The Influence of Design Complexity on Perceived Quality: The Moderating Role of Price and Brand Familiarity

by

Alina Maria Braun

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Approved by

Veena Chattaraman, Chair, Associate Professor of Consumer and Design Sciences
Sandra Forsythe, Wrangler Professor of Consumer and Design Sciences
Pamela Ulrich, Under Armor Professor of Consumer and Design Sciences

Abstract

This study investigates the influence of three important product factors – design, brand, and price on consumers' perceived product quality and purchase intention. A 2 (product design: complex/simple) x 2 (brand familiarity: low/high) x 2 (price: low/high) mixed factorial experiment design was employed with 431 participants. Results demonstrated a marginally significant interaction effect between design complexity and brand familiarity on perceived quality. Specifically, for unfamiliar brands, complex designs were perceived as higher quality than simple designs. For familiar brands, product's design complexity had no significant effect on perceived quality. Design complexity and price had no significant interaction effect on perceived quality. All dimensions of perceived quality positively influenced purchase intention, with the style/aesthetic dimension of quality having the largest influence. This study's findings allow product, retail, and brand managers to appropriately tailor the level of design complexity (simple vs. complex) in product offerings for different brands (familiar/established vs. unfamiliar/new).

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CHAPTER I. INTRODUCTION

Today's market of consumer products is highly competitive and offers a wider variety of products, services, and brands compared to the past. For consumers, this greater variety can result in an overload of information and choice, making the decision process time-consuming and challenging. Due to limited processing capacity, consumers may use only a part of the available information, such as a product's material, brand, price, or design, in their decision making (Laroche, Kim, & Zhou, 1996), allowing them to simplify the process. The evaluation of clothing products is a complex decision making process moderated by several extrinsic and intrinsic product characteristics (Zeithaml, 1988). Extrinsic characteristics refer to attributes that are related to the product but are outside the physical product itself, such as brand name, packaging, and price (Zeithaml, 1988). Intrinsic characteristics include the product's physical, aesthetic, and performance features such as color, material, construction, and design (Zeithaml, 1988). Over the last several years, the aesthetics of a product, namely its design, has gained increased attention because it is argued to have a strong influence on consumers' beliefs about the product's other characteristics and quality judgments (Page & Herr, 2002).

Quality judgments are a very important criterion in consumers' decision-making processes (Swinker & Hines, 2005). Consumers' purchase intention is strongly impacted by their quality judgments (Beneke, Fynn, Greig, & Mukaiwa, 2013). Understanding how certain product attributes impact consumers' product evaluations such as perceived quality is important in gaining insight into the decision-making processes that influence their purchase behavior. Important research questions regarding product quality were studied in the late 1980s. Since then, there has been a gap in quality research, particularly as it relates to the

aesthetics-quality relationship. Since product attributes signaling quality are not static and change over time (Zeithaml, 1988), it is important to revisit the topic of quality and explore whether new product attributes have an impact on quality perceptions. For example, studies have shown that consumers often use shortcuts such as price, packaging, brand name, or design in evaluating products and making purchase decisions. However, if shortcuts are conflicting, consumers may face a choice conflict in which they have to make trade-offs by choosing one attribute over another (Acebron & Dopico, 2000; Dodds & Monroe, 1985; Dodds, Monroe, & Grewal, 1991; Forsythe, 1991, 1995; Na, Holland, Shackleton, Hwang, Melewar, 2008; Page & Herr, 2002; Teas & Agrawal, 2000). For instance, when consumers try to determine a product's quality based on brand name and design, and perceive that the brand conflicts with design attributes, consumers have to decide which information to rely on in their decision-making.

This leads to several important questions: Which information is prominent when evaluating an apparel product? Do consumers use a product's design, brand, or price as an indicator of its quality? How does the design of an apparel product interact with its price and brand to influence consumers' quality judgments? How does this quality judgment subsequently influence purchase intention for the product? This study aims to investigate these questions in the context of apparel product decision-making.

Problem Statement

Much previous research has studied consumers' perceptions of product quality and defined quality as "the totality of characteristics of an entity" emphasizing its multidimensionality (Brown & Rice, 1998). Apparel Quality may be evaluated based on intrinsic and extrinsic attributes. Intrinsic attributes include the product's design, materials, construction, and performance, such as emotional and sensory aspects; as well as functional

performance, such as durability and serviceability (Brown & Rice,1998; Klerk & Lubbe, 2004). In addition to these intrinsic product attributes, consumers also use a variety of extrinsic product attributes such as brand name, packaging, and price to form quality judgments (Zeithaml, 1988).

To better understand the effects of intrinsic and extrinsic product attributes on quality perceptions, researchers have examined products from different categories such as electronics (Page & Herr, 2002), food (Acebron & Dopico, 1999; Erdem, Keane, & Sun, 2008), sport equipment (Na et al., 2008; Wheatly, Walton, & Chiu, 1977), apparel products (Forsythe, 1991, 1995; Swinker & Hines, 2006), and hygiene products (Gardner, 1971). However, generalizing the influence of extrinsic and intrinsic product attributes on perceived quality across different products has been difficult for managers and researchers because consumers' perceptions of quality have been found to be highly specific to a product category (Swinker & Hines, 2006). For example, previous research has demonstrated that the price-quality relationship is mostly positive (Dodds et al. 1991; Teas & Agarwal, 2000), such that the higher the price, the higher the quality perception, especially in the absence of other product information. it was also found that durables rather than nondurables (consumer products) are more likely to have positive price-quality relationships (Erdem et al., 2008; Zeithaml, 1988). Furthermore, intrinsic product characteristics that consumers use to infer quality, differ widely across products (Zeithaml, 1988). For instance, attributes indicating quality in food are not the same as those indicating quality in electronics. But even within one product category, attributes may signal different aspects of quality (Zeithaml, 1988). For example, a thick and sturdy touch may indicate high quality in a woven fabric, but not in a jersey fabric. As a result, Swinker and Hines (2006) argued that more research is needed to gain a clear understanding of the apparel product attributes influencing consumers' quality perceptions.

Previous studies that have examined the aesthetics-quality relationship have defined and operationalized product aesthetics based on high versus low aesthetics (Page & Herr, 2002), physical appearance (Forsythe, 1995), overall design (good vs. bad), and emotional aesthetic dimensions (Klerk & Lubbe, 2006). For example, Na et al. (2008) investigated the absence versus presence of a design attribute on product evaluation, but did not specify the design attribute. Page and Herr (2002) focused on the consistency/inconsistency between two design factors – aesthetics (high vs. low) and function (high vs. low). However, classifying product aesthetics as high/low or good/bad is subjective and may not provide objective implications for product design. For this reason it was important to clearly define and operationalize a product's design based on overarching design principles (Berlyne, 1971). Design complexity is one such principle that has been studied in conjunction with architecture, music, paintings, and apparel products and deemed important to examine in the context of varied consumer products such as fashion apparel (Cox & Cox, 2002), product packages (Garber, Burke, & Jones, 2000) and video recorders (Creusen, Veryzer, & Schoormans, 2010).

Brand-related constructs such as brand equity, strength, name, labeling, and extension have been studied extensively in relation to quality judgments (Andrews & Valenzi, 1971; Davis 1985; Dodds & Monroe, 1985; Dodds et al., 1991; Erdem et al., 2008; Forsythe, 1991; Forsythe, 1995; Gardner, 1971; Jacoby, Olson, & Haddock, 1971; Na et al., 2008; Page & Herr, 2002; Raju, 1977; Teas & Agrawal, 2000; Wheatly et al., 1977). Despite the value of previous work relating brand constructs to perceived quality, little apparel research has focused on the construct of brand familiarity in relation to quality judgments. In having the ability to classify a brand as strong or weak, consumers must have prior brand knowledge and brand experience, thus making brand familiarity critical for brand categorization. Brands with no or little familiarity are less capable of providing cues for additional product-related

information. Thus, for unfamiliar brands, quality perceptions are important in determining brands' success and in competing with well-established familiar brands. With respect to brand name, two previous studies found a positive relationship between brand name and quality (Davis, 1985; Dodds et al., 1991); however, a later study found that the influence of brand strength on quality judgments depends on the consistency of the product's design attributes (Page & Herr, 2002). For example, when design factors are inconsistent, brand strength may not influence quality judgments (Page & Herr, 2002). These findings demonstrate that intrinsic attributes such as a product's design moderate the effects of extrinsic attributes such as brand strength on perceived quality. However, systematic investigations of such interactions between intrinsic and extrinsic attributes have not been undertaken in quality literature.

In summary, the effects of brand-related constructs and price on quality perceptions have been studied (Dodds & Monroe, 1985; Erdem et al., 2008; Forsythe, 1991, 1995; Teas & Agrawal, 2000). However, no prior research has investigated how the intrinsic product attribute of design complexity interacts with the extrinsic product attributes of brand familiarity and price to influence perceived quality and subsequently purchase intention for apparel products.

Purpose

The purpose of this study was to investigate the interaction effects of a product's design complexity (intrinsic attribute), brand familiarity (extrinsic attribute), and price (extrinsic attribute) on perceived product quality by applying the Model of Consumer Responses to Product Form (Bloch, 1995) and the Model of the Dimensions of Clothing Product Quality (Klerk & Lubbe, 2004). Bloch suggests a conceptual model describing how a product's design relates to consumers' psychological and behavioral responses. Klerk and

Lubbe's model introduces different dimensions of quality and delineates apparel quality as a multidimensional construct. Specifically, this study investigated how the complexity of a product's design interacts with brand familiarity and price to influence consumers' quality perceptions. Additionally, based on the propositions of the Model of Consumer Responses to Product Form (Bloch, 1995), this study examined how perceived quality influences the approach-avoidance behavior, of purchase intention.

Significance of the Study

Quality was explored vigorously in the late 1980s, but since then there has been a gap in quality research. However, in the last few years, quality as a research topic has received new attention because of its importance in consumers' judgment and decision-making processes. Moreover, increased competition and improved technology in today's world may have changed the strength of product-related attributes affecting quality. In the past intrinsic attributes may have been more prominent in quality evaluations, whereas today's consumers might be highly influenced by companies' marketing strategies. For example, a century ago consumers had the knowledge and ability to make their own clothes and appreciated a well-finished and constructed product, whereas today only a few are able to do so. Most consumers are not familiar with the construction and manufacturing process of textiles and apparel products. Further, since product attributes signaling quality are not static and change over time (Zeithaml, 1988), it is important to revisit the topic of quality perceptions in research and explore whether or not the relative importance of attributes signaling quality have changed, and whether new product attributes have gained importance.

Design has become an important strategic tool that many companies use to gain a competitive advantage. Product design, especially the complexity of a design, plays an important role in consumers' response to a variety of products (Cox & Cox, 2002; Creusen et

al., 2010). Furthermore, it is often the first aspect of product information that catches consumers' attention and allows making product judgments from a distance. Mass-customization, which enables consumers to modify a product's design according to their taste, offers consumers a design selection opportunity and a new aesthetic experience (Deng, Hui, & Hutchinson, 2010). As a result, consumers are becoming increasingly design sensitive. In the current consumer era of design and aesthetic sensitivity, the relationship between design and quality is important because it may significantly impact consumers' product evaluations and purchase decisions. However, this relationship has not been adequately explored in the quality literature (Klerk & Lubbe, 2008; Page & Herr, 2002). This study aimed to close the gap in aesthetics-quality research for apparel products by providing empirical insights into this important relationship in a product category where design complexity plays a significant role in consumer evaluations (Cox & Cox, 2002; Fiore, Kimle, & Moreno, 1996).

Beyond the main effect of design on quality judgments, it is important to systematically understand how this variable interacts with extrinsic product attributes such as brand and price when assessing quality. Specifically, in regard to the brand construct, this study focused on the variable, brand familiarity. No previous work has examined the interaction effects of a) design complexity and brand familiarity, and b) design complexity and price on consumers' quality perceptions and purchase intention. In examining these interaction effects, this study answers important questions such as: How do consumers use a product's design, brand, and price as combinatorial indicators of its quality? How do extrinsic attributes such as brand and price interact with the intrinsic attribute of design to influence perceptions of quality? Which constructs have the strongest effect on consumers' quality judgment for apparel? The results of this study provide clear answers to such questions that have not been examined previously. Findings may allow product, retail, and

brand managers to more appropriately tailor the level of design complexity (simple vs. complex) in product offerings for different price points (low vs. high) and different brands (familiar/established vs. unfamiliar/new). These design-quality implications for offering products at the appropriate level of design complexity are important for: 1) new brands that can employ an appropriate design strategy to compete with more established brands to gain market share; 2) established brands with respect to improving their current design strategy; and 3) new and established brands with respect to informing design strategy for price points.

Definition of Terms

Behavioral Responses (construct in Bloch's model) originate from consumers' psychological responses to a product form; these responses can be described as either approach or avoidance (Bloch, 1995) (in this study, it is purchase intention).

Brand Familiarity is the extent of consumers' brand knowledge and experience resulting from their direct or indirect exposures to the brand (Aaker, 1996; Park & Stoel, 2006).

Price from the perspective of the consumer is "what is given up or sacrificed to obtain a product" (Zeithaml, 1988, p.10).

Design Complexity is "the degree of stimulation from the number and physical quality of units, the degree of dissimilarity of units, and the level of organization in the arrangements of units" (Day, 1981, p. 33).

Extrinsic Product Attributes are attributes related to the product but outside the physical product itself, such as brand name, packaging, and price (Zeithaml, 1988).

