

## **ABSTRACT**

NEWCOMB, ELIZABETH ANNE. Apparel Product Development Considerations for US Hispanic Women: A Study of Evaluative Criteria and Fit Preferences of 18-25 Year-Old Females. (Under the direction of Dr. Cynthia L. Istook).

This research is meant to provide information to apparel companies that might help them focus their product development strategies toward Mexican-American females' needs and preferences. Trade magazines and news media continually report "preferences" that may better be described as stereotypes, and much of the published research related to Hispanic market preferences is often conflicting. Targeted product development processes are not benefiting from much of this information and the industry desperately lacks comprehensive information about the market's preferences for intrinsic and extrinsic attributes and the importance they play in actual apparel purchase decisions. This research particularly explored these evaluative criteria preferences through a combination of exploratory and descriptive research.

Framed by four research objectives (RO), this research first focused on identifying and modeling the full range of factors that might influence preferences for apparel evaluative criteria. Using the model created as part of RO1, RO2 obtained a clear understanding of the use and importance of 20 intrinsic and extrinsic attributes in the purchase of casual pants, tops, skirts, and dresses. Given the importance of the Fit / sizing criteria in the overall aesthetic and functional performance of garments, RO3 delved further into preferences related to this attribute, to obtain an understanding of the market's fit preferences across a range of casual garments. The effect of physical body, ethnic, and demographic factors in

shaping these preferences was also evaluated. Thus, RO1 – RO3 focused on obtaining a better understanding of the apparel evaluative criteria preferences, and specifically the fit preferences, of Mexican-American women in their apparel purchases. Research Objective 4 explored the practical application of the information gathered from RO1 – RO3 to targeted product development processes for this market.

An original survey instrument was designed to respond to RO2 – RO4, and was distributed online via SurveyGizmo. The sample was restricted to Mexican-American females, 18-25 years old, from the Southwestern US to confront well-documented variability in the Hispanic market and isolate the effects of the variables of interest in this study.

Results from RO1 clearly demonstrated the consumer-oriented factors and external situation-oriented factors that influence consumer preferences for apparel evaluative criteria. The model developed as part of this objective was significant due to its inclusion of apparel-specific considerations that can be used to guide research into apparel evaluative criteria preferences.

Research Objective 2 showed that Mexican-American females undergo complex purchase decisions when shopping for apparel, considering that the majority of intrinsic and extrinsic attributes studied were important, if not critical, in apparel purchases. Overall, intrinsic attributes inherent to the product were considered more important and determinant than extrinsic attributes. Minor differences in importance were also observed depending on garment category. However, the concentration of ratings toward the high end of the scale used to assess importance reduced the effect of the physical body, ethnic, and demographic variables on these preferences.

Using an original fit preference assessment scale developed for this research, results also indicated that Mexican-American females preferred semi-fitted garments. This preference for a mid-range fit level contradicts some of the stereotypes that exist for the market. Statistical analysis demonstrated the possible effect of physical body characteristics of body shape and size, particularly on respondents' preferences for fitted and loose garments. Respondents of a larger size were more likely to prefer loosely fitted garments, while respondents of a smaller size and narrower waists were more likely to prefer closely fitted garments.

Findings from RO1 – RO3 have direct application in targeted product development processes, specifically in line planning, concept and pattern development, marketing, and sourcing and production. A consideration of the evaluative criteria the market considers important and their associated fit preferences optimizes product development efforts and enables the development of products well-matched to customer needs. Findings of this research also reveal a wide array of future research opportunities, such as further clarification of specific evaluative criteria and fit preferences, application of the research methodology developed for this study to analyze additional target markets, and the modification of sampling strategies and the survey instrument to confront limitations involved in the current research.

