ratio) and item-to-total correlation (Point Biserial Correlation Coefficients), a 23 item TKI resulted. Validity of TKI was tested by experimental manipulation method. Reliability of TKI was tested by test-retest and internal consistency methods.

The first experiment investigated whether Fabric Structure (FS) and level of TK affected categorization of subjects' descriptions of fabric specimens. A non-probability convenience sampling method was used. Subjects, 93 female college students, received a self-administered questionnaire including one of two FSs (woven or knitted) and the TKI. Subjects were asked to describe the fabric; these descriptions were content analyzed. Multivariate Multi-sample Rank Sum Test found that categorization of subjects' descriptions of fabrics differed as a function of FS and the level of TK. Descriptions of the woven fabric were more likely to be classified as "appearance" category and less likely to be classified as "fiber content" and "texture" categories than the knitted fabric. Descriptions by subjects with Lower TK (LTK)

were more likely to be classified as "appearance" and less likely to be classified as "fabric name" than subjects with Higher TK (HTK).

The second experiment investigated whether level of TK, fiber content label information, and their interaction caused differences in subjects' descriptions and evaluations of a microfiber polyester fabric. Subjects, 107 female college students, received a self-administered questionnaire including a fabric specimen labeled in "100% polyester", "100% microfiber polyester", or no information. Subjects were asked to describe and evaluate the fabric. Results showed that the negative stereotypic images of polyester tended to influence subjects' evaluations of the fabric specimen. However, subjects with LTK tended to be more influenced by stereotype of polyester than subjects with HTK. Under label conditions of "100% polyester" and "100% microfiber polyester", subjects with LTK evaluated the fabric specimen as lower quality, less attractive, and slightly less expensive than subjects with HTK. Results were discussed as they related to categorization processes.

# The Effect of Textile Knowledge on Categorization and Stereotyping of Textiles

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APPROVED:

Redacted for Privacy

Major Professor, representing Apparel, Interiors, Housing, and Merchandising

Redacted for Privacy

Head of Department of Apparel, Interiors, Housing, and Merchandising

Redacted for Privacy

Dean of Graduate School

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The Effect of Textile Knowledge on Categorization and Stereotyping of Textiles

# Chapter I

## Introduction

Consider the following scenario: a couple enters a fabric store in search of a fabric for their baby girl's new dress. The husband points to a fabric and says "look at the pink fabric. That is a pretty color". The wife looks at the fabric and says "yes, that is a very pretty color. However, it looks like a man-made fiber". She reads the fiber content label of the fabric which is made from 100% polyester. She says "this is made from polyester which is not healthy for our baby. Our baby needs natural fibers with high absorbency such as cotton". The husband describes the fabric as a pink fabric whereas the wife describes the same fabric as a man-made fiber. There is a difference in how they categorize the same fabric; the husband categorized the fabric by the color and the wife categorized the fabric by the fiber content. A number of factors are related to the categorization process. To better understand how people perceive textiles, factors related to the categorization of textiles must be investigated.

According to Fiske and Neuberg (1990), when people encounter an object/person, they initially or automatically attempt to categorize the object/person. Only if they can not categorize the object/person or they need to analyze the object/person in detail, will they then analyze the object/person attribute by attribute. The term "categorization" is used to describe humans' way of mentally organizing and storing information from the world around them. Through the categorization process

individuals retrieve mentally stored information in order to identify novel objects and decide appropriate responses to these objects.

How people perceive and categorize objects can be explained, in part, by examining information processing by which "stimuli are registered in the receptors, identified and stored in memory" (Coren & Ward, 1989, p. 13). First, information from objects is registered through sensory systems (eg., sight, touch). Next, the information is registered in memory, and other information related to the sensory experience is retrieved from memory. Then, both kinds of information are used to interpret and understand the object. Individuals identify, categorize, and store the features (information), which are reported by the sensory organs, through cognitive mechanisms so that the individual forms his/her own impression of the world (or an object). Thus, categorization is a way of mentally organizing and storing information, and the way people mentally categorize this information is a clue to how they perceive the world or stimuli.

"To categorize is to render discriminably different things equivalent, to group the objects and events around us into classes, and to respond to them in terms of their class membership rather than their uniqueness" (Bruner, Goodnow, & Austin, 1956, p. 1). Categorization provides for a highly efficient means of processing information with the least cognitive effort. According to Bruner, Goodnow, and Austin (1956), there are five benefits of forming mental categories: (1) categorizing objects reduces the complexity of the environment, (2) categorizing is the means by which objects of the world are identified, (3) the establishment of categories reduces the need for constant learning, (4) categorizing allows us to decide an appropriate action, and (5)

categorizing is a useful way to organize information in that categories can be further organized into subordinate and super-ordinate relations.

According to Rosch (1978), the real world comes as structured information rather than as arbitrary or unpredictable attributes. Rosch, Mervis, Gray, Johnsen, & Boyes-Braem (1976) proposed a hierarchical organization of categories with three levels including super-ordinate (e.g., furniture, clothing), basic (e.g., chair, shirts), and subordinate (e.g., kitchen chair, a dress shirt) categories. The differentiation of categories can be measured by determining how much the members of a category share attributes with one another but have different attributes from the members of other categories. According to Rosch et al. (1976), the members of super-ordinate level categories share few attributes (e.g., pants and shirts in clothing category) and the members of the subordinate-level categories share many of the same attributes with the members of other similar subordinate categories (e.g., dress shirt category and knit shirt category). But at the basic level (shirt), the members (dress shirt and knit shirt) not only share many attributes but have attributes that differ from members of other basic level categories (pants category). Therefore, the basic level categories are the first categories we learn and the most important in language development (Mervis & Crisafi, 1982; Rosch, 1978).

The purpose of the present study was to better understand categorization of textiles and factors that affect this categorization process. Perceptions and subsequent categorization of an object/person have been found to be influenced by several factors: (1) attributes of the object/person (Buckley, 1884-85; Lennon, 1992; Reed & Blunk, 1990; Stangor, Lynch, Duan & Glas, 1992), (2) characteristics of the perceiver

(Stangor, Lynch, Duan, & Glas, 1992; Moskowitz, 1993), and (3) attributes of the situation or context (Damhorst, 1984-85). The present study focused on the effects of object attributes (i.e., fabric structures) and perceivers' characteristics (i.e., textile knowledge) on the categorization of textiles.

Attributions of the objects themselves play an obvious role in the categorization process (Buckley, 1984-85; Fiske & Neuberg, 1990). Any person/object can be categorized in a multitude of ways, based on any observable feature or combination of features. However, we are not likely to categorize others/objects on the basis of all available information. For example, people are more likely to automatically categorize others by race than by clothing style (Fiske & Neuberg, 1990). John and Sujan (1990) found that perceptual attributes of a product (i.e., shape, color, size, and visual displays on the package) were used more frequently in subordinate level categories than other attributes (i.e., affection, usage, taste, product benefit, and ingredients).

Attributes of textiles and apparel have been found to affect the categorization of these objects (Buckley, 1984-85; Delong & Minshall, 1988; Delong, Minshall, & Larntz, 1986). For example, Delong and Minshall (1988) studied how ensembles of daywear (a basic level of female dress) were categorized by consumers. They found that consumers categorized the ensembles by the attributes of the ensembles (i.e., the silhouette and internal shape, the part to whole relation, and associated meanings).

Buckley (1984-85) studied how individuals mentally organized and stored clothing styles at a basic category level. The subjects sorted 106 sketches of women's dress as special occasion dress, everyday bifurcated dress, and everyday skirted dress. According to Buckley (1984-85), if subjects simply considered the structure of the

dress, they probably would have put all bifurcates together in one basic cluster, but subjects placed them in different categories. Buckley reasoned that subjects' cognitive processes may have been based upon the classification of contextual factors as well as structural features of the dress.

Furthermore, researchers of textile perception have demonstrated that the perceptions and categorization of textiles are influenced by characteristics of the textiles themselves (Paek, 1985; Winakor, Kim, & Wolins, 1980). Winakor et al. (1980) showed that several fabric attributes affected tactile perceptions (e.g., crisp/limp, silky/scratchy, coarse/fine): (1) fiber content including cotton and polyester, (2) degree of stiffness, (3) degree of roughness, and (4) degree of thickness.

Therefore, the present study investigated the effects of attributes of fabrics (i.e., fabric structures including woven and knitted) on the categorization of fabrics. It was predicted that the categorization of fabric descriptions would differ depending on the fabric structure.

Attributes of perceivers are also an important factor influencing the categorization process. Specifically, individual differences in perceivers' knowledge or expertise has been found to affect the categorization process in various ways. Alba and Hutchinson (1987) proposed that the cognitive structures used to differentiate products are "more veridical, more complex, and less stereotyped for experts than for novices" (p. 418) and that "product categorization by novices is more influenced by perceptual attributes than it is for experts" (p. 418).

However, from a conceptual perspective, "knowledge" is different from "expertise" proposed by Alba and Hutchinson (1987). "Expertise" was proposed as

automaticity (using less cognitive efforts), refined cognitive structure, the ability to analyze information, the ability to elaborate on given information, and the ability to memorize information (Alba & Hutchinson, 1987). On the other hand, "knowledge" is the accurate information stored in memory (Park, Mothersbaugh & Feick, 1994). Expertise is a result of cumulative knowledge but has more dimensions than simple knowledge.

In this study, the conceptual and operational definitions of categorization and of knowledge differed. Textile knowledge, which was measured for this study, was defined as the accurate information which is stored in memory and which is related to textiles. Persons may have textile related information stored in their memory. However, some of the information may be incorrect. This study measured objective textile knowledge which focuses on accurate information. When a person identifies something, the person accesses a piece of information stored in memory whether the information is accurate or inaccurate. Categorization of individuals' descriptions of fabrics is a measure of these pieces of information accessed by the individuals. Therefore, an individual's description of fabrics is not a measure of the individual's textile knowledge.

However, individuals' knowledge has been found to influence the categorization of objects. Tanaka and Taylor (1991) found that individual differences in domain-specific knowledge affected the extent that the basic level was central to categorization. For example, experts of dogs considered "beagle" as a basic level category whereas novice persons considered "dog" as a basic level category. Compared to novices, the experts of dogs or birds differentiated subordinate-level

categories as easily as basic level categories, used subordinate-level names as frequently as basic-level categories, and were as fast at categorizing subordinate-level as basic-level categories.

Compared to the research on the effects of textile characteristics on textile perception and categorization, less research has been conducted examining the effects of perceivers' characteristics and situation on textile categorization (Burns & Lennon, 1994). One noted exception was Wauer (1965) who found that individual differences in textile knowledge influenced descriptions of fabrics. According to Wauer (1965), the use of terms to describe a fabric differed between home economists (assumed experts) and consumers (assumed non-experts). Home economists used the following terms more frequently than consumers: weave or method of fabric construction, weight, and fabric name. However, consumers tended to use color, texture, and design terms relatively more often than other terms. Wauer (1965) suggested that a lack of understanding of textile terminology by consumer subjects caused the difference in the use of descriptive terms between home economists and consumers.

Individual differences (i.e., textile knowledge) may result in the use of different textile attributes in textile perceptions in categorization of textiles. Therefore, the present study investigated the effect of perceivers' textile knowledge on categorization of textiles. Based upon past research, it was predicted that individuals with low levels of textile knowledge would use perceptual attributes to categorize textiles to a greater degree than individuals with high levels of textile knowledge.

As we have seen, attributes of the target object/person and characteristics of the perceiver are important factors affecting the perception and categorization of target

objects/persons. According to the prototype model of categorization, a prototype of a category is a summary description of category members (Rosch et al., 1976; Rosch, 1978). Categorization, according to this model, involves the cognitive grouping through comparison between a target object and a prototype of a category stored in memory (Cohen & Basu, 1987). Thus, we have mental representations or prototypes of various categories which best describe members of the categories and are stored in our memory. When we encounter an object, we initially or automatically categorize the object into a group whose prototype is closer to the object than prototypes of other categories. However, all attributes of the object may not always be consistent with our mental representation or prototype of the category.

In some cases, these mental representations or prototypes can be considered stereotypes. Stereotyping can be said to be a byproduct of categorization. People categorize every available object/person or information into various groups, and, then, often attach stereotypes to some of the groups. "A stereotype is an exaggerated belief associated with a category whether it is favorable or unfavorable" (Allport, 1954, p.191). Some stereotypes are totally unsupported by facts whereas others develop from a sharpening and overgeneralization of facts. Discrepancies often exist between stereotypes of the category and attributes of a member of the category (e.g., we can easily find an overweight person who does not eat more than an average person). However, a stereotype is a mental representation and a cognitive structure that can influence the way in which information about groups and group members is processed (Hamilton, Stroessner, & Driscoll, 1994). Perceivers have mental representations (prototype or stereotype) of various categories. When a person or object is

encountered, the person/object is categorized as a member of a category to which there is greatest fit between the person/object and the mental representation. Then, the features of this mental representation (prototype or stereotype) are used to make inferences or evaluations of the person/object.

Stereotyping can affect categorization processes in several ways. First, stereotypes affect what information is attended to and encoded. Activation of a stereotype directs attention such that perceivers are more likely to process and encode information that is stereotype-consistent than information that is irrelevant to the stereotype (Cohen, 1981; Rothbart, Evans, & Fluero, 1979). However, evidence suggests that information that is inconsistent with a stereotype is more likely to be processed than is consistent information (Clary & Tesser, 1983; Rojahn & Pettigrew, 1992; Stangor & McMillan, 1992). Because information that is inconsistent with a stereotype tends to be surprising, it draws attention as the perceiver attempts to account for the inconsistency.

Second, stereotypes can influence how information is constructed or interpreted, especially when the information is ambiguous. The following example shows the influence of a stereotype on how information is interpreted when the information is ambiguous:

> ... a controversial advertisement developed for Benetton by a French agency. The ad features a black man and a white man handcuffed together... even though the company has a reputation for promoting racial tolerance. People interpreted it to depict a black man who had been arrested by a white man. Even though both men are dressed the same, people's prior assumptions (such as a stereotype of African American) distorted the ad's meaning (Solomon, 1992, p.33).

Third, stereotypes affect how people behave when interacting with members of the categories or groups (Hamilton, Sherman, & Ruvolo, 1990). When an object or person is categorized as a member of a group, a stereotype about the group is activated in the perceiver's mind. Then, the stereotype serves both as a basis of expectancies about how that object or person is likely to act and as a guide to how one should behave when interacting with that object or person.

Furthermore, discrepancies between attributes of the target object and the mental representation or prototype of the category have been found to influence the process of categorization. According to Stayman, Alden, and Smith (1992), when an attribute (i.e., preservative) was included in the description of a product of a category (i.e., a fruit juice) which was very discrepant from the mental representation of the category (or the prototype of a fruit juice), consumers perceived the product as another category (i.e., a soft drink) rather than the described category (i.e., a fruit juice).

Stereotypic impressions of textile fibers exist. For example, polyester is "the most widely used manufactured fiber in the world" (Stone & Samples, 1985, p.103) but has been associated with a stigma of being cheap, tasteless, and low quality (Gill, 1991; Workman, 1990). In reality, polyester, particularly microfiber polyester, can emulate a silk-like texture. It also can approximate the look and feel of chamois, fine cotton, satin, taffeta, plush velvet, and superfine worsted wool (Gill, 1991).

The effect of mental representations (stereotypes) of fibers on categorization of fabrics is not known. Consumers often depend on clothing labels for fiber content information. Specifically, when consumers shop for clothing from catalogs, consumers lack tactile information about textiles and depend on visual information (picture of the

product) and descriptions. Therefore, if consumers have a mental stereotype of fiber content or fabric structure, the stereotype may influence the perceptions and categorization of the clothing product. Furthermore, consumers inspecting a clothing product also may be influenced by the stereotype of fiber content.

According to Allport (1954), if prejudice against a category exists, any information that conflicts with the stereotype would be disregarded and the stereotype would remain intact. For example, if a consumer observed a pair of jeans labeled as 100% polyester that looked like and felt like cotton, the cotton attributes would be ignored. However, Workman (1990) found that both the stereotype of the category and the information conflicting with the stereotype influenced the perception of the category. Labels were used to create an experimental situation in which subjects perceived discrepancies between the characteristics of the object and their mental representation (stereotype). When subjects examined a pair of 100% cotton jeans labeled as 100% polyester or 50% cotton/50% polyester, they correctly perceived the characteristics that would be associated with cotton jeans. For example, subjects did not perceive jeans with 100% polyester label as more functional nor less fashionable than jeans with 100% cotton label or no label. At the same time, subjects perceived the jeans as more synthetic and shrink resistant when the label indicated 100% polyester or 50% cotton/50% polyester than when the label indicated 100% cotton.

Polyester has a negative stereotype. However, the negative image no longer reflects polyester's characteristics. Specifically, polyester microfiber is recognized by professionals as having favorable characteristics. Fabrics made from polyester microfibers convey incongruent information with the negative stereotype of polyester.

Changing stereotypes is not easy. Stereotypes tend to bias information processing in ways that maintain and preserve the existing belief system. A stereotype is sustained by selective perception and selective forgetting (Allport, 1954). People tend to seek and remember information that confirms their stereotypes.

However, Hamilton et al. (1994) suggested that, "if categorization in social perception is inevitable, one might try to change the kinds of categories that are used, or to make perceivers cognizant of multiple possible categorizations (p. 315)." For example, when the new high-tech polyester fiber was introduced, it needed to be introduced as something other than polyester. However, this is impossible in the U.S. because laws require that all textiles be labeled with their generic name (e.g., polyester). Therefore, marketers have sub-categorized new polyester fiber as "microfiber polyester" rather than "polyester". The perception of a fabric labeled as microfiber polyester may be less influenced by the stereotype of polyester than when it is labeled as polyester. Therefore, the present study investigated the effect of fiber content label information (e.g., "polyester", "microfiber polyester") on perceptions and evaluations of polyester (stereotypic) fabrics.

The present study also examined the interaction between perceiver characteristics (textile knowledge) and fiber content information on perceptions and evaluations of polyester (stereotypic) fabrics. Past research suggests that level of knowledge may influence the effect of stereotyping (Maheswaran, 1994). For example, Sujan (1985) studied the interaction effect between knowledge and discrepancy between product information and the category mental representation: how expert and novice consumers process information when the information was discrepant

from their category expectation (mismatched condition) compared to when information was consistent with category expectation (matched condition). Sujan (1985) found that consumers with less category knowledge (novice) ignored the information when the information was in conflict with the category expectation whereas knowledgeable consumers (experts) examined the information when the information was in conflict with the category expectation. When information was discrepant from category expectations, knowledgeable consumers switched from non-analytical processing (category-based processing) to analytical processing (piecemeal processing) and still attempted to categorize the product to form an impression of it, but they categorized the product more at the subordinate level. Therefore, perceivers' knowledge, discrepancies between attributes of a target object and mental representation of the category to which the target object belongs may influence the process of categorization.

Therefore, the effects of stereotyping on perceptions and evaluations of polyester may vary depending on consumers' textile knowledge. The present study investigated the influence of textile knowledge and discrepancies between perceptual information of fabrics and mental representations (stereotypes) of fiber content label information (polyester) on the perceptions and evaluations of polyesters' textile characteristics (natural/synthetic), functional characteristics (easy to care or not), aesthetic characteristics (attractive/unattractive), and economic characteristics (expensive/cheap) characteristics. When consumers evaluate fabrics which have different attributes from the stereotype of polyester but are labeled as polyester, it is

predicted that knowledgeable consumers might be less influenced by the stereotype of polyester than less knowledgeable consumers.

## Purpose of the Study

The way people mentally categorize information is a clue as to how they perceive the world. Thus, the study of categorization can be used to better understand consumers' perceptions of textiles. Through the study of the categorization of textiles and factors that affect categorization of textiles, we can gain a better understanding of how consumers perceive textiles as a product and as an important element of apparel.

The purpose of this study was to investigate the effects of textile knowledge on textile perception: how consumers categorize textiles, and how consumers are influenced by stereotypes in their overall perception and evaluation of textiles. Individual differences in textile knowledge may result in the use of different attributes of textiles in textile categorization. This study included two experiments. The objective of the first experiment was to investigate whether fabric structure and level of textile knowledge affect descriptions of fabric specimens. The objective of the second experiment was to investigate the effects of textile knowledge and discrepancies between perceptual information of fabrics and mental representations (stereotypes) of fabric fiber content (polyester) on descriptions and evaluations of fabric specimens.

## Conceptual Definitions

Perception: an impression of an object which is elaborated from sense-impressions by the cognitive interpretation with additional associated ideas (Bundesen, 1977).

Categorization: the process by which perceivers group objects into categories. Categorization is a way of mentally organizing and storing information. "To categorize is to render discriminably different things equivalent, to group the objects and events around us into classes, and to respond to them in terms of their class membership rather their uniqueness" (Bruner, Goodnow, & Austin, 1956, p.1).

Stereotype: "an exaggerated belief associated with a category whether it is favorable or unfavorable" (Allport, 1954, p.191). Some stereotypes are totally unsupported by facts whereas others develop from a sharpening and overgeneralization of facts. A stereotype is a mental representation and a cognitive structure that can influence the way information about groups and group members is processed (Hamilton, Stroessner, & Driscoll, 1994).

Textile knowledge: the accurate information which is stored in memory and is relevant to textiles.

## Operational Definitions

Textile knowledge: scores on the Textile Knowledge Inventory.

Descriptions of fabrics: perceived characteristics of fabric specimens which are written by subjects.

Evaluations of fabrics: subjects' choices on multiple-choice questions of 3-nominal-level and scores on 7-point semantic differential scales of preselected fabric characteristics.

The content of the stereotype of polyester: most frequently described traits/characteristics of polyester by a group of subjects.

## Hypotheses

### Experiment 1

H1. Categorization of descriptions of fabrics will differ as a function of the fabrics' structures (i.e., woven and knitted fabrics).

H2. Categorization of descriptions of fabrics will differ as a function of the level of subjects' textile knowledge (i.e., high textile knowledge and low textile knowledge).

### Experiment 2

H3. Categorization of subjects' descriptions of polyester fabrics will vary as a function of the label information regarding fiber content (i.e., polyester, microfiber polyester, no label information).

H4. The subjects' evaluation of "synthetic/natural" for polyester fabrics will vary as a function of:

- H4a. the fiber label information condition
- H4b. the level of subjects' textile knowledge.

H5. The subjects' evaluations of "machine washable/dry cleaning" for polyester fabrics will vary as a function of:

H5a. the fiber content label information condition

H5b. the level of subjects textile knowledge.

H6. The subjects' evaluations of "fashionable/not fashionable" for polyester fabrics will vary as a function of:

H6a. the fiber content label information condition

H6b. the level of subjects textile knowledge

H6c. the interaction between the label condition and the level of subjects' textile knowledge.

H7. The subjects' evaluation of "expensive/not expensive" for polyester fabrics will vary as a function of following factors:

H7a. the fiber content label information condition

H7b. the level of subjects textile knowledge

H7c. the interaction between the label condition and the level of subjects' textile knowledge.

H8. The subjects' evaluation of "easy to wrinkle/ not easy to wrinkle" for polyester fabrics will vary as a function of following factors:

H8a. the fiber content label information condition

H8b. the level of subjects textile knowledge

H8c. the interaction between the label condition and the level of subjects' textile knowledge.

H9. The subjects' evaluation of "easy to care for/not easy to care for" for polyester fabrics will vary as a function of following factors:

H9a. the fiber content label information condition

H9b. the level of subjects textile knowledge

H9c. the interaction between the label condition and the level of subjects' textile knowledge.

H10. The subjects' evaluation of "high quality/low quality" for polyester fabrics will vary as a function of following factors:

H10a. the fiber content label information condition

H10b. the level of subjects textile knowledge

H10c. the interaction between the label condition and the level of subjects' textile knowledge.