Intrinsic Product Attributes are the product's physical, aesthetic, and performance features such as color, material, construction, and design (Olson & Jacoby, 1972; Retrief & Klerk, 2003; Swinker & Hines, 2006).

Moderating Influences (construct in Bloch's model) are variables that moderate or qualify consumers' responses to product design such as individual tastes and preferences as well as situational factors (Bloch, 1995).

Perceived Apparel Quality is "the totality of characteristics of an entity" (Brown & Rice, 1998), a multidimensional construct, defining the degree to which the product satisfies the consumers' expectations about the product including all performance and physical product features (Retrief & Klerk, 2003).

Product Form (construct in Bloch's model) represents a number of design elements combined into a whole (Bloch, 1995).

Psychological Response (construct in Bloch's model) is an affective or cognitive response elicited by a product's form and leading to behavioral responses in Bloch's model of consumer response to product form (Bloch, 1995).

Purchase Intention is "a predictor of subsequent purchase" (Grewal et al., 1998, pp. 339) and represents "what we think we will buy" (Blackwell, Miniard, & Engel, 2001).

CHAPTER II. LITERATURE REVIEW

This chapter presents the review of literature and the theoretical framework on which the study is based beginning with the introduction of Bloch's Model of Consumer Response to Product Form (1995), as the underlying conceptual framework for this study. The model is integrated with the review of existing research on design complexity, perceived quality, brand familiarity, and price, as they relate to the key constructs of the model. The Model of the Dimensions of Clothing Product Quality (Klerk & Lubbe, 2004) is introduced in the discussion on quality. Next, the hypotheses development section, presenting literature in support of each hypothesis, follows. Finally, the research model for this study visually summarizes the hypothesized relationships.

Bloch's Model

Bloch's (1995) Model of Consumer Responses to Product Form is based on findings from theories of design and consumer behavior. The central part of Bloch's model (1995) consists of product form, psychological responses, and behavioral responses to product form (Figure 1). According to the model, design goals and constraints, such as the brand or the design of a product, influence the product's form. In turn, a product's form evokes psychological (cognitive or affective) responses leading to approach or avoidance behavioral responses. The model also introduces situational and individual factors such as social setting and design preferences as potential moderators before and after the psychological processes.

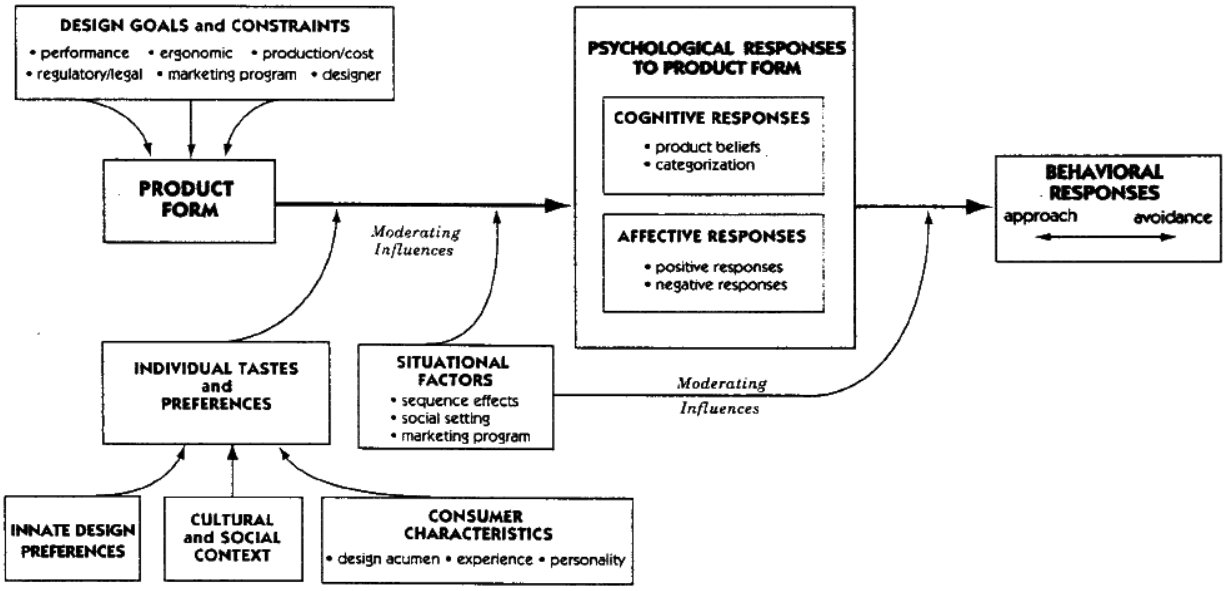


Figure 1. Bloch's Model of Consumer Responses to Product Form. "Seeking the ideal form: Product design and consumer response", by P. H. Bloch, 1995, *Journal of Marketing, 59*, p. 17

Product Form

According to Bloch's Model of Consumer Responses to Product Form, the product's form represents a set of elements that are gathered into a whole (Bloch, 1995). When design elements, such as the product's shape, scale, tempo, proportion, texture, materials, color, and ornamentation, are combined, they represent the product's form (Davis, 1987; Kellaris & Kent, 1993). The product's form also signifies product aesthetics. Aesthetics has been defined as the "human reaction to the non-instrumental qualities" of an object or situation (O'Neil, 1998; Klerk & Lubbe, 2004, p. 2). Product aesthetics has gained increased attention due to its strong influence on consumers' beliefs about a product's characteristics (Page & Herr, 2002) and consumers' affective responses (Bloch, 1995). After perceiving an object, consumers respond to it by liking/approaching or disliking/avoiding. The process of perceiving an object may include examining edges, contours, blobs, and basic geometrical shapes and analyzing which elements belong to the same object (Hekkert & Leder, 2008).

With respect to product form, the present study examines the design principle of complexity (Berlyne, 1971) as an integrative dimension of product form described below.

Design Complexity. Gestalt Principles identify factors that lead to specific forms of perceptual organization, demonstrating why we see what we see and, moreover, why we have preferences for certain objects over others (Hekkert, 2006). According to the Gestalt Principles, elements that are perceived similar in color, size, or shape, are seen as a whole, allowing consumers to encode and interpret stimuli in the simplest form (Hekkert & Leder, 2008). For example, a pattern or object consists of several units. A unit can be defined as a part of the form, such as a stripe in a print, a color, or a shape created by a design. By decreasing the number of units, the object is perceived as more cohesive and less complex (Fiore & Kimle, 1997).

Design complexity is an organizational principle (Berlyne, 1971) that refers to "the degree of stimulation from the number and physical quality of units, the degree of dissimilarity of units, and the level of organization in the arrangements of units" (Day, 1981, p. 33). According to Berlyne (1971), design complexity describes the degree of similarity or dissimilarity of units in an object. Irregular shapes and curvilinear lines are perceived more complex than predictable geometric shapes with straight lines. In terms of apparel design, complexity of a garment can be assessed according to its color, print, texture, form, rhythm, balance, construction, and silhouette (Klerk & Lubbe, 2008). Berlyne's theory (1971) describes an inverted U-shaped curve for the relationship between design complexity and hedonic value (see Figure 2). This is because as complexity increases to an optimal level, consumers' pleasure also increases. However, if a design exceeds the optimal level of complexity, its decryption becomes difficult, and pleasure decreases. Hence, highly complex designs are perceived as less attractive and less pleasurable; whereas, overly simple or low complexity designs with regular structures are perceived as monotonous, too orderly, and not

very stimulating (Berlyne, 1971). In essence, an important condition for a product design to be appealing is that its complexity should lie between chaos and monotony. The present study considered two types of designs: a design with moderate level of complexity (referred to as complex design in this study) versus a simple/low complex design (referred to as simple design in this study).

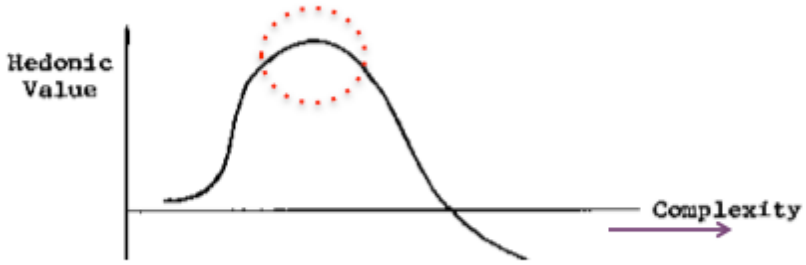


Figure 2. Berlyne's (1971) Inverted u-shaped relationship between hedonic value and complexity

Psychological Responses to Product Form

A product's form can initiate a variety of psychological responses that can be separated into cognitive or affective categories (Bloch, 1995). Affective responses to product form can be either positive or negative. Usually affective responses originate from aesthetic product characteristics such as design and sensory attributes, rather than its functional attributes (Bloch, 1995). For example, positive affective responses can result from positive emotions about the product's material or design. Cognitive responses can be divided into product-related beliefs and product categorization. Product beliefs include perceptions about the product's characteristics such as its value, durability, technical construction, price, ease of use, and prestige (Bloch, 1995). Product categorization relates to how consumers consciously or unconsciously place the product within an existing category to simplify product evaluation. For example, when consumers view a new design of a Louis Vuitton handbag,

they will categorize it by placing it into an existing category associated with luxury and wealth. With respect to psychological response to product form, the present study examines perceived quality as a cognitive response to the product's design complexity (product form).

Perceived Quality. Quality describes "the extent to which the specimen provides the service characteristics that the individual consumer desires" (Abraham-Murali & Littrell, 1995). In other words, quality explains the degree to which the product satisfies consumers' expectations about the product, including all performance and physical product features (Retrief & Klerk, 2003). From consumers' perspectives, quality is defined by consumers' judgments about the product's overall excellence or superiority (Zeithaml, 1988; Kim & Damhorst, 2010) and includes sensory and emotional aspects (Retrief & Klerk, 2003). Moreover, in the perception of consumers, apparel quality is mainly defined by appearance and durability (Zeithaml, 1988).

Because quality is multidimensional, it should be assessed on more than a few attributes (Forsythe, 1991; Klerk & Tselepsis, 2007; Klerk & Lubbe, 2004; Swinker & Hines, 2005; Zeithaml, 1988). Consumers' perceptions of quality can be determined on the basic of several intrinsic and extrinsic product attributes (Klerk & Lubbe, 2004; Swinker & Hines, 2006; Zeithaml, 1988) (see Figure 3). Extrinsic attributes such as brand name, packaging, and price are outside the physical product (Zeithaml, 1988). Intrinsic attributes such as color, material, construction, and design refer to the product's physical features (Olson & Jacoby, 1972; Swinker & Hines, 2006). Studies have illustrated the importance of such intrinsic attributes when evaluating quality. For example, if consumers perceive quality according to the product's style and design, then popular styles that look good are categorized as high quality (Forsythe, Presley, & Caton, 1996; Hines & Swinker, 2001). Page and Herr (2002) argued that a superior product design can raise consumers' quality evaluations. Moreover, Hines and Swinker (2001) found that appearance attributes have a significantly higher effect

on apparel quality than other type of attributes. Intrinsic product attributes can be further divided into physical and performance dimensions (Retrief & Klerk, 2003) (Figure 3). The physical dimension defines the clothing item and includes attributes such as the design, material, finishing, and construction (Brown & Rice, 1998). The performance dimension can be further divided into aesthetic and functional characteristics. Aesthetic characteristics describe the emotional, sensory, and cognitive aesthetic experience in relation to a product (Fiore & Kimle, 1997; Retrief & Klerk, 2003). For example, aesthetic experience at the cognitive level includes the symbolic meaning of clothing for the wearer, such as group identification or distinction. The functional characteristics dimension includes describe the characteristics of the product, for example, its durability or serviceability (Brown & Rice, 1998; Klerk & Lubbe, 2004; Klerk & Tselepsis, 2007). The above sub-dimensions in Retrief and Klerk's quality model (2003) parallel those introduced by Forsythe, Presley, and Caton (1996) as overarching dimensions of apparel quality: sturdiness/durability (seams, stitching, construction), style/aesthetics (design, style, over-all appearance), and lasting/care (garment life, care required).

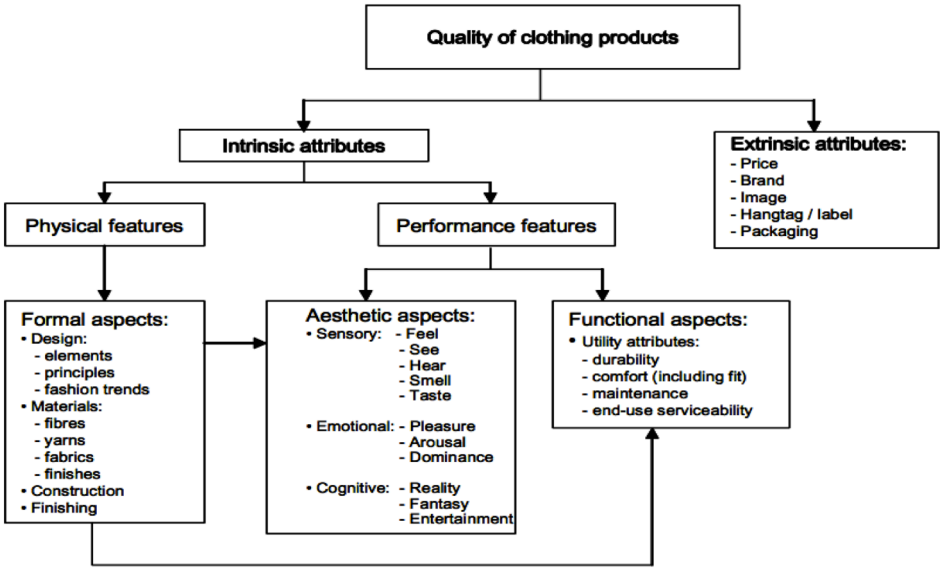


Figure 3. Dimensions of apparel quality. "Development of a guide for the visual assessment of quality of clothing textile products", by Retrief and Klerk, 2003, *Journal of Family Ecology and Consumer Sciences, 31,* p. 21

Behavioral Responses

The last path in Bloch's model (1995) introduces behavioral responses to a product's form that can be categorized as approach/liking or avoidance/disliking behaviors. Consumers' avoidance behaviors may result from negative feelings towards a product and could include ignoring the product, failure to make the purchase, or product abuse (Bloch, 1995). On the other hand, positive feelings towards a product may lead to close exposure, need for seeking product information, eagerness to go to the shop where the product is available (Bloch, 1995), and most importantly, the purchase of the product (Berkowitz, 1987; Roy, 1994).