Apparel Product Development Considerations for US Hispanic Women: A Study of  
Evaluative Criteria and Fit Preferences of 18-25 Year-Old Females

by  
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## DEDICATION

*To my biggest supporters and best friends,  
my parents,  
Fred & Myrtle Newcomb*

## **BIOGRAPHY**

Beth Newcomb was born in Goldsboro, North Carolina on August 19, 1981. She shares this birthday with her twin sister, Katy Newcomb Lamb, and her parents are Fred and Myrtle Newcomb. She grew up in Belfast, North Carolina, graduating from Charles B. Aycock High School in 1999. She enrolled at North Carolina State University in the Fall of 1999 as an undergraduate student in the Biochemistry department. With the help of a wonderful mentor in the Park Scholarship Program, she decided to follow her true passion – for fashion – and transferred to the College of Textiles' Textile and Apparel, Technology and Management program in 2000. She received her Bachelor's degree in 2003 and her Master's degree in 2005 from the College of Textiles. She is currently completing her graduate requirements for the doctoral degree in Textile Technology and Management and hopes to continue her work in the apparel industry.

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## CHAPTER 1: INTRODUCTION

Product and service providers across industries face immense pressures to remain innovative and competitive in today's ever-changing global markets. This is certainly true for the United States (US) apparel industry, which has greatly experienced the effects of globalization, increased competition, shortened product life cycles, technological advancements, and changing customer needs. In the saturated, competitive market that is prevalent today, development of new products not only helps apparel firms respond to customer needs and stay relevant in the current market, but is also critical for the maintenance or creation of a competitive advantage (Choi, Powell, & Cassill, 2005). In addition, execution of organized product development processes provides a structure for acquiring and translating customer requirements into an end product that provides value to target consumers and corresponds to the timing demanded by the market (Bruce & Biemans, 1995; Cooper, 2001; Kotler 2000; Kuczarski, 1992; Peter & Donnelly, 2004). Considering the ultimate measure of a successful product is one that is well-matched to customer preferences and needs, the customer has a critical role in the success of product development processes. This is driving the shift from manufacturer-oriented product development processes to customer-oriented processes (Kotler).

As companies direct more resources to customer-oriented product development, they have recognized that consumers are heterogeneous. However, groups of consumers are likely to have homogenous characteristics and needs that can be useful for market segmentation. Successful product and market matching is more likely when companies target products to specific consumer segments with defined needs, rather than specific

products to entire populations. Segmentation is important for today's product developers because it facilitates resource allocation to the most profitable consumer groups (Kotler, 2000; Minger, 1994). Populations are usually segmented using demographics, psychographics, behavioral, and situational characteristics (Blackwell, Miniard, & Engel, 2006; Kotler).

Market segmentation by ethnicity is now more prevalent due to the increasing diversity of the US market. While analysts once predicted that massive immigration into the US would reduce the effect of ethnicity as immigrants blend into the US "melting pot," quite the opposite has occurred. Instead, most ethnic groups attempt to preserve their ethnic identity as they mix into the US population that is now commonly labeled a "salad bowl" (Sanchez, 2002). Thus, ethnic markets now exist in the US with potentially distinct needs and wants from the average population (Pires & Stanton, 2005). However, many analysts consider these groups the least understood and most overlooked segments of the US population (Schreiber & Lenson, 2000).

The US Hispanic market is an ethnic group garnering considerable attention from apparel marketers and product developers due to substantial growth in population size and purchasing power and the documented effect of ethnicity on consumer behavior, the purchase decision process, product attribute evaluation, shopping preferences, and media usage (Becerra, 2002; Blackwell, et al., 2006; Donthu & Cherian, 1994; Faber & O'Guinn, 1987; Solomon & Rabolt, 2004). However, a relative scarcity exists regarding apparel-specific market and product preferences for the Hispanic consumer. Of the information that exists, findings often contradict each other, rendering the information difficult to interpret and

implement into apparel design and development processes. The result of this lack of actionable consumer information ultimately impedes the development of apparel products truly targeted to Hispanic preferences and needs.