H11. The subjects' evaluation of "attractive/not attractive" for polyester fabrics will vary as a function of following factors:

H11a. the fiber content label information condition

H11b. the level of subjects textile knowledge

H11c. the interaction between the label condition and the level of subjects' textile knowledge.

H12. The subjects' evaluation of "likely to buy clothing made from it/not likely to buy clothing made from it" for polyester fabrics will vary as a function of following factors:

H12a. the fiber content label information condition

H12b. the level of subjects textile knowledge

H12c. the interaction between the label condition and the level of subjects' textile knowledge.

H13. The subjects' evaluation of "durable/not durable" for polyester fabrics will vary as a function of following factors:

H13a. the fiber content label information condition

H13b. the level of subjects textile knowledge

H13c. the interaction between the label condition and the level of subjects' textile knowledge.

H14. The subjects' evaluation of "soft/not soft" for polyester fabrics will vary as a function of following factors:

H14a. the fiber content label information condition

H14b. the level of subjects textile knowledge

H14c. the interaction between the label condition and the level of subjects' textile knowledge.

# Chapter II

# Review of Literature

The purpose of this study was to investigate the effects of textile knowledge on textile perceptions: how consumers categorize textiles and how consumers are influenced by stereotypes in their overall perceptions and evaluations of textiles. This chapter reviews the literature related to how people perceive an object/target person. Research on social perception provides the theoretical framework. This research indicates that perceptions of an object/target person are a function of the attributes of the object/target person, the characteristics of the perceiver, and the attributes of the situation/context. In this chapter, past research related to social perception, categorization and stereotyping are reviewed.

## Social Perception

According to social perception perspectives (Davis, 1984; Lennon, 1992; Lennon & Davis, 1989; Zebrowitz, 1990), perceptions of an object/target person are a function of three factors: (1) object (target person's) attributes (Behling & Williams, 1991; Reed & Blunk, 1990), (2) characteristics of the perceiver (Rowold, 1984; Stangor et al., 1992), and (3) attributes of the situation/context in which the observation occurs (Damhorst, 1984-85). The three factors play important roles in the formation of impressions of the object/target person.

First, an object's (target person's) attributes have been found to affect social perception (Lennon & Davis, 1989). For example, a target persons' clothing styles

and gender have been found to influence the perceptions of the persons' intelligence and academic achievement (Behling & Williams, 1991). Subjects, 750 high school students and 159 teachers, were shown eight black and white pictures (2 genders of models x 4 clothing styles) and were asked to estimate the overall intelligence and GPA of the pictured models. Male models were perceived to have higher intelligence than female models. For both male and female models, intelligence and GPA were judged to be higher when the models were wearing a "dressy" look (i.e., plaid suit, tube top, dark hose, and heels for the female model and dark suit, a white shirt, dark tie, and dress shoes for the male model) than when the models were wearing a "hood" look (i.e., faded jeans with holes, T-shirt, untied tennis shoes for female model and tight faded jeans, T-shirt, untied tennis shoes for male model).

Characteristics of perceivers (e.g., physical traits such as vision and hearing accuracy; personal traits such as goals, values and personality; sensitivity to the appearance of others; and cognitive structures such as memory and knowledge structures) are likely to affect how an object is perceived (Lennon & Davis, 1989). For example, Rowold (1984) found that, compared to subjects with low sensitivity to the appearance of others, subjects with high sensitivity were less likely to project their own level of self-esteem on target persons when they attributed the self-esteem of these target persons based upon appearance cues. Subjects, 78 female home economics undergraduates, completed three instruments: (1) awareness of clothes instrument which measured sensitivity to the appearances of others, (2) Janis-Field feelings of inadequacy which measured social self-esteem, and (3) semantic differential scales for reporting impressions of two stimulus persons presented by photo-slides on a screen.

Subjects' self-esteem scores were found to be positively correlated with the attributed self-esteem of target persons (e.g., subjects with high self-esteem were likely to perceive the target person as a person with high self-esteem).

Perceivers' knowledge has also been found to influence the perception of objects/person. For example, Herr (1989) found that individual differences in knowledge influenced the effects of priming on product judgements. In priming, "by unobtrusively presenting exemplars of a category, that category becomes temporarily more accessible from memory and more likely to be used subsequently in processing new information" (Herr, 1989, p. 67). It appears that the expert/novice distinction serves to identify individuals who are likely to have a relevant accessible category. The effects of priming on product judgements were detected only for judgements made by subjects with high product knowledge. No priming effects were found for judgements made by subjects with low knowledge. For example, knowledgeable subjects initially exposed to expensive cars (primed) tended to evaluate a target car as less expensive than knowledgeable subjects initially exposed to inexpensive cars (primed) whereas the conditions of priming (expensive cars or inexpensive cars) had non-significant effects on less-knowledgeable subjects' evaluations of a target car. Herr (1989) suggested that stored information may have a profound influence on consumer information processing and priming may increase the likelihood of use of any cognitive concepts (a category, decision rule, or any stored information).

Context or situation has also been found to affect perception of target persons. For example, Damhorst (1984-85) found that the perceptions of target persons and relationship were influenced by the interpersonal-context (i.e., similarities and contrasts

in apparel worn by two interacting persons). Subjects were 64 male and female employees from 14 private business firms in which both casual and formal clothing were worn by employees. Subjects were shown one of four drawings which showed the interaction of the target persons (one male and one female) in an office setting: (1) both target persons wore formal-wear, (2) both target persons wore casual-wear, (3) female wore formal-wear and male wore casual-wear, and (4) female wore casual-wear and male wore formal-wear. Subjects were asked to describe what they thought was happening in the four different pictures. Target persons wearing suits were more often assigned management roles by subjects than were persons in casual clothing. Contrasts in formal vs. casual clothing were found to influence the perceptions of target persons. For example, male and female target persons wearing suits were more often judged to have higher rank when their adjacent companion wore casual clothing than when their adjacent companion wore formal-wear. The male wearing formal-wear was described as giving more directive, rewarding, or punishing communications to the female in casual dress than to the female in formal-wear.

In this social perception process, when people encounter an object/person, they initially categorize an object/person as a member of a category (Fiske & Neuberg, 1990). Thus, researchers of social perception have focused on understanding the mental process of categorization.

## Categorization

According to Rosch (1978) and Rosch et al. (1976), the real world comes to perceivers as structured information rather than as arbitrary or unpredictable attributes.

The cognitive formation of categories of this information provides the perceiver with maximum information with the least cognitive effort.

Categorization is the cognitive grouping of information which involves comparisons between a target object and categorical information (or a prototype of a category) stored in memory (Cohen & Basu, 1987). Several models of categorization have been proposed to explain the process of categorization: prototype model, exemplar model, and theory-based model. For example, Rosch et al. (1976) and Rosch (1978) proposed a prototype model which defined the representation (prototype) of a category as a summary description of entire members in a category. In this model, the prototype approximates a measure of central tendency of the category members. Some members of a category match the whole description of a prototype of category whereas some members match only a part of the description of a prototype. Therefore, some members are better examples of a category than are other members. For example, a robin and penguin both belong to a bird category. However, a robin is a better example of bird than is a penguin.

In the exemplar model view, concepts of a category are represented by the exemplars (members) of the category rather than by a summary description (prototype) of the category. Through the comparison between a target object and the exemplars (members) of a category, people categorize a target object into a category whose members are similar the target object. Thus, "the more similar the target object is to concrete exemplars of a category, the more likely it will be placed in that category" (Cohen & Basu, 1987, p.460). For example, a bluejay is categorized as a bird, since it is most similar to the exemplars (members) of the category of bird.

Exemplar model and prototype model assume that similarity plays the major role in categorization. These models contend that cognitive classification maximizes within-category similarity relative to between-category similarity (i.e., similar objects are classified into the same category). According to the theory based model (Murphy & Medin, 1985), people have theoretical beliefs (or ideas) about the world and the relations of entities to each other. People categorize target objects based upon their theoretical beliefs (or ideas) of the relationships of target objects to others. For example, a home-sewer can categorize cotton fabric and nonflammable polyester fabric into a same category (children's sleep-wear fabrics: both fabrics have some benefits for sleep-wear) or two different categories (cotton fabric or polyester fabric) depending upon the situation.

Rosch et al. (1976) proposed a hierarchical organization of categories with three levels including super-ordinate (furniture, clothing), basic (chair, shirt), and subordinate (kitchen chair, dress shirt) categories. The differentiation of categories can be measured by determining how much the members of a category share attributes with one another but have different attributes from the members of other categories. The members of super-ordinate level categories share few attributes (e.g., pants and shirts in the clothing category) and the members of the subordinate-level categories share many of the same attributes with the members of other similar subordinate categories (e.g., dress shirt category and knit shirt category). But at the basic level (shirt), the members (dress shirt and knit shirt) not only share many attributes but have attributes that differ from members of other basic level categories (pants category).

The study of categorization has been applied to our understanding of perceptions of textiles and apparel (Buckley, 1984-85; Delong & Minshall, 1988; Delong , Minshall, & Larntz, 1986; Schutz & Philips, 1976). Several studies have focused on categorization of apparel products. For example, Delong and Minshall (1988) examined the way respondents categorized 15 ensembles of daywear (a basic-level category of female dress). Subjects were 52 college students similar in age (18-21), and occupational interest: their majors were retail merchandising and apparel design. They found that subjects grouped the ensembles based on layout variations (i.e., prominence of cut and sewn parts, silhouettes, etc.), associated meanings (i.e., professional wear, casual wear, etc.), and surface variations (i.e., the way light reflected on surfaces, woven and printed variations, etc.). Grouping occurred for similar reasons among the respondents. Thus, for a group of female respondents, similar in age and occupational interest, a similar basis for perceiving and attaching meaning to an ensemble occurred.

Buckley (1985) studied how dress was organized and mentally stored by individuals at a basic category level. Subjects, 100 college students, sorted 106 sketches of women's dress according to their common features. Cluster analysis was used to identify basic categories and content analysis was used to examine salient features within the categories. Three clusters, special occasion dress, everyday bifurcated dress, and everyday skirted dress, emerged. According to Buckley (1984-85), if subjects simply considered the structure of the dress they probably would have put all bifurcates together in one basic cluster, but subjects placed them in different

categories. Buckley reasoned that subjects' categorization may have been based upon the classification of contextual factors as well as structural features of the dress.

The present study expanded research on categorization by investigating categorization of textiles.

## Factors Affecting Categorization/Perception

Factors including attributes of the object/target person, characteristics of the perceiver, and attributes of the situation/context have been found to influence the categorization/perception process. Following sections describe past research related to attributes of the object and characteristics of perceivers.

### Attributes of the Object/Fabrics

Attributes of an object have been found to influence the perceptions of the object as well as the categorization processing. For example, Stangor et al. (1992) found that attributes of target person and attributes of the perceiver influenced the categorization of the object. Subjects, 72 college students, were more likely to categorize target individuals according to the target's gender than according to the target's race. However subjects also tended to categorize using a single subordinate category representing sex and race simultaneously (i.e., a white woman). In addition, racially prejudiced subjects were more likely to categorize by race than were non-prejudiced subjects.

Lennon (1992) found that subjects categorized female targets by body-type. Subjects were 129 female undergraduate students. Subjects saw black and white slides of 6 female targets (3 females wore size 6 and 3 females wore size 14) and listened to an audio tape of a perfume marketing campaign. Then, subjects were asked to rate each target person. Subjects rated the size 6 females higher than the size 14 females in terms of competence, friendliness, and being comfortable to work with.

Attributes of fabrics have been found to influence the categorization/perception of fabrics. Winakor et al., (1980) demonstrated that tactile perceptions (i.e., crisp/limp, silky/scratchy, coarse/fine, heavy/light, rough/smooth, thick/thin, sleazy/firm, soft/hard, and stiff/flexible) were affected by the following fabric attributes: (1) fiber content including cotton and polyester, (2) degree of stiffness, (3) degree of roughness, and (4) degree of thickness. Sixteen fabrics were selected as fabric specimens: 2 (cotton/polyester) x 2 (high/low in stiffness) x 2 (high/low in roughness) x 2 (high/low in thickness). Subjects were 59 college students enrolled in a textile course, and were asked to handle one of the 16 fabrics behind a screen so that they could not see but could feel and handle the fabric freely. After handling a fabric, they indicated their tactile perception on scales of nine polar-pair adjectives. Results showed that 100% cotton fabrics were more likely to be assessed as crisp, scratchy, coarse, heavy, rough, thick, firm, hard, and stiff than 100% polyester. Stiff fabrics were more likely to be assessed as crisp, firm, and stiff than flexible fabrics.

Schutz and Philips (1976) studied the way in which consumers perceive and group fabrics in terms of similarity of attributes. Fifty female subjects rated 46 fabrics for their appropriateness on 48 attributes. Attribute means on each fabric and

similarity measures (scaled distance) among all pairs of fabrics were calculated. The fabrics were found to be grouped into 4 groups: synthetic, cotton, wool and silk.

Furthermore, researchers (Burns, Brown, Cameron, Chandler, Dallas, & Kaiser, 1995; Paek, 1985) have investigated the interaction between fabrics' attributes and situation or context. In the investigations of fabric hand, researchers have shown that the textile perception when only tactile information of fabric was available was different from the textile perception when both tactile and visual information were available.

For example, Paek (1985) showed that when subjects could see and touch fabrics, wool was rated stiffer, burlap was rated thicker, silk was rated warmer, and cotton and linen were rated cooler than when subjects could only touch them. Subjects were seventy-five college students enrolled in a textile class. Each subject was asked to rate 11 fabrics on four tactile attributes (i.e., stiffness, thickness, roughness, and warmness) twice, first by touch only and a second time by sight and touch.

Burns et al. (1995) found that subjects who viewed and felt fabrics used different categories of terms to describe fabrics than subjects who only felt the fabrics. Fabrics were selected based upon pre-identified end-use properties and included woven, knit, and non-woven fabric structures made from natural and manufactured fibers. Subjects were 120 college students and were divided two groups. Subjects either felt and saw the fabrics (82 subjects) or only felt the fabrics (38 subjects). Subjects were asked to sort the fabrics on the basis of how the fabrics felt to them and then to write why they sorted the fabrics the way they did. These written descriptions

were content analyzed. Subjects with tactile and visual information were more likely to use terms classified as end use, appearance, and fabric name, whereas subjects who only felt the fabrics were more likely to use terms classified as texture, fiber content, fabric characteristics and weight.

## Characteristics of the Perceiver

Characteristics of the perceiver (e.g., perceiver's knowledge in a specific domain) have been found to influence the perception and the process of categorization of objects/persons (Tanaka & Taylor, 1991; Wauer, 1965).

### Individual Differences in Knowledge.

Two kinds of knowledge have been distinguished by researchers (Engel, Blackwell, & Miniard, 1995; Park, Mothersbaugh & Feick, 1994; Radecki & Jaccard, 1995): (1) objective knowledge which is accurate information about the object stored in long-term memory, and (2) self-assessed knowledge which is an individual's perception of what or how much he/she knows about the object. For the present study, objective knowledge was assessed.

However, from a conceptual perspective, "knowledge", a variable in this study, is different from "expertise" proposed by Alba and Hutchinson (1987). "Expertise" was proposed as automaticity (using less cognitive efforts), refined cognitive structure, the ability to analyze information, the ability to elaborate on given information, and the ability to memorize information (Alba & Hutchinson, 1987). On the other hands,

"knowledge" is the accurate information stored in memory (Park, Mothersbaugh & Feick, 1994). Expertise is a result of cumulative knowledge but has more dimensions than simple knowledge.

The categorization process appears to be influenced by objective knowledge. For example, Tanaka and Taylor (1991) found that individual differences in domain-specific knowledge affected the extent to which the basic level was central to categorization. In one experiment, 12 dog experts and 12 bird experts (selected on the basis of their membership and participation in local dog and bird watching organizations) filled out a general questionnaire concerning their past experience with dogs and birds. As might be expected, the two groups of experts met the criteria of expertise for either the dog or bird domains. None of the subjects had extensive experience in both domains. Next, these subjects were asked to list the characteristics of subordinate-level bird and dog categories (i.g., robin, crow, jay, and cardinal; and beagle, Doberman pinscher, collie, and poodle) along with super-ordinate and basic-level categories (i.g., animal, dog, and bird) and an additional nine categories used as fillers (e.g., fruit, furniture, chair). Results indicated that experts differed from novices in listing more features of subordinate level objects. In a second experiment, experts in dogs and birds were shown 86 black and white drawings and photographs of common objects (i.g., 8 target dog and bird pictures with 78 filler pictures) and were asked to name the objects. Dog experts used subordinate-level names more often than did novices for the dog picture. The same was found for bird experts. In a third experiment, dog and bird experts were shown color pictures of dogs and color pictures of birds, and 16 color pictures of rocks and trees with matching names. If the picture

matched the name, subjects were asked to indicate the match was true; otherwise they were asked to indicate the match was false. Subjects were faster to make category judgements in their area of expertise than outside their domain of expertise. Experts were as fast to categorize at the subordinate level in their expert domain as they were to categorize at the basic level. Overall, the experts differentiated subordinate-level categories as well as basic level categories, used subordinate-level names as well as basic-level categories, and were as fast at categorizing subordinate-level as basic-level categories.

Textile Knowledge.

Characteristics of perceivers can also influence the perceptions of textiles. For example, individual differences in textile knowledge have been found to influence the fabric perception. According to Wauer (1965), home economists and consumers used different terms to describe a fabric. Subjects were 16 home economists (members of the textile and clothing faculty at a university) and 30 consumers (mothers of 9th grade girls). Although objective knowledge was not assessed, home economists were assumed to have more textile knowledge than were consumers. Subjects were asked to handle 12 pre-selected fabrics which might be used for girls' skirts and to describe each fabric as completely as they could. The descriptive terms were categorized as to color, design, fiber content, fabric name, texture or hand, use, method of weave or construction, and weight. Compared to consumers, home economists used the following terms more frequently: weave or method of fabric construction, weight, and fabric name. However, consumers tended to use color, texture, and design terms

relatively more often than other terms. Wauer (1965) suggested that a lack of understanding of textile terminology by consumer subjects caused the difference in the usage of descriptive terms between home economists and consumers.

Attributes of target object/person and characteristics of perceiver are important factors that affect the perception of a target object/person. Discrepancy between information about a target object and mental representation may be another important factor that influences the categorization process.

Discrepancy between Attributes of an Object and Mental Representation/Prototype.

According to the prototype model of categorization, we have a mental representation or prototype of a category in our memory. A mental representation or prototype is a best description of members of a category. However, when we encounter a member of a category, information perceived about an object may not always be congruent with a mental representation of the category. Any discrepancy may influence the categorization process and the perceptions of the object. Fiske and Pavelchak (1986) suggested that, when new information is congruent with a mental representation of a product category stored in memory, a more holistic processing (category-based-processing) occurs rather than an attribute level processing (piecemeal-processing). On the other hand, when new information is not congruent with a prototype stored in memory, a more piecemeal-processing occurs.

Stayman et al. (1992) found that, when attributes included in a description of a new product were very discrepant from a prior category schema, consumers switched the category of new product from an initially given category to another category (i.e.,

from fruit juice to soft drink). In a between-subjects experimental design, 79 college student subjects, were randomly exposed to one of five new beverage descriptions booklets. All descriptions included the initial product category (fruit juice or soft drink) and five attributes of the category. In three of the descriptions, a sixth attribute, either congruent or incongruent with the category, was included. Thus, the five description booklets had one of following information sets: (1) 5 attributes of fruit juice, (2) 5 attributes of soft drink, (3) 5 fruit juice attributes and a sixth attribute of "all natural" (congruent), (4) 5 fruit juice attributes and a sixth attribute of "high preservative" (incongruent), and (5) 5 soft drink attributes and a sixth attribute of high preservative" (congruent). When subjects were asked to list their thoughts about the new product, subjects in the fruit juice and high preservative condition (incongruent condition) were significantly more likely to list the target attribute ("high preservative") than were subjects in the fruit-juice and "all natural" condition. When subjects were asked to check which of four beverages (i.e., soft drink, fruit juice, mineral water, a dairy beverage, or other) best described the product description they had seen, 80 percent of the subjects in the fruit-juice and high preservative (incongruent) condition checked the soft drink category, while 80 percent or more the subjects in each of the other conditions checked the category that had been initially provided in their description.

Sujan (1985) studied how expert and novice consumers process information when the information is discrepant from their mental representation of a category, compared to when information is consistent with category representations. Subjects were 126 graduate students enrolled in a school of management. Half of the subjects

received descriptions of a camera that were consistent with category representations and half of the subjects received descriptions of a camera that were discrepant from category representations. Two different descriptions and two types of cameras (35 mm SLR and 110 mm) were used to create four simulated printed advertisements. Subjects were asked to read one of the advertisements and to form an impression of the advertised product. After viewing the ad, subjects verbalized their responses to it, and then wrote their evaluations of the product. The time taken to make the evaluation was measured. Then, subjects completed a 15-item questionnaire to measure their objective knowledge about cameras. Results indicated that expert and novice groups responded differently to advertisements containing information either consistent to or discrepant from category representation. When information was consistent with category representation, expert consumers rapidly reached final impressions and evaluations and generated more thoughts related to the product category and fewer thoughts related to the product's attributes (category-based processing) than novice consumers. When information was discrepant from category representations, knowledgeable consumers engaged in more analytical processing (piecemeal processing: evaluating attribute by attribute). When product information was discrepant from category representations, expert consumers still attempted to categorize the product to form an impression of it, but they used more subordinate level categories. Novice consumers recognized when information was consistent with or discrepant from their representations about the category. However, novice consumers used category-based knowledge rather than attribute information to evaluate products (category-based processing) more than did experts when information was both

consistent with and discrepant from category representation. For example, novices rated the camera labeled 35mm SLR more positively than the camera labeled 110, whether or not the product description matched the product label. It appeared that novices knew that 35 mm SLR were good cameras, and thus they used this category-based knowledge rather than attribute information to evaluate the products.

As reviewed research demonstrates, a number of factors have been found to influence the perception and categorization of an object/person. In the present study, perceivers' objective textile knowledge was investigated as a factor influencing the perception and categorization of textiles. In addition, the interaction between objective textile knowledge and the discrepancy between textile attributes and mental prototypes (stereotypes) was investigated.

## Stereotyping

Stereotyping is a byproduct of categorization. "A stereotype is an exaggerated belief associated with a category whether it is favorable or unfavorable (Allport, 1954, p.191)". Some stereotypes are totally unsupported by facts whereas others develop from a sharpening and overgeneralization of facts.

Since Katz and Braly (1933) studied the racial stereotypes held by college students, the Katz and Braly method (occasionally with minor modifications) has become the standard methodology for assessing the content of stereotypes. Subjects of Katz and Braly (1933) were 100 Princeton students. Subjects were given a list of 84 trait-descriptive adjectives and were asked to select which ones they felt described each

of ten racial groups. Those attributes that were checked with the highest frequency were considered to define the stereotype of that group.

Because stereotypes are mental representations and cognitive structures (internal knowledge structures), they can influence the way information about groups and group members is processed (Hamilton, Stroessner, & Driscoll, 1994). Stereotyping has been found to affect (1) what information is attended to and coded, (2) how information is constructed or interpreted, and (3) how people behave when interacting with members of the stereotyped group.