Purchase Intention. With respect to behavioral responses to product form, the present study examines purchase intention, "a predictor of subsequent purchase" (Grewal et al., 1998, p. 339). Depending on the psychological responses to product form, purchase intention can be either negative or positive. Positive psychological responses (quality perceptions) to the product are likely to lead to a greater intention to make a purchase. On the other hand, negative psychological responses are likely to negatively influence consumers' purchase behavior, such that consumers who have negative quality perceptions about the product may turn away from the purchase.

Moderating Influences on Consumer Response to Product Form

Moderating influences such as individual tastes, preferences, and situational factors can influence the cognitive and affective responses that result from the product form (Bloch, 1995). According to Bloch, innate design preferences and tastes, cultural and social context, and consumer characteristics can influence consumers' responses. For example, consumers' assessment of design is influenced by cross-cultural differences, but also by personal taste. Different consumer characteristics, such as consumers' personality variables, experiences, and design acumen, may influence individual tastes (Bloch, 1995). According to Bloch

(1995), situational factors including marketing programs also exert moderating influences on the relationship between product form and aesthetic response. The present research introduced two types of moderators: price, a situational factor, and familiarity with a brand, a consumer characteristic. These two moderators and their influence on consumers' responses on product form are discussed in the hypotheses development section below.

Hypotheses Development

Interaction Effect of Design Complexity and Brand Familiarity

Brand familiarity is defined as the number of brand-related direct or indirect experiences consumers had with the brand and their knowledge about the brand (Laroche, Kim, & Zhou, 1996; Park & Stoel, 2006). Brands are heuristic cues (Maheswaran, Mackie, & Chaiken, 1992; Goh, Chattaraman, & Forsythe, 2013) that are employed for making product-related judgments, such as performance, quality, reliability, and liking judgments (Page & Herr, 2002). Frequent exposure to brands in advertisements and stores, and brand ownership increase consumers' experience with the brand, which in turn increases their brand familiarity (Alba & Hutchinson, 1987; Park & Stoel, 2006). For example, brands advertised in magazines and other media tend to become highly familiar to consumers due to repeated exposure (Kent & Allen, 1994). Familiarity with the brand may result in confidence towards the brand such that a familiar brand may be associated with highly accessible and positive product-related information. Familiar brands are highly diagnostic cues due to the amount of information associated with them (Page & Herr, 2002). Brands can also serve as a shortcut to form product attitudes by providing consumers with information (Goh et al., 2013; Maheswaran et al., 1992; Zeithaml, 1988). Well-known brands are able to create a knowledge structure in the memory and may allow achieving a better recall than unfamiliar brands, which are characterized by little or no brand knowledge (Kent & Allen, 1994). Hence,

compared to highly familiar brands, unfamiliar ones are less capable of serving as diagnostic cues because consumers have little or no association with or information about the brand.

Previous research exploring the effects of branding concepts on perceived quality has suggested that perceived quality is related to consumers' attitude toward the brand image and overall brand experience, as opposed to just the product's features (Beneke et al., 2013). In certain circumstances, however, consumers may rely more heavily on product's intrinsic characteristics than on brand name when evaluating quality (Abraham-Murali, 1995). When brand information is available, consumers are likely to use their existing brand knowledge for product evaluation (Goh et al., 2013). For example, well-known brands are believed to have high performance, quality, and reliability (Aaker, 1991; Farquhar, 1989; Forsythe, 1991). However, if brand information is not available or if there is little or no knowledge about the brand, consumers are likely to use perceptual information, such as the product's design, as a primary source for product evaluation (Goh et al., 2013). Page and Herr (2002) found that the impact of aesthetics on the relationship between brand and quality judgments is qualified by brand strength such that aesthetics has a greater impact for weaker than stronger brands. Brand strength differs from brand familiarity, but the above findings support the argument that aesthetics may interact with brand familiarity to affect perceived quality. For unfamiliar brands, a product's design is expected to have a significant influence on perceived quality. For highly familiar brands, the design's impact may be less consequential due to highly accessible brand information to aid in forming the quality judgment. The following hypotheses are proposed to test this argument:

Hypothesis 1: A simple vs. complex design will have a greater effect on the perceived quality of low familiarity brands than high familiarity brands. In other words, product design complexity (simple vs. complex) and brand familiarity (low vs. high) will have an interaction effect on perceived quality.

Hypothesis 1a: For high familiarity brands, product's design complexity (simple vs. complex) will have no significant effect on perceived quality.

Hypothesis 1b: For low familiarity brands, complex designs will result in significantly higher perceptions of quality than simple designs.

Interaction Effect of Design Complexity and Price

From a consumer's perspective, price can be defined as "what is given up or sacrificed to obtain a product" (Zeithaml, 1988). The price of a product can be described as the amount of payment or compensation given in return for the product. In the past, price was explored from many different perspectives, such as a demand, budget constraint, informational cue, marketing mix variable, and decision variable (Curry & Riesz, 1988). From these perspectives price serves as an external product attribute conveying information that may affect consumers' judgments and beliefs about the product (Stiglitz, 1987).

The effect of price on quality perceptions can be captured by the commonly used phrase "you get what you pay for" (Brown & Rice, 1998, p. 41). Consumers often believe that there is a positive price-quality relationship leading to the belief that price mirrors quality (Zeithaml, 1988). A high priced product leads to assumptions of high quality and vice versa. On the other hand, products offered at a lower price than competing products, are more attractive to the consumer because of the lower price, but at the same time, may be less attractive because of suspected inferior quality (Brown & Rice, 1998). This implies that price is an important mechanism for signaling quality because price can be easily compared across

alternative products. When there is an absence of product information or when consumers have inadequate information about product features, price especially functions as a heuristic for quality (Erdem et al., 2008; Dodds et al., 1991; Zeithaml, 1988). For example, when consumers face a choice between two similar items and are not familiar with other quality indicators, price is the main attribute available for use in the assessment of the product's quality. However, if other product information is available, the influence of price on quality judgments may be moderated (Brown & Rice, 1998).

Studies have also shown that consumers perceive price as a reflection of quality regardless of the product category (Zeithaml, 1988). Studies have also shown that the price-quality relationship is stronger for nondurable, lower-priced, and frequently purchased convenience goods (Caves & Greene, 1996; Erdem, et al., 2008; Roa & Monroe, 1989), suggesting that certain factors can moderate this relationship. Specifically, price and its effect on consumers' responses (e.g., product beliefs) can be influenced by factors such as brand, store name, advertisement, or product aesthetics (Dodds et al., 1991). Previous studies have argued that product aesthetics, such as a pleasing design, strongly influences consumers' perceptions of quality (Brown & Rice, 1998; Forsythe, 1991; Forsythe et al., 1996; Page & Herr, 2002; Swinker & Hines, 2006). Furthermore, findings indicated that U.S. consumers use the physical appearance of a product, including its design, as a quality signal above price (Dawar & Parker, 1994). In addition to the main effect of price on quality perceptions, we can expect product aesthetics to moderate the price-quality relationship (Dodds et al., 1991). In line with this argument, we expect that if the product's price is low, consumers are unlikely to use price as an indicator of quality and, thus, less likely to formulate a perception of quality on the basis of price. Hence, for low priced products, a product's design is expected to draw consumers' attention toward the product having a consequential effect on their quality perceptions. On the other hand, for high priced products, the design's impact

may be less important because price may serve as a stronger indicator of quality. We propose the following hypotheses to test this argument:

Hypothesis 2: A simple vs. complex design will have a greater effect on perceived quality of low priced products than on high priced products. In other words, product design complexity (simple vs. moderate) and price (low vs. high) will have an interaction effect on perceived quality.

Hypothesis 2a: For high priced products, simple vs. complex designs will have no significant effect on perceived quality.

Hypothesis 2b: For low priced products, complex designs will result in significantly higher perceptions of quality than simple designs.

Perceived Quality and Purchase Intention

Previous findings show that perceived quality is a very important criterion when making a purchase decision (Swinker & Hines, 2005). Purchase intention describes "what we think we will buy" (Blackwell et al., 2001, p. 283) and is “a predictor of subsequent purchase” (Grewal et al., 1998, p. 339). Psychological responses affected by product attributes lead to approach or avoidance behavioral responses (Bloch, 1995). Avoidance behavior results from negative feelings about the product; approach behavior is associated with positive feelings (Bloch, 1995). Therefore, perceived quality (psychological response) can increase or decrease consumers' intention to purchase (Blackwell et al., 2001). Several factors influence either directly or indirectly the perception of quality, which in turn can influence purchase intention (Dodds et al., 1991; Forsythe, 1991; Page & Herr, 2002; Zeithaml, 1991). Hence, we propose the following hypothesis:

Hypothesis 3: Perceived quality will positively influence purchase intention toward the product.

Proposed Model

Based on the review of Bloch's (1995) Model of Consumer Responses to Product Form, this study proposed and tested the following framework of hypothesized relationships:

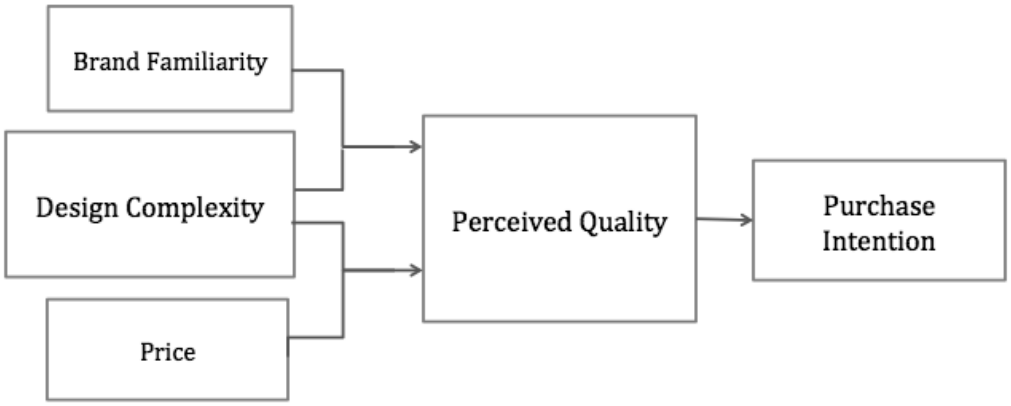


Figure 4. The conceptual framework of the present research

CHATER III. METHODOLOGY

This chapter will give an overview of the research design followed by descriptions of the pretest and the main study. The pretest had two objectives and resulted in the selection of appropriate stimuli for the main study. The main study empirically tested the hypotheses proposed in Chapter 2 using an online experiment and quantitative data analysis.

Research Design

The main study used an experimental research design with a 2 (design complexity: simple vs. complex) x 2 (brand familiarity: low vs. high) x 2 (price: low vs. high) mixed factorial design with price and brand familiarity as the between-subjects factors, and design complexity as the within-subjects factor. All three independent variables (design complexity, brand familiarity, and price) were manipulated through appropriate stimuli. The dependent variables, perceived quality (with its three dimensions: fabric/garment construction, style/aesthetics, lasting/care) and purchase intention, were measured using appropriate scales. Prior to the main experimental study, a pretest was conducted to develop the stimuli for the main study. Before recruiting subjects, approval was sought from the Institutional Review Board (IRB) at the university.

Pretest - Stimulus Development

The pretest had two objectives: a) to choose one familiar and one unfamiliar apparel brand; b) to choose four designs of apparel accessories (scarves) – to represent two complex and two simple designs. The two selected brands and the four selected products were used to manipulate brand familiarity and design complexity in the main study.

Sample and Data Collection Procedure

The pretest sample was drawn from the same sample pool as the subjects of the main study. The pretest sample was a non-probabilistic convenience sample, consisting of 40 students. Respondents were recruited from three departments at Auburn University: Consumer and Design Sciences, Human Development and Family Studies, and Nutrition, Dietetics, and Hospitality Management. The participation in the pretest was voluntary; students received extra course credit. The participants were asked to rate the level of complexity of eight scarves (four simple/low complexity designs and four complex designs) and brand familiarity of eight brands (four familiar and four unfamiliar brands).