### **Purpose of Research**

The basic purpose of this study was to obtain apparel-specific information from US Hispanic women that could be used as inputs for more targeted product development processes for this target market. Specifically, the study aimed to provide apparel designers with a clear understanding of the use and importance of evaluative criteria in the apparel purchase decisions of US Hispanic consumers. In addition, the research explored the fit preferences of Hispanic women across a variety of product categories. To better understand the characteristics that shape these preferences, the study also researched whether physical body characteristics, ethnic factors, or selected demographic variables affected apparel evaluative criteria or fit preferences. In this way, the study attempted to satisfy some of the product and market-related informational needs of apparel product developers challenged with providing apparel products for female Hispanic consumers.

Recognizing the restrictions and limitations involved in studying the population of Hispanic women as a whole (which is discussed later), the sample used in this research was restricted to Mexican-American women between the ages of 18 and 25 from the Southwestern US. This controlled for the effects of gender, age, subculture, and geography on the variables of interest in the study.

## **Research Objectives**

This research aimed to confront a critical deficiency hindering truly targeted apparel product development for US Hispanic women. In 2006, May-Plumlee and Little specified the value of evaluative criteria as a form of consumer input to the apparel product development process (see Theoretical Background for a more thorough review). The current research used this established connection between evaluative criteria and product development to investigate apparel preferences and fit preferences of Mexican-American females between the ages of 18 and 25, from the Southwestern US states of Arizona, California, New Mexico, and Texas. The study was guided by four research objectives (RO1 - RO4):

- RO1: To explore and model the range of factors that influence or determine consumer preferences and the use of apparel evaluative criteria in the purchase decision process.
- RO2: To determine the most important and determinant criteria used by Mexican-American women, ages 18-25 from the Southwestern US when shopping for apparel and evaluate whether these preferences are influenced by:
  - a. Physical body characteristics, including body shape perception, BMI, and clothing size,
  - b. Ethnicity, including acculturation level and generational status, and
  - c. Demographic factors, including educational level, income, and occupation.

RO3: To examine the fit preferences of Mexican-American women, ages 18-25 from the Southwestern US across a range of apparel product categories and determine if these preferences are affected by:

- a. Physical body characteristics, including body shape perception, BMI, and clothing size,
- b. Ethnicity, including acculturation level and generational status, and
- c. Demographic factors, including educational level, income, and occupation.

RO4: To explore the practical applications of gathered Hispanic market information and product preferences for apparel product development processes.

Overall, the research attempted to provide both market and product information inputs to enhance apparel product development for US Hispanic women. The research provided market-related information to product development processes in the form of potential subsegments of Hispanic consumers with unique preferences. In addition, product-related information in the form of evaluative criteria and fit preferences was also supplied.

### **Significance of Research**

The significance of this research is in its contribution to theory, practical product development information, and methodology within the field of apparel preference research. Theoretically, the research provided an apparel-specific model showing the wide range of factors that influence the evaluative criteria used in the purchase of apparel (RO1). The model incorporated consumer-oriented influences, such as demographics, psychographics,

and physical characteristics, but also included situational-oriented influences. Current models in the literature do not tend to include situational factors, specifically those related to methodology, which impact the preferences expressed by consumers. This research incorporated both consumer and situational aspects to provide researchers with a model that can be used to effectively guide future research in this area.

This research also provided practical garment-specific information that apparel product developers and designers can use in the creation of products targeted to Mexican-American women between the ages of 18 and 25, from the Southwestern US. Results of the study indicated the most important and determinant evaluative criteria that these women utilize in the evaluation and purchase of casual pants, tops, skirts, and dresses (RO2). In addition, fit preferences within these garment categories was also determined (RO3). Statistical analysis enabled the researcher to analyze the data for any effect of physical body characteristics, ethnicity, or additional demographic factors on apparel preferences. The findings from this research were then applied to the basic apparel product development process to suggest an approach to create targeted products for this consumer market (RO4).