First, stereotypes affect what information is attended to and encoded. Activation of a stereotype in one's mind directs attention such that perceivers are more likely to process and encode information that is stereotype-consistent than information that is irrelevant to the stereotype. Cohen (1981) studied whether stereotypic knowledge influences social perception of a target person. Subjects, 96 undergraduate students, watched a videotape of a target woman having a birthday dinner with her husband in her home. The videotape pictured 18 features which were selected as typical features of either a waitress or a librarian (e.g., bowling ball vs. golf club). Half of the subjects were told the target woman was a waitress and the other half were told she was a librarian. Subjects more accurately remembered features of the woman that were consistent with their stereotype of the target person's occupation than features that were inconsistent. For example, when subjects were told the target person was a waitress, subjects were more likely to remember that a bowling ball (a selected feature of the waitress) was present in the apartment than when subjects were told the target person was a librarian.

However, evidence exists that information that is inconsistent with a stereotype is more likely to be processed than is information consistent with a stereotype (Clary & Tesser, 1983). In a study conducted by Clary and Tesser (1983), subjects, 68 introductory psychology students, were exposed to a general personality description of a target person and then received additional information about an event that was either consistent or inconsistent with the description. Subjects were then asked to retell the story. The results revealed that, compared to processing consistent information, subjects were more likely to provide spontaneous explanations of the inconsistent events along with retelling the story.

Second, stereotypes can influence how information is constructed or interpreted, especially when the information is ambiguous. Sagar and Schofield (1980) presented subjects with several drawings portraying children performing a series of behaviors. The targets' behaviors were ambiguous in that they could be perceived either as play or as threatening acts. For example, one child is shown poking another child with the eraser end of his pencil. For half of the subjects, the target person was portrayed as being white and for the other half, the target person was portrayed as being black. Results indicated that subjects evaluated the behaviors as being more mean or threatening when performed by black children than when the same behaviors were performed by white children.

Third, stereotypes affect how people behave when interacting with members of the categories or groups. When an object or person is categorized as a member of a group, a stereotype about the group is activated. Then, the stereotype serves both as a basis of expectancies about how that object or person is likely to act and as a guide to

how one should behave when interacting with that object or person (Word, Zanna, & Cooper, 1974).

Maheswaran (1994) analyzed the effects of consumer expertise and product stereotyping (of country of origin) on product evaluations. Subjects, 119 college students, were assigned one of four treatment booklets that included descriptions of a new computer product. A 2 x 2 between-subjects experiment was conducted with the following conditions: two levels of product attribute (high performance vs. low performance) and two levels of country of origin information (Taiwan as unfavorable condition vs. Japan as favorable condition). Results indicated that experts evaluated more positively the product with a high performance description than with a low performance description. Country of origin did not influence experts' evaluations. However, novices evaluated the product more positively when the country of origin was favorable. Performance description (high vs. low performance) did not influence novices' evaluations.

## Stereotyping of Textiles.

Stereotypic perceptions of textile fibers exist. Workman (1990) examined stereotypic perceptions of clothing products associated with the fiber content of jeans and whether a prejudice exists against jeans made of polyester. In the first study, subjects were 90 college students under age 30. The independent variable was label information with four levels: 100% cotton, 100% polyester, 50% cotton/50% polyester, and no fiber content information. The dependent variable was a list of attributes associated with jeans which subjects evaluated with 7-point Likert-type scales.

Subjects were randomly assigned to the four treatments. Based on label information only, subjects were asked to indicate what they thought a hypothetical pair of jeans with this label information would be like. Jeans labeled 100% polyester were characterized as low quality garments that were of low quality fabric and construction and not likely to be purchased by subjects. In a second study, the four versions of label information were attached to 100% cotton jeans. Subjects, 114 college students, were randomly assigned to the four treatments. Results indicated that when subjects examined a pair of 100% cotton jeans labeled as 100% polyester or 50% cotton/50% polyester, they did not perceive the jeans as more nor less functional/fashionable than jeans with 100% cotton label or no label. At the same time, subjects perceived the jeans as more synthetic and shrink resistant when the label indicated 100% polyester or 50% cotton/50% polyester. The stereotype of polyester did influence the subjects' perceptions of synthetic and shrink resistant, but did not influence the subjects' perceptions of functional/fashionable.

Research indicates that the stereotype of polyester may influence perceptions of fabrics. In the present study, the interaction effect between textile knowledge and the stereotype of polyester on the perceptions and evaluations of fabrics was examined.

# Chapter III

# Method

The present study investigated the effect of individual differences in textile knowledge on subjects' categorization of fabric specimens and on the stereotyping of fibers. This study consisted of two experiments. This chapter describes the selection of subjects, methods used for two experiments including procedures and data analyses. However, before describing the two experiments, the development of Textile Knowledge Inventory which was used to measure subjects' textile knowledge is described.

## Development of Textile Knowledge Inventory

Knowledge can be defined as the information stored in memory (Engel, Blackwell, & Miniard, 1995). In this study, knowledge was limited to objective knowledge which focuses on the accuracy of information. The definition of textile knowledge is the accurate information which is stored in memory and is relevant to textiles.

According to Engel et al. (1995), there are two ways to measure knowledge: (1) to measure objective knowledge or (2) to measure subjective knowledge. Measuring objective knowledge is to tap what individuals actually have stored in memory (Brucks, 1986; Cole, Gaeth, Singh, 1986), whereas measuring subjective knowledge is to tap individuals' perceptions of their own knowledgeability (Beatty & Smith, 1987). Subjective knowledge is related to objective knowledge (Park,

Mothersbaugh, & Feick, 1994), but is affected by self-confidence (Park & Lessig, 1981). Thus, subjective knowledge is not appropriate to measure what individuals actually know (Engel et al, 1995). Based upon the definition of textile knowledge for the present study, measuring objective knowledge was deemed appropriate.

Because of the absence of an inventory to measure objective textile knowledge of consumers, the development of a Textile Knowledge Inventory was necessary. First, interviews were conducted with four university researchers in clothing and textiles, using the following questions as a guide: (1) what does textile knowledge consists of? and (2) what differentiates individuals who have high textile knowledge from those with low textile knowledge? Based upon these interviews, textile knowledge was found to consist of information in the following categories: fibers, fabrics, finishes, color applications (printing and dyeing), and textile regulations information. Fibers, fabrics, and finishes each had three dimensions: terminology, properties, and usage and care (table 1). Furthermore, in a review of information covered in basic textile textbooks (e.g., Tortora, 1987) similar structures of aspects of textile knowledge were discovered.

In general, individuals who have a low level of textile knowledge have little terminology and information on properties of fibers and fabrics. They are not expected to have information on finishes, color applications and textile regulations. For example, they may know that cotton, wool, and silk are natural fibers and nylon and polyester are manufactured fibers but they are not expected to know what water repellent finishes are. On the other hand, individuals who have a high level of textile knowledge (expertise) would have more detailed information on all categories of

Table 1.
Examples of Textile Knowledge.

| Categories | Dimension | Examples |
|---|---|---|
| Fiber | Terminology | Rayon is a manufactured (manmade) fiber.<br>Lycra is a trade mark for spandex. |
| | Properties | Cotton is high in moisture absorbency. |
| | Usage and care | Propropylene is the good choice for indooroutdoor carpeting.<br>Chlorine bleaches should not be used in laundering spandex. |
| Fabric | Terminology | Woven, knitted and nonwoven are the types of fabric structures.<br>Satin, twill, and plain are the three basic weaves.<br>Gabardine, denim, jean, and drill are twill fabrics. |
| | Properties | Satin fabric has smooth surface.<br>Knitted fabrics have a good elasticity |
| | Usage and care | Knits maintain their shape best if they are dried flat after laundry. |
| Finishes | Terminology | GORETEX is a trade mark for water repellent finishes using PTFE membrane.<br>Flame retardant finishes.<br>Permanent press. |
| | Properties | Water repellent means that fabrics resist penetration by water but are not completely waterproof. |
| | Usage and care | Use of chlorine bleach,soaps,or lowphosphate detergents and some fabric softeners may result in a loss of the flame retardant finish. |
| Color Applications | Dyeing<br>Printing | Solution dyeing is applicable only to manmade fibers.<br>Batik is a wax resist process printing. |
| Regulations | | Textile Fiber Products Identification Act. |

textile information including fibers, fabrics, finishes, color applications, and textile regulations. For example, they are expected to know the difference between a generic fiber name (e.g., Spandex) and the fibers' trade name (e.g., Lycra) and to know the difference between roller printing and screen printing. Therefore, based on the results of the interviews and the review of textile textbooks (e.g., Tortora, 1987), 38 preliminary true-false questions were developed (appendix A).

Item Analysis

First, a scale including the 38 items was administered to 116 college students during two home economics core classes. The sample included 17 students majoring in nutrition, 5 students majoring in education, 32 students majoring in human development and family sciences, 16 students majoring in apparel design, 25 students majoring in merchandising management, 10 students majoring in housing and interiors, 4 students majoring in business administration, one student majoring in health promotion and education, and 2 student majoring in communication (4 students did not indicate their major). Thirty two of the students had taken either one or two textiles courses, and the other students (n=84) had not take any textiles courses. Thus, some degree of difference in the level of textile knowledge of the 116 students was expected. The items were examined as to whether there were any items which all students answered either correctly or incorrectly, because these questions did not discriminate among levels of textile knowledge. There was no item which all students answered either correctly or incorrectly.

Item-to-item correlation.

Scale items were scored as either 0 (incorrect answer) or 1 (correct answer). Therefore, the possible values of each item were 0 or 1. Cross Product Ratios were calculated to investigate item-to-item correlations. For every two items, 2x2 tables were constructed by counting the frequency of correct and incorrect answer for each case: (1) cell(0,0) has the frequency of subjects who had incorrect answers for both items ($x_{0,0}$), (2) cell(0,1) has the frequency of subjects who had incorrect answers for the first item but had correct answers for the second item ($x_{0,1}$), (3) cell(1,0) has the frequency of subjects who had correct answers for the first item but had incorrect answers for the second item ($x_{1,0}$), (4) cell (1,1) has the frequency of subjects who had correct answers for both items ($x_{1,1}$). Cross Product Ratios were calculated by

$$\hat{\alpha} = \frac{x_{00}x_{11}}{x_{01}x_{10}} .$$

In order to test the significance of Cross Product Ratio (Fienberg, 1980), the Cross Product Ratios were converted to Chi-square by

$$X^2 = \frac{(\log\hat{\alpha})^2}{S_\alpha^{\ 2}} ,$$

$$S_\alpha^{\ 2} = \frac{1}{x_{00}} + \frac{1}{x_{01}} + \frac{1}{x_{10}} + \frac{1}{x_{11}} ,$$

where Chi-square has 1 d.f..

Table 2 shows the Cross Product Ratios between every two items and their significance. Furthermore, table 3 shows the summary of the ratios among the 38 items. According to table 3, item 2 and item 35 were significantly correlated to only one item out of 37 items. Therefore, due to low inter-item correlation, item 2 and item 35 were considered for deletion.

Item-to-total correlation.

The 38 items were submitted to item analysis using item-to-total correlation coefficients. This analysis determines whether all items in a scale measure the same concept. In this case, the outcome of each item was either 0 (incorrect) or 1 (correct) whereas the possible outcome of total score ranged from 0 to 38. Therefore, Point Biserial Correlation coefficient was used instead of Pearson Correlation coefficient.

"The biserial correlation coefficient gives an estimate of the well known Pearson product moment correlation between the criterion score and the hypothesized item continuum when the latter is dichotomized" (Henryssen, 1971, p.141). Biserial correlation refers to an association between a random variable X measured on only two values (e.g., 0 and 1), and a random variable Y measured on a continuum. If it is assumed that the distributions of Y, conditional on X=0 and 1, are normal with different means but with a common variance, the product moment correlation coefficient between X and Y is estimated by the Point Biserial Correlation Coefficient

$$r_{pb} = (pq)^{1/2}(M_{y_{(x=1)}} - M_{y_{(x=0)}}) \,/\, s_y \,,$$

Table 2

Cross Product Ratio among 38 preliminary items

| | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Q13 | Q14 | Q15 | Q16 | Q17 | Q18 | Q19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q2 | 9.1* | | | | | | | | | | | | | | | | | | |
| Q3 | 1.5 | 1.1 | | | | | | | | | | | | | | | | | |
| Q4 | 1.4 | 1.0 | 2.6 | | | | | | | | | | | | | | | | |
| Q5 | 1.4 | .6 | 2.8* | 1.7 | | | | | | | | | | | | | | | |
| Q6 | 1.3 | 1.6 | 2.5 | 3.8* | 1.6 | | | | | | | | | | | | | | |
| Q7 | 2.8* | 2.5 | 2.1 | 3.1 | 1.0 | 3.0* | | | | | | | | | | | | | |
| Q8 | 1.3 | 2.3 | 4.3* | 1.5 | 1.0 | 1.4 | 2.7* | | | | | | | | | | | | |
| Q9 | 1.4 | 1.0 | 8.4* | 1.0 | 1.7 | 4.0 | 2.0 | 4.0* | | | | | | | | | | | |
| Q10 | 1.5 | 4.2 | 7.0* | 3.5 | 1.3 | 5.3 | 6.4 | 1.2 | 5.7* | | | | | | | | | | |
| Q11 | 1.4 | 1.8 | 1.6 | 1.6 | 1.3 | 2.9* | 2.1 | 2.6* | 2.3 | 2.8 | | | | | | | | | |
| Q12 | 3.1* | 2.3 | 11.8* | .9 | 2.9 | .8 | 1.7 | 1.0 | 3.1 | 1.2 | 2.3 | | | | | | | | |
| Q13 | 1.6 | .9 | 1.1 | 2.0 | 3.2* | 4.1* | 3.8* | 1.8 | 4.3* | 1.7 | 2.4* | 2.2 | | | | | | | |
| Q14 | 3.7* | .4 | 3.0 | 4.1* | 3.0* | .9 | 3.3* | 1.3 | 2.0 | 4.0 | .7 | 3.0* | 1.5 | | | | | | |
| Q15 | .6 | 4.5 | 2.8* | 10.0* | 1.0 | 1.6 | 1.0 | 1.6 | 1.4 | 2.2 | 2.6* | .7 | .9 | 1.2 | | | | | |
| Q16 | 1.8 | 2.6 | 3.7* | 2.5 | 2.4* | 6.4* | 4.0* | 2.1 | 2.3 | 7.3* | 2.1 | 2.5 | 4.9* | 2.3 | 2.0 | | | | |
| Q17 | 1.7 | 2.7 | 5.3* | 1.8 | 2.6* | 1.5 | 3.1* | 1.9 | 3.2* | 10.3* | 3.1* | 2.6* | 1.8 | 1.6 | 1.9 | 2.8* | | | |
| Q18 | .8 | 1.8 | 4.3* | 3.0 | 1.9 | 1.6 | 2.0 | 2.9* | 4.1* | 8.8* | 1.5 | .7 | 1.9 | 1.1 | 2.4 | 3.6* | 6.3* | | |
| Q19 | 4.2* | 2.7 | 4.0* | 2.6 | 2.3 | 2.5 | 3.1 | 2.4 | 1.9 | 3.2* | 1.3 | 2.2 | .6 | 2.2 | .9 | 2.5* | 3.5* | 7.1* | |
| Q20 | 1.0 | .8 | 3.1 | 2.5 | 1.5 | 8.2* | 4.6* | 1.6 | 1.8 | 9.6 | 3.0* | 1.6 | 2.9 | 1.2 | 1.1 | 1.6 | 1.7 | 3.1* | 3.1 |
| Q21 | 1.0 | .8 | 1.8 | 5.5* | .6 | 5.9* | 3.4* | 1.2 | 1.8 | 4.1 | 1.7 | .8 | 2.2 | 1.2 | 1.1 | 2.2 | .7 | .9 | 1.8 |
| Q22 | 1.0 | 2.1 | 2.2 | .7 | 1.5 | 1.5 | 1.9 | 3.5* | 2.9* | 2.3 | 3.2* | 2.0 | 1.6 | 1.5 | 1.5 | 1.5 | 1.4 | 1.2 | 1.1 |
| Q23 | .9 | 1.1 | 2.5 | 2.4 | .5 | 3.8 | 4.5 | 2.2 | 1.4 | 6.7* | 4.7* | 2.1 | .8 | 1.6 | 1.9 | 2.3 | 3.0 | .7 | 3.3* |
| Q24 | 1.7 | .4 | 2.7* | 3.4 | 2.4* | 3.3 | 1.2 | 1.7 | 5.3* | 6.3* | 1.5 | 1.3 | 4.3* | 2.3 | 2.4* | 1.3 | 5.5* | 5.9* | 2.2 |
| Q25 | 1.6 | .8 | 7.0* | 2.5 | 1.7 | 2.3 | 1.8 | 3.7* | 5.1* | 7.3* | 2.5* | 5.9* | 3.9* | 1.9 | 1.7 | 3.5* | 3.8* | 2.9* | 3.7* |
| Q26 | 1.7 | 3.2 | 3.3* | 1.2 | 2.3* | 4.0* | 3.9* | 2.1 | 6.1* | 4.0* | 2.1 | 4.2* | 2.7* | 1.2 | 1.4 | 2.3* | 3.4* | 6.1* | 2.2 |
| Q27 | 1.5 | 1.9 | .7 | 2.3 | .7 | 2.8 | 3.0* | 1.9 | 3.2 | .5 | 1.5 | 1.5 | 1.5 | .8 | 1.6 | 1.8 | 1.4 | 2.1 | 3.4 |
| Q28 | .8 | .5 | 1.7 | 2.1 | 1.4 | 3.5 | 1.0 | 1.5 | 2.3 | 2.8* | 1.4 | 1.7 | 4.5* | .5 | .8 | 1.9 | 2.9* | 3.1* | 1.7 |
| Q29 | 1.6 | 4.1 | 4.5* | 21.3* | .7 | 4.0* | 3.4* | 2.1 | 2.8* | 6.6* | 1.4 | 1.0 | 1.5 | 1.7 | 4.2* | 2.4* | 2.6* | 11.6* | 3.1* |
| Q30 | 2.1 | .9 | 6.4 | 1.7 | 1.9 | 1.1 | 2.7 | 1.3 | 1.6 | 1.6 | 4.9* | 6.8* | 4.6* | 2.6 | .7 | 2.0 | 2.0 | .9 | 1.1 |
| Q31 | .9 | .8 | 2.0 | 2.9 | 2.5* | 1.9 | .9 | 1.0 | 1.5 | 1.1 | 2.0 | 2.8* | 4.7* | 1.4 | 1.6 | 1.7 | 2.9* | 2.0 | .9 |
| Q32 | 1.2 | 2.0 | 2.7 | 3.3* | 1.1 | 3.0* | 2.9* | 1.9 | 2.5 | 1.4 | 2.1 | 1.3 | 3.4* | 1.5 | 1.7 | 1.6 | 3.3* | 1.9 | 1.9 |
| Q33 | 2.1 | .6 | 2.3 | .8 | .7 | 1.2 | 1.0 | 1.9 | 2.5 | 3.5* | 1.7 | .7 | 1.0 | 1.4 | 1.3 | 1.5 | 2.3 | 1.0 | 2.3 |
| Q34 | .9 | 1.7 | 2.7* | 2.2 | 1.1 | 1.8 | 3.0* | 5.1* | 1.4 | .9 | 1.0 | 1.1 | 1.6 | .8 | 1.2 | .9 | 1.6 | 3.1* | 2.2 |
| Q35 | .6 | .7 | .6 | 2.1 | 1.0 | 1.3 | 1.5 | .5 | .5 | 2.1 | 1.3 | 2.6 | 1.3 | 3.3* | .5 | 2.0 | .9 | 1.0 | 1.4 |
| Q36 | 2.4 | .5 | 2.9* | 6.4 | 2.2 | 4.1 | 1.3 | 1.1 | 3.1* | 4.3* | 1.4 | 2.3 | 7.0 | 1.8 | 2.2 | 2.6 | 1.9 | 6.6 | 2.2 |
| Q37 | 2.2* | .9 | 6.8* | 2.4 | 1.3 | 2.7 | 1.8 | 5.4* | 3.4* | 3.9* | 1.6 | 2.0 | 2.3 | 1.4 | 2.2 | 2.0 | 6.2* | 3.6* | 3.1* |
| Q38 | 1.2 | 1.2 | 5.0* | 1.8 | 1.1 | 2.5 | 2.8* | 2.9* | 2.6 | 6.3* | 3.4* | 1.4 | 1.9 | 1.4 | 3.4* | 1.9 | 4.7* | 3.0* | 2.8* |

*(table continues)*

Table 2. (*continued*)

| | Q20 | Q21 | Q22 | Q23 | Q24 | Q25 | Q26 | Q27 | Q28 | Q29 | Q30 | Q31 | Q32 | Q33 | Q34 | Q35 | Q36 | Q37 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q21 | 4.4* | | | | | | | | | | | | | | | | | |
| Q22 | 6.3* | 1.8 | | | | | | | | | | | | | | | | |
| Q23 | 2.9 | .7 | 3.9* | | | | | | | | | | | | | | | |
| Q24 | 2.4 | .6 | 3.2* | 2.4 | | | | | | | | | | | | | | |
| Q25 | 7.7* | 3.1 | 2.0 | 11.4* | 4.8* | | | | | | | | | | | | | |
| Q26 | 3.9* | 3.9* | 2.2* | 1.8 | 2.1 | 7.1* | | | | | | | | | | | | |
| Q27 | 5.6* | 4.0* | 4.1* | 3.1 | .9 | 3.4* | 4.3* | | | | | | | | | | | |
| Q28 | 2.6 | 1.7 | 1.5 | 1.3 | 2.8* | 2.6* | 3.1* | 2.8 | | | | | | | | | | |
| Q29 | 1.9 | 1.9 | 2.7* | 5.1* | 3.9* | 3.3* | 2.0 | 2.1 | 1.8 | | | | | | | | | |
| Q30 | .8 | 1.4 | 1.2 | 2.6 | .7 | 4.2* | 2.5 | 2.0 | .6 | 2.7 | | | | | | | | |
| Q31 | 1.5 | 1.5 | .8 | .8 | 1.7 | 2.3* | 1.4 | 1.7 | 1.0 | 1.4 | 4.7* | | | | | | | |
| Q32 | 1.4 | 2.6 | .7 | 1.4 | 1.6 | 2.0 | 2.2 | 1.7 | 2.1 | 3.2* | 4.0* | 2.5* | | | | | | |
| Q33 | .4 | .4 | 1.4 | 4.0* | 3.8* | 3.2* | .9 | 1.0 | .5 | 2.4 | 3.3 | 1.1 | 1.2 | | | | | |
| Q34 | 2.0 | 1.5 | 1.1 | 2.5 | 2.1 | 2.7* | 1.5 | 1.3 | 2.2 | 2.3* | .7 | 1.4 | 2.7* | 1.9 | | | | |
| Q35 | 1.7 | 2.5 | .7 | .8 | .8 | 1.5 | 1.1 | 2.3 | .8 | .9 | 2.8 | 2.0 | 2.8 | .7 | .9 | | | |
| Q36 | 3.1 | 3.1 | 2.4 | 3.3 | 15.4* | 7.5* | 3.9* | 3.3 | 6.7* | 5.8* | .7 | 1.1 | 1.6 | 2.5 | 3.9* | .9 | | |
| Q37 | 1.9 | 1.0 | 2.0 | 5.1* | 5.6* | 9.8* | 5.5* | 5.3* | 3.6* | 2.4* | 2.7 | 1.6 | 2.4 | 5.3* | 2.7* | .9 | 4.2* | |
| Q38 | 2.5 | 3.3* | 2.4* | 4.3 | 3.1* | 2.6* | 3.0* | 3.7* | 3.2* | 4.8* | 2.1 | 1.2 | 4.4* | 1.6 | 1.6 | 1.5 | 1.3 | 6.3* |

Note. *$p < .05$
The ratio larger than 1 indicate positive correlation.
The ratio less than 1 indicate negative correlation.