Stimuli Selection

First, scarf photographs were presented and subjects were asked to rate the level complexity of the scarf designs. The stimuli were colored photographs of apparel accessory products, scarves (see Table 1). Scarves were chosen for several reasons: 1) they can be displayed and presented in a clearly organized and easily understood form; 2) they are not affected by garment size or fit problems; and 3) the main focus for scarves is the design. For the scarf designs, complexity of a design was evaluated according to the degree of similarity or dissimilarity of units. A complex scarf design is operationally defined as a design with a higher number of units, a higher degree of interest of the units, or a decreased cohesion among these units (Berlyne, 1971). A simple scarf design is operationally defined through classic or basic designs such as stripes or a solid color (Berlyne, 1971). Simple and complex designs were chosen based on these definitions. Five pairs of scarves were formed, each with one simple and one complex design and similar color ranges to control for the impact of color (see Table 1). All brand information was removed to ensure that the brand did not influence the responses on the pretest.

Table 1

Pretest Stimuli – Different Levels of Design Complexity

	Design Complexity	
	Simple	Complex
Pair 1		
Pair 2		
Pair 3		
Pair 4		
Pair 5		

Next, eight apparel accessory brands were presented and subjects were asked to rate their familiarity. The brands were chosen based on the following criteria: a) targeted to similar market segments, 2) similar brand image, 3) no gender-specific characteristics because the study will include males and females, 4) similar prince ranges and 5) similar product categories. The reason for these criteria was to minimize a great number of differences between familiar and unfamiliar brands. Familiar brands were chosen based on their inclusion in top brands featured on a popular department store's website with the assumption that such a listing will ensure high brand familiarity. The familiar brands selected included well-established and well-known American brands such as Coach, Calvin Klein, Ralph Lauren, and Michael Kors. European brands, such as Lala, Codello, Liebeskind, and Airfield were chosen as unfamiliar brands to ensure that the participants (US students) had little or no knowledge about the brand.

Measures

A two item 5-point semantic differential scale adapted from Cox and Cox (1988, 2002) was used to measure design complexity. Subjects rated the product designs by answering the following questions: "The design of this scarf is: simple/complicated, not complex/complex" (1 = simple, 5 = complex). A three item 5-point sematic differential scale adapted from Cox and Cox (2002) was used to measure the likeability and fashionability for the scarves introduced as control variables in this study. Examples of items that were used in this measure include: This scarf is "bad – good" or "unpleasant – pleasant". Simple and complex designs that were equally likeable but differed with respect to complexity were selected. Brand familiarity was measured using three 5-point semantic differential scales. The measurement items included "no information/a great deal of information", and "no previous experience/a lot of previous experience" (Laroche et al., 1996, p. 117), and "very unfamiliar/very familiar" (Park, Milberg, & Lawson, 1991, p. 189).

Data Analysis and Results

A total of 40 students out of 46 students completed the online questionnaire, yielding a response rate of 86.9%. The entire data collection process lasted two weeks. Five cases were determined unusable and thus deleted because more than 20% of the questionnaire was left unanswered. The reliabilities of all scales, including the two-item measures (indicating inter-item correlation for two items), were calculated using Cronbach's α coefficient. All scales revealed satisfactory reliabilities with Cronbach's α coefficient over .70 (see Table 2). Hence, the items of each scale were combined and the mean scores were used for further analysis.

Table 2

Reliability Analysis Pretest

	Measure	Cronbach's α	N of Items	*N*
Manipulation Check	Brand Familiarity	.98	3	40
	Design Complexity	.829	2	40
	Likeability	.96	2	40

Design complexity, fashionability, and likeability of five pairs of scarves, each with one simple and one complex design, were measured in the pretest. Two pairs, each with the highest and lowest complexity ratings were chosen (see Table 3). An effort was made to ensure that the likeability and fashionability ratings of the scarves with the simple and complex designs were similar in order to control for differences in product liking and fashionability.

Table 3

Mean Scores for Design Complexity Stimuli from Pretest

	Stimuli	Complexity	Likeability	Fashionability
Pair 1	Simple			
		2.13	2.78	2.68
	Complex			
		3.26	4.19	4.18
Pair 2	Simple			
		2.38	2.41	2.41
	Complex			
		3.35	3.60	3.50
Pair 3*	Simple			
		2.53	3.03	3.15

	Stimuli	Complexity	Likeability	Fashionability
Pair 3*	Complex			
		3.75	3.19	3.24
Pair 4	Simple			
		2.22	3.67	3.32
	Complex			
		3.00	2.76	2.82
Pair 5*	Simple			
		2.22	3.67	3.32
	Complex			
		3.35	3.60	3.50

* Reflect selected pairs

Paired samples *t*-tests further validated the significant differences between the simple and complex designs of each pair, but ensured that the likeability and fashionability of the simple and complex scarf designs were not significantly different (see Table 4). Based on the results of the pretest, the main study employed the four selected scarf designs (pairs 3 and 5 from Table 3).

Table 4

Results of Pretest for Design Complexity, Likeability, and Fashionability

	Manipulation		*M*	*t*(33)	*p*
Pair 3	Design Complexity	Simple	2.53	-.325	< .001
		Complex	3.75		
	Likeability	Simple	3.03	-.8	.429
		Complex	3.24		
	Fashionability	Simple	3.15	-.325	.747
		Complex	3.19		
Pair 5	Design Complexity	Simple	2.22	-6.49	< .001
		Complex	3.35		
	Likeability	Simple	3.67	-1.06	.298
		Complex	3.60		
	Fashionability	Simple	3.32	-.828	.414
		Complex	3.50		

The objective of the second part of the pretest was to select two accessory brands (one familiar and one unfamiliar) for the manipulation of brand familiarity in the main study. Two brands, one with high and one with low familiarity ratings, were chosen ($M_{CalvinKlein}$= 4.05, $M_{Codello}$= 1.01) (see Table 5). The chosen brand for the high familiarity brand condition (Calvin Klein) did not show the highest mean score, however, the font and length of the name had similarities to the selected low familiarity brand and both names started with the letter "C" (Codello and Calvin Klein), thus minimizing potential confounding effects. An independent samples *t*-tests also validated the significant differences between the selected familiar and unfamiliar brand ($M_{CalvinKlein}$= 4.05, $M_{Codello}$= 1.01, $t(33)$= 21.95, p< .001).

Table 5

Mean Scores for Brand Familiarity from Pretest

Brand	Logo	Brand Familiarity
Coach		4.54
Michael Kors		4.59
Lala		1.16
Airfield		1.06
Calvin Klein		4.05
Liebeskind		1.06
Codello		1.1
Ralph Lauren		4.59

Two price levels (low and high) were chosen based on the average scarf prices of a moderate and better brand. GAP, a moderate brand, offers scarves between $19.99 and $39.99 and Ralph Lauren, a better brand, offers scarves between $70.00 and $300.00. Based on the scarves' prices of these two brands, the following price levels were selected for stimuli manipulation in the main study: $29.95 for a low price scarf and $129.95 for a high price scarf. Further, based on the results of the pretest, the main study employed the four selected scarf designs (2 simple and 2 complex designs) and the two selected brands (familiar and unfamiliar) for the manipulation of design complexity and brand familiarity.

Main Study

The main study collected data using an online questionnaire and tested the hypotheses proposed in Chapter 2. The questionnaire consisted of three sections: The first section measured perceived quality and purchase intention in response to the stimuli; the second section included manipulation checks for brand familiarity, design complexity, and price; and the last section collected participants' demographic information.

Sample and Data Collection Procedure

Auburn University students who were 19 or older were recruited from three departments at Auburn University: Consumer and Design Sciences, Human Development and Family Studies, and Nutrition, Dietetics, and Hospitality Management through an in-class announcement, followed by a class email. The email contained a link and information on how to access the online survey. The participation was voluntary, but the students received extra credit as an incentive for participation. After the in-class announcement and the first email, data were collected over a two-week period. To achieve a higher participation rate, the students were reminded via email by the end of the first week to participate in the study. After a two-week period, the link to the survey was deactivated and the promised incentives delivered.

Stimuli

The self-administered, Internet-based questionnaire (see Appendix E) included a set of four accessory products (see Table 3), color pictures of two scarves with a complex design, and two scarves with a simple design. Each product photograph was presented on a separate page. The order of the photographs was randomized to control for order effects in within-subjects design (design complexity: within-subjects factor). Measures of perceived quality, purchase intention, design complexity, brand familiarity, and price appeared after each

stimulus photograph, followed by questions about demographic information. The items on demographic information included age, gender, academic standing, major area of study, and ethnicity.

Dependent Measures – Perceived Quality and Purchase Intention

Perceived quality, including its three dimensions: 1) fabric/garment construction, 2) style/aesthetics, and 3) lasting/care, were measured by a 5-point Likert-type scale adapted from Abraham-Murali and Litrell (1995) and Forsythe et al. (1996). The three quality dimensions were chosen based on items being relevant to the product category, scarves. Therefore, the first subscale (fabric/garment construction) was adapted from Abraham-Murali and Litrell (1995) and the second and third subscale (style/aesthetics, and lasting/care) were adapted from Forsythe et al. (1996). Items that were not relevant to the product category of scarves were deleted. Examples of items that were used in this measure included: "The fabric will be soft", "the scarf will be easy to care for", and "the styling of this scarf is good" (Abraham-Murali & Litrell, 1995; Forsythe et al., 1996) (see Table 6). The items were modified from "shirt" or "fabric" to "scarf" to match the study's stimuli. In previous studies (Abraham-Murali & Litrell, 1995; Forsythe et al., 1996), the scale's Cronbach's α coefficients were found to be .96 (fabric/garment construction), .79 (style/aesthetics), and .65 (lasting/care).

Purchase intention was measured by a three item 5-point Likert-type willingness to buy scale (see Table 6) adapted from Dodds, Monroe and Grewal (1991). An example of an item was "I would consider buying this scarf." Dodds et al. (1991) found the scale's internal consistency to be high (Cronbach's α coefficient= .97).

Manipulation Checks – Brand Familiarity, Design Complexity, and Price

Brand familiarity was measured by 5-point semantic differential scales adapted from Laroche, Kim, and Zhou (1996) and Park, Milberg, and Lawson (1991) (reliability was 0.83). The scales included "no information/a great deal of information", and "no previous experience/a lot of previous experience" (Laroche et al., 1996, p. 117), and "very unfamiliar/very familiar" (Park et al., 1991, p. 189).

Design complexity was measured by a two item, 5-point semantic differential scale developed by Cox and Cox (2002). Respondents rated the design by answering following questions: "The design of this scarf is: simple/complicated, not complex/complex" (1 = simple, 5 = complex). The Cronbach's α reliability for the design complexity scale was 0.85 (Cox & Cox, 2002).

Participants evaluated the product's price on a 5-point semantic differential scale by answering following question: "The price for this scarf is: very low/very high (1= very low, 5=very high). All variables were measured using 5-point scales to maintain consistency and to avoid confusion.

Control Variables – Product Likeability and Fashionability

In order to control for differences in liking and fashionability between different scarves, product likeability and fashionability were introduced as control variables. Participants rated each stimulus as "bad- good", "unpleasant-pleasant", "not likeable-likeable" (Cox & Cox, 2002), and "not fashionable-fashionable".

Table 6

Measures for Pretest and Main Study

	Goal	Variable	Measures	
Pretest	Selection of appropriate Stimuli	Design Complexity	The design of this scarf is: a) simple - complicated b) not complex - complex	Cox and Cox (2002)
		Likeability	This scarf is: a) bad - good b) not likeable - likeable	Cox and Cox (2002)
		Fashionability	c) not fashionable - fashionable	
		Brand Familiarity	a) no information - a great deal of information b) no previous experience - a lot of previous experience c) very unfamiliar - very familiar	Laroche et al. (1996) Park et al. (1991)
Main Study	Dependent Variables	Perceived Quality	<u>Fabric/ Garment construction</u> The scarf will be soft. The scarf will be the color I anticipate. The scarf will be well-finished on the wrong side. The scarf will be the weight I anticipate.	Abraham-Murali and Litrell (1995)
			<u>Style/Aesthetics</u> The design is attractive. The styling of this scarf is good. The style will look good on a person wearing it. The fabric will feel soft against my skin.	Forsythe et al. (1996)
			<u>Lasting/care</u> Cost/Time involved in care will be minimal. The scarf will be easy to care for. The fabric will not stretch out during wear and care.	Forsythe et al. (1996)
		Purchase Intention	I would consider buying this scarf. I will purchase this scarf. There is a strong likelihood that I will buy this scarf.	Dodds et al. (1991)
	Manipulation Checks	Design Complexity	The design of this scarf is: a) simple - complicated b) not complex - complex	Cox and Cox (2002)
		Price	The price for this scarf is: low - high	
		Brand Familiarity	a) no information - a great deal of information b) no previous experience - a lot of previous experience c) very unfamiliar - very familiar	Laroche et al. (1996) Park et al. (1991)
	Control Variables	Product Likeability	This scarf is: a) bad - good b) not likeable - likeable	Cox and Cox (2002)
		Fashionability	c) not fashionable - fashionable	

Data Analysis

Data were analyzed using SPSS software. The independent variables manipulated/measured in this study were: design complexity, brand familiarity, and price. The dependent variables measured in this study were: perceived quality with three dimensions (fabric/garment constriction, style/aesthetics, lasting/care) and purchase intention. Table 7 shows the statistical tests employed in hypothesis testing. The results are presented in Chapter 4.