In addition to providing a range of apparel product development inputs and theoretical models of evaluative criteria research, the study contributed to the advancement of methodology in the area of body shape perception studies and fit preference assessment. Instead of using traditional silhouette line drawings commonly employed, this research assessed body shape perception by employing three-dimensional (3D) avatars. In addition, color pictures of physical garments were used to evaluate consumer fit preferences, rather than traditional flat drawings or line sketches. In this way, the study not only advances

understanding of the Hispanic apparel consumer and the determinants of apparel preferences for this consumer, but also furthers the methods used to evaluate apparel consumer perceptions and preferences.

### **Research Limitations**

This study experienced several limitations due to the survey instrument, survey administration methods, and sampling strategies. These limitations affect the extent to which the results can be considered representative of the behavior or characteristics of the entire population of Mexican-American women, 18-25 years old, from the Southwestern US. A list of these limitations is below:

1. The survey instrument used to gather data for this study included questions in which respondents were asked to self-report their body shape perception, height, weight, and clothing size.
  - a. Consumer perception about their body shape may not reflect their actual body shape as defined by anthropometric measurements. However, the researcher assumes that their perception of their body will influence their behavior and preferences, and was thus an appropriate measure for use in this study.
  - b. In the body shape perception question, 3D body models were used to assess perception. Body size was controlled as much as possible so that respondents were evaluating the body model in terms of shape rather than size. However, any discrepancy in body size among the models could influence the body shape selected by respondents.

- c. Height and weight was self-reported. The researcher assumes that respondents were accurate in providing this information, so that any analysis performed using this information was also accurate.
  - d. Clothing size was also self-reported. Due to extreme variability across (and sometimes within) clothing manufacturers' sizing strategies, clothing size is not uniform or standard. Therefore, consumers were asked to select the clothing size that they *generally* wear, taking this variability into account.
- 2. The survey instrument included an evaluative criteria measure that asked respondents to indicate their preferences for a list of pre-selected attributes. The pre-selection of attributes may exclude attributes that the population considers important in apparel purchases, or may include attributes that the population does not consider at all.
- 3. The survey instrument included a fit preference measure incorporating pictures of specific garments on an actual human body. Respondents were asked to indicate their own personal fit preferences for these individual garments.
  - a. The human body in the photographs used as stimuli may have influenced the preferences indicated by respondents.
  - b. The different levels of fit were developed through circumferential additions or subtractions of ease. Fit related to longitudinal measurements was not assessed, but are also considered an important dimension of fit preference analysis.
- 4. The survey instrument included a pre-developed scale to measure acculturation level of Hispanic respondents. This scale utilized a language-based approach, which may

ignore other dimensions of acculturation such as adherence to cultural traditions and marriage within culture.

5. The web-based survey administration excluded those respondents in the population who did not have internet access. Higher levels of internet access are sometimes associated with higher levels of acculturation, and possibly different apparel preferences (Fox & Livingston, 2007).
6. The survey administration and sampling procedures utilized in this study required that potential respondents click on a link to launch the survey. Apparel preferences for respondents who choose to participate in the study may be different than those of people who choose not to participate.
7. The primary sampling strategy used in this research involved recruitment of respondents from colleges and universities. This type of convenience sampling excluded a large portion of the population of interest, by focusing on recruitment at institutions of higher education. This exclusion may affect the preferences expressed by respondents and the representativeness of the results.
  - a. Specifically, this strategy may compromise the measurement of acculturation, since younger and more educated Hispanics are more likely to exhibit higher levels of acculturation than older, less educated Hispanics. Thus the sample was pre-disposed to higher representation of Hispanics who are considered “highly acculturated” (Kara & Kara, 1996; Khairullah & Khairullah, 1999; Olmedo & Padilla, 1978; Penaloza, 1994).

## **CHAPTER 2: REVIEW OF LITERATURE**

The review of literature will begin with a presentation of the theory supporting and guiding this research. The remaining sections relate specifically to the goals and interests of this research, including an overview of the US Hispanic market, a discussion of issues involved in apparel evaluative criteria research, and a focus specifically on the attribute of apparel fit.