Table 3.
Summary of Cross Product Ratio Among 38 Items.

| Item No. | # of items significantly correlated (+) with[a] |
|---|---|
| Q1 | 6 |
| Q2 | 1 |
| Q3 | 18 |
| Q4 | 6 |
| Q5 | 8 |
| Q6 | 10 |
| Q7 | 15 |
| Q8 | 10 |
| Q9 | 13 |
| Q10 | 16 |
| Q11 | 11 |
| Q12 | 8 |
| Q13 | 13 |
| Q14 | 6 |
| Q15 | 6 |
| Q16 | 12 |
| Q17 | 19 |
| Q18 | 16 |
| Q19 | 11 |
| Q20 | 10 |
| Q21 | 7 |
| Q22 | 10 |
| Q23 | 8 |
| Q24 | 16 |
| Q25 | 23 |
| Q26 | 20 |
| Q27 | 8 |
| Q28 | 10 |
| Q29 | 20 |
| Q30 | 6 |
| Q31 | 7 |
| Q32 | 10 |
| Q33 | 5 |
| Q34 | 9 |
| Q35 | 1 |
| Q36 | 10 |
| Q37 | 19 |
| Q38 | 19 |

Note. [a]The number indicate how many items were significantly correlated with particular item. The possible range of the number is from 0 to 37.

(PBCC) where $(x_1,y_1)$, $(x_2,y_2)$,...,$(x_n,y_n)$ is a sample from the (X,Y) population, $M_{y(x=1)}$ and $M_{y(x=0)}$ are the mean of y-values of observations having $x_i=1$ and $x_i=0$, respectively; $s_y^2$ is the sample variance of y; and p is the proportion of the x-sample with $x_i=1$, (q=1-p).

The statistic t is used to test the significance of the coefficient, where

$$t = \frac{(n-2)^{1/2}\, r_{pb}}{(1-r_{pb}^2)^{1/2}}$$

and *t* is distributed as Student's *t* with n-2 degrees of freedom under the null hypothesis of no correlation. Table 4 shows the PBCC and their t-values. According to table 4, item 2 and item 35 also had low item-to-total correlations. Therefore, item 2 and item 35 were deleted from the scale. A total of 36 items remained. However, it was believed that the number of items should be further reduced to be a practical and useful scale. The items which correlated with fewer than 10 other items according to the item-to-item analysis, were considered for deletion (i.e., item 1, 4, 5, 12, 14, 15, 21, 23, 27, 30, 31, 33, 34). Although, these 10 items had significant PBCC, they had smaller PBCC compared to other items. Taking into consideration both types of item analysis, 15 items were subsequently deleted (i.e., 1, 2, 4, 5, 12, 14, 15, 21, 23, 27, 30, 31, 33, 34, 35) resulting in a 23-item Textile Knowledge Inventory (Appendix B).

## Validity

After item analysis, the validity of the 23-items Textile Knowledge Inventory was tested. The validity of measurement deals with "what is actually being measured

Table 4.
Point Biserial Correlation Coefficients of 38 items in prelimilary questionnaire.

| Item No. | P.B.C.C. | t-value |
|---|---|---|
| 1 | .274 | 3.045*** |
| 2 | .131 | 1.413 |
| 3 | .556 | 7.155*** |
| 4 | .341 | 3.874*** |
| 5 | .282 | 3.140*** |
| 6 | .405 | 4.741*** |
| 7 | .412 | 4.840*** |
| 8 | .398 | 4.639*** |
| 9 | .489 | 5.992*** |
| 10 | .504 | 6.242*** |
| 11 | .405 | 4.733*** |
| 12 | .335 | 3.798*** |
| 13 | .426 | 5.040*** |
| 14 | .290 | 3.236*** |
| 15 | .293 | 3.273*** |
| 16 | .492 | 6.040*** |
| 17 | .569 | 7.392*** |
| 18 | .450 | 5.383*** |
| 19 | .428 | 5.058*** |
| 20 | .363 | 4.159*** |
| 21 | .254 | 2.810*** |
| 22 | .358 | 4.097*** |
| 23 | .336 | 3.816*** |
| 24 | .507 | 6.281*** |
| 25 | .662 | 9.448*** |
| 26 | .559 | 7.210*** |
| 27 | .313 | 3.526*** |
| 28 | .349 | 3.978*** |
| 29 | .524 | 6.579*** |
| 30 | .296 | 3.315*** |
| 31 | .314 | 3.542*** |
| 32 | .391 | 4.537*** |
| 33 | .226 | 2.486** |
| 34 | .340 | 3.860*** |
| 35 | .120 | 1.291 |
| 36 | .422 | 4.978*** |
| 37 | .593 | 7.879*** |
| 38 | .519 | 6.494*** |

Note. The possible range of PBCC is from -1 to +1. The closer to 1 the PBCC is, the higher correlated to total score the particular item is. The significance of PBCC was decided by *t*-test with 114 d.f..
**$p < .01$ ***$p < .005$

by the measurement" (Adams & Schvaneveldt, p.80). Construct validity of Textile Knowledge Inventory was checked.

Construct validation determines whether test scores provide a good measure of a specific construct; i.e., Does the test measure the attribute it is said to measure? (Cronbach, 1971; Murphy & Davidshofer, 1994). There are several ways to establish construct validity.

> The most basic method is to correlate scores on the test in question with scores on a number of other tests. Here, the word "test" is used broadly to indicate any type of behavioral measure.... Another method is a factor analysis.... A third method of studying construct validity involves experimental manipulation of the construct that is to be measured (Murphy & Davidshofer, 1994, pp.120-121).

To check construct validity, the method of experimental manipulation was used. The questionnaire was administered to the students enrolled in an introductory textiles course at the beginning of term and at the end of term. The textiles course should increase textile knowledge among students. If the Textile Knowledge Inventory has construct validity, students should get higher scores at the end of term than at the beginning of term.

Twenty four students completed the test at the beginning of term and at the end of term. Test scores were compared by a paired *t*-test. There was a significant increase in the scores ($t=-7.57$, 23 df, $p < 0.00001$). The average of the difference between score at the beginning and score at the end of term was -6.58 (sd = 4.26). 95% Confidence of Interval for the difference was from -8.38 to -4.78. At the beginning of term, students got lower scores (mean = 12.08, sd = 4.26) than they did at the end of the term (mean = 18.67, sd=2.278). Thus, Textile Knowledge Inventory

was found to predict that the textile class increased the textile knowledge among students. Therefore, this inventory was considered to have the construct validity.

## Reliability

### Test-retest Method Assessing Reliability.

There are four methods that can be used to test reliability; (1) test-retest methods, (2) alternative forms methods, (3) split-half methods, and (4) internal consistency methods (Gronlund, 1993; Murphy and Davidshofer, 1994). For this study, test-retest method and internal consistency methods were used. The test-retest method of establishing reliability entails administering the same instrument twice to the same group of individuals under equivalent conditions after some time interval has elapsed (Adams & Schvaneveldt, 1985). The correlation coefficient between two tests gives an estimate of how stable the results are over a given time period.

First, a questionnaire including the Textile Knowledge Inventory was administrated to 18 subjects during a merchandising management class. Then, the same questionnaire was administrated to the same subjects two days later. Three subjects did not finish the second questionnaire so that data from only 15 subjects were used. The coefficient of correlation between scores from the two tests was calculated ($r = .819$, $p < 0.0001$). The scores from the two tests were significantly correlated. Therefore, Textile Knowledge Inventory can be considered reliable.

Internal Consistency.

The most widely used method to assess the reliability of a test is internal consistency reliability (e.g., Cronbach alpha, Kuder-Richardson formula) because of its convenience (Thorndike et al., 1991). Internal consistency of a test is the degree to which all of the items measure a common characteristic of the subject. When the test is homogeneous, in the sense that every item measures the same general factors of ability or personality as every other item, coefficient alpha (Cronbach alpha) or Kuder-Richardson-20 estimates can reasonably be interpreted as reflecting the reliability of the test (Murphy & Davidshofer, 1994; Thorndike et al., 1991).

When each item is scored as either 1 or 0 (or pass/fail), Kuder-Richardson-20 is used to estimate internal consistency (Stanley, 1971; Thorndike et al., 1991).

$$r_{11} = \left(\frac{n}{n-1}\right)\left(\frac{SD_t^2 - \sum p_i q_i}{SD_t^2}\right)$$

where $r_{11}$ is the estimated reliability of the test, n is the number of items in the test, $SD_t$ is the standard deviation of the test scores, $p_i$ is the proportion of subjects passing the ith item, and $q_i$ is the proportion of subjects failing the ith item.

To estimate $r_{11}$, the first test scores of 39 students which were used to estimate validity and reliability were used. For this Textile Knowledge Inventory, $r_{11}$ was .80. Therefore, this inventory has reasonable internal consistency.

Furthermore, this Textile Knowledge Inventory was used to measure the level of subjects' textile knowledge for both experiment 1 and experiment 2. The following sections will describe the methods used for the experiment 1 and experiment 2.

## Experiment 1

The objective of the first experiment was to investigate the effect of fabric structures on the subjects' categorization of descriptions of fabrics. Furthermore, the effect of level of textile knowledge on differences in the categorization of descriptions of fabric specimens was investigated.

### Subjects.

A non-probability convenience sampling method was used. A non-probability convenience sample results in some limitations on generalization of the results. These limitations will be discussed later. With the permission of instructors, questionnaires were distributed to college students enrolled in a Human Sexuality course and a Textiles for Interiors course. In order to randomly assign subjects to the experimental treatments (i.e., two fabric structures: woven or knitted), the questionnaires which had a fabric specimen from the two different fabric structures, were sorted in random order and then distributed.

In order to control for the influences of gender on the perception of fabrics, all subjects were female. Subjects were 93 female college students. Subjects were from 17 years old to 40 years old and the average age of subjects was 20.23 years (sd = 3.68). In terms of ethnic identity, most of subjects were Caucasians (i.e., 72 Caucasians, 7 Asian, and 4 others). Table 5 show the information about subjects' majors.

Table 5.
Information about Subjects' Majors for Experiment 1.

| Major | # of subjects | percentage |
|---|---|---|
| Human Development and Family Sciences | 20 | 21.5% |
| Merchandising Management and Apparel Design | 17 | 18.3% |
| Education | 9 | 9.7% |
| Business | 6 | 6.7% |
| Biology | 5 | 5.4% |
| Others** | 27 | 29.0% |
| No information | 9 | 9.7% |
| Total | 93 | 100% |

Note. ** Include Communication, Psychology, Pre-medicine, Dental-Hygiene, Linguistics, Political science, Liberal Arts, Anthropology, and Nutrition.

Procedure.

A between-subjects experiment was conducted. The independent variables were textile knowledge and fabric structure. The dependent variable was the subjects' descriptions of fabric specimens. Subjects were given a questionnaire (Appendix C) including a fabric specimen randomly selected from two fabric specimens and an open ended question. The open-ended question was "How would you describe this item?". This question was expected to induce the subjects to identify the fabric specimen as a member of various categories. In order to describe subjects' demographic characteristics, the following demographic questions were asked: age, major at the university, and ethnic identity. Subjects then completed the Textile Knowledge Inventory which was previously developed to measure subjects' objective textile knowledge (see Appendix B).

Fabric Specimens.

Two fabric specimens were selected from two fabric structures (knitted and woven). These two fabric specimens were used to examine what features are used to categorize the fabric. Attributes of fabrics have been found to affect the perceptions/categorization of fabrics in past research (Peak, 1985; Winakor et al., 1980). The structure of fabrics determines various physical characteristics of fabrics (e.g., texture, elasticity, flexibility). The basic structures of fabric are knitted, woven, and non-woven. Knitted and woven fabrics are used most for apparel, and have distinguishable perceptual characteristics. Therefore, these fabric structures were

investigated as they relate to categorization of description of fabrics. To control for color and pattern, all fabric specimens were solid white. The fiber content of all fabric specimens were 100% cotton.

Analysis.

Based upon the subjects' score of Textile Knowledge Inventory (TKI) subjects were categorized into a high textile knowledge or a low textile knowledge group. The possible scores on TKI ranged from 0 to 23. Figure 1 shows the distribution of subjects' TKI score. A score of 16 (70% of 23) or higher was considered to be high textile knowledge. Twenty subjects with scores of 16 or higher were grouped as those with high textile knowledge and the other 73 subjects were grouped as those with low textile knowledge. Based upon fabric structure of fabric specimen, subjects were also grouped as a woven fabric or a knitted fabric group resulting in the following four groups: (1) 39 subjects in a low textile knowledge and knitted fabric group, (2) 34 subjects in a low textile knowledge and woven fabric group, (3) 10 subjects in a high textile knowledge and knitted fabric group, and (4) 10 subjects in a high textile knowledge and woven fabric group.

Descriptive responses of each subject to the open-ended question were content analyzed using Burns et al. taxonomy (1995) including the following nine categories: (1) texture (e.g., soft, oily feeling, silky), (2) fabric characteristics (e.g., thick, flexible, wrinkle free), (3) end-use (e.g., for summer dress, sweatshirt), (4) fabric name (e.g., denim, linen), (5) fiber content (e.g., cotton, polyester), (6) appearance (smooth, white), (7) weight (e.g., heavy, light), (8) extended inferences (e.g., comfortable,

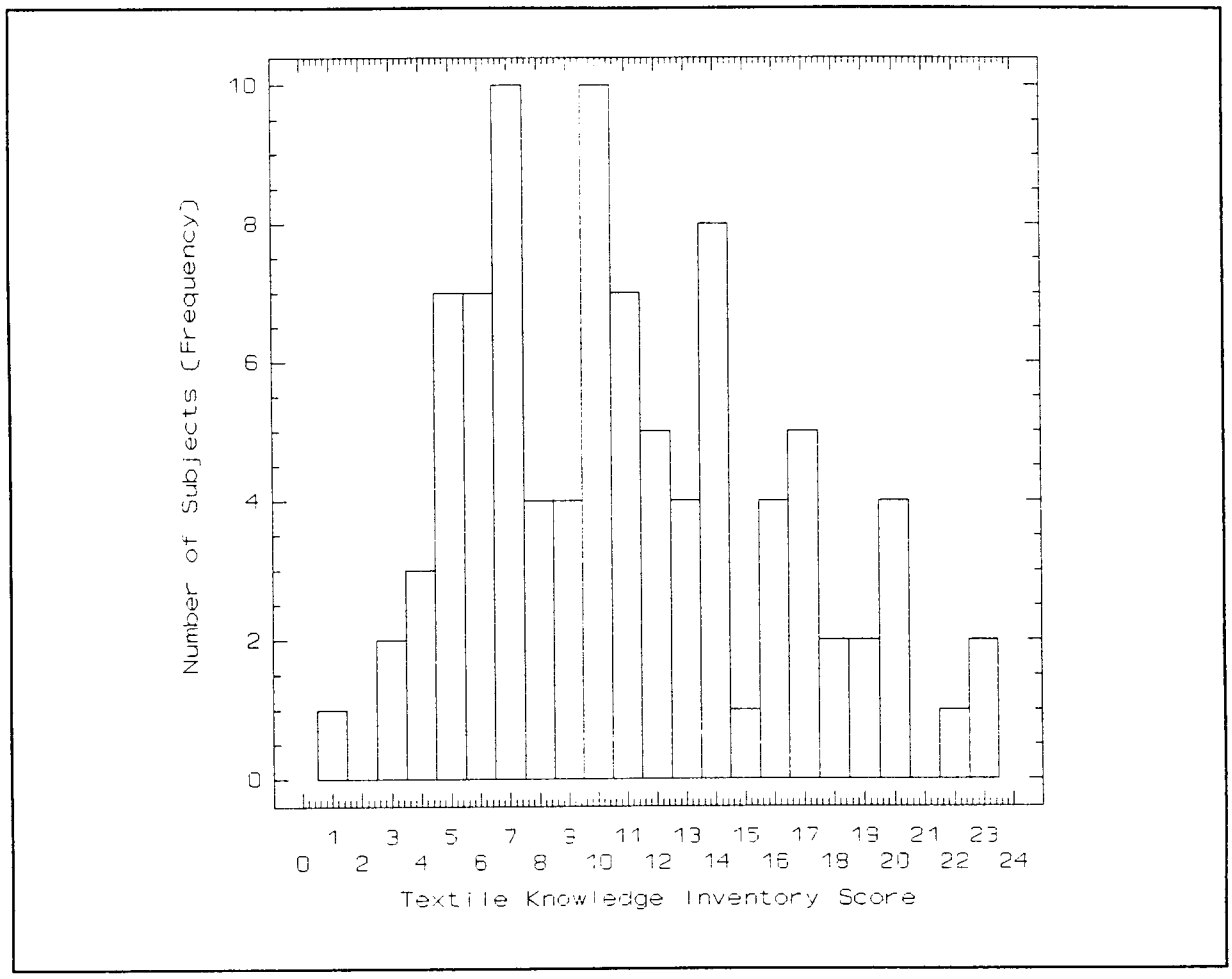


Figure 1. Frequency distribution of TKI score

expensive, reminds me of toilet paper, an empty canvas, durable), and (9) affective responses (e.g., nice). Content analysis is a procedure for producing quantitative data from verbal or nonverbal communication. The unit of content analysis was words or phrases. For example, one of subjects' response was "white, stretchy cotton, reasonably soft and would be comfortable". This subject's response was coded into [1,1,0,0,1,1,0,1,0]; 1 texture, 1 fabric characteristics, 0 end-use, 0 fabric name, 1 fiber content, 1 appearance, 0 weight, 1 extended inference, and 0 affective responses. If a subject's response was "soft, light, good cotton material for summer dresses, light sweaters", this subject's response was coded into [1,0,2,0,1,0,1,0,0]; 1 texture, 0 fabric characteristics, 2 end-use, 0 fabric name, 1 fiber content, 0 appearance, 1 weight, 1 extended inference, and 0 affective responses. Two coders performed this procedure independently and inter-rater reliability was calculated by a percentage of agreement, "the number of agreements between the raters are divided by the number of total possible agreements or disagreements" (Adams & Schvaneveldt, 1985, p. 244). The inter-rater reliability was 96.36%: the number of observed agreements was 106 and the number of observed disagreement was 4.

After counting frequency of each category for each subject, each absolute frequency was changed into a relative-frequency (proportion). For example, the previous example vector, [1, 1, 0, 0, 1, 1, 0, 1, 0], was changed to [1/5, 1/5, 0, 0, 1/5, 1/5, 0, 1/5, 0]. A relative-frequency vector shows which category (/categories) was more likely to be used compared to other categories by a particular subject. Therefore, the relative-frequency vector served as the dependent variable. Independent variables were textile knowledge and fabric structure.

To investigate the effect of fabric structure on categorization (Hypothesis 1), Multivariate Multi-sample Rank Sum Test (MMRST), which is a Multivariate Multisample Non-Parametric Test, was employed (Schwertman, 1985). The MMRST proposed by Puri and Sen (1971) is equivalent to the Kruskal-Wallis test (Rank-Sum test) when there is only one dependent variable. MMRST calculates a $L_n$ statistic which is asymptotically distributed as a chi-square distribution with p(c-1) degrees of freedom (where p is a number of dependent variables and c is a number of levels of an independent variable). The asymptotic chi-square distribution of the $L_n$ statistic was used to determine the critical value. The fabric structure (woven or knitted) was the independent variable. However, any one out of nine elements of the relative-frequency vector was a function of the other eight elements of relative-frequency. Therefore, only the first eight elements were used to calculate the value of $L_N$ of MMRST.

To perform MMRST, an algorithm developed by Schwertman (1982) was used. In this algorithm, Schwertman (1982) used the SYMINV subroutine developed by Heal (1968) which invert a symmetric matrix. However, Farebrother and Berry (1974) found some flaws of the SYMINV. Therefore, instead of SYMINV subroutine, a subroutine which inverses a matrix by the Gaussan Elimination method was developed. Before integrating the subroutine into the main program, the validity of the subroutine was tested with several example matrices from textbooks. Before using the program to analyze the data, the validity of the program was tested by analyzing an example of Schwertman (1985).

To investigate whether there was a difference between subjects with high textile knowledge and subjects with low knowledge and which fabric features were generally

used to categorize fabrics (Hypothesis 2), MMRST was also used. The independent variable was the level of subjects' textile knowledge (i.e., high textile knowledge or low textile knowledge) and the dependent variable was the relative frequency vector which resulted from the content analysis of subjects' descriptions of the fabric specimens.

## Experiment 2

The objective of the second experiment was to investigate whether level of textile knowledge and fiber content label information caused differences in descriptions and evaluations of fabric specimen. Furthermore, the effect of the interaction between textile knowledge and fiber content label information on evaluations of fabrics was investigated.

### Subjects.

A non-probability convenience sampling method was used. A non-probability convenience sample results in some limitations on generalization of the results. These limitations will be discussed later. With the permission of instructors, questionnaires were distributed to 107 students during Perspectives in Home Economics, Fashion and Society, Historic Costume, and Retail Merchandising classes. In order to randomly assign subjects to the experimental treatments (i.e., no information, "100% polyester", "100% microfiber polyester"), questionnaires were sorted in random order and then were distributed.

All subjects were female in order to control for the influences of gender on the perception of fabrics. Subjects were from 18 years old to 50 years old and the average age of subjects was 22.17 years (sd = 5.72). Table 6 shows the ethnic identity of subjects. Table 7 shows the information about subjects' majors.

Procedure

A between-subjects experiment was conducted. The independent variables were level of subjects' textile knowledge and fiber content label information. The dependent variables were subjects' descriptions and evaluations of a fabric specimen. Subjects were given a questionnaire (Appendix D) which included an assessment of their perceptions of polyester, a fabric specimen labeled in one of three ways (no information control, labeled as polyester, or labeled as microfiber polyester) with questions to describe and evaluate the fabrics, the Textile Knowledge Inventory, and questions asking about their demographic characteristics (i.e., age, major at university, and ethnic identity).

Since Katz and Braly (1933) studied racial stereotypes held by college students, the Katz and Braly method (occasionally with minor modifications) has become the standard method used in stereotype research. This method easily assesses the content of stereotypes. The procedure includes giving subjects a list of trait-descriptive adjectives and asking subjects to indicate which ones they feel describe members of a particular group. Those attributes that are checked with a high frequency are

Table 6.
Information about Subjects' Ethnic Identity for Experiment 2.

| Ethnic Identity | # of Students | Percentage |
|---|---|---|
| Caucasian | 85 | 79.4% |
| African American | 4 | 3.7% |
| Asian American | 6 | 5.6% |
| Others | 10 | 9.3% |
| Missing | 2 | 1.9% |
| Total | 107 | 100% |

Table 7.
Information about Subjects' Majors for Experiment 2.

| Major | # of subjects | percentage |
|---|---|---|
| Merchandising Management and Apparel Design | 47 | 43.9% |
| Human Development and Family Science | 16 | 15.0% |
| Nutrition and Food Management | 18 | 16.8% |
| Housing and Interiors | 10 | 9.3% |
| Others** | 14 | 13.1% |
| No information | 2 | 1.9% |
| Total | 107 | 100% |

Note. ** Include Business, Psychology, Political science, Liberal Arts, and Sociology.

considered to define the stereotype of that group. This method, however, has a serious limitation in that it restricts the content of the stereotype to trait terms provided on the checklist by the researcher.

Therefore, for the present study, subjects were not given a list of trait descriptive adjectives. Instead, subjects were asked their perceptions of traits of polyester fibers and fabrics made from polyester through an open ended question: "What do you think are the traits/characteristics of polyester fibers used in making apparel fabrics? (Please list as many traits or characteristics as you can.)".

Subjects received a fabric specimen with fiber content label information (either polyester or microfiber polyester) attached or no fiber content label information attached and a question asking subjects to describe the fabric ("How would you describe this item?").