Table 7

Hypothesis Testing

Hypothesis	Variable	Continuous/Interval	Statistical Tests
1, 1a, 1b	Design Complexity (IV) Brand Familiarity (IV) Perceived Quality (DV)	Categorical Categorical Continuous	Repeated Measures Analysis of Variance for each dimension of perceived quality
2, 2a, 2b	Design Complexity (IV) Price (IV) Perceived Quality (DV)	Categorical Categorical Continuous	Repeated Measures Analysis of Variance for each dimension of perceived quality
3	Perceived Quality (IV) Purchase Intention (DV)	Continuous Continuous	Multiple Linear Regression

CHAPTER IV. RESULTS

The objective of this study was to test the interaction effects of a product's design, brand familiarity, and price on perceived product quality and purchase intention by applying two different models: the Model of Consumer Responses to Product Form (Bloch, 1995) and the Model of the Dimensions of Clothing Product Quality (Klerk & Lubbe, 2004). Data were collected in a pretest followed by the main study (Internet experiment). The pretest had two objectives: a) to choose a familiar and unfamiliar apparel brand; and b) to choose four designs (two complex and two simple) of apparel accessories (scarves). The two selected brands and the four selected products were used to manipulate brand familiarity and design complexity respectively, in the main study.

Results of the main study were analyzed using SPSS software. The steps for the preliminary analysis included coding the price and brand condition (low vs. high), cleaning the data, conducting sample's descriptive analysis, conducting factor analysis, checking the reliability of all variable measures, calculating the means, and creating composite scores for each measure. Following the preliminary data analysis process, hypotheses testing analysis was conducted.

Main Study

Sample Description

A total of 461 students out of 750 students completed the online questionnaire, yielding a response rate of 61.40%. Before the analysis the responses of 30 students were excluded because they had left over 20% of the items unanswered. The sample was 92.6% female and 7.4% male. The largest percentage of students had a major in Nursing (21.9%),

followed by a major in the Department of Human Development and Family Studies (18.3%), Nutrition (8.3%), and Elementary Education (6.6%). The sample consisted of students between 19 and 32 years old (Mean = 20.23, Median = 20). The respondents were from all class standings, including freshman (14.2%), sophomore (44.4%), junior (24.7%), senior (15.1%), graduate (0.2%), and other (1.4%). The majority of the respondents were Caucasian/White (86.3%), followed by African American/Black (9.0%), other (1.9%), Hispanic (1.4%), Asian American (1.2%), and Native American (.2%).

Reliability Analysis

Scale reliabilities were calculated using Cronbach's α coefficient for design complexity, brand familiarity, likeability, each dimension of perceived quality (fabric/garment construction, style/aesthetics, lasting/care), and purchase intention. All scales indicated adequate reliability (see Table). Items in each scale were hence combined, and the mean scores were used for further analysis.

Table 8

Main Study Scale Reliability Analysis

	Measure	Cronbach's α	N of Items	*N*
Dependent Variable	Purchase Intention	.923	3	431
	Perceived Quality Dimensions			
	Fabric/garment construction	.908	4	431
	Style/aesthetics	.866	4	431
	Lasting/care	.942	3	431
Manipulation Check	Brand Familiarity	.981	3	431
	Design Complexity	.819	2	431
Control Variable	Product Likeability/ Fashionability	.868	3	431

After reliability checks, multidimensionality of the quality scale (fabric/garment construction, style/aesthetics, lasting/care) was checked by factor analysis with varimax rotation. Results from factor analysis confirmed that quality is multidimensional with three

components (see Table 6). Based on the factor loadings, the first five items formed the first component, named fabric/garment construction; even though one item ("The scarf will be well finished on the wrong side") of the first component had low loadings on all 3 components. However, according to Tabachnick and Fidell (2001) .32 is a good practical rule for the minimum loading of an item equating to approximately 10% overlapping variance with the other items in that factor. Since the item loaded over .32 on the first component, it was not removed. The next three items (item 5-7) were combined to form the second component, named style/aesthetics. The last three items were combined to form the third component, named lasting/care (item 9-11). Factor analysis confirmed the three dimensions of quality introduced in chapter 2 (fabric/garment construction, style/aesthetics, lasting/care).

Table 9

Factor Loadings for Mulidimensionality of Perceived Quality Scale

	Factor Loadings		
Perceived Quality Scale Item	Component 1 (fabric/garment construction)	Component 2 (style/aesthetics)	Component 3 (lasting/care)
The scarf will be soft.	.877		
The scarf will be the color I anticipate.	.559		
The scarf will be well finished on the wrong side.	.379		
The scarf will be the weight I anticipate.	.720		
The fabric will feel soft against my skin.	.827		
The design is attractive.		.931	
The styling of this scarf is good.		.922	
The style will look good on a person wearing it.		.833	
Cost/Time involved in care will be minimal.			.867
The scarf will be easy to care for.			.891
The fabric will not stretch out during wear and care.			.732

Manipulation Checks

Manipulation checks were conducted for each of the manipulated variables (design complexity, brand familiarity, price). Conducting a *t*-test determined differences between the two levels of each variable. Results from paired samples *t*-test indicated the success of the design complexity manipulation; simple designs significantly differed from complex designs (see Table 7). Further, results from paired samples *t*-test indicated that simple versus complex design did not significantly differ in likeability and fashionability (see Table 7).

Table 10

Manipulation Checks for Design Complexity and Likeability/ Fashionability

	Manipulation		*M*	M_{diff}	*t*(1,430)	*p*
Pair 3	Design Complexity	Simple	2.013	-1.146	-18.713	< .001
		Complex	3.159			
	Likeability/ Fashionability	Simple	3.867	.046	.696	.487
		Complex	3.822			
Pair 5	Design Complexity	Simple	2.268	-1.212	-18.6	< .001
		Complex	3.48			
	Likeability/ Fashionability	Simple	3.527	-.05	-.669	.504
		Complex	3.577			

Results from independent samples *t*-test indicated the success of the brand familiarity manipulation; the unfamiliar brand (Codello) significantly differed from the familiar brand (Calvin Klein), such that the familiar brand was rated higher than the unfamiliar brand (see Table 8). To test the manipulation check for price, an independent samples *t*-test was conducted for each single stimulus. Results indicated that there was a significant difference between the low and high price condition. Furthermore, results indicated that in both price conditions, the scarves were rated above midpoint on the scale. Participants may have perceived the selected price for a scarf in the low price condition ($29.99) as high.

Table 11

Manipulation Checks for Brand Familiarity and Price

	Stimuli	Manipulation		*M*	M_{diff}	*t*(429)	*p*
Pair 3	Simple	Brand Familiarity	low	1.81	-1.44	-15.14	< .001
			high	3.25			
		Price	low	3.56	-1.408	-13.209	< .001
			high	4.60			
	Complex	Brand Familiarity	low	1.81	-1.46	-14.58	< .001
			high	3.27			
		Price	low	3.63	-9.41	-12.00	< .001
			high	4.56			
Pair 5	Simple	Brand Familiarity	low	1.80	-1.42	-14.84	< .001
			high	3.22			
		Price	low	3.57	-1.057	-13.60	< .001
			high	4.63			
	Complex	Brand Familiarity	low	1.84	-1.42	-14.40	< .001
			high	3.26			
		Price	low	3.63	-.927	-11.83	< .001
			high	4.55			

Hypotheses Testing Results

Hypotheses 1, 1a, and 1b assumed an interaction effect of brand familiarity and design complexity on perceived quality, and Hypotheses 2, 2a, and 2b claimed an interaction effect of price and design complexity on perceived quality. Hypothesis 3 asserted that perceived quality will positively influence purchase intention toward the product. The dependent variables were perceived quality represented in its three dimensions and purchase intention. The independent variables were design complexity as the within subject factor and brand familiarity and price as the between-subject factors. Items within the three different dimensions of quality were combined to test Hypotheses 1, 1a, 1b, 2, 2a, 2b using repeated measures ANOVA for each dimension of quality. Items within the purchase intention scales were combined to test Hypothesis 3 using multiple linear regression.

Design Complexity

Repeated measures ANOVA revealed that design complexity had a significant main effect on the fabric/garment construction dimension of perceived quality [$F(1,430)= 3.674$, $p= .056$, partial $\eta^2= .01$]. Specifically, a simple design was rated significantly higher than a complex design on perceived quality (fabric/garment construction dimension: $M_{complex}= 3.70$, $M_{simple}= 3.74$). However, design complexity had no significant main effect on the style/aesthetics dimension of quality [$F(1,430)= 0.884$, $p= .35$, partial $\eta^2= .002$] and the lasting/care dimension of quality [$F(1,430)= 0.471$, $p= .49$, partial $\eta^2= .001$] (see Figure 5).

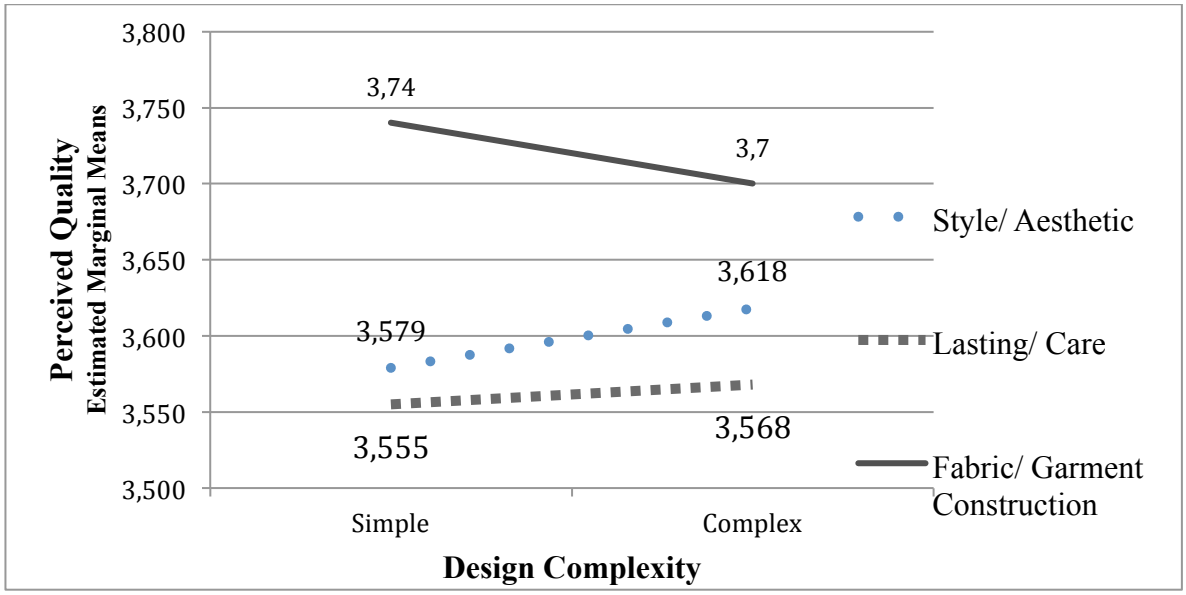


Figure 5. Main effect of design complexity on each dimension of perceived quality

Design Complexity and Brand Familiarity

Hypotheses 1, 1a, and 1b asserted that design complexity will have a greater effect on the perceived quality of low familiarity brands than high familiarity brands. Specifically, Hypothesis 1 claimed an interaction effect between brand familiarity and design complexity on perceived quality. The analysis revealed that the interaction effect between design

complexity and brand familiarity was marginally significant [$F(1,430)= 2.927$, $p= .088$, partial $\eta^2= .007$] (p-value of .10 indicates marginal significance; Gelman, 2013) for the lasting/care dimension of quality, but not significant for the fabric/garment construction dimension [$F(1,430)= 0.322$, $p= .571$, partial $\eta^2= .001$] and the style/aesthetics dimension [$F(1,430)= .911$, $p= .34$, partial $\eta^2= .002$]. Thus, Hypothesis 1 was marginally supported for lasting/care dimension of quality but not supported for the other dimensions. Hypothesis 1a asserted that for high familiarity brands, a product's design complexity will have no significant effect on perceived quality. The mean difference for lasting/care quality perception between complex and simple designs in the high brand familiarity condition was not significant [$F(1,430)= .521$, $p= .471$], supporting Hypothesis 1a (see Table). Hypothesis 1b asserted that for low familiarity brands, complex designs will result in significantly higher perceptions of quality than simple designs. Results indicated, that for unfamiliar brands complex designs were rated higher on perceived quality with respect to lasting/care than simple designs and this difference was marginally significant ($M_{Complex}= 3.62$, $SE_{Complex}= 0.28$; $M_{Simple}= 3.573$, $SE_{Simple}= 0.28$; $p= .09$) (Figure *6*). Thus, Hypothesis 1b was marginally supported (see Table).