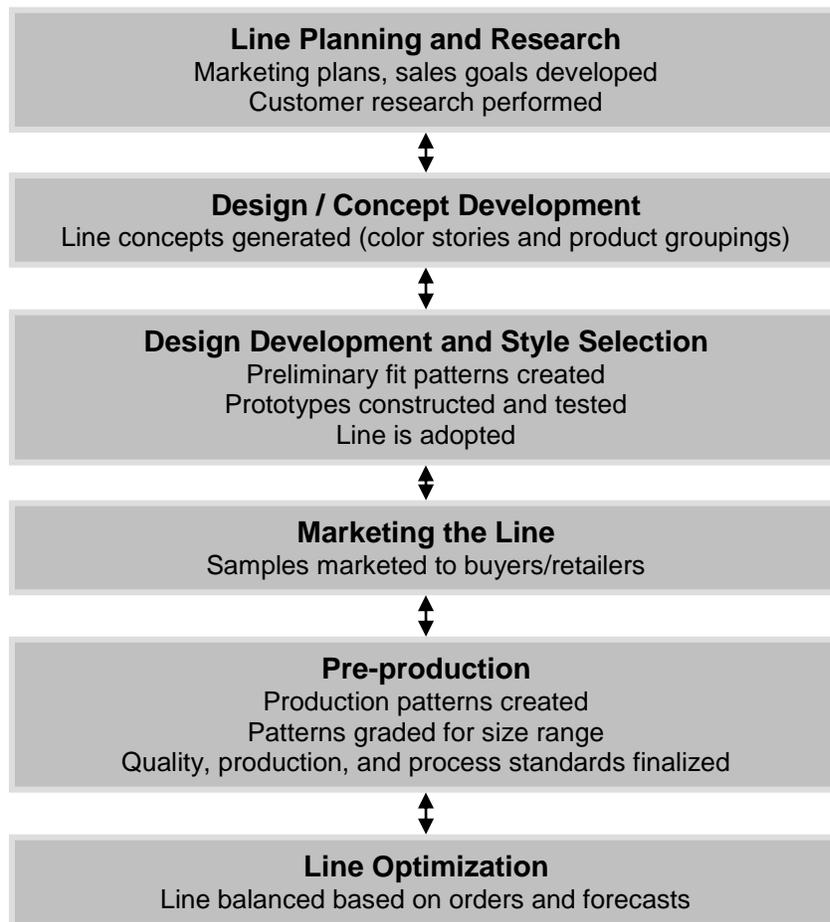
### **Theoretical Background**

Since this research collected and analyzed information for apparel product development for US Hispanic women, the foundation of the study was a thorough understanding of the product development process, from its purpose and functions to the increased role of the customer. This section will present the series of concepts that guided this research, starting with an introduction to the apparel product development process and the importance of the customer and ending with a discussion of factors that may influence customer demands or behavior.

#### *Apparel Product Development*

Apparel product development is defined as the series of tasks performed to translate product ideas into tangible products for delivery to a consumer (Keiser & Garner, 2003). While specific tasks performed in the process may differ slightly depending on the manufacturer, basic functions are required to successfully create apparel products. Figure 1 presents a model of the apparel product development process, adapted from May-Plumlee and Little (1998). The double arrows connecting the product development steps are used to demonstrate the complex processes performed in most companies due to the seasonality of

apparel, multiple product lines, and various development approaches. For instance, most manufacturers create multiple product lines or groupings for several seasons throughout the year. Individual products or groupings are often scattered in various stages of the product development cycle at any given time, and move forward or backward in the process depending on the outcome at each step (May-Plumlee & Little). This variability necessitates a fluid product development process as shown in Figure 1.



**Figure 1: Apparel product development process**

Note: Adapted from “No-interval coherently phased product development model for apparel,” by T. May-Plumlee and T. Little, 1998, *International Journal of Clothing Science and Technology*, 10(5), pp. 342-364.