Next, subjects were asked to complete evaluation scales including two nominal scale items (i.e., machine washable/not machine washable, synthetic/natural) and nine 7-point semantic differential scale items (i.e., fashionable/not fashionable, expensive/not expensive, easy to wrinkle/not easy to wrinkle, easy to care/not easy to care, high quality/low quality, attractive/not attractive, likely to buy/not likely to buy, durable/not durable, and soft/not soft). These items have been used by other researchers of apparel/fabrics characteristics (Burns, Lennon, & Choi, 1995; Schutz & Phillips, 1976; Workman, 1990) and by researchers of the stereotype of polyester (Gill, 1991; Workman, 1990).

Subjects then completed the Textile Knowledge Inventory which was developed (see Appendix B) to measure a person's objective textile knowledge and questions about demographic characteristics.

## Fabric Specimen

Fabric made from polyester microfiber was selected for this experiment. All fabrics specimens were taken from the same fabric and were labeled as 100% polyester, 100% microfiber polyester, or included no fiber content information. To control for color and pattern, solid white fabric was selected.

Polyester microfiber fabric was selected because fabrics made from polyester microfiber are often considered to be fashionable and sophisticated whereas fabrics made from polyester fiber are often considered to be unattractive and inexpensive. Therefore, polyester microfiber fabrics have characteristics discrepant from the stereotype of polyester. If subjects have stereotypic perceptions of polyester, the descriptions and evaluations of the fabric specimen without fiber content information may be different from the descriptions and evaluations of the fabric specimen labeled as made from polyester fiber.

## Analysis

Content analysis was used for the first question to determine the content of the polyester stereotype. Unit of analysis for the first question was a word or phrase. All

traits/characteristics described by all subjects were listed, and then, the most frequently used traits/characteristics were selected as the content of the polyester stereotype.

The descriptions of fabric specimens were content analyzed to look at the affect of three fiber content label information conditions including no information, 100% polyester, and 100 microfiber polyester on categorization of subjects' fabric description (Hypothesis 3). First, the descriptions of each subject were coded by the same manner and the same nine categories as in the first experiment. The unit of analysis was a word or phrase. Two coders independently coded the data. The inter-rater reliability was 94.77%, the number of agreements was 163 and the number of disagreements was 9. Using the same procedure as in the first experiment, each subject's response was coded into an absolute-frequency vector. Then, the absolute-frequency vector was changed into a relative frequency vector (a proportion vector). In order to investigate whether the mental representation or stereotype of polyester influenced the fabric categorization by comparing the three label conditions, MMRST was used. The independent variable was the label condition with three levels and the dependent variables were 9 elements of the proportion vector. However, to perform MMRST, only eight elements of the relative-frequency vector were used to calculate $L_N$ statistics because each one of nine elements was a function of the other eight elements of the relative-frequency vector.

Then, in order to investigate the effects of textile knowledge and fiber content information on subjects' evaluations of fabric specimens (Hypothesis 4 through Hypothesis 12), Chi-square (H4 and H5) and Analysis of Covariance (H6 through H12) were employed.

For the H4 and H5, independent variables were the level of subjects' textile knowledge (high or low textile knowledge) and the label conditions (no information, 100% polyester, or 100% microfiber polyester). Subjects with TKI scores of 16 or higher were categorized as high textile knowledge and the other subjects were categorized as low textile knowledge: (1) 22 low textile knowledge and 13 high textile knowledge subjects were in the label condition of "no information"; (2) 21 low textile knowledge and 13 high textile knowledge subjects were in the label condition of "100% polyester"; (3) 26 low textile knowledge and 12 high textile knowledge subjects were in the label condition of "100% microfiber polyester". Figure 2 shows the distribution of the subjects' TKI score.

For hypothesis 4, the dependent variable was the subjects' responses (i.e., synthetic, natural, or don't know) as to their evaluation of "synthetic/natural". Chi-square was used to investigate the influence of the label condition (H4a) and the level of textile knowledge (H4b) on the subjects' evaluation on "synthetic/natural".

For hypothesis 5, the dependent variable was the subjects' responses (i.e., machine washable, dry cleaning, or don't know) as to their evaluation of "machine washable/dry cleaning". Chi-square was used to investigate the influence of the label condition (H4a) and the level of textile knowledge (H4b) on the subjects' evaluation on "machine washable/dry cleaning".

For hypothesis 6 through 14, analysis of covariance was employed. Independent variables were the label condition with the subjects' score of Textile Knowledge Inventory serving as the covariate variable. Dependent variables were the subjects' responses to the following variables: fashionable/not fashionable,

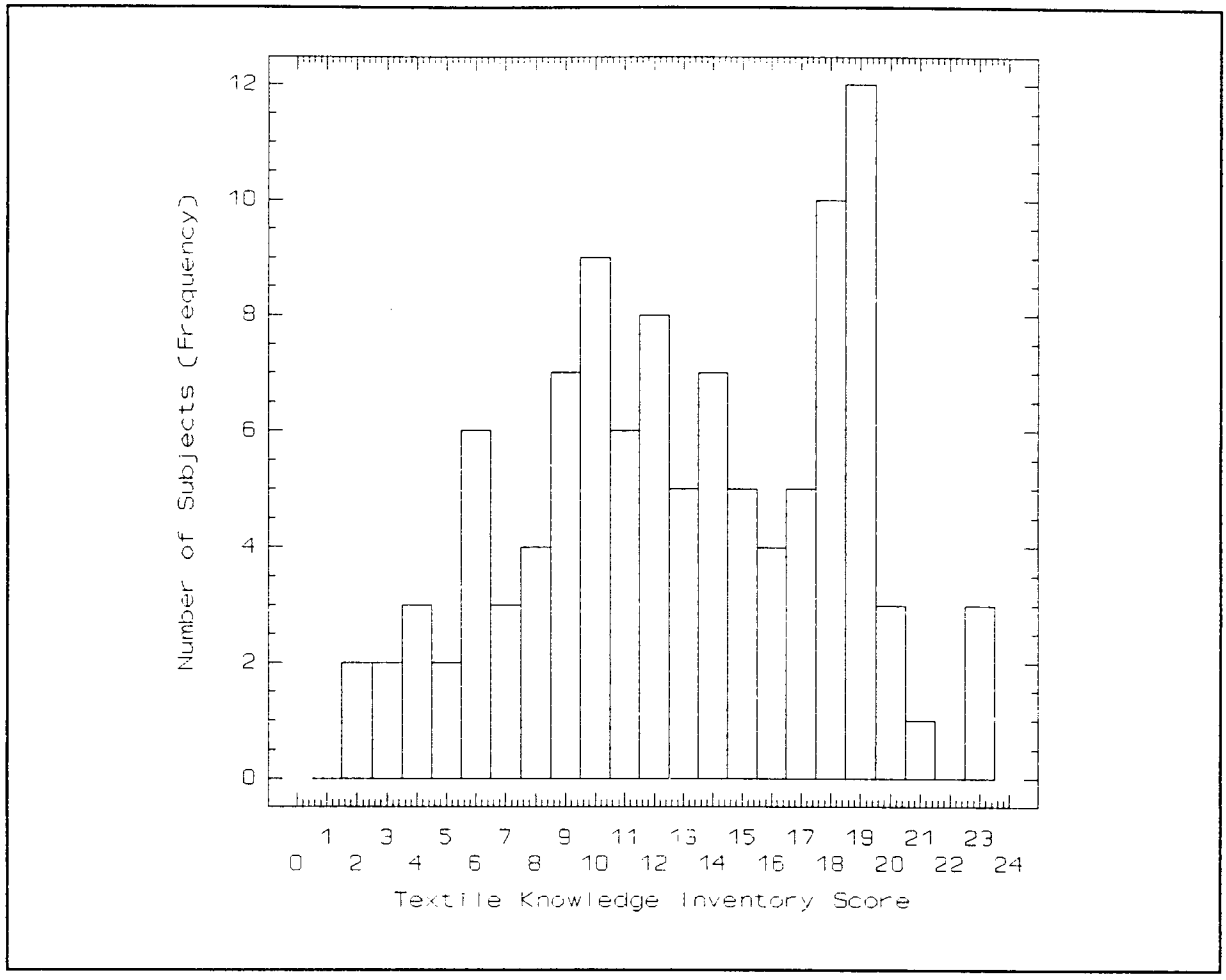


Figure 2. Frequency distribution of TKI score

expensive/not expensive, easy to wrinkle/not easy to wrinkle, easy to care/not easy to care, high quality/low quality, attractive/not attractive, likely to buy/not likely to buy, durable/not durable, soft/not soft.

# Chapter IV

# Results and Discussion

The purpose of this study was to investigate the effects of textile knowledge on textile perception: how consumers categorize textiles, and how consumers are influenced by stereotypes in their overall perception and evaluation of textiles. This study consisted of two experiments. The objective of first experiment was to investigate whether fabric structure and level of textile knowledge affected categorization of subjects' descriptions of fabric specimens. The objective of second experiment was to investigate the effects of textile knowledge and discrepancies between perceptual information of fabrics and mental representations (stereotypes) of fabric fiber content (polyester) on descriptions and evaluations of fabric specimens. This chapter describes the findings from the two experiments and discusses the findings.

## Findings from Experiment 1

### Hypothesis 1

Hypothesis 1, which stated that categorization of subjects' descriptions of fabrics would differ as a function of the fabrics' structures (i.e., woven and knitted fabrics) was supported ($L_N = 23.02$, 8 d.f., $p < .01$). MMRST showed that categorization of subjects' descriptions of knitted fabrics was different from categorization of subjects' descriptions of woven fabrics. Compared to subjects in the

knitted fabric group, subjects in the woven fabric group were more likely to use "appearance" category than other categories (see tables 8 & 9). However, subjects in the knitted fabric group were more likely to use "fiber content" and "texture" categories than subjects in the woven fabric group.

Hypothesis 2

Hypothesis 2, which stated that categorization of subjects' descriptions of fabrics would differ as a function of the level of subjects' textile knowledge was supported ($L_N = 26.12$, 8 d.f., $p < .001$). MMRST showed that categorization of fabric descriptions by subjects with high knowledge was different from categorization of fabric descriptions by subjects with low textile knowledge. Compared to high textile knowledge subjects, low textile knowledge subjects were more likely to use "appearance" category than other categories (see table 10 & 11). However, compared to low textile knowledge subjects, high textile knowledge subjects were more likely to use "fabric name" category than other categories.

According to the results of testing hypothesis 1 and hypothesis 2, categorization of subjects' descriptions of fabrics was found to be influenced by the fabrics' structure (i.e., knitted and woven) and the level of subjects' textile knowledge as predicted. According to past research, perception and categorization of an object is a function of the object's attributes, characteristics of the perceiver, and characteristics of the situation or context. Different fabric structures provide different types of information about the fabric specimen to the perceiver. Subjects may have encoded the different types of information from the different fabric structures resulting in descriptions, that

Table 8

Differences between Average Rank of Each Group (knitted or woven fabrics) and Average Rank of All Subjects.

| | Texture | Fabric character-istics | End use | Fabric name | Fiber content | Appearance | Weight | Extended Inference | Affective Response |
|---|---|---|---|---|---|---|---|---|---|
| Knitted fabrics | 5.133 | 1.173 | 0.898 | -3.714 | 5.041 | -6.112 | -1.316 | 1.653 | 1.3469 |
| Woven fabrics | -5.716 | -1.307 | -1.000 | 4.136 | -5.614 | 6.807 | 1.466 | -1.841 | -1.500 |

Note. MMRST tests the difference among groups by calculating the difference between average rank of each group and average rank of a total observation. A total 93 subjects' average rank for each category was 47.0. The possible range of ranks for each category was from 1 to 93. The figures in table indicate the average rank of each group subtracted from the average rank of all subjects.

Table 9

Average Relative-Frequency (Proportion) of Each Category used to Describe Fabrics by Subjects of Each group (knitted and woven fabrics).

| | Texture | Fabric character-istics | End use | Fabric name | Fiber content | Appearance | Weight | Extended Inference | Affective Response |
|---|---|---|---|---|---|---|---|---|---|
| Knitted fabrics | 18.67% | 10.85% | 1.36% | 3.74% | 27.52% | 23.67% | 3.06% | 7.89% | 1.19% |
| Woven fabrics | 11.14% | 6.86% | 0.00% | 10.98% | 15.87% | 41.44% | 5.38% | 3.79% | 0.00% |

Note. Higher percentage indicates that a particular category was more likely to be used by subjects.

Table 10

Differences between Average Rank of Each Group (high or low textile knowledge) and Average Rank of All Subjects.

| | Texture | Fabric character-istics | End use | Fabric name | Fiber content | Appearance | Weight | Extended Inference | Affective Response |
|---|---|---|---|---|---|---|---|---|---|
| Low Textile Knowledge | 0.3356 | -0.562 | -1.000 | -5.36 | 0.514 | 3.788 | -2.233 | 0.151 | -0.212 |
| High Textile Knowledge | -1.225 | 2.05 | 3.650 | 19.550 | -1.875 | -13.825 | 8.150 | -0.550 | -0.800 |

Note. MMRST tests the difference among groups by calculating the difference between average rank of each group and average rank of a total observation. A total 93 subjects' average rank for each category was 47.0. The possible range of ranks for each category was from 1 to 93. The figures in table indicate the average rank of each group subtracted from the average rank of all subjects.

Table 11

Average Relative-Frequency (proportion) of Each Category used to Describe Fabrics by subjects of Each Group (high or low textile knowledge)

| | Texture | Fabric character-istics | End use | Fabric name | Fiber content | Appearance | Weight | Extended Inference | Affective Response |
|---|---|---|---|---|---|---|---|---|---|
| Low Textile Knowledge | 14.52% | 8.86% | 0.00% | 2.97% | 22.97% | 36.89% | 2.44% | 6.67% | 0.57% |
| High Textile Knowledge | 17.25% | 9.33% | 3.33% | 22.50% | 18.50% | 14.50% | 10.42% | 3.33% | 0.83% |

Note. Higher percentage indicates that a particular category was more likely to be used by subjects.

when categorized, differed by fabric structure. Compared to descriptions by subjects in the knitted fabric group, descriptions by subjects in the woven fabric group were more likely to be classified in the "appearance" category than other categories. Compared to the ordinary fabric, the woven fabric had no unique characteristics except the fabric was woven with a twill weave which is visible. Therefore, subjects in the woven fabric group may have noticed this twill weave. Furthermore, descriptions by subjects in the woven fabric group were more likely to include "fabric name" than were descriptions by subjects in the knitted fabric group. Descriptions by subjects in the knitted fabric group were more likely to be classified in the "fiber content" and "texture" categories than were descriptions by subjects in the woven fabric group. Although both fabric specimens were 100% cotton, subjects were more likely to describe the knitted fabric as cotton or cotton and polyester because the particular knitted fabric was similar to the material of typical t-shirts which are often made from cotton or cotton/polyester. Furthermore, because of the knitted fabric structure and fiber content, the knitted fabric specimen was perceived and described by subjects as soft, a term classified in the "texture" category. Subjects tended to describe the object based upon the information provided from the object.

"Categorization of a stimulus depends heavily on knowledge (Engel et al., 1995, p. 492)". For example, categorization of an object by persons with low knowledge is more likely to be influenced by perceptual attributes than by persons with high knowledge (Alba & Hutchinson, 1987). In this study, the level of textile knowledge was found to influence categorization of subjects' descriptions of the fabric specimens. Descriptions by subjects with low textile knowledge were more likely to

be classified as "appearance" than any other category. Descriptions by subjects with high textile knowledge were more likely to be classified as "fabric name" and "weight" than were descriptions by subjects with low textile knowledge. Subjects with low textile knowledge may be less interested in fabrics or have less formal education regarding fabrics. Because of this possible lack of their interest and education, they tended not to have as extended a vocabulary to describe the fabrics. So they were more likely to depend on visual information in describing the fabric specimen. Thus because of a lack of textile terminology knowledge, they were more likely to use "appearance" category (36.89%) rather than other categories such as "fabric name" (2.97) and "end-use" (0.00%).

## Findings from Experiment 2

### The Contents of the Stereotype of Polyester

Table 12 shows the contents of the stereotype of polyester. Polyester was perceived to have a combination of extended inference and negative appearance characteristics. For example, 20 subjects out of 107 subjects described the perceived characteristics of polyester fiber as "old" (e.g., dad's old cloths, old, senior cloth, out of style, out of date clothing, and retro) and 17 subjects described the polyester fiber as "60's & 70's style" (e.g., 60's fire, 60's polyester shirts with the butterfly collar, 70's disco, John Travolta in Saturday Night Fever, 70's style, tight, double knit, leisure suits, and bell bottom). Furthermore, polyester was perceived to have negative characteristics. Nine subjects described the polyester fiber as ugly/not appealing (e.g.,

Table 12
The Most Frequently Perceived Traits or Characteristics of Polyester by Subjects.

| Category | NO* | Examples |
|---|---|---|
| Old | 20 | dad's old cloths, old, senior cloth, out of style, out of date clothing, retro |
| 60's & 70's style | 17 | 60's fire, 60's polyester shirts with the butterfly collar, 70's disco, John Travolta in Saturday Night Fever, 70's style, tight,double knit, leisure suits, bell bottom. |
| Ugly & Not appealing | 9 | ugly, appearance less appealing, not appealing, un-attractive, |
| Itchy & Rough | 21 | itchy, scratchy, sort of scratchy on skin, irritating rough, not soft, coarse, not smooth |
| Smooth | 6 | smooth |
| Durability | 18 | strong, durable, long lasting, resists deterioration from sun, acid, & breach, It is not damaged by moth, mildew |
| Hot | 13 | hot to wear, hot, hot in summer time, uncomfortable in hot weather |
| Non-Breathable | 9 | non-breathable, don't breath well, traps perspiration |
| Uncomfortable | 8 | uncomfortable to wear, uncomfortable |
| Cheap | 8 | cheap, inexpensive |
| Wrinkle Resistance | 6 | wrinkle resistance, wrinkle free |
| Easy to care | 6 | easy to care, low maintenance |

Note. * The number of subjects who described the characteristics of polyester as a particular trait or characteristics.

ugly, appearance less appealing, not appealing, and un-attractive). Other characteristics include "itchy/rough" (e.g., itchy, scratchy, irritating, rough, not soft, coarse, and not smooth), "hot" (e.g., hot to wear and hot in summer time), "non-breathable" (e.g., non-breathable, don't breath well, and traps perspiration), and "uncomfortable". These negative characteristics were similar to what other researchers have found (Gill, 1991; Workman, 1990). However, polyester was also perceived as durable, wrinkle resistant, and easy to care for.

Hypothesis 3

Hypothesis 3 which stated that there would be an effect of the label information regarding fiber content (polyester, microfiber polyester, or no label control) on the subjects' categorization of descriptions of polyester fabrics was not supported ($L_N$ = 16.61, 16 d.f. $p > .1$).

Past research has demonstrated that stereotyping tends to influence the way in which people process information. In order to investigate the effect of the stereotype of polyester fiber on categorization of subjects' description of the fabric specimen (H3), the fabric specimen was labeled as "100% polyester" or "100% microfiber polyester" or no information was given about the fiber content. The fiber content label condition was found to not influence categorization of subjects' descriptions of the fabric specimen. Either descriptions of the fabric were based upon characteristics of the fabric specimen with disregard to the label or stereotypic impressions of polyester, in general, were not transferred to impressions of this fabric specimen.

Hypothesis 4

Hypothesis 4 stated that the subjects' evaluation of polyester fabrics about synthetic/natural would be influenced by the fiber content label information condition (H4a) and the level of subjects textile knowledge (H4b). Tables 13 and 14 show the results of testing H4a and H4b. H4a was not supported (Chi-square (4) = 3.707, $p$ = 0.447). The influence of fiber content label information on categorization of subjects' evaluation of synthetic/natural was not significant.

However, H4b was supported (Chi-square (2) = 10.144, $p$ = .006). The influence of the level of subjects' textile knowledge on categorization of subjects' evaluation of synthetic/natural was significant. Subjects with high textile knowledge were more likely to evaluate the fabric as "synthetic". Although fiber content information did not influence the subject's evaluation of polyester fabric about synthetic/natural, the level of subjects' textile knowledge did influence the subjects' evaluation.

Hypothesis 5

Hypothesis 5 stated that the subjects' evaluation of polyester fabrics about machine washable/dry cleaning would be influenced by the fiber content label information condition (H5a), and the level of subjects textile knowledge (H5b). Tables 15 and 16 show the results of testing H5. The influence of fiber content label information on categorization of subjects' evaluation of machine washable/dry cleaning was not significant (Chi-square (4) = .338, $p$ = 0.987). The influence of the level of

Table 13
Contingency Table of Subjects Responses of Synthetic/Natural Question by Label Condition.

| | | Subjects' Responses | | | Total |
|---|---|---|---|---|---|
| | | Synthetic | Natural | Don't Know | |
| Label Condition | No information | 26 (74.29) | 3 (8.57) | 6 (17.14) | 35 (100) |
| | 100% Polyester | 25 (73.53) | 3 (8.82) | 6 (17.65) | 34 (100) |
| | 100% Microfiber polyester | 34 (89.47) | 1 (2.63) | 3 (7.89) | 38 (100) |
| Total | | 85 (79.44) | 7 (6.5) | 15 (14.02) | 107 (100) |

Note. Frequency (Percentage).
Chi-square = 3.707, d.f. = 4, p= 0.447.

Table 14
Contingency Table of Subjects Responses of Synthetic/Natural Question by Level of Textile Knowledge.

| | | Subjects' Responses | | | Total |
|---|---|---|---|---|---|
| | | Synthetic | Natural | Don't know | |
| Level of Subjects' Textile Knowledge | High Textile Knowledge | 36 (94.74) | 2 (5.26) | 0 (0.00) | 38 (100) |
| | Low Textile Knowledge | 49 (71.01) | 5 (7.25) | 15 (21.74) | 69 (100) |
| Total | | 85 (79.44) | 7 (6.54) | 15 (14.02) | 107 (100) |

Note. Frequency (Percentage).
Chi-square = 10.144, d.f. = 2, p= 0.006.

Table 15
Contingency Table of Subjects Responses of Machine Washable/Dry Cleaning Question by Label Condition

| | | Subjects' Responses | | | Total |
|---|---|---|---|---|---|
| | | Machine Washable | Dry Cleaning | Don't Know | |
| Label Condition | No information | 16 (45.71) | 17 (48.57) | 2 (5.71) | 35 (100) |
| | 100% Polyester | 16 (47.06) | 15 (44.12) | 3 (8.82) | 34 (100) |
| | 100% Microfiber Polyester | 18 (47.37) | 17 (44.74) | 3 (7.89) | 38 (100) |
| Total | | 50 (46.73) | 49 (45.79) | 8 (7.48) | 107 (100) |

Note. Frequency (Percentage)
Chi-Square = 0.338, d.f. = 4, $p$ = 0.987.

Table 16
Contingency Table of Subjects Responses of Machine Washable/Dry Cleaning Question by Level of Textile Knowledge.

| | | Subjects' Responses | | | Total |
|---|---|---|---|---|---|
| | | Machine Washable | Dry Cleaning | Don't Know | |
| Level of Subjects' Textile Knowledge | High Textile Knowledge | 24 (63.16) | 12 (31.58) | 2 (5.26) | 38 (100) |
| | Low Textile Knowledge | 26 (37.68) | 37 (53.62) | 6 (8.7) | 69 (100) |
| Total | | 50 (46.73) | 49 (45.79) | 8 (7.48) | 107 (100) |

Note. Frequency (Percentage)
Chi-square = 6.390, d.f. = 2, $p$ = 0.041.

subjects' textile knowledge on categorization of subjects' evaluation was significant (Chi-square (2) = 6.39, $p$ = .041). Although fiber content information did not influence the subjects' evaluation of polyester fabric about machine washable/dry cleaning the level of subjects' textile knowledge did influence the subjects' evaluation. Subjects with high textile knowledge were more likely to evaluate the fabric as "machine washable".