Table 12

Interaction Effect of Design Complexity and Brand Familiarity

		Design Complexity					
		Simple		Complex		Mean Differences	Sig.
		M	*SE*	*M*	*SE*		
Brand Familiarity	Low	3.573	.047	3.620	.048	.047	.09
	High	3.537	.048	3.517	.048	-.02	.471

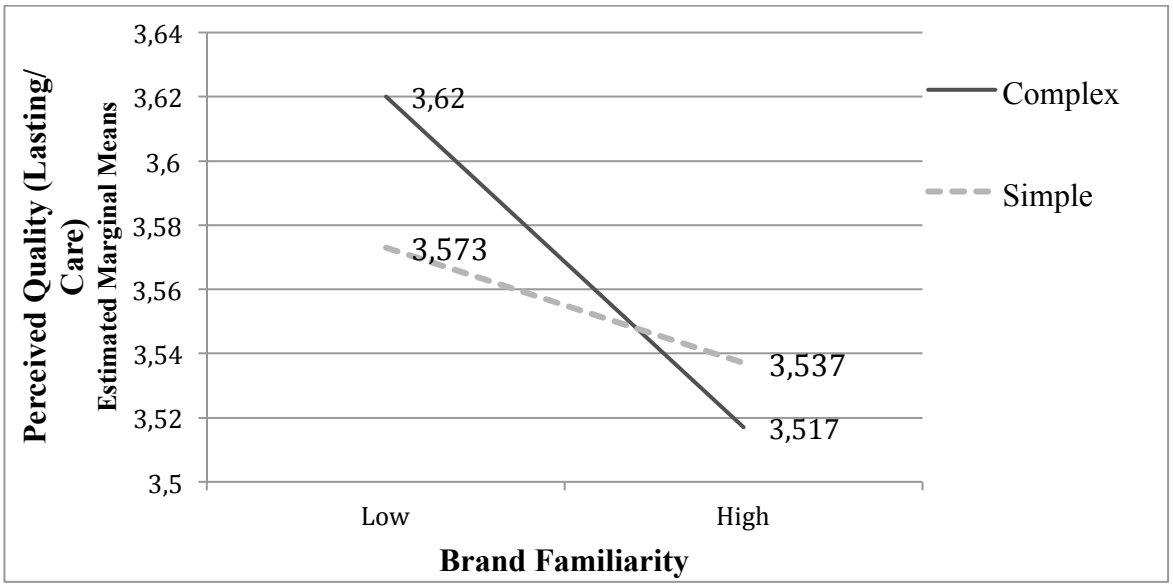


Figure 6. Interaction effect of brand familiarity and design complexity

Design Complexity and Price

Hypothesis 2, 2a, and 2b asserted the interaction effect of price and design complexity on perceived quality. Repeated measures ANOVA revealed that price and design complexity had no significant interaction effect on all dimensions of quality [fabric/garment construction: $F(1,430)= 1.852$, p= .174, partial $\eta^2= .004$, style/aesthetics: $F(1,430)= .096$, p= .756, partial $\eta^2= .000$, lasting/care: $F(1,430)= .55$, p= .459, partial $\eta^2= .001$]. Therefore, the results failed to support Hypothesis 2. Hypothesis 2a asserted that for high priced products, simple versus complex designs will have no significant effect on perceived quality. Hypothesis 2b claimed that for low priced products complex designs will result in significantly higher perceptions of quality. Since the interaction effect between price and design complexity was not significant, Hypotheses 2, 2a, and 2b were not supported.

Perceived Quality and Purchase Intention

Hypothesis 3 proposed that perceived quality will positively influence purchase intention toward the product, such that the higher (lower) the perceived quality of the products the higher (lower) the purchase intention. Multiple linear regression was used to test this hypothesis. Results indicated a significant positive relationship between perceived quality and purchase intention for all three dimensions of quality. For the style/aesthetics and lasting/care dimension, results indicated a strong positive relationship, such that the higher the perceived quality, the higher the purchase intention, and the lower the perceived quality, the lower the purchase intention [style/aesthetics: $\beta = .330$, $t(429) = 6.212$, $p < .001$, lasting/care: $\beta = .345$, $t(429) = 4.707$, $p < .001$]. For the fabric/garment construction dimension of quality there was a negative relationship found, such that the lower the quality perception, the higher the purchase intention [fabric/garment construction: $\beta = -.141$, $t(429) = -2.517$, $p < .001$]. Tests to see if the data met the assumption of collinearity indicated that multicollinearity was a concern (style/aesthetics: *Tolerance* = .696, *VIF* = 1.438; lasting/care: *Tolerance* = .755, *VIF* = 1.324; fabric/garment construction: *Tolerance* = .627, *VIF* = 1.595). Fabric/garment construction was highly correlated with the style/aesthetics dimension (R= .535, R^2= 28.62%) and lasting/care dimension (R= .474, R^2= 22.47%)

Due to the issue of multicollinearity, simple linear regression was conducted to test each dimension's influence on purchase intention individually. Results showed that all three dimensions of quality had a significant positive influence on purchase intention. Out of all quality dimensions, the biggest part of variance was shared between the style/aesthetics dimension and purchase intention (R= .344, R^2= 11.8%, $F(1,429)$= 57.57, p< .001), followed by the lasting/care dimension (R= .296, R^2= 8.8%, $F(1,429)$= 41.25, p< .001). The dimension of fabric/garment construction shared the smallest variance with purchase intention (R= .149, R^2= 2.22%, $F(1,429)$= 9.757, p= .002). Overall, all quality dimensions had a significant

positive influence on purchase intention. Therefore, Hypothesis 3 was supported. Results of hypotheses testing are summarized in Table 10.

Table 3

Hypotheses Testing Results

	Hypotheses	
H1	A simple vs. complex design will have a greater effect on the perceived quality of low familiarity brands than high familiarity brands. In other words, product design complexity (simple vs. complex) and brand familiarity (low vs. high) will have an interaction effect on perceived quality.	P/S
H1a	For high familiarity brands, product's design complexity (simple vs. complex) will have no significant effect on perceived quality.	P/S
H1b	For low familiarity brands, complex designs will result in significantly higher perceptions of quality than simple designs.	P/S
H2	A simple vs. complex design will have a greater effect on perceived quality of low priced products than on high priced products. In other words, product design complexity (simple vs. complex) and price (low vs. high) will have an interaction effect on perceived quality.	N/S
H2a	For high priced products, simple vs. complex designs will have no significant effect on perceived quality.	N/S
H2b	For low priced products, complex designs will result in significantly higher perceptions of quality than simple designs.	N/S
H3	Perceived quality will positively influence purchase intention toward the product.	S

N/S-Not Supported
P/S-Partially Supported
S-Supported

CHAPTER V. DISCUSSION AND IMPLICATIONS

This study aimed to investigate the influence of three important product factors – design, brand, and price on consumers' product judgment and decision-making. Specifically, the purpose of this study was to investigate the interaction effects of a product's design complexity, brand familiarity, and price on perceived product quality and purchase intention. This chapter discusses the results of hypotheses testing by relating it to the literature reviewed and conceptual background on which this study is based. First, the results regarding the interaction effect of design complexity and brand familiarity on perceived quality are discussed, followed by a discussion of the interaction effect of design complexity and price on perceived quality, and relation between quality perception and purchase intent. Last, theoretical and managerial implications, limitations of the study, and suggestions for future research are discussed.

Discussion and Conclusion

Design Complexity

This study found a non-hypothesized main effect for design complexity on perceived quality, supporting previous research that has found the significant impact of product aesthetics on consumers' quality judgments (Cox & Cox, 2002; Creusen et al., 2010; Page & Herr, 2002). Specifically, this study found that simple designs were perceived to be higher in quality than complex designs. This finding was significant for the fabric/garment construction dimension of quality, but not for the other two dimensions (style/aesthetics and lasting/care). Berlyne's psychobiological theory of aesthetics (1971) posits that a moderately complex design has greater hedonic value than a simple design, and this has been confirmed

in more recent studies (Cox & Cox, 2002; Page & Herr, 2002). However, in the current study, the moderately complex design had lower functional value (quality perception) than a simple design, indicating the existence of hedonic and functional trade-offs (Chitturi, Raghunathan, & Mahajan, 2007) with respect to design complexity. In relation to this main effect of design complexity on perceived quality, it is possible that the multicolored print in the complex scarf designs influenced participants' thinking about fabric quality and construction, which they may have rated less positively on items such as softness, finishing, weight, and color as compared to the simple scarf designs because an all-over print on a textile can influence its softness, weight, and finishing. For example, consumers may have a memory of a low quality print that causes the textile to be stiffer and heavier, making it unpleasant to touch and uncomfortable to wear. The multicolored print in the complex scarf designs may have triggered such a memory and led to lower quality perceptions. However, it did not influence consumer's perceptions regarding lasting and care. Hence, in the context of apparel products, it is indeed possible that while moderate complexity leads to a more positive hedonic response as compared with low complexity (Berlyne, 1971; Cox & Cox, 2002), it may concurrently lead to lower functional (quality) perceptions if the source of complexity is a fabric print. Such hedonic and functional trade-offs related to design complexity in apparel products are worthy of further examination.

In line with the above argument, design complexity should have affected the style/aesthetics dimension of perceived quality in a reverse direction that is consistent with Berlyne's theory. We found some support for this trend, although it was not statistically significant; complex designs led to higher means on quality perceptions than simple designs. The lack of statistical significance for this finding (main effect for design on the style/aesthetics dimension) could be due to the fact that this study strongly controlled for liking between complex and simple stimuli such that both complex and simple designs were

pretested to be equally "attractive" and "good". In order to isolate the effects of design complexity while minimizing the influence of any other factor such as liking, this study tested each pair of complex and simple designs for differences in liking in the pretest. For this reason, only designs that were equally likeable but differed with respect to complexity were selected. Items of the style/aesthetics dimension of perceived quality including "the design is attractive" and "the styling of this scarf is good," which are highly correlated to the product's liking, hence did not differ based on the product's design complexity.

Design Complexity and Brand Familiarity

Much previous research explored brand-related constructs such as brand equity, strength, name, labeling, and extension in relation to quality judgments (Aaker, 1991; Farquhar, 1989; Forsythe, 1991; Goh, 2013; Page & Herr, 2002). However, only few studies have focused on the construct of brand familiarity in relation to quality perceptions. One of the purposes of this study was to examine the moderating role of brand familiarity in the relationship between design complexity and product quality perceptions. Hypothesis 1 proposed the specific nature of this interaction effect, such that design complexity has a greater effect on the perceived quality of low familiarity brands than high familiarity brands.

Results marginally supported H1 by demonstrating that brand familiarity and design complexity asserted a marginally significant interaction effect on the lasting/care dimension of perceived quality: for unfamiliar brands, complex designs are perceived higher quality than simple designs; whereas, for familiar brands simple designs are rated higher quality than complex designs. Unfamiliar brands are less capable of serving as heuristics, given that consumers have little or no knowledge about them. Hence, the presence of aesthetic information such as design complexity has a stronger impact for unfamiliar brands as compared with familiar brands. For familiar brands, product aesthetics may be less consequential since consumers may hold an adequate amount of information associated with

the familiar brands (Page & Herr, 2002). Further, brand familiarity leads to high brand recognition making consumers' decision processes simplistic or heuristic (Page & Herr, 2002). These results support previous findings that showed that the impact of aesthetics on the relationship between brand and product judgments is qualified by brand familiarity such that aesthetics has a greater impact for unfamiliar than familiar brands (Goh et al., 2013). Hence, when brand information is available, consumers are more likely to use their existing brand knowledge for product evaluation, thus reducing their reliance on aesthetic information (Goh et al., 2013).

The interaction effect between design complexity and brand familiarity was marginally significant for the lasting/care dimension of quality, but not significant for the fabric/garment construction dimension and the style/aesthetics dimension. It is possible that the fabric/garment construction is mainly affected by the main effect of design complexity rather than the interaction effect of design complexity and brand familiarity. The lack of a significant effect on the style/aesthetics dimension could be due to our controlling for liking between complex and simple stimuli (discussed previously).

Design Complexity and Price

Prior studies have found a significant main effect of price on quality (Zeithaml, 1988), such that the higher the price, the higher quality perceptions. Furthermore, the effect of price on quality perception can be strong or weak, depending on the presence of other variables (Abraham-Murali & Litrell, 1995). This study's second research purpose was to test the moderating role of design complexity on the relationship between price and perceived quality. Hypotheses 2, 2a, and 2b claimed the interaction effect of price and design complexity on perceived quality. Results were expected to show that consumers use design to form their quality perception for low priced products as compared to high priced products. For high priced products, consumers may base their perception of quality mainly on the price

level, thus reducing the effect of the product's design. However, this study's findings did not support the hypotheses proposed. Price and design complexity asserted no significant interaction effect on perceived quality within this combinatorial model. This could be due to the selection of inappropriate price levels for the low vs. high price conditions. Price levels for the two conditions were chosen based on the average scarf manufactures suggested retail prices of moderate and better brands. Even though participants rated the price in the low price condition lower than in the high price condition, the low price was still rated above midpoint on the scale (midpoint = 3.0, $Mean_{lowPriceCond}$= 3.6, $Mean_{highPriceCond}$= 4.6). Participants may have perceived the selected price for a scarf in the low price condition ($29.99) as higher than what they are used to pay for a scarf and than what they consider low price due to their lower income level as students. Hence, future studies may be needed to re-test this hypothesis by selecting price levels based on the study's sample. An appropriate low price level for a scarf should represent prices paid by consumers and perceived by those consumers as a low price.

Perceived Quality and Purchase Intention

The psychological responses related to perceived quality can increase or decrease consumers' intention to purchase a product (Blackwell et al., 2001). Hypothesis 3 proposed that perceived quality will positively influence purchase intention towards a product. Results revealed a significant support for Hypothesis 3 for all dimensions of quality. Findings show that the higher perceptions of quality, the higher purchase intention for the scarves. The style/aesthetics quality dimension shared the biggest part of variance with purchase intention, indicating that the look and style of the product (scarves) influenced consumers' purchase intention the most. The more likeable the product's aesthetics, the higher the intention to purchase. The second important factor in predicting purchase intention was the fabric/garment construction dimension followed by the lasting/ care dimension of quality. Results support previous findings that revealed the style/aesthetics and fabric/garment

construction dimensions as the main predictors of perceived quality (Forsythe et al., 1996) and concurrently the main predictors of purchase intent. Further, aesthetics-quality literature indicated that the aesthetic qualities of apparel products are the most important elements in the purchase decision process (Fiore & Damhorst, 1992), which is supported by this study. Furthermore, at the decision of purchase, it seems as if consumers' needs with regard to the aesthetical product qualities overshadow most of the functional needs that may be experienced later during wear and care (Klerk & Lubbe, 2008). Participants may tend to emphasize characteristics that they can evaluate adequately and without any effort based on their prior product knowledge and ability to judge (Klerk & Lubbe, 2008), such as the visible elements described by the product aesthetics and style.