The concurrent apparel product development process relies on the cooperation of a multifunctional team with representation from marketing, merchandising, design and development, and production (May-Plumlee & Little, 1998). Within the design stage, manufacturers coordinate both creative line design and technical design of patterns and garment fit. The overall process is dependent on information contributed by the multifunctional team, such as target market preferences, trend research, design ideas, sourcing approaches, production competencies or restrictions, and overall strategic and financial goals (Keiser & Garner, 2003). This information serves as vital inputs to create a final apparel product well-designed for manufacturability, alignment with strategic goals, and satisfaction of customer demands.

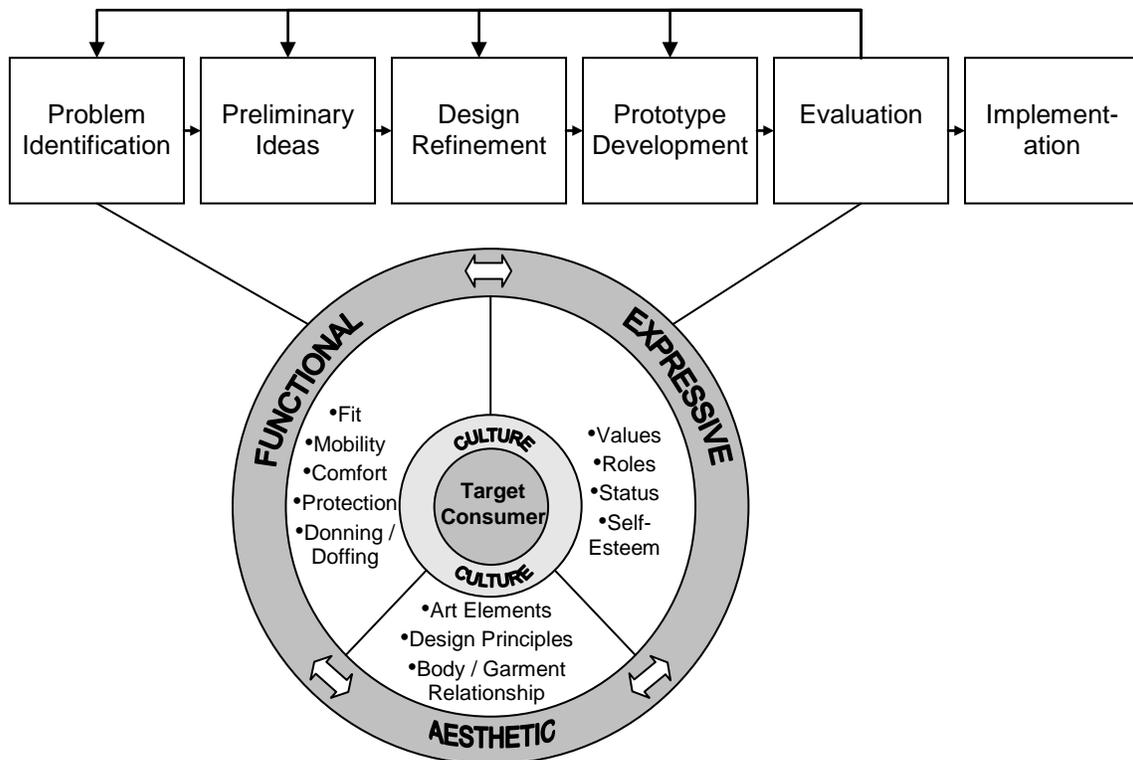
#### *The Customer's Role in Apparel Product Development*

The previous section highlighted the basic purpose and functions of the apparel product development process. As shown, the goal of any process is the development of a final product (or product line) matched to well-defined market needs or customer demands. Since the customer is the ultimate measure of product success or failure, clear customer definition and understanding is critical. However, significant customer involvement is often associated with increased product development time, which the apparel industry cannot support given the short cycle times and overlapping development processes that characterize the industry (May-Plumlee & Little, 2006).