According to results testing H4 and H5, the fiber content label condition was found to not influence subjects' evaluation of "synthetic/natural" (H4a) and "machine washable/dry cleaning" (H5a) for the fabric specimen. It was expected that subjects exposed to the fiber content labels of "100% polyester" and "100% microfiber polyester" would be more likely to evaluate the fabric specimen as synthetic. However, there was no difference among three label conditions on subjects' evaluation of synthetic/natural. The possible explanation is that some subjects might perceive the terms "synthetic/natural" as synthetic/natural feeling rather than synthetic material/natural material. In addition, some of subjects may not know whether or not "polyester" and "microfiber polyester" are synthetic fibers and some of subjects may know that the fabric specimen was polyester even without the fiber content label information. Therefore, the label of "polyester", or "microfiber polyester" did not influence their evaluation of fabric specimen for synthetic/natural.

There was also no difference among three label conditions on subjects' evaluation of machine washable/dry cleaning. Although most polyester fabrics are machine washable and the fabric specimen is machine washable, the label of "polyester", and "microfiber polyester" did not influence subjects' evaluation of the

fabric specimen regarding its machine washability. Regardless of the label condition, the percentage of subjects that evaluated the fabric specimen as "machine washable" was almost same as the percentage of subjects that evaluated the specimen as "dry cleaning". For each label condition, approximately 45% of subjects evaluated the specimen as "dry cleaning". This may be because of perceptual characteristics of the fabric specimen which were close to the characteristics of sandwashed rayon and velvet (e.g., soft, velvety). Indeed some subjects actually described the fabric specimen as velvety, brushed, or sandwashed. Rayon and velvet must be dry cleaned. Therefore, some of the subjects may have recognized that the fabric specimen has similar texture and appearance to rayon or velvet. Because they were not sure about the cleaning method, they selected the safe way to clean fabrics. However, high textile knowledge subjects were more likely to evaluate the fabric specimen as "synthetic" (H4a) and "machine washable" (H5a) than were low textile knowledge subjects. The fabric specimen was made from a synthetic fiber and was machine washable. Because of their textile knowledge, subjects with textile knowledge were accurate in their evaluation of the fabric specimen as "synthetic" and "machine washable".

The Result of Multivariate Analysis of Covariance.

According to Multivariate Analysis of Covariance, there was a significant overall effect of textile knowledge on the set of nine dependent variables: the subjects' evaluations of "fashionable/not fashionable", "expensive/not expensive", "easy to wrinkle/not easy to wrinkle", "easy to care/not easy to care", "attractive/not attractive",

"likely to buy the clothing made from it/not likely to buy clothing made from it", "durable/not durable", and "soft/not soft" (Wilks' Lambda = .8095, $F_{9, 93}$ = 2.43, p = .0157). This multivariate test indicated there was a significant linear relationship between the 9 dependent variables and the covariate (textile knowledge) at the .05 level. However, there was no significant effect of the fiber content label information (Wilks' Lambda = .796, $f_{18, 186}$ = 1.25, p = .227) and the interaction (Wilks' Lambda =.804, $f_{18, 186}$ = 1.19, p = .275) on the set of nine dependent variables.

Hypothesis 6

Hypothesis 6 stated that subjects' evaluation of polyester fabrics about fashionable/not fashionable would be influenced by the fiber content label information condition (H6a), the level of subjects textile knowledge (H6b), and the interaction between the label condition and the level of subjects' textile knowledge (H6c). Tables 17, 18, and 19 show the results of testing H6a, H6b, and H6c. H6a and H6c were not supported (see table 17). There were no significant effects of label condition and the interaction between label condition and the level of textile knowledge on subjects' evaluation of polyester fabrics about fashionable/not fashionable.

However, H6b was supported (see table 17). There was a significant effect of the level of textile knowledge on subjects' evaluation of polyester fabrics about fashionable/not fashionable (F (1,101) = 5.12, p = .026). Subjects with high textile knowledge evaluated the fabric specimen as more fashionable than subjects with low textile knowledge (see table 18).

Table 17
Analysis of Covariance for Fashionable

| Source | DF | Sum of Square | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| LABEL | 2 | 1.54[a] | 0.768 | 0.50 | 0.6095 |
| **Textile Knowledge** | **1** | **7.90[a]** | **7.902** | **5.12** | **0.0259** |
| TK by LABEL | 2 | 3.21[a] | 1.605 | 1.04 | 0.3576 |
| Error* | 101 | 156.02 | 1.545 | | |

Note. * Experimental Error. [a] Type III Sum of Squares.

Table 18
Estimated Parameters including Intercept and Coefficients

| Parameter | | Estimate (Coefficients) | T for H0: Parameter=0 | Pr > \|T\| | Std Error of Estimate |
|---|---|---|---|---|---|
| INTERCEPT | | 4.12 | 7.14 | 0.000 | 0.577 |
| LABEL | 1 | 0.83 | 1.00 | 0.321 | 0.833 |
| | 2 | 0.38 | 0.50 | 0.620 | 0.770 |
| | 3 | 0.00 | . | . | . |
| **Textile Knowledge** | | **0.10** | **2.41** | **0.018** | **0.042** |
| TK*LABEL | 1 | -0.08 | -1.39 | 0.167 | 0.060 |
| | 2 | -0.06 | -1.04 | 0.301 | 0.056 |
| | 3 | 0.000 | . | . | . |

Table 19
Means of Fashionable Scores by Label Condition

| Label conditions | N | Adjusted Means* | SD | Unadjusted Means | SD |
|---|---|---|---|---|---|
| No information | 35 | 5.16 | 0.21 | 5.17 | 1.15 |
| 100% polyester | 34 | 5.04 | 0.21 | 5.03 | 1.49 |
| 100% microfiber polyester | 38 | 5.40 | 0.20 | 5.42 | 1.15 |

Note. * Means adjusted to the average Textile Knowledge.

Hypothesis 7

Hypothesis 7 stated that subjects' evaluation of polyester fabrics about "expensive/not expensive" would be influenced by the fiber content label information condition (H7a), the level of subjects textile knowledge (H7b), and the interaction between the label condition and the level of subjects' textile knowledge (H7c). Tables 20, 21 and 22 show the results of testing for H7a through H7c. H7a ($F$ (2,101) = 4.24, $p$ = .017) and H7c ($F$ (2,101) = 3.74, $p$ = .027) were supported whereas H7b was not supported (see table 20). There was a significant effect for the label condition and for the interaction between label condition and the level of textile knowledge on subjects' evaluation of polyester fabric about expensive/not expensive. Table 22 shows the mean scores of expensive/not expensive at each label condition.

Furthermore, figure 3 shows the effects of the interaction. Under the label condition of "no information", subjects with higher textile knowledge evaluated the fabric specimen as less expensive than subjects with lower textile knowledge (see table 21 & figure 3). Under the two label conditions of "100% polyester" and "100% microfiber polyester", subjects with higher textile knowledge evaluated the fabric specimen as more expensive than subjects with lower textile knowledge (see table 21 & figure 3).

Hypothesis 8

Hypothesis 8 stated that subjects' evaluation of polyester fabrics about "easy to wrinkle/not easy to wrinkle" would be influenced by the fiber content label

Table 20
Analysis of Covariance for Expensive

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| LABEL | 2 | 11.667[a] | 5.833 | 4.24 | 0.0171 |
| Textile Knowledge | 1 | 2.285[a] | 2.285 | 1.66 | 0.2007 |
| TK by LABEL | 2 | 10.307[a] | 5.154 | 3.74 | 0.0271 |
| Error* | 101 | 139.103 | 1.377 | | |

Note. * Experimental Error. [a] Type III Sum of Squares.

Table 21
Estimated Parameters including Intercept and Coefficients

| Parameter | | Estimate | T for H0: Parameter=0 | Pr > \|T\| | Std Error of Estimate |
|---|---|---|---|---|---|
| INTERCEPT | | 4.088 | 7.50 | 0.0001 | 0.545 |
| LABEL | 1 | 2.087 | 2.65 | 0.0093 | 0.786 |
| | 2 | 0.257 | 0.35 | 0.7242 | 0.727 |
| | 3 | 0.000 | . | . | . |
| Textile Knowledge | | 0.030 | 0.75 | 0.4522 | 0.039 |
| TK * LABEL | 1 | -0.145 | -2.58 | 0.0114 | 0.056 |
| | 2 | -0.029 | -0.55 | 0.5819 | 0.052 |
| | 3 | 0.000 | . | . | . |

Table 22
Means of Expensive Scores by Label Condition

| Label conditions | N | Adjusted Means* | SD | Unadjusted Means | SD |
|---|---|---|---|---|---|
| No information | 35 | 4.684 | 0.199 | 4.657 | 1.211 |
| 100% polyester | 34 | 4.353 | 0.202 | 4.353 | 1.252 |
| 100% microfiber polyester | 38 | 4.470 | 0.190 | 4.474 | 1.156 |

Note. * Means adjusted to the average Textile Knowledge.

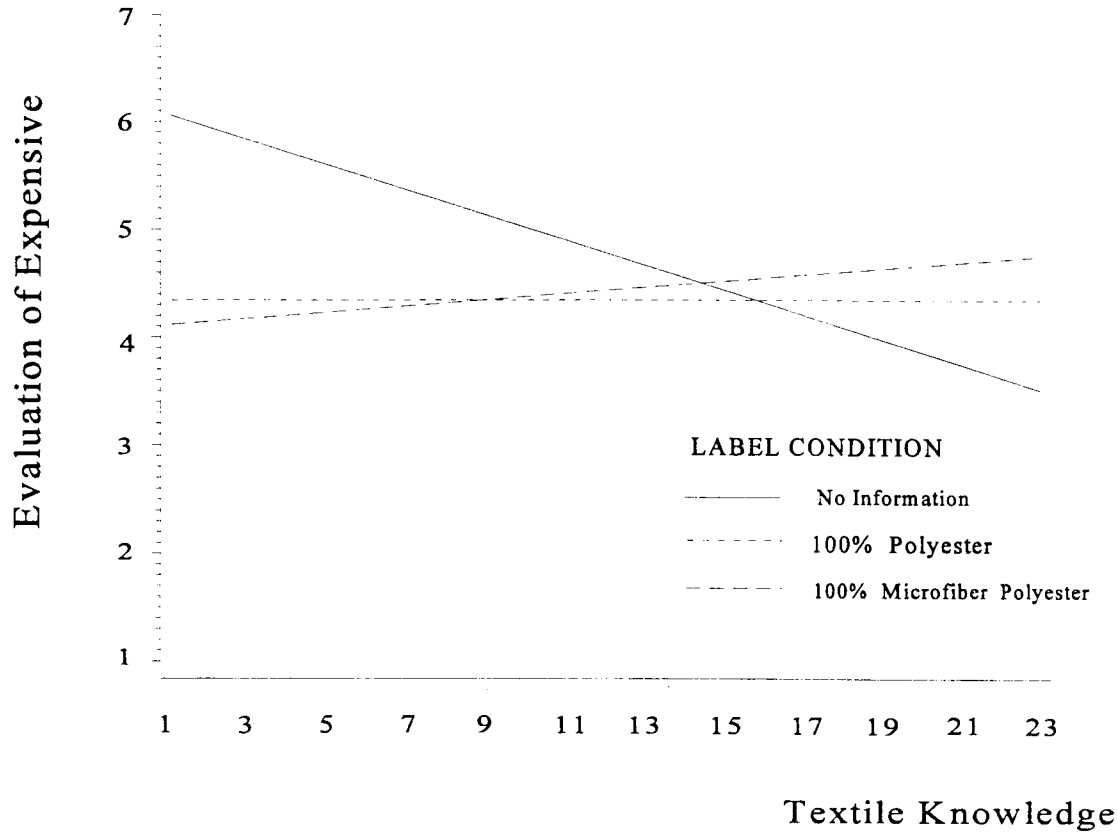


Figure 3. Estimated relationship between the level of subjects' textile knowledge and subjects' evaluation of polyester fabrics on "Expensive" at each label condition.

information condition (H8a), the level of subjects' textile knowledge (H8b), and the interaction between the label condition and the level of subjects' textile knowledge (H8c). Tables 23 and 24 show the results of testing for H8a through H8c. H8a, H8b, and H8c were not supported (see table 23). The three factors had no significant effects on subjects' evaluation about "easy to wrinkle/not easy to wrinkle".

Hypothesis 9

Hypothesis 9 stated that the subjects' evaluation of polyester fabrics about "easy to care for/not easy to care for" would be influenced by the fiber content label information condition (H9a), the level of subjects' textile knowledge (H9b), and the interaction between the label condition and the level of subjects' textile knowledge (H9c). Tables 25, 26, and 27 show the results of testing for H9a through H9c. H9a and H9c were not supported (see table 25). Only the level of subjects' textile knowledge (H9b) had a significant effect on subjects' evaluation about "easy to care for/not easy to care for" ($F(1,101) = 12.56$, $p = .0006$). Estimated coefficient of textile knowledge was 0.12 (SE = .05) (see table 26). Subjects with higher textile knowledge evaluated the fabric specimen as more easy to care for than subjects with lower textile knowledge.

Hypothesis 10

Hypothesis 10 stated that subjects' evaluation of "high quality/low quality" for polyester fabrics would be influenced by the fiber content label information condition

Table 23
Analysis of Covariance for Easy To Wrinkle

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| LABEL | 2 | 8.811[a] | 4.405 | 1.11 | 0.3326 |
| Textile Knowledge | 1 | 1.063[a] | 1.063 | 0.27 | 0.6054 |
| TK*LABEL | 2 | 2.330[a] | 1.165 | 0.29 | 0.7457 |
| Error* | 101 | 399.765 | 3.958 | | |

Note. * Experimental Error. [a] Type III Sum of Squares.

Table 24
Means of Easy to Wrinkle Scores by Label Condition

| Label conditions | N | Adjusted Means* | SD | Unadjusted Means | SD |
|---|---|---|---|---|---|
| No information | 35 | 4.377 | .3366 | 4.371 | 1.8000 |
| 100% polyester | 34 | 3.720 | .3419 | 3.706 | 2.2092 |
| 100% microfiber polyester | 38 | 3.311 | .3228 | 3.316 | 1.8903 |

Note. * Means adjusted to the average Textile Knowledge.

Table 25
Analysis of Covariance for Easy Care

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| LABEL | 2 | 8.375[a] | 4.187 | 1.89 | 0.1568 |
| Textile Knowledge | 1 | 27.870[a] | 27.870 | 12.56 | 0.0006 |
| TK*LABEL | 2 | 4.465[a] | 2.232 | 1.01 | 0.3693 |
| Error* | 101 | 224.134 | 2.219 | | |

Note. * Experimental Error. [a] Type III Sum of Squares.

Table 26
Estimated Parameters including Intercept and Coefficients

| Parameter | | Estimate (Coefficients) | T for H0: Parameter=0 | Pr > \|T\| | Std Error of Estimate |
|---|---|---|---|---|---|
| INTERCEPT | | 2.618 | 3.79 | 0.0003 | 0.692 |
| LABEL | 1 | -0.612 | -0.61 | 0.5412 | 0.998 |
| | 2 | 1.161 | 1.26 | 0.2114 | 0.923 |
| | 3 | 0.000 | . | . | . |
| **Textile Knowledge** | | **0.120** | **2.42** | **0.0175** | **0.050** |
| TK*LABEL | 1 | 0.012 | 0.17 | 0.8678 | 0.071 |
| | 2 | -0.074 | -1.12 | 0.2667 | 0.067 |
| | 3 | 0.000 | . | . | . |

Table 27
Means of Easy Care Scores by Label Condition

| Label conditions | N | Adjusted Means* | SD | Unadjusted Means | SD |
|---|---|---|---|---|---|
| No information | 35 | 3.712 | .252 | 3.743 | 1.559 |
| 100% polyester | 34 | 4.370 | .256 | 4.353 | 1.612 |
| 100% microfiber polyester | 38 | 4.170 | .242 | 4.184 | 1.522 |

Note. * Means adjusted to the average Textile Knowledge.

(H10a), the level of subjects textile knowledge (H10b), and the interaction between the label condition and the level of subjects' textile knowledge (H10c). Table 28, 29, and 30 show the results of testing for H10a through H10c. H10a and H10b were not supported (see table 28).

However, H10c was supported ($F$ (2,101) = 3.76, $p$ = .026). There was a significant effect of the interaction between the label condition and the subjects' textile knowledge on the subjects' evaluation of high quality/low quality for the fabric specimen. Figure 4 shows the effect of interaction between the label condition and the level of textile knowledge. Under the label condition "no information", the level of subjects' textile knowledge had a negative relationship with the score of subjects' evaluation about high quality/low quality (see table 29 & figure 4). Subjects with lower textile knowledge evaluated the fabric specimen as higher quality than subjects with higher textile knowledge. However, under the label conditions of "100% polyester" and "100% microfiber polyester", the level of subjects' textile knowledge had a positive relationship with the score of subjects' evaluation about high quality/low quality (see table 29 & figure 4). Subjects with lower textile knowledge evaluated the fabric specimen as lower quality than subjects with higher textile knowledge.

Hypothesis 11

Hypothesis 11 stated that subjects' evaluation of polyester fabrics about "attractive/not attractive" would be influenced by the fiber content label information condition (H11a), the level of subjects textile knowledge (H11b), and the interaction between the label condition and the level of subjects' textile knowledge (H11c).

Table 28
Analysis of Covariance for Quality

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| LABEL | 2 | 6.145[a] | 3.073 | 2.74 | 0.0692 |
| Textile Knowledge | 1 | 0.759[a] | 0.759 | 0.68 | 0.4124 |
| TK*LABEL | 2 | 8.428[a] | 4.214 | 3.76 | 0.0266 |
| Error* | 101 | 113.129 | 1.120 | | |

Note. * Experimental Error. [a] Type III Sum of Squares.

Table 29
Estimated Parameters including Intercept and Coefficients

| Parameter | | Estimate (Coefficients) | T for H0: Parameter=0 | Pr > \|T\| | Std Error of Estimate |
|---|---|---|---|---|---|
| INTERCEPT | | 4.300 | 8.75 | 0.0001 | 0.491 |
| LABEL | 1 | 1.326 | 1.87 | 0.0644 | 0.709 |
| | 2 | -0.154 | -0.24 | 0.8145 | 0.656 |
| | 3 | 0.000 | . | . | . |
| Textile Knowledge | | 0.056 | 1.58 | 0.1180 | 0.035 |
| TK*LABEL | 1 | -0.119 | -2.34 | 0.0214 | 0.051 |
| | 2 | 0.001 | 0.01 | 0.9884 | 0.047 |
| | 3 | 0.000 | . | . | . |

Table 30
Means of Quality Scores by Label Condition

| Label conditions | N | Adjusted Means* | SD | Unadjusted Means | SD |
|---|---|---|---|---|---|
| No information | 35 | 4.815 | .179 | 4.800 | 1.256 |
| 100% polyester | 34 | 4.874 | .182 | 4.853 | 1.019 |
| 100% microfiber polyester | 38 | 5.020 | .172 | 5.026 | 0.972 |

Note. * Means adjusted to the average Textile Knowledge.

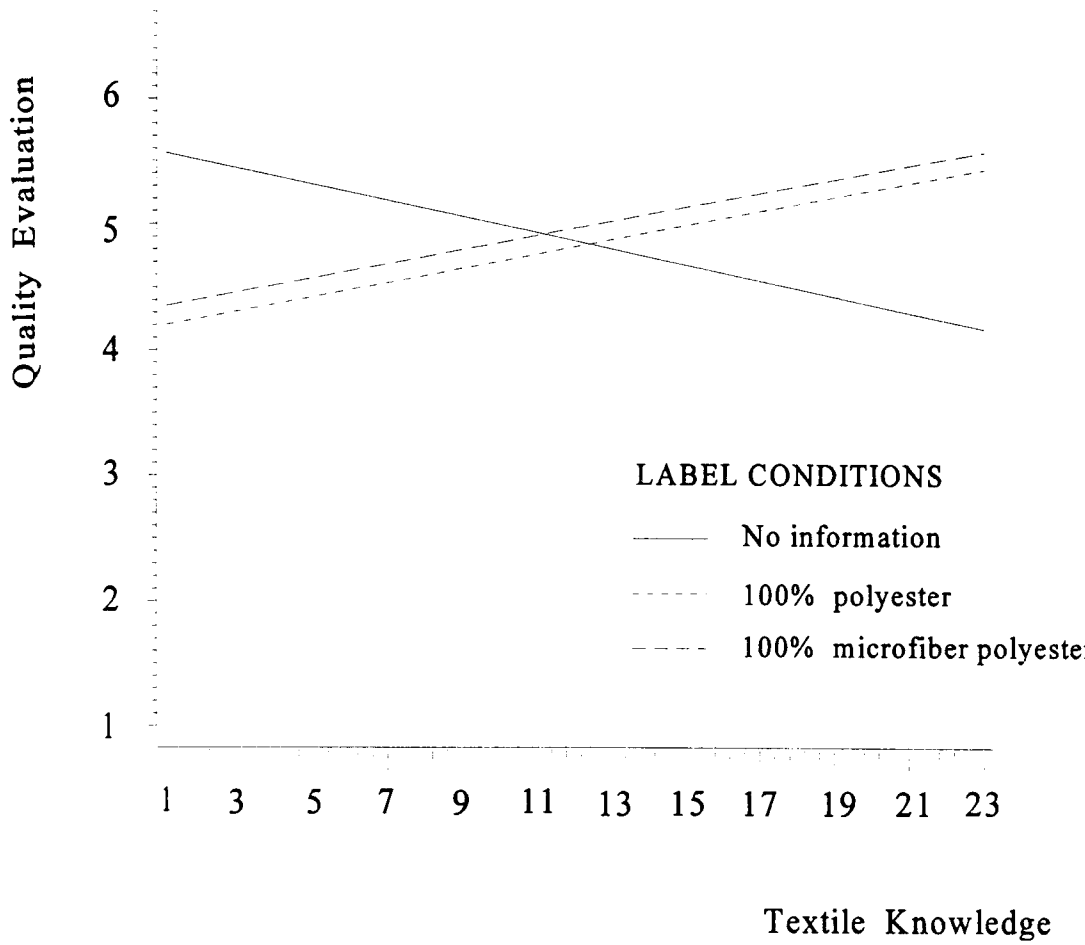


Figure 4. Estimated relationship between the level of subjects' textile knowledge and subjects' evaluation of polyester fabrics on "Quality" at each label condition.

Tables 31, 32, and 33 show the results related to H11a, H11b, and H11c. H11a was supported. The label condition had a significant effect on the subjects' evaluation of attractive/not attractive ($F(2,101) = 4.12$, $p = .02$) (see table 31). Table 33 shows the means scores of the subjects' evaluation of attractive/not attractive by the fiber content label conditions.

There was a significant effect of the interaction between the label condition and the subjects' textile knowledge ($F(2,101) = 4.81$, $p = .01$) (see table 31) on the subjects' evaluation of "attractive/not attractive". Figure 5 shows the effect of the interaction on the subjects' evaluation about attractive/not attractive. Under the label condition of "No information", subjects with lower textile knowledge evaluated the fabric specimen more attractive than subjects with higher textile knowledge. However, under the label condition of "100% polyester" and "100% microfiber polyester", subjects with higher textile knowledge evaluated the fabric specimen slightly more attractive than subjects with lower textile knowledge.