This study's stimuli were colored photographs of scarves. Participants may have rated differently if there were actual items to touch and feel against the skin. The other quality dimensions relating to the construction and feel of the product may have been more important for the consumers if the study had included real items presented in an actual retail setting. For the context of online retailing, where consumers make purchase decisions based on a product's image, this study's results, showing the relative importance of product aesthetics in consumers' purchase decisions, are indeed significant.

Theoretical Implications

This study offers multiple theoretical implications, which are presented below. First, this study's findings are a first step to address a critical gap in aesthetics-quality research. The findings suggest that design complexity may differentially influence aesthetic and functional dimensions of quality, although this study was unable to furnish conclusive support for this differential impact. The trends in the findings indicate the possibility of hedonic and functional trade-offs in quality perceptions that may arise from increased

complexity in designs. This may be the case for certain categories of products such as apparel because design complexity can emerge from various sources, such as prints, construction details, and trims, that may enhance perceptions of aesthetic quality but could negatively impact performance, care, and fabric perceptions. The results also revealed marginal support for the interaction effect of design complexity and brand familiarity on perceived quality. Therefore, this study provides preliminary evidence to delineate the impact of a product's design, an intrinsic factor, in combination with a brand's familiarity, an extrinsic factor, in quality evaluations that needs to be confirmed in future studies. The findings also furnish support for the multidimensional nature of consumers' perception of clothing quality and provide validation for the Model of the Dimensions of Clothing Product Quality (Klerk & Lubbe, 2004).

Perceived quality was found to successfully predict purchase intention, with regard to style/aesthetics dimension of quality emerging as the most critical predictor. These results provide empirical support for the Model of Consumer Responses to Product Form (Bloch, 1995), such that product design significantly influences consumers' cognitions toward the product and in turn, their behavioral approach/avoidance of the product. This study also supports Bloch's model by demonstrating the impact of brand familiarity as an important moderator of the effects of a product's design on consumer product cognitions. In summary, this study importantly highlights the integral role of aesthetics in quality perceptions.

Managerial Implications

Design Complexity and Brand Familiarity

This study offers insights for manufacturers, designers, and marketers of young, unfamiliar, or new brands. Results showed that when there is a lack of brand knowledge (unfamiliar brand), consumers are more likely to base their lasting/care quality judgments on

design, such that higher more than lower complexity may lead to higher quality perceptions. Hence, unfamiliar brands may be at a competitive disadvantage compared with familiar brands if they produce products with simple designs. Consequently for unfamiliar brands, increasing the design complexity can influence the product's success and, thereby, the company's success. Hence, an appropriate level of design complexity can help unfamiliar brands compete with familiar, well-established brands by shifting consumers' attention to the design attributes and decreasing the influence of brand name. These implications for unfamiliar brands are also applicable for young brands. Young brands may not necessarily have a weaker brand image; but because these brands are new in the marketplace, consumers' brand associations for them may not be strong and well established (Goh, 2013). For familiar/established brands the product's design is less consequential in quality evaluations. In summary, these findings may allow product, retail, and brand managers to appropriately tailor the level of design complexity (simple vs. complex) in product offerings for different brands (familiar/established vs. unfamiliar/new).

Perceived Quality and Purchase Intention

This study provides insights for manufacturers and retailers, and particularly online retailers, by revealing that consumers may weigh style/aesthetics factors of quality more than performance, lasting/care, fabric and construction dimensions when forming purchase intention for apparel products and accessories in the online channel. These findings may be relevant to catalog retailers as well. Hence, manufacturers and retailers may need to invest more resources to the product's aesthetics aspects, particularly when selling through the online channel.

Limitations and Recommendations for Future Research

Despite efforts to ensure the validity of the results, this study has some limitations due to methodological issues. First, the sample used in this study mainly consisted of undergraduate students from the same university and within the same college. Students may attribute less importance to a product's quality and may be less discerning about quality issues as compared to other consumer segments such as working professionals. Thus, including other age groups and consumer segments may allow a broader generalization of the study's results. In regard to the study's sample, the majority of participants were women, which limits the variability of results. In this sample there were 399 females and only 32 males. Future research could benefit from having an equal number of men and women in their sample. In conjunction with this, the stimulus chosen (scarf) could have affected participants' responses in regard to purchase intention. Male participants may have considered a scarf as a female accessory. Future research could choose stimuli that are less gender-specific and pretest the effect of different stimuli on male and female participants.

The study was conducted as an online experiment, where the completion process was self-paced and the exposure time to the stimuli (i.e. scarf images) for each participant was not controlled. The exposure time to the product's image may have influenced participants' evaluation processes. For example, if participants looked at the image for only a few seconds the price of the product might have been overlooked. Future studies could implement a specific stimuli exposure time. Prior to the main study, price points (for scarves) of moderate and better brands were compared and averaged to manipulate low vs. high prices. These different price levels were not tested with a student sample prior to the main study. Even though significant differences in the price levels were found, participants rated both price levels above midpoint indicating that both price levels (low and high) were perceived to be high. It is expected that this was the main reason for not finding support for the proposed

hypotheses regarding price. Future studies should pretest the price manipulation among target respondents to ensure that participants rate prices consistent with expectations. Controlling strongly for liking between the low and high complexity stimuli through pretests may have been confounded with any differences between these designs in that both designs were found to be equally "attractive" and "good". Additionally, the style/aesthetics dimension of quality is highly interrelated with the product's likeability, which may be the main reason for not finding a significant main effect for design complexity on the style/aesthetics dimension.

This study demonstrated a hedonic and functional trade-off (Chitturi et al., 2007) with respect to design complexity. Thus, in the context of apparel products, it is indeed possible that while moderate complexity leads to a more positive hedonic response as compared with low complexity, it may concurrently lead to lower functional (quality) perceptions if the source of complexity is a fabric print. Such hedonic and functional trade-offs related to design complexity in apparel products should be examined further.

The experiment used only one product category, scarves. For this reason, the ability to generalize these findings to other product categories is limited. Furthermore, this study used product images in an online retailing context to test the proposed hypotheses, creating another limitation. Perceptions of quality need to be assessed with real products to ensure that this study's findings are generalizable beyond the online retailing channel. This study also only measured purchase intention rather than actual purchases, although purchase intention has been shown to be a true indicator of consumers' future purchase (Ajzen, 1988).

REFERENCES

Aaker, D. A. (1991). *Managing brand equity*. New York, NY: Free Press.

Abraham- Murali, L., & Litrell, M. A. (1995). Consumer's perception of apparel quality over time: An exploratory study. *Clothing and Textile Research Journal, 13*(3), 149-158.

Acebron, L. B., & Dopico, D. C. (2000). The importance of instrinic and extrinsic cues to expected and experienced quality: an empirical application for beef. *Food Quality and Preferences, 11*, 229-238.

Andrews, I. R., & Valenzi, E. R. (1971). Combining price, brand and store cues to form an impression of product quality. *Proceesings, 79th Annual Convention of the American Psychological Association*, 649-650.

Beneke, J., Fynn, R., Greig, T., & Mukaiwa, M. (2013). The influence of perceived product quality, relative price and risk on consumer value and willingness to buy: a study of private label merchandise. *Journal of Product and Brand Management, 22*(3), 218-228.

Berkowitz, M. (1987). Product shape as a design innovation strategy. *Journal of Product Innovation Management, 4*(4), 274-283.

Berlyne, D. E. (1971). Novelty, complexity, and hedonic value. *Perception and Psychophysics, 8*(5A), 279-287.

Blackwell, R. D., Miniard, P. W., Engel, J. F., (2001). *Consumer Behavior*. Orlando, FL: The Dryden Press.

Bloch, P. H. (1995). Seeking the ideal form: Product design and consumer response. *Journal of Marketing, 59*(3), 16-29.

Brown, P. & Rice, J. (1998). *Ready-to-wear apparel analysis*. 2nd ed. Merrill-Prentice Hall New Jersey.

Caves, R. E., D. P. Greene (1996). Brands' quality levels, prices and advertising outlays: Empirical evidence on signals and information costs. *International Journal of Industrial Organization, 14*(1), 29-52.

Chitturi, R., Raghunathan, R. & Mahajan, V. (2007). Form versus function: How the intensities of specific emotions evoked in functional versus hedonic trade-offs mediate product preferences. *Journal of Marketing Research, 44*(November), 702–714.

Cox, D., & Cox, A. D. (2002). Beyond first impressions: The effects of repeated exposure on consumer liking of visually complex and simple product designs. *Journal of the Academy of Marketing Science, 30*(2), 119-130.

Creusen, M. E. H., Veryzer, R. W., & Schoormans, J. P. L. (2010). Product value importance and consumer preference for visual complexity and symmetry. *European Journal of Marketing, 49*(9-10), 1437-1452.

Curry, D. J., Riesz. P.C. (1988). Prices and price/quality relationships: A longitudinal analysis. *Journal of Marketing, 52,* 36-51.

Day, H. I. (1981). *Advances in intrinsic motivation and aesthetics*. New York: Plenum.

Davis, L. L. (1985). Effects of physical quality and brand labeling on perceptions of clothing quality. *Perceptual and Motor Skills, 61*, 671-677.

Davis, L.L. (1987) Consumer use of label information in ratings of clothing quality and clothing fashionability. *Clothing and Textiles Research Journal, 6,* 8-14.

Dawar, N., & Parker, P. (1994). Marketing universals: Consumers' use of brand name, price, physical appearance, and retailer reputation as signals of product quality. *Journal of Marketing, 58*(2), 81–95.

Deng, X., Hui, S. K., & Hutchinson, J. (2010). Consumer preferences for color combinations: An empirical analysis of similarity-based color relationships. *Journal of Consumer Psychology, 20*(4), 476-484.

Dholakia, U. M. (2001). A motivational process model of product involvement and consumer risk perception. *European Journal of Marketing, 35*, 1340-1360.

Dickerson, K. (1982). Imported versus U.S.-produced apparel: consumer views and buying patterns. *Home Economics Research Journal*, *10*, 241-252.

Dodds, W. B., & Monroe, K. B. (1985). The effect of brand and price information on subjective product evaluations. *Advances in Consumer Research, 12*, 85-90.

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of price, brand, and store information on buyer's product evaluations. *Journal of Marketing Research, 28*(3), 307-319.

Erdem, T., Keane, M. P., & Sun, B. (2008). A dynamic model of brand choice when price and advertising signal product quality. *Marketing Science, 27*(6), 1111-1125.

Farquhar, P. H. (1989). Managing brand equity. *Marketing Research, 1*, 24-33.

Fiore, A. M., & Kimle, P. A. (1997). *Understanding aethetics for the merchandising and design professional*. New York, NY: Fairchild.

Fiore, A. M., Moreno, J. M., & Kimle, P. A. (1996). Aesthetics: A comparison of the state of the art outside and inside the field of textiles and clothing. Part three: Appreciation process, appreciator and summary comparisons. *Clothing and Textiles Research Journal, 14*(3), 169-184.

Forsythe, S. (1991). Effect of private, designer, and national brand names on shopper's perception of apparel quality and price. *Clothing and Textiles Research Journal*, *9*, 1-6.

Forsythe, S. (1995). Consumer's use of brand name, price and physical appearance: Examining retail markets in mexico. Journal of Shopping Center Research, 2(2), 83-112.

Forsythe, S., Presley, A. B., & Caton, K. W. (1996). Dimensions of apparel quality influencing consumers' perceptions. *Perceptual and Motor Skills*, *83*, 299-305.

Garber, L. L., Burke, R. R., & Jones, J. M. (2000). *The role of package color in consumer purchase consideration and choice* (Rep. No. 00-104). Cambridge, MA: Marketing Science Institute.

Gardner, D. M. (1971). Is There A Generalized Price-Quality Relationship? *Journal of Marketing Research, 8*, 241-243.

Gelman, Andrew (2013). Commentary: P values and statistical practice. *Epidemiology, 44*(1), 69-72.

Goh, Y. S., Chattaraman, V., & Forsythe, S. (2013). Brand and category design consistency in brand extensions. *Journal of Product and Brand Management, 22*(4), 272-285.

Grewal, D., Krishnan, R., Baker, J., & Borin, N. (1998). The effect of store brand, brand name, and price discounts on consumers' evaluations and purchase intentions. *Journalof Retailing, 74*, 331-352.

Hekkert, P. (2006). Design aesthetics: Principles of pleasure in design. *Psychology Science, 48*(2), 157-172.

Hekkert, P., & Leder, H. (2008). *Product experience*. New York, NY: Elsevier Ltd.

Hines, J. D., & Swinker, M. E. (2001). Knowledge: A variable in evaluating clothing quality. *International Journal of Consumer Studies*, *25*, 72-76.

Howard, J. A., & Sheth, J. N. (1969). *The Theory of Buyer Behavior*. New York, NY: Wiley.

Jacoby, J., & Olson, J. C., & Haddockr., A. (1971). Price, brand name, and product composition characteristics as determinants of perceived quality. *Journa1 of Applied Psychology, 55*, 570-579.

Kellaris, J. J., & Kent, R. J. (1993). Exploring responses elicited by music varying in tempo, tonality, and texture. *Journal of Consumer Psychology, 2*(4), 381-401.