Across industries, product development approaches are reflecting an overall shift from manufacturing to marketing orientations. Many marketing texts and articles refer to this shift as a move from “push” strategies to “pull” strategies as the customer is becoming

more central in the supply chain. This widespread shift now supports and encourages customer-focused product design and development (Kotler, 2000). The apparel industry recognizes the importance of customer involvement and have called for research to better understand how customer input can be used in apparel product development (May-Plumlee & Little, 2006). Two apparel product development models presented in the literature incorporate customer involvement and serve as a theoretical focus for the current research.

In 1992, Lamb and Kallal published their “Conceptual Framework for Apparel Design,” which outlines the need for an understanding of the target customer’s functional, aesthetic, and expressive apparel preferences, and the application of these preferences throughout the design process. Figure 2 shows the Lamb and Kallal framework as well as the type of information target customers can provide to the product development process. It is important to recognize that while the process steps for this model are termed differently than the steps presented in Figure 2, the basic apparel product development functions are the same for both the Lamb & Kallal and May-Plumlee & Little (1998) models. The important feature of this model is the specification of the customer-focused design process.



**Figure 2: Lamb and Kallal conceptual framework for apparel design**

Note: Adapted from, “A conceptual framework for apparel design,” by J.M. Lamb and M.J. Kallal, 1992, *Clothing and Textiles Research Journal*, 10(2), pp. 42-47.

In 2006, May-Plumlee and Little published a complex product development model known as the proactive product development integrating consumer requirements (PPDICR) model. This model links their no-interval coherently phased product development model for apparel to Engel, Blackwell, and Miniard’s (EBM) model of consumer behavior. The EBM model of consumer purchase decision is a principle model in consumer behavior theory and outlines stages of the decision process from initial need recognition, search, and pre-purchase alternative evaluation to purchase, consumption, post-purchase alternative evaluation, and divestment (see Appendix A for the graphical representation of the model). A critical stage in

the EBM model is the evaluation of product alternatives according to a set of criteria used by the customer. May-Plumlee and Little effectively integrate consumer behavior with product development through the specification of 13 universal evaluative criteria that consumers use in their apparel purchases. These criteria include intrinsic and extrinsic product attributes that consumers can directly provide to apparel designers and product developers for their incorporation into final apparel products. Providing product developers and designers with the most important evaluative criteria used in purchase decisions is only one of the ways in which consumers can directly influence product development as specified in the PPDICR model. May-Plumlee and Little’s model specifies additional examples of direct and indirect customer involvement throughout the apparel product development process (see Table 1).

**Table 1: Consumer input in apparel product development**

Indirect Approaches	Direct Approaches
Commercial Surveys / Panels Commercial Trend Forecasts Ethnographic Research Fit Models Intermediaries	Consumer Created Product Evaluative Criteria Point-of-Sale Data Limited Rollout Returns & Complaints Wear Testing Style Tests Concept Tests Focus Groups Attitude / Usage Studies Sizing Data

Note: Adapted from, “Proactive product development integrating consumer requirements,” by T. May-Plumlee and T.J. Little, 2006, *International Journal of Clothing Science and Technology*, 18(1), pp. 53-66.