Hypothesis 12

Hypothesis 12 stated that subjects' evaluation of polyester fabrics about "likely to buy/not likely to buy" would be influenced by the fiber content label information condition (H12a), the level of subjects textile knowledge (H12b), and the interaction between the label condition and the level of subjects' textile knowledge (H12c). Tables 34 and 35 show the results of testing for H12a through H12c. H12a, H12b, and H12c were not supported (see table 34).

Table 31
Analysis of Covariance for Attractive

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| LABEL | 2 | 13.136[a] | 6.568 | 4.12 | 0.0191 |
| Textile Knowledge | 1 | 5.206[a] | 5.206 | 3.26 | 0.0739 |
| TK*LABEL | 2 | 15.354[a] | 7.677 | 4.81 | 0.0101 |
| Error* | 101 | 161.189 | 1.596 | | |

Note. * Experimental Error. [a] Type III Sum of Squares.

Table 32
Estimated Parameters including Intercept and Coefficients

| Parameter | | Estimate (Coefficients) | T for H0: Parameter=0 | Pr > \|T\| | Std Error of Estimate |
|---|---|---|---|---|---|
| INTERCEPT | | 4.048 | 6.90 | 0.0001 | 0.586 |
| LABEL | 1 | 2.026 | 2.39 | 0.0186 | 0.847 |
| | 2 | -0.087 | -0.11 | 0.9115 | 0.783 |
| | 3 | 0.000 | . | . | . |
| Textile Knowledge | | 0.105 | 2.50 | 0.0140 | 0.042 |
| TK*LABEL | 1 | -0.170 | -2.80 | 0.0061 | 0.061 |
| | 2 | -0.018 | -0.31 | 0.7539 | 0.057 |
| | 3 | 0.000 | . | . | . |

Table 33
Means of Attractive Scores by Label Condition

| Label conditions | N | Adjusted Means* | SD | Unadjusted Means | SD |
|---|---|---|---|---|---|
| No information | 35 | 5.244 | 0.214 | 5.229 | 1.352 |
| 100% polyester | 34 | 5.092 | 0.217 | 5.059 | 1.413 |
| 100% microfiber polyester | 38 | 5.408 | 0.205 | 5.421 | 1.222 |

Note. * Means adjusted to the average Textile Knowledge.

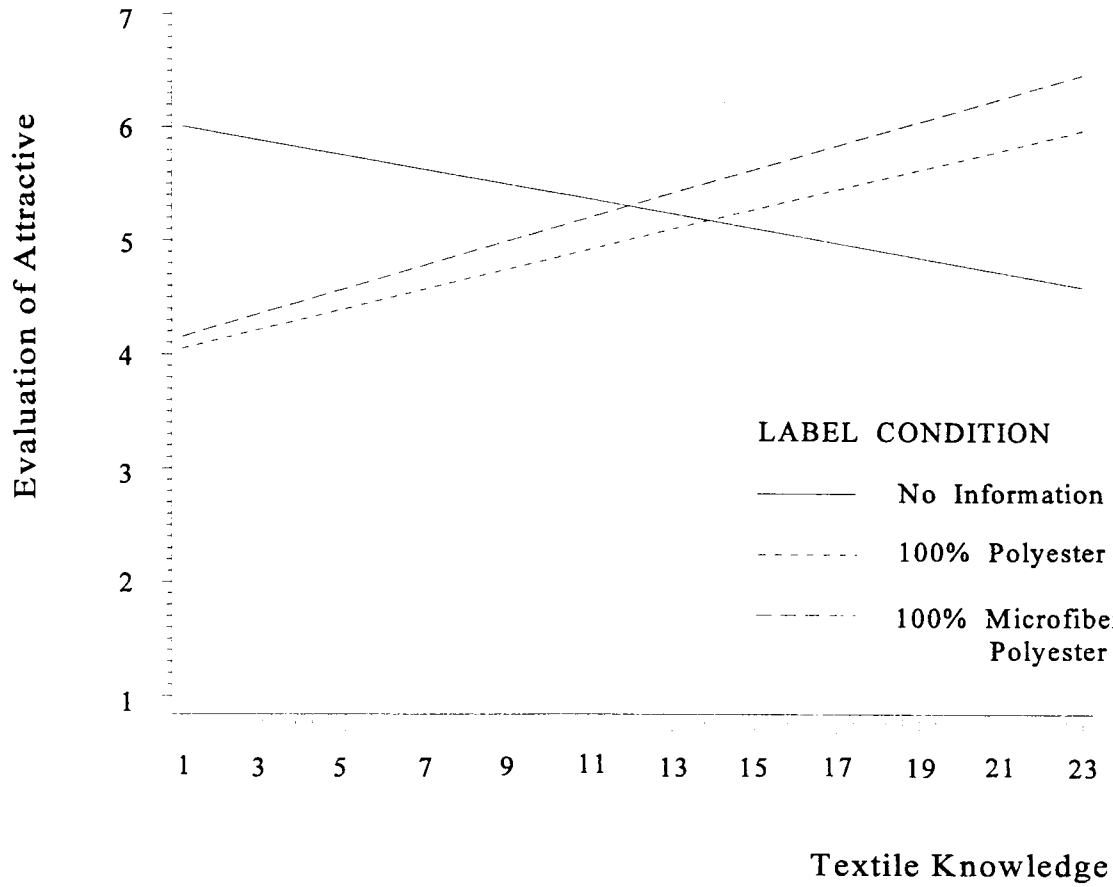


Figure 5. Estimated relationship between the level of subjects' textile knowledge and subjects' evaluation of polyester fabrics on "Attractive" at each label condition.

Table 34
Analysis of Covariance for Buying Intention

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| LABEL | 2 | 4.395[a] | 2.198 | 0.82 | 0.4417 |
| Textile Knowledge | 1 | 3.368[a] | 3.368 | 1.26 | 0.2638 |
| TK*LABEL | 2 | 5.754[a] | 2.877 | 1.08 | 0.3440 |
| Error* | 101 | 269.463 | 2.668 | | |

Note. * Experimental Error. [a] Type III Sum of Squares.

Table 35
Means of Buying Intention Scores by Label Condition

| Label conditions | N | Adjusted Means* | SD | Unadjusted Means | SD |
|---|---|---|---|---|---|
| No information | 35 | 4.436 | .276 | 4.429 | 1.596 |
| 100% polyester | 34 | 4.317 | .280 | 4.294 | 1.784 |
| 100% microfiber polyester | 38 | 4.807 | .265 | 4.816 | 1.540 |

Note. * Means adjusted to the average Textile Knowledge.

Hypothesis 13

Hypothesis 13 stated that subjects' evaluation of polyester fabrics about "durable/not durable" would be influenced by the fiber content label information condition (H13a), the level of subjects' textile knowledge (H13b), and the interaction between the label condition and the level of subjects' textile knowledge (H13c). Tables 36, 37, and 38 show the results of testing for H13a through H13c. H13a and H13c were not supported (see tables 36 & 37). However, H13b was supported ($F(1,101) = 5.84$ $p = .018$). The subjects' textile knowledge had a significant effect on subjects' evaluation of durable/not durable (see table 37). Subjects with higher textile knowledge evaluated the fabric specimen as more durable than subjects with lower textile knowledge.

Hypothesis 14

Hypothesis 14 stated that the subjects' evaluation of polyester fabrics about "soft/not soft" would be influenced by the fiber content label information condition (H14a), the level of subjects textile knowledge (H14b), and the interaction between the label condition and the level of subjects' textile knowledge (H14c). Tables 39 and 40 show the results of testing for H14a through H14c. H14a, H14b, and H14c were not supported (see table 39). The three factors had no significant influence on subjects' evaluation of polyester fabrics about soft/not soft.

According to results of testing H6, H9, and H13, textile knowledge was found to influence the subjects' evaluation of "fashionable/not fashionable", "easy to care/not easy to care", and "durable/not durable". Subjects with higher textile knowledge

Table 36
Analysis of Covariance for Durable

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| LABEL | 2 | 0.85[a] | 0.42652432 | 0.23 | 0.7934 |
| Textile Knowledge | 1 | 10.73[a] | 10.73102648 | 5.84 | 0.0175 |
| TK*LABEL | 2 | 1.49[a] | 0.74487408 | 0.41 | 0.6679 |
| Error* | 101 | 185.67 | 1.83833749 | | |

Note. * Experimental Error. [a] Type III Sum of Squares.

Table 37
Estimated Parameters including Intercept and Coefficients

| Parameter | | Estimate (Coefficients) | T for H0: Parameter=0 | Pr > \|T\| | Std Error of Estimate |
|---|---|---|---|---|---|
| INTERCEPT | | 3.836 | 6.09 | 0.0001 | 0.629 |
| LABEL | 1 | 0.589 | 0.65 | 0.5184 | 0.909 |
| | 2 | 0.433 | 0.52 | 0.6072 | 0.840 |
| | 3 | 0.000 | . | . | . |
| **Textile Knowledge** | | **0.091** | **2.02** | **0.0462** | **0.045** |
| TK * LABEL | 1 | -0.058 | -0.90 | 0.3708 | 0.065 |
| | 2 | -0.031 | -0.51 | 0.6137 | 0.061 |
| | 3 | 0.000 | . | . | . |

Table 38
Means of Durable Scores by Label Condition

| Label conditions | N | Adjusted Means* | SD | Unadjusted Means | SD |
|---|---|---|---|---|---|
| No information | 35 | 4.849 | .229 | 4.857 | 1.458 |
| 100% polyester | 34 | 5.052 | .233 | 5.029 | 1.381 |
| 100% microfiber polyester | 38 | 5.015 | .220 | 5.026 | 1.305 |

Note. * Means adjusted to the average Textile Knowledge.

Table 39
Analysis of Covariance for Soft

| Source | DF | Sum of Squares | Mean Square | F Value | Pr > F |
|---|---|---|---|---|---|
| LABEL | 2 | 2.108[a] | 1.054 | 2.18 | 0.1184 |
| Textile Knowledge | 1 | 1.063[a] | 1.063 | 2.20 | 0.1413 |
| TK*LABEL | 2 | 2.555[a] | 1.277 | 2.64 | 0.0762 |
| Error* | 101 | 48.839 | 0.484 | | |

Note. * Experimental Error. [a] Type III Sum of Squares.

Table 40
Means of Soft Scores by Label Condition

| Label conditions | N | Adjusted Means* | SD | Unadjusted Means | SD |
|---|---|---|---|---|---|
| No information | 35 | 6.462 | .118 | 6.457 | .657 |
| 100% polyester | 34 | 6.511 | .119 | 6.500 | .748 |
| 100% microfiber polyester | 38 | 6.467 | .113 | 6.474 | .725 |

Note. * Means adjusted to the average Textile Knowledge.

subjects were found to evaluate the fabric specimen as more fashionable than subjects with lower textile knowledge. The fabric specimen was similar to sandwashed rayon or velvet. Furthermore, in recent years, microfiber polyester, sandwashed rayon and velvet have been used for fashion apparel. Therefore, subjects with higher textile knowledge might integrate this fact so that they evaluate the fabric specimen as more fashionable than subjects with lower textile knowledge.

Subjects with higher textile knowledge also evaluated the fabric specimen as more easy to care for and more durable than subjects with lower textile knowledge. The fabric specimen was machine washable and synthetic. Because subjects with higher textile knowledge knew that machine washable and synthetic fabrics are easy to care for and durable, they were more likely to evaluate the fabric as easy to care for and durable than subjects with lower textile knowledge.

According to results of testing H6, H9, and H13, the fiber content labels were not found to affect subjects' evaluation of "fashionable/not fashionable", "easy to care for/not easy to care for", and "durable/not durable". The fiber content label did not influence subjects' evaluation of fashionable/not fashionable, although Workman (1990) found a hypothetical polyester jean perceived as less fashionable than a hypothetical cotton jean. This might suggest that the fiber content information is less of a factor in whether or not people perceive a fabric or clothing as fashionable when an object is actually present.

The fiber content label did not influence subjects' evaluation of "easy to care for/not easy to care for" and "durable/not durable". Although, the "care" and "durability" of fabrics usually depends upon the fiber content and fabric structure.

Apparently, subjects did not depend on fiber content label to evaluate "easy to care for". They may depend on only the sensory (tactile and visual) information of the fabric specimen.

According to results of testing H7, H10, and H11, the effect of interaction between the fiber content label and the level of subjects' textile knowledge were found to influence the subjects' evaluation of "expensive/not expensive", "high quality/low quality", and "attractive/not attractive".

Under the condition of "no fiber content label information", subjects with lower textile knowledge were more likely to evaluate the fabric specimen as "more expensive", "high quality", and "more attractive" than subjects with higher textile knowledge. Under the condition of "100% polyester" and "100% microfiber polyester", subjects with lower textile knowledge were more likely to evaluate the fabric specimen as "less expensive", "low quality", and "less attractive" than subjects with higher textile knowledge. As predicted, subjects with lower textile knowledge were more likely to be influenced by the stereotype of polyester fiber (e.g., cheap, ugly, out of style, low quality) than subjects with higher textile knowledge. Textile knowledge influenced the effect of the fiber content label condition on subjects' evaluation of expensive/not expensive. Subjects with higher textile knowledge were less likely to be effected by the label of stereotyped fiber (i.e., "polyester", "microfiber polyester") than subjects with lower textile knowledge.

The fiber content information was found to influence the subjects' evaluation of "attractive/not attractive" of fabric specimen. Subjects with lower textile knowledge evaluated the fabric specimen without the fiber content label information as more

expensive and attractive than the fabric specimen with the label of "100% polyester" or "100% microfiber polyester". It appears the stereotypic image of polyester as being "cheap" may have influenced their evaluation of expensive/not expensive for the fabric specimen. This result was predicted by past researchers (Alba & Hutchinson, 1987; Sujan, 1985; Maheswaran, 1994). However, there was no difference between "100% polyester" and "100% microfiber polyester". The sub-category, "microfiber polyester", apparently was not far enough from "polyester" in subjects' minds to be disattached from the image of polyester.

According to results of testing H8, H12, and H14, subjects' evaluations of "easy to wrinkle/not easy to wrinkle", "likely to buy clothing made from it/not likely to buy", and "soft" for the fabric specimen was not influenced by the fiber content label information, textile knowledge, and the interaction. In order to evaluate "easy to wrinkle/not easy to wrinkle" for the fabric specimen, subjects were observed to try to wrinkle the fabric specimen rather than depending on the label information or their own knowledge. Furthermore, although some of subjects had the image of polyester being rough and itchy, subjects evaluated the fabric specimen with "100% polyester" or "100% microfiber polyester" no less soft than the fabric without fiber content label information. Subjects may have relied on the physical attributes of the fabric specimen for the evaluation of softness rather than the fiber content label. Because there are so many polyester fabrics with various physical characteristics, subjects may know the fiber content label of "polyester" is not the reliable indicator of the "softness" of fabrics. Subjects' evaluation of "likely to buy clothing made from it/not likely to buy" was also not influenced by the fiber content information because the fiber content

might not be the main factors influence subjects' buying intention of clothing. Style and price of the clothing may be more likely to be main factors that influence a person's intention of buying clothing rather than the fiber content. According to Davis (1987), style and price were the two most considered attributes of blouses when female college students participated in a simulated shopping and purchase. Furthermore, in the study of Workman (1990), fiber content was rated as the least important factor when college students considered purchasing a pair of jeans.

# Summary, Implications, Limitations, and Recommendations

## Summary

When people encounter an object/person, they initially or automatically attempt to categorize the object/person (Fiske & Neuberg, 1990). The term "categorization" is used to describe humans' way of mentally organizing and storing information from the world around them. The way people mentally categorize this information is a clue to how they perceive the world or stimuli.

The purpose of the present study was to better understand categorization of textiles and factors that affect this categorization process. Perceptions and subsequent categorization of an object/person have been found to be influenced by several factors: (1) attributes of the object/person, (2) characteristics of the perceiver, and (3) attributes of the situation or context. The present study focused on the effects of object attributes (i.e., fabric structures including woven and knitted) and perceivers' characteristics (i.e., the level of textile knowledge) on the categorization of textiles. It was predicted that the categorization of fabric descriptions would vary depending on the fabric structure and individual's textile knowledge.

Furthermore, stereotyping can be said to be a byproduct of categorization. People categorize every available object/person or information into various groups, and, then, often attach stereotypes to some of the groups. "A stereotype is an exaggerated belief associated with a category whether it is favorable or unfavorable" (Allport, 1954, p.191). Discrepancies often exist between stereotypes of the category and attributes of a member of the category. However, a stereotype can influence the

way information about groups and group members is processed (Hamilton, Stroessner, & Driscoll, 1994).

Polyester fibers possess a negative stereotype of being cheap, tasteless, and of low quality (Gill, 1991; Workman, 1990). In actuality, fabrics made from polyester, particularly microfiber polyester, have favorable characteristics. However, stereotypes tend to bias information processing in ways that maintain and preserve the existing belief system. Therefore, the present study investigated the effect of fiber content label information (e.g., "polyester", "microfiber polyester") on perceptions and evaluations of polyester (stereotypic) fabrics. The present study also examined the interaction between perceiver characteristics (textile knowledge) and fiber content information on perceptions and evaluations of polyester (stereotypic) fabrics.

This study included the development of the Textile Knowledge Inventory (TKI) and two experiments. In this study, textile knowledge was defined as the accurate information which is stored in memory and is relevant to textiles. Furthermore, this study required an inventory measuring individual's textile knowledge. Because of the absence of an inventory to measure individual's objective textile knowledge, the TKI was developed. Interviews conducted with four university clothing and textiles researchers and a review of information covered in basic textiles text book revealed that, from a conceptual perspective, textile knowledge consists of information about fibers, fabrics, finishes, color applications, and textile regulations. Fibers, fabrics, and finishes each have three dimensions: terminology, properties, and usage and care. From this conceptual analysis, 38 preliminary true-false questions were initially generated for the TKI.

To determine if the scale discriminated among levels of textile knowledge and to conduct item-analysis, 116 students from across campus (32 students had taken at least one textile course) completed the preliminary questionnaire. None of the 38 items were answered either correctly or incorrectly by all subjects. Scale items were scored as either 0 (incorrect answer) or 1 (correct answer). Cross Product Ratios were calculated to investigate item-to-item correlations. Two scale items were significantly correlated with only one item out of 37 items. Therefore, these two items were considered for deletion. Then, item-to-total correlations of the 38 items were investigated. The outcome of each item was either 0 (incorrect) or 1 (correct); total score ranged from 0 to 38. According to Point Biserial Correlation Coefficients (PBCC), the same two scale items also had insignificant item-to-total correlations. Therefore, these items were deleted from the scale, resulting in a 36-item scale. However, to create a practical and useful scale, taking into consideration results of the item-to-item analysis and PBCC, 15 items were subsequently deleted, resulting in a 23-item TKI.

To check construct validity through the experimental manipulation method, students enrolled in an introductory textiles course completed the inventory at the beginning of the term and again at the end of the term. Inventory scores, compared by a paired *t*-test, were significantly different ($t = 7.57$, 23 df, $p < .01$). Students' scores on the inventory were lower (mean = 12.08, sd = 4.26) at the beginning of the term than they were at the end of the term (mean = 18.67, sd = 2.28). Thus, the inventory was considered to have construct validity.

Test-retest and internal consistency methods were used to check reliability of the inventory. A questionnaire including TKI was administered to 15 student subjects. The same questionnaire was then administrated to the same subjects two days later. The coefficient of correlation between the two scores ($r = .819$, $p < .01$) indicated that the scores were significantly correlated: the reliability of the inventory over time was supported. Internal consistency was calculated by Kuder-Richardson-20 (KR-20) instead of coefficient alpha (Cronbach alpha) because the scores of the each scale item were either 0 or 1. Using the inventory scores of 39 subjects, KR-20 coefficient for the TKI was .80; revealing reasonable internal consistency. This TKI was used to measure subjects' textile knowledge for experiment 1 and experiment 2.

The objective of first experiment was to investigate whether fabric structure and level of textile knowledge affect descriptions of fabric specimens. A non-probability convenience sampling method was used. Ninety three female college students participated in the first experiment. Subjects were randomly assigned to one of the experimental treatments (i.e., two fabric structures: woven or knitted). The independent variables were textile knowledge and fabric structure. The dependent variable was the subjects' description of a fabric specimen. Subjects were given a questionnaire (Appendix C) including a fabric specimen randomly selected from two fabric specimens (i.e., a white cotton woven, a white cotton knitted fabric) and an open ended question asking subjects to describe the fabric specimen. Subjects then completed the Textile Knowledge Inventory which was developed to measure subjects' objective textile knowledge (Appendix B).

Subjects were classified into high or low textile knowledge groups based upon their scores on the TKI. Next, descriptive responses to the open-ended question were content analyzed using a taxonomy developed by burns, et al. (1995) including the following nine categories: (1) texture, (2) fabric characteristics, (3) end-use, (4) fabric name, (5) fiber content, (6) appearance, (7) weight, (8) extended inferences, and (9) affective responses. The unit of content analysis was words or phrases. Two coders performed this procedure independently and inter-rater reliability was calculated by a percentage of agreement; the inter-rater reliability was 96.36%. After counting the frequency of each category for each subject, each absolute frequency was changed into a relative-frequency (proportion). Independent variables were the level of textile knowledge (high or low) and fabric structure (knitted or woven). To investigate the effect of fabric structure on categorization (Hypothesis 1), Multivariate Multi-sample Rank Sum Test (MMRST) which is a Multivariate Multisample Non-Parametric Test was employed (Schwertman, 1985). To investigate whether there was a difference between subjects with high textile knowledge and subjects with low knowledge on which fabric features were generally used to categorize fabrics (Hypothesis 2), MMRST was also used. Categorization of subjects' descriptions of fabrics was found to differ as a function of fabrics' structures ($L_N$=23.02, 8 d.f., $p<.01$) and subjects' textile knowledge ($L_N$=26.12, 8 d.f., $p<.001$). Compared to subjects in the knitted fabric, descriptions by subjects in the woven were more likely to be classified as "appearance" than as any other categories. Descriptions by subjects in the knitted fabric group were more likely to be classified as "fiber content" and "texture" categories than subjects in the woven fabric group. Compared to subjects with higher

textile knowledge, descriptions by subjects with lower textile knowledge were more likely to be classified as "appearance" category than other categories. However, compared to subjects with lower textile knowledge, descriptions by subjects with higher textile knowledge were more likely to be classified as "fabric name" category than other categories.

The objective of the second experiment was to investigate whether level of textile knowledge and fiber content label information caused differences in descriptions and evaluations of fabric specimens. Furthermore, the effect of the interaction between textile knowledge and fiber content label information on evaluations of fabrics was investigated. A non-probability convenience sampling method was used. One-hundred and seven female college students participated. Subjects were randomly assigned to one of the experimental treatments: three fiber content information label conditions including "100% polyester", "100% microfiber polyester", and no information. The independent variables are levels of subjects' textile knowledge and fiber content label information. The dependent variables are subjects' descriptions and evaluations of a fabric specimen. Subjects were given a questionnaire (Appendix D) which included an assessment of their perceptions of polyester, a fabric specimen with questions to describe and evaluate the fabrics, the TKI, and questions asking about their demographic characteristics (i.e., age, major at university, and ethnic identity). A solid white fabric, made from polyester microfiber, was selected for this experiment. All fabric specimens were taken from the same fabric and were labeled as 100% polyester, 100% microfiber polyester, or included no fiber content information.