Kent, R. J., & Allen, C. T. (1994). Competitive interference effects in consumer memory for advertising: The role of brand familiarity. *Journal of Marketing, 58,* 97-105.

Kim, J., & Damhorst, M. L. (2009). Effects of level of internet retailer's service quality on perceived apparel quality, perceived service quality, perceived value, satisfaction, and behavioral intentions toward an internet retailer. *Clothing and Textile Research Journal, 28*(1), 56-73.

Klerk, H. M. & Lubbe, S. (2004). The role of aesthetics in consumer's evaluation of apparel quality: A conceptual framework. *Journal of Family Ecology and Consumer Sciences*, 32.

Klerk, H. M. & Lubbe, S. (2008). Female consumers' evaluation of apparel quality: exploring the importance of aesthetics. *Journal of Fashion Marketing and Management, 12*(1), 36-50.

Klerk, H. M., & Tselepis, T., (2007). The early-adolescent female clothing consumer: Expectations, evaluation and satisfaction with fit as part of the appreciation of clothing quality. *Journal of Fashion Marketing and Management*, *11*(3), 413-428.

Laroche, M., Kim, C., & Zhou, L. (1996). Brand familiarity and confidence as determinants of purchase intention: an empirical test in a multiple brand context. *Journal of Business Research, 37*(2), 115-120.

Maheswaran, D., Mackie, D. M., & Chaiken, S. (1992). Brand name as a heuristic cue: The effects of tasks importance and expectancy confirmation on consumer judgments. *Journal of Consumer Psychology, 1*(4), 317-336.

Na, K. J., Holland, R., Shackleton, J., Hwang, Y.Y., Melewar, T.C. (2008). The effect of evaluation criteria on design attributes and brand equity in the product evaluation process. *Journal of Brand Management, 16*, 195-212.

O'Neal, G. S. (1998). African-american aesthetic of dress: current manifestations. *Clothing and Textiles Research Journal, 16*(4), 167-75.

Page, C., & Herr, P. M. (2002). An investigation of the processes by which product design and brand strength interact to determine initial affect and quality judgments. *Journal of Consumer Psychology, 12*(2), 133-147.

Park, C. W., Milberg, S., & Lawson, R. (1991). Evaluation of brand extensions: The role of product feature similarity and brand concept consistency. *Journal of Consumer Research,18,* 185-193.

Park, J., & Stoel, L. (2005). Effects of brand familiarity, experience and information on online apparel purchase. *International Journal of Retail & Distribution Management*, *33*(2), 148–160.

Raju, P. S. (1977). Product Familiarity, Brand Name and Price Influences on Product Evaluation. *Advances in Consumer Research, 4*, 64-71.

Retief, A. & Klerk H. M. (2003). Development of a guide for the visual assessment of quality of clothing textile products. *Journal of Family Ecology and Consumer Sciences, 31,* 2003.

Roy, R. (1994). Can the benefits of good design be quantified? *Design Management Journal, 5*(2), 9-17.

Rao, A. R., K. B. Monroe (1989). The effect of price, brand name and store name on buyers' perceptions of product quality: An integrative review. *Journal of Marketing Research, 26*, 351-357.

Sternquist, B. & Davis, B. (1986). Store status and country of origin as information cues: consumer's perception of sweater price and quality. *Home Economics Research Journal, 15*, 124-131.

Stiglitz, J. E. (1987). The causes and consequences of the dependence of quality and price. *Journal of Economic Literature, 25*, 1-48.

Swinker, M. E., & Hines, J. D. (2006). Understanding consumers' perception of clothing quality: a multidimensional approach. *International Journal of Consumer Studies, 30*(2), 218-223.

Teas, R. K., & Agarwal, A. (2000). The effects of extrinsic product cues on consumers' perceptions of quality, sacrifice, and value. *Journal of the Academy of Marketing Science*, *28*(2), 278-290.

Wheatley, J. J., Walton, R. G., & Chiu, J. S. Y. (1977). The influence of prior product experience, price, and brand on quality perception. *Advances in Consumer Research, 4*, 72-77.

Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: A means-end model and synthesis of evidence. *Journal of Marketing*, *52*, 2-22.

APPENDIX A

Approval Letter and Information Letter [Protocol #14-127 EX 1404]

Dear Ms. Braun,

Your protocol entitled "The Influence of Product Attributes on Consumer's Evaluation" has received approval as "Exempt" under federal regulation 45 CFR 46.101(b)(2).

Official notice:

This e-mail serves as official notice that your protocol has been approved. A formal approval letter will not be sent unless you notify us that you need one. By accepting this approval, you also accept your responsibilities associated with this approval. Details of your responsibilities are attached. Please print and retain.

Information Letter:

Please add the following IRB approval information to your information letter:"The Auburn University Institutional Review Board has approved this document for use from April

03, 2014 to April 2, 2017. Protocol #14-127 EX 1404 "

You must use that updated document to consent participants. Once you have made the update you may begin your study. *Please forward a copy of the electronic letter with live links so that we may print a final copy for our files*.

Expiration – Approval for three year period:

*****Note that the new policy for Exempt approvals is a *three year approval***. Therefore, your protocol **will expire on April 2, 2017.** Put that date on your calendar now. About three weeks before that time you will need to submit a renewal request.

When you have completed all research activities, have no plans to collect additional data and have destroyed all identifiable information as approved by the IRB, please notify this office via e-mail. A final report is no longer required.

If you have any questions, please let us know. Best wishes for success with your research!

Susan

Susan Anderson, M.S., CIM IRB Administrator

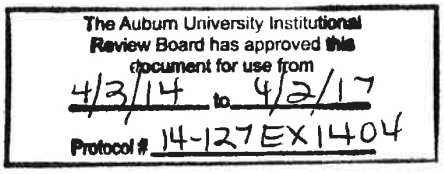
Office of Research Compliance

115 Ramsay Hall (basement)

Auburn University, AL 36849 (334) 844-5966

hsubjec@auburn.edu

APPENDIX B



(NOTE: DO NOT AGREE TO PARTICIPATE UNLESS IRB APPROVAL INFORMATION WITH CURRENT DATES HAS BEEN ADDED TO THIS DOCUMENT.)

INFORMATION LETTER
for a Research Study entitled
"The Influence of Product Attributes on Consumers' Evaluations"

You are invited to participate in a research study to examine the influence of product attributes on consumers' responses. The study is being conducted by Alina Braun, Graduate Student the Auburn University Department of Consumer and Design Sciences. You were selected as a possible participant because you are an Auburn student and are age 19 or older.

What will be involved if you participate? Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to complete an online questionnaire. Your total time commitment will be approximately 15 minutes.

Are there any risks or discomforts? We assure that the participation in this study would put you in no physical or psychological risks other than the minimal inconvenience of completing the questionnaire. The information collected through this survey will remain completely anonymous. No identifiers will be used to link your responses to your identity.

Are there any benefits to yourself or others? The general population may benefit from this study as product/environment designers and marketers may produce and sell products that better fit the aesthetic preferences of their target market. If you participate in this study, you can expect to receive extra credits. We cannot promise you that you will receive any or all of the benefits described.

Will you receive compensation for participating? To thank you for your time you will be offered extra credit for the specific class in which the study announcement was made.

If you change your mind about participating, you can withdraw at any time during the study by closing your browser window. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Once you've submitted anonymous data, it cannot be withdrawn since it will be unidentifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University or the Department of Consumer and Design Sciences.
Your privacy will be protected, any data obtained in connection with this study will remain anonymous. We will protect your privacy and the data you provide by not collecting IP

addresses from research participants. Anonymous information collected through your participation may be published in a professional journal, and/or presented at a professional meeting.

If you have questions about this study, please contact Alina Braun at amb0042@auburn.edu

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334) 844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CLICK ON THE LINK BELOW. YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

Alina Braun 03/20/2014

Investigator Date

The Auburn University Institutional Review Board has approved this document for use from 4/3/14 to 4/2/17 Protocol # 14-127 EX 1404

The Auburn University Institutional Review Board has approved this document for use from 4/3/14 *to* 4/2/17. *Protocol #* 14-127 EX 1404

LINK TO SURVEY

APPENDIX C

Pretest

(Evaluation of the Design)

Directions: Please indicate the number that best reflects your opinion towards the product below (scarf).

(All eight stimuli images were presented and rated in the pretest.)

The scarf is _____.
1.

Bad	○	○	○	○	○	Good
Not likeable	○	○	○	○	○	Likeable
Not fashionable	○	○	○	○	○	Fashionable

2.

Simple	○	○	○	○	○	Complicated
Not complex	○	○	○	○	○	Complex

(page break)

APPENDIX C (continued)

(Evaluation of the Brand)

Directions: Please indicate the number that best reflects the amount of information you have about the brand below.

(All four stimuli brands were presented and rated in the pretest.)

CODELLO

No information	○ ○ ○ ○ ○	A great deal of information
No previous experience	○ ○ ○ ○ ○	A lot of previous experience
Very unfamiliar	○ ○ ○ ○ ○	Very familiar

APPENDIX D

Stimuli used for Main Study

APPENDIX E

Main Study

On the following pages, you will see images of products offered by a brand that you will be asked to evaluate. Please imagine that you are evaluating each product for yourself.

(Stimulus image changed according to condition.)

If you were to see the product (scarf) above in an online store, please indicate your likelihood to purchase the product by selecting the appropriate button.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I would consider buying this scarf	○	○	○	○	○
I will purchase this scarf	○	○	○	○	○
There is a strong likelihood that I will buy this scarf	○	○	○	○	○

APPENDIX E (continued)

Please indicate the number that best reflects your opinion towards the product (scarf) above.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The scarf will be soft	○	○	○	○	○
The scarf will be the color I anticipate	○	○	○	○	○
The scarf will be well finished on the wrong side	○	○	○	○	○
The scarf will be the weight I anticipate	○	○	○	○	○
The design is attractive	○	○	○	○	○
The styling of this scarf is good	○	○	○	○	○
The style will look good on a person wearing it	○	○	○	○	○
The fabric will feel soft against my skin	○	○	○	○	○
Cost/Time involved in care will be minimal	○	○	○	○	○
The scarf will be easy to care for	○	○	○	○	○
The fabric will not stretch out during wear and care	○	○	○	○	○

Please select the appropriate button that best reflects your opinion towards the design of the product (scarf) above.

The design of the scarf is _____.

1.

Bad	○	○	○	○	○	Good
Not likeable	○	○	○	○	○	Likeable
Not fashionable	○	○	○	○	○	Fashionable

2.

Simple	○	○	○	○	○	Complicated
Not complex	○	○	○	○	○	Complex

APPENDIX E (continued)

Please indicate the number that best reflects the amount of information you have about the brand of the product (scarf) above.

No information	○ ○ ○ ○ ○	A great deal of information
No previous experience	○ ○ ○ ○ ○	A lot of previous experience
Very unfamiliar	○ ○ ○ ○ ○	Very familiar

Please select the appropriate button that best reflects your opinion towards the price of the product (scarf) above.

The price of this scarf is _____.

Low	○ ○ ○ ○ ○	High

(Demographics)

The following set of statements relates to your demographics. Please choose the answer that best matches your response.

What is your gender?

○ Male

○ Female

What is your age?

What is your major area of study?

APPENDIX E (continued)

Which of the following ethnic groups of the following do you consider to be a member of?

- ○ Non-Hispanic Black (African American)
- ○ Non-Hispanic White (Caucasian American)
- ○ Hispanic
- ○ Asian/Pacific Islander
- ○ American Indian/Alaskan Native
- ○ Other (Please list in the space provided)

What is your academic standing?

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ Graduate Student
- ☐ Other (Please list in the space provided)

Have you completed this survey before?

- ○ Yes
- ○ No

APPENDIX F

Table of Results from Repeated Measures ANOVA For Hypothesis 1 and 2

Fabric/ Garment Dimension of Quality

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial eta^2
Design	Pillai's Trace	.009	3.674	1	427	**.056**	.009
	Wilk' Lambda	.991	3.674	1	427	**.056**	.009
Design*Brand	Pillai's Trace	.999	.322	1	427	.571	.001
	Wilk' Lambda	.999	.322	1	427	.571	.001
Design* Price	Pillai's Trace	.996	1.852	1	427	.174	.004
	Wilk' Lambda	.996	1.852	1	427	.174	.004

APPENDIX G

Table of Results from Repeated Measures ANOVA For Hypothesis 1 and 2

Style/Aesthetics Dimension of Quality

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial eta^2
Design	Pillai's Trace	.002	.884	1	427	.348	.002
	Wilk' Lambda	.998	.884	1	427	.348	.002
Design*Brand	Pillai's Trace	.002	.911	1	427	.340	.002
	Wilk' Lambda	.998	.911	1	427	.340	.002
Design* Price	Pillai's Trace	0	.096	1	427	.254	.003
	Wilk' Lambda	1	.096	1	427	.254	.003

APPENDIX H

Table of Results from Repeated Measures ANOVA For Hypothesis 1 and 2

Lasting/Care Dimension of Quality

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial eta^2
Design	Pillai's Trace	.001	.471	1	427	.493	.001
	Wilk' Lambda	.999	.471	1	427	.493	.001
Design*Brand	Pillai's Trace	.007	2.927	1	427	**.088**	.007
	Wilk' Lambda	.993	2.927	1	427	**.088**	.007
Design* Price	Pillai's Trace	.001	.550	1	427	.459	.001
	Wilk' Lambda	.999	.550	1	427	.459	.001