The descriptions of fabric specimens were content analyzed. First, the descriptions were coded in the same manner and using the same nine categories as in the first experiment. Two coders independently coded the data and then inter-rater reliability was investigated. The inter-rater reliability was 94.77%. With the same procedure as in the first experiment, each subject's response was coded into an absolute-frequency vector. Then, the absolute-frequency vector was changed into a relative frequency vector (a proportion vector). In order to investigate whether the mental representation or stereotype of polyester influenced the fabric categorization by comparing the three label conditions, MMRST was used. The independent variable was the label condition and dependent variable was the proportion vector. Results indicated that the fiber content label information (i.e., 100% polyester, 100% microfiber polyester, or no label information) did not influence the categorization of subjects' descriptions of polyester fabrics ($L_N$=16.61, 16 d.f., $p$>.1). Either subjects described the fabric based upon characteristics of the fabric specimen with disregard to the label or stereotypic impressions of polyester, in general, were not transferred to impressions of this fabric specimen.

To investigate the effects of textile knowledge and fiber content information on subjects' evaluations of fabric specimens, Chi-square (H4 and H5) and Analysis of Covariance (H6 through H12) were employed. The subjects' evaluation of synthetic/natural for polyester fabric was found to be influenced by the level of subjects' textile knowledge (Chi-square(2, $N$ = 107) = 10.144, $p$=.006). Subjects with high textile knowledge were more likely to evaluate the fabric as "synthetic". The subjects' evaluation of machine washable/dry cleaning for polyester fabric was found

to be influenced by the level of subjects' textile knowledge (Chi-square(2, N = 107) = 6.39, p=041). Subjects with high textile knowledge were more likely to evaluate the fabric as "machine washable". The fiber content label information did not influence the subjects' evaluation of synthetic/natural and machine washable/dry cleaning. Because some subjects might perceive the terms "synthetic/natural" as synthetic/natural feeling rather than synthetic material/natural material, the fiber content label did not influenced the subjects' evaluation of "synthetic/natural". Regardless of the label condition, the percentage of subjects evaluated the fabric specimen as "machine washable" was almost same as the percentage of subjects evaluated the specimen as "dry cleaning". For each label condition, approximately 45% of subjects evaluated the specimen as "dry cleaning". Because some of the subjects may have recognized that the fabric specimen has similar texture and appearance to sandwashed rayon or velvet which have to be dry cleaned and then they were not sure about the cleaning method, they selected the safe way to clean fabrics.

Textile knowledge was found to influence the subjects' evaluation of polyester fabrics about "fashionable/not fashionable" ($F$ (1, 101) = 5.12, $p$ = .026), "easy to care for/not easy to care for" (F(1, 101) = 12.56, $p$ = .0006) and "durable/not durable" (F(1,101) = 5.84, $p$ = .018). Subjects with higher textile knowledge were found to evaluate the fabric specimen as more fashionable than subjects with lower textile knowledge. Subjects with higher textile knowledge were found to evaluate the fabric specimen as more easy to care for and durable than subjects with lower textile knowledge. Subjects with higher textile knowledge knew that the fabric specimen was machine washable and synthetic and that machine washable and synthetic fabrics are

easy to care for and durable. Therefore, they were more likely to evaluate the fabric as easy to care for and durable than subjects with lower textile knowledge.

The interaction between label condition and the level of subjects' textile knowledge was found to influence the subjects' evaluation of polyester fabric about "expensive/not expensive" ($F(2,101) = 3.74$, $p=.027$), "high quality/low quality" ($F(2,101) = 3.76$, $p=.026$), and "attractive/not attractive" ($F(2,101) = 4.12$, $p=.02$). Under the label condition of "no information", subjects with lower level of textile knowledge evaluated the fabric specimen as higher quality, more attractive, and slightly more expensive than subjects with higher level of textile knowledge. Under two label conditions of "100% polyester" and "100% micro fiber polyester", subjects with lower textile knowledge evaluated the fabric specimen as lower quality, less attractive, and slightly less expensive than subjects with higher textile knowledge. The stereotypic images of polyester (e.g., "cheap", "low quality", and "unattractive"), influenced the subjects' evaluations of the fabric specimen. However, the level of textile knowledge tended to influence the way of the stereotype influencing the subjects' evaluation. Subjects with lower textile knowledge were more likely to be influenced by the stereotype of polyester than subjects with higher textile knowledge.

In summary, this study included the development of Textile Knowledge Inventory and two experiments which tested 14 hypotheses. Table 41 shows the summary of the results of testing the hypotheses.

Table 41
Summary of Testing Hypotheses.

| Hypotheses | Results | Statistics | |
|---|---|---|---|
| Experiment 1 | | | |
| H1 | Supported | $L_{N(8\ d.f.)} = 23.02$, | $p < .01$ |
| H2 | Supported | $L_{N(8\ d.f.)} = 26.12$, | $p < .001$ |
| Experiment 2 | | | |
| H3 | Not supported | $L_{N\ (16\ d.f.)} = 16.61$, | $p > .1$ |
| H4a | Not supported | $x^2_{(4\ d.f.)} = 3.707$, | $p = .447$ |
| H4b | Supported | $x^2_{(2\ d.f.)} = 10.144$, | $p = .006$ |
| H5a | Not supported | $x^2_{(4\ d.f.)} = 0.338$, | $p = .987$ |
| H5b | Supported | $x^2_{(2\ d.f.)} = 6.390$, | $p = .041$ |
| H6a | Not supported | $F_{2,101} = 0.50$, | $p = .609$ |
| H6b | Supported | $F_{1,101} = 5.12$, | $p = .026$ |
| H6c | Not supported | $F_{2,101} = 1.04$, | $p = .358$ |
| H7a | Supported | $F_{2,101} = 4.24$, | $p = .017$ |
| H7b | Not supported | $F_{1,101} = 1.66$, | $p = .200$ |
| H7c | Supported | $F_{2,101} = 3.74$, | $p = .027$ |
| H8a | Not supported | $F_{2,101} = 1.11$, | $p = .333$ |
| H8b | Not supported | $F_{1,101} = 0.27$, | $p = .605$ |
| H8c | Not supported | $F_{2,101} = 0.29$, | $p = .746$ |
| H9a | Not supported | $F_{2,101} = 1.89$, | $p = .157$ |
| H9b | Supported | $F_{1,101} = 12.56$, | $p = .0006$ |
| H9c | Not supported | $F_{2,101} = 1.01$, | $p = .369$ |
| H10a | Not supported | $F_{2,101} = 2.74$, | $p = .069$ |
| H10b | Not supported | $F_{1,101} = 0.68$, | $p = .412$ |
| H10c | Supported | $F_{2,101} = 3.76$, | $p = .026$ |
| H11a | Supported | $F_{2,101} = 4.12$, | $p = .019$ |
| H11b | Not supported | $F_{1,101} = 3.26$, | $p = .074$ |
| H11c | Supported | $F_{2,101} = 4.81$, | $p = .010$ |
| H12a | Not supported | $F_{2,101} = 0.82$, | $p = .442$ |
| H12b | Not supported | $F_{1,101} = 1.26$, | $p = .264$ |
| H12c | Not Supported | $F_{2,101} = 1.08$, | $p = .344$ |
| H13a | Not supported | $F_{2,101} = 0.23$, | $p = .793$ |
| H13b | Supported | $F_{1,101} = 5.84$, | $p = .012$ |
| H13c | Not supported | $F_{2,101} = 0.41$, | $p = .668$ |
| H14a | Not supported | $F_{2,101} = 2.18$, | $p = .118$ |
| H14b | Not supported | $F_{1,101} = 2.20$, | $p = .141$ |
| H14c | Not supported | $F_{2,101} = 2.64$, | $p = .076$ |

# Implications

## Theoretical Implications

It has been suggested by researchers that the categorization of objects is influenced by objects' (target person's) attributes (Behling & Williams, 1991; Reed & Blunk, 1990), and characteristics of the perceiver (Rowold, 1984; Stangor et al., 1992). The overall goal of this project was to investigate whether this premise could be applied to categorization of fabrics. The results of this study partially supported the premise. In this study, categorization of subjects' description of fabrics was investigated to better understand the categorization of fabrics. The first experiment demonstrated that categorization of subjects' description of the fabric specimen was influenced by the fabric structure. According to researchers (Schutz & Philips, 1976; Winakor et al., 1980), attributes of fabrics have been found to influence the categorization and perception of fabrics. In this study, fabric structure was selected and investigated as a factor influencing categorization of fabrics and was found to influence the categorization of subjects' description of the fabric specimen. Therefore, it was supported that categorization of fabrics is a function of attributes of fabrics and fabric structure is an attribute of fabrics influencing the categorization.

The first experiment also demonstrated that categorization of subjects' descriptions of the fabric specimen was influenced by subjects' textile knowledge. Perceiver's knowledge in a specific domain has been found to influence perception and the categorization of objects/target persons (Tanaka & Taylor, 1991; Wauer, 1965). Furthermore, Wauer (1965) demonstrated that textile knowledge might influence the

categorization of subjects' descriptions of fabrics. However, Wauer (1965) did not measure the subjects' textile knowledge and assumed that home economists possessed high textile knowledge and consumers possessed low textile knowledge. Furthermore, she used descriptive statistics rather than inferential statistics; she showed percentages and did not conduct any inferential statistical test. Her suggestion that textile knowledge caused the difference between categorization of home economists' description of fabrics and categorization of consumers' description of fabrics was not statistically supported. In this study, subjects' textile knowledge was actually measured and an inferential statistical test (MMRST) was conducted. Textile knowledge was found to influence categorization of subjects' descriptions of the fabric specimen. Therefore, it was supported that categorization of fabrics to be a function of perceiver's characteristics in that perceiver's textile knowledge is a characteristic of the perceiver influencing categorization of fabrics. Furthermore, it was predicted that subjects with lower textile knowledge would be more likely to use perceptual attributes to describe the fabric specimen than subjects with higher textile knowledge (Alba & Hutchinson, 1987; Wauer, 1965). The results of first experiment partially supported this prediction. Compared to high textile knowledge subjects, low textile knowledge subjects were more likely to use "appearance" (a perceptual attribute) than other categories. Compared to low textile knowledge subjects, high textile knowledge subjects were more likely to use "fabric name" than other categories.

Past research found that stereotypes influence the perception of objects or the way in which information of objects is processed by perceiver (Cohen, 1981; Hamilton, Stroessner, & Driscoll, 1994; Sagar & Schofield, 1980; Word, Zanna, &

Cooper, 1974). Stereotyping has been found to affect (1) what information is attended to and encoded, (2) how information is constructed or interpreted, and (3) how people behave when interacting with members of the stereotyped group. Furthermore, perceiver's knowledge influences the way in which stereotypes influence the perception (Maheswaran, 1994; Sujan, 1985). According to Maheswaran (1994), a stereotype (of country of origin) did not influence experts' evaluations of a product (i.e., a computer) but influenced novices' evaluations. In this study, it was investigated whether subjects' textile knowledge would influence the way a fiber stereotype affected subjects' evaluations of the fabric specimen. Results of the second experiment supported that the stereotype influenced the perception of fabrics. Furthermore, it was supported that the effect of stereotype depended upon perceiver's textile knowledge. When subjects evaluated a fabric, subjects with lower textile knowledge were found to be more influenced by the stereotype than subjects with higher textile knowledge.

## Applied Implications

The results of this study can be applied by researchers to better understand the perception of fabrics. This study developed the Textile Knowledge Inventory (TKI) to measure individuals' objective textile knowledge. The TKI will be useful to researchers investigating textile knowledge as a variable related to the perception of fabrics or consumer behavior of clothing/fabrics. Instead of assuming the level of individual's textile knowledge based on individual's occupation or major, the individual's objective textile knowledge can be easily measured by TKI.

In this study, both open-ended questions and closed-ended questions were used. Some results of this study indicated that the open-ended format may be more reliable measurement of categorization than closed-ended format. When stereotypic category was provided to subjects and subjects were asked to evaluate the fabric specimen using semantic differential scale items, the stereotype perpetuated the subjects' responses. For example, under the fiber content label condition of "100% polyester" and "100% microfiber polyester", none of the subjects described the fabric specimen as unattractive, cheap, and low quality. However, subjects' evaluations of "attractive/unattractive", "high quality/low quality", and "expensive/not expensive" for the fabric specimen tended to be influenced by the stereotype of polyester (i.e., cheap, unattractive). When subjects were asked to describe (open-ended question) the fabric specimen, the stereotypic terms were not used. Therefore, when words are given to subjects, subjects tend to evaluate an object based on those terms even though they did not use the terms to describe the object.

In order to isolate the new polyester fiber from the unfavorable stereotype of polyester, marketers have sub-categorized new favorable polyester fiber as "microfiber polyester" rather than "polyester" and some of marketers try to promote microfiber polyester fibers (Gill, 1991). However, in this study, subjects did not consider "microfiber polyester" as a different fiber from "polyester". Promoters may want to educate consumers as to the beneficial characteristics of microfiber polyester.

The fiber content label information did not influence the subjects' evaluation of "machine washable", "easy to wrinkle", "easy to care for", "durable", and "soft". Subjects in this study were apparently relying on the physical attributes of the fabric

specimen in order to evaluate these variables. Because clothing catalogs with no fabric specimens do not provide information about the physical attributes of fabrics, consumers rely on the descriptions of fabrics provided by catalog marketers. Therefore, mail-order clothing marketers whose catalogs do not include fabric specimens should describe the fabric in more detail in terms of "machine washable", "easy to care for", "easy to wrinkle", and "soft". Although these variables may not be the important criteria for consumers to decide to purchase clothing, the discrepancy between what they perceive the clothing of catalog as and what they perceive the actual clothing as can cause dissatisfaction.

## Limitations

Data for both experiment 1 and experiment 2 were collected using female students at Oregon State University. The generalization of results of both experiments were limited to this sample of female students at Oregon State University. Before applying the results to other populations, the differences between this sampled population and other populations have to be carefully considered. For example, compared to male students, female students of other universities in a metropolitan area, or other females with different occupation and ages, the sampled population of this study might have more or less experience with fabrics/clothing and have different perspectives, interest, and motivation toward fabrics/clothing.

This study used a non-probability convenience sampling method so that has some limitations of generalization of the results. Furthermore, this study was partially a controlled experiment and partially an observational study because the treatments

(i.e., fabric structure, the fiber content label information) were randomly assigned to subjects whereas the level of subjects' textile knowledge could not be controlled. The possible effects of confounding variables related to the textile knowledge may exist.

Chi-square which was used for testing hypothesis 4 and hypothesis 5 might be biased because the some cells had frequency of less than 5. However, this problem is not expected to cause any changes in the results unless small changes in chi-square values.

## Recommendations for Further Research

In this study, in order to understand the categorization of fabrics, categorization of subjects' description of the fabric specimen was investigated. However, only one fabric specimen was provided to ask subjects to describe. The categorization of fabrics can be investigated in a different way using many fabric specimens and asking subjects to sort them. This procedure requires more effort and resources than the procedure used in this study. However, comparison of the procedure used in this study with the procedure suggested would allow for comparisons between categorization when one fabric is present as compared to when many fabrics are present.

Textile knowledge was found to be a factor influencing categorization of fabrics. However, we now need to investigate why individual's textile knowledge influences categorization of fabrics. Textile knowledge may contribute to differing amounts of terminology acquired by individuals or differing types of information processing. For example, individuals with higher knowledge (in a specific domain) are more likely to be good at memorizing and retrieving information (Matlin, 1983).

Furthermore, individuals with higher knowledge may or may not attend to information from an object differently than individuals with lower knowledge. Therefore, investigation of categorization of fabrics before and after increasing individuals' textile knowledge would allow for within subject comparison. Thus, comparisons may shed additional light on the role textile knowledge plays in the categorization process; particularly whether the effect of textile knowledge on categorization of fabrics is caused by differing amounts of terminology or by differing types of information processing.

The perceivers' knowledge was found to influence the effect of stereotype on the perception of object. Perceivers with higher knowledge were found to be less likely to be influenced by the stereotype than perceivers with lower knowledge. It should next be investigated why this occurred. An investigation of the effect of stereotypes at each stage of information processing (i.e., attention, encode, storing, retrieving, recognition, and response) between high knowledge perceivers and low knowledge perceivers would be valuable. For example, when people perceive stereotyped object, are those with lower knowledge more likely to attend to information congruent with the stereotype of the group than people with higher knowledge?.

In addition, this study did not investigate the role of context on the categorization process. Researchers may want to address this issue by examining the effect of the context of use for fabrics (e.g., polyester fabric to be used for a jacket) on descriptions and evaluations of the fabric. This combined work will provide greater

insight as to why the husband categorized the fabric according to color and why the wife categorized the fabric according to fiber content.

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# Appendices

# Appendix A

## Preliminary Questionnaire To Develop Textile Knowledge Inventory

Following questions are true-false questions. Please choose one from true, false, or don't know (Please Circle one).

T = True, F = False

| | | | |
|---|---|---|---|
| 1[1]. Household chlorine bleach can be used to whiten yellowed silk. | T | F | Don't know |
| 2. Cotton is a natural fiber. | T | F | Don't know |
| 3. Cotton, linen, and rayon are cellulosic fibers. | T | F | Don't know |
| 4. Cotton is wrinkle resistant. | T | F | Don't know |
| 5. Cotton is stronger when it is wet than when it is dry. | T | F | Don't know |
| 6. Cotton is high in moisture absorbency. | T | F | Don't know |
| 7. Wool has poor insulating properties. | T | F | Don't know |
| 8. Wool should be washed with hot water and minimum agitation. | T | F | Don't know |
| 9. Felting is a type of shrinkage associated with wool. | T | F | Don't know |
| 10. Propropylene is the good choice for indoor-outdoor carpeting. | T | F | Don't know |
| 11. Chlorine bleaches should not be used in laundering spandex. | T | F | Don't know |
| 12. Lycra is a trade mark of spandex. | T | F | Don't know |
| 13. Nylon has high strength, smoothness and durability. | T | F | Don't know |
| 14. Rayon is a manufactured fiber. | T | F | Don't know |
| 15. Most man-made fibers have low electrical conductivity and are subject to static buildup. | T | F | Don't know |

[1] The question number was not included in actual questionnaire.

| | | | |
|---|---|---|---|
| 16. Acrylic fibers have a wool-like feel and light weight. | T | F | Don't know |
| 17. Gabardine, denim, and jean are twill fabrics. | T | F | Don't know |
| 18. Fabrics with satin weaves have a smooth surface. | T | F | Don't know |
| 19. Satin weaves are used for linings because of their high durability. | T | F | Don't know |
| 20. Knitted fabrics have a good ability to stretch. | T | F | Don't know |
| 21. Knitted wool fabrics maintain their shape best if they are dried flat after laundry. | T | F | Don't know |
| 22. Hosiery are typically made by knitted fabrics. | T | F | Don't know |
| 23. The terms course and wale are associated with weaving. | T | F | Don't know |
| 24. In clothing construction, the garment is usually cut with warp yarns running lengthwise. | T | F | Don't know |
| 25. Thread count refers to the number of warp yarns and filling yarns per square inch. | T | F | Don't know |
| 26. Oxford cloth is often used in men's shirts. | T | F | Don't know |
| 27. The following fabric sample is an example of a knitted fabric. | T | F | Don't know |
| 28. The following fabric sample is an example of a gabardine fabric. | T | F | Don't know |

29. The following fabric sample is an example of fabric with a satin weave. T F Don't know

30. Fabric softeners can be used to decrease static build-up. T F Don't know

31. A durable-press (permanent press) increase the resiliency (do not wrinkle easily) of natural fibers. T F Don't know

32. A flame retardant finish decreases a fabric's tendency to burn. T F Don't know

33. A water-proof finish closes all fabric pores so air and moisture can not enter. T F Don't know

34. Water-repellent is another word for water-proof finishes. T F Don't know

35. GORE-TEX is a brand name of a water-repellent finish. T F Don't know

36. Solution dyeing is applicable only to manufactured fibers. T F Don't know

37. Batik is a wax-resist process for printing fabrics. T F Don't know

38. According to the Textile Fiber Products Identification Act, the percentages of fibers must be listed on fabric and clothing labels. T F Don't know

# Appendix B

## Textile Knowledge Inventory

Following questions are true-false questions. Please choose one from true, false, or don't know (Please circle one).

T = True, F = False

| | | | |
|---|---|---|---|
| Cotton, linen, and rayon are cellulosic fibers. | T | F | Don't know |
| Cotton is high in moisture absorbency. | T | F | Don't know |
| Wool has poor insulating properties. | T | F | Don't know |
| Wool should be washed with hot water and minimum agitation. | T | F | Don't know |
| Felting is a type of shrinkage associated with wool. | T | F | Don't know |
| Propropylene is a good choice for indoor-outdoor carpeting. | T | F | Don't know |
| Chlorine bleaches should not be used in laundering spandex. | T | F | Don't know |
| Nylon has high strength, smoothness and durability. | T | F | Don't know |
| Acrylic fibers have a wool-like feel and are light weight. | T | F | Don't know |
| Gabardine and denim are fabrics with twill weaves. | T | F | Don't know |
| Fabrics with satin weaves have a smooth surface. | T | F | Don't know |
| Satin weaves are used for linings because of their high durability. | T | F | Don't know |
| Knitted fabrics have a good ability to stretch. | T | F | Don't know |
| Hosiery is typically made with knitted fabrics. | T | F | Don't know |
| In clothing construction, the garment is usually cut with warp yarns running lengthwise. | T | F | Don't know |
| Thread count refers to the number of warp yarns and filling yarns per square inch. | T | F | Don't know |

| | | | |
|---|---|---|---|
| Oxford cloth is often used in men's shirts. | T | F | Don't know |
| The following fabric sample is an example of a gabardine fabric. | T | F | Don't know |
| The following fabric sample is an example of fabric with a satin weave. | T | F | Don't know |
| Flame retardant finishes decrease a fabric's tendency to burn. | T | F | Don't know |
| Solution dyeing is applicable only to manufactured fibers. | T | F | Don't know |
| Batik is a wax-resist dye-process for producing a print on fabrics. | T | F | Don't know |
| According to the Textile Fiber Products Identification Act, the percentages of fibers must be listed on fabric and clothing labels, unless the percentages of fibers are less than 5%. | T | F | Don't know |

# Appendix C

## Questionnaire for The First Experiment

1. How would you describe the item attached left?

2. Are you?

___ Female
___ Male

3. What was your age at your last birthday?

_____

4. What is your major?

_____

5. Which best describes your ethnic identity? (optional)

____ Caucasian
____ African American
____ Latino/Chicano/Hispanic American
____ Asian American
____ American Indian/Alaskan Native
____ Other (please specify)_____

# Appendix D

## Questionnaire for The Second Experiment

1. What traits or characteristics do you associated with polyester fibers used to make fabrics?

2. Are you?

___ Female
___ Male

3. What was your age at your last birthday?

_____

4. What is your major?

_____

5. Which best describes your ethnic identity? (optional)

____ Caucasian
____ African American
____ Latino/Chicano/Hispanic American
____ Asian American
____ American Indian/Alaskan Native
____ Other (please specify)_____

6. How would you describe
the item attached right?

Fiber Content: 100% Microfiber Polyester

7. What do you think the fabric attached on previous page is?
(please choose one)

a. Synthetic
b. Natural
c. Don't know

8. What do you think the fabric attached on previous page is?
(please choose one)

a. Machine washable
b. Dry-cleaning
c. Don't know

Please indicate your evaluation of the fabric attached on the previous page.
(please circle one number)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 9. Fashionable | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Not fashionable |
| 10. Expensive | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Not expensive |
| 11. Easy to Wrinkle | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Not easy to wrinkle |
| 12. Easy to care for | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Not easy to care for |
| 13. High quality | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Low quality |
| 14. Attractive | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Unattractive |
| 15. Likely to buy clothing made from it | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Not likely to buy clothing made from it |
| 16. Durable | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Not durable |
| 17. Soft | 7 | 6 | 5 | 4 | 3 | 2 | 1 | Rough |