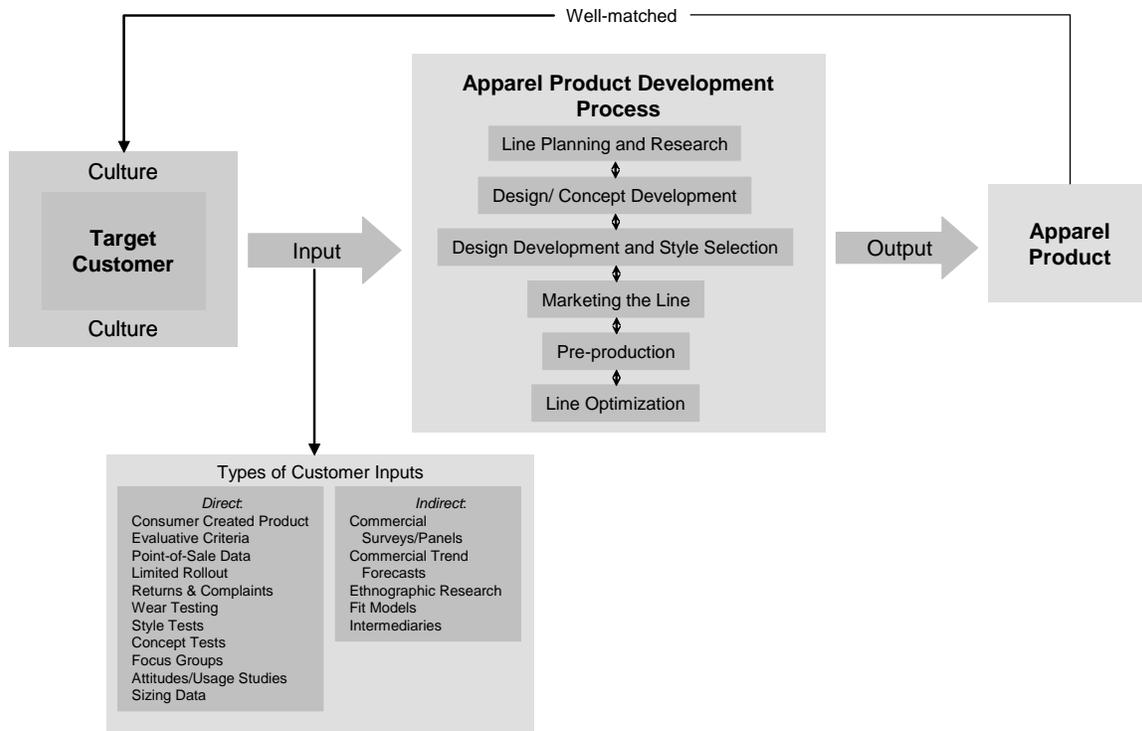
The Lamb and Kallal (1992) and May-Plumlee and Little (2006) models clearly indicate the important role that the customer has in apparel product development. As an

information-dependent process, apparel product development benefits most from the definition of distinct and targetable customer segments with well-researched and understood customer preferences. Models within the consumer behavior discipline provide a structure to understand the formation and use of these consumer preferences in product evaluation and purchase decisions. As shown in Appendix A, the EBM model of the decision process suggests that a range of environmental influences and individual differences can potentially influence the way consumers evaluate and purchase products (Engel, Blackwell, & Miniard, 1995). One of these environmental influences, culture, is of particular relevance for this research and provides additional theoretical support for this study. Using the connection made between the consumer decision process model and apparel product development by May-Plumlee and Little (2006), an understanding of impact of the Hispanic culture on the formation and use of product preferences is very useful in the design and development of apparel for this target market. Lamb and Kallal's (1992) conceptual framework for apparel design also notes the influence of culture on the target consumer and its subsequent importance in the design process (see Figure 2), and thus further supports this research.

### *Conceptual Framework*

Illustrated by the theory presented in this section, the customer has a critical role in apparel product development, primarily through providing the market and product information that directs product design and development. A clear understanding of the forces influencing product evaluation and purchase, such as culture, strengthens the development process toward customer demands and thus increases the chance for a successful product design. Figure 3 presents the organization of concepts framing this research. The figure

illustrates the apparel product development process, including its purpose, types of customer involvement, and customer influences.



**Figure 3: Conceptual Framework for this research**

Note: Developed by the author and based on models created by:

Lamb, J. M., & Kallal, M. J. (1992). A conceptual framework for apparel design. *Clothing and Textiles Research Journal*, 10(2), 42-47.

May-Plumlee, T., & Little, T. J. (2006). Proactive product development integrating consumer requirements. *International Journal of Clothing Science and Technology*, 18(1), 53-66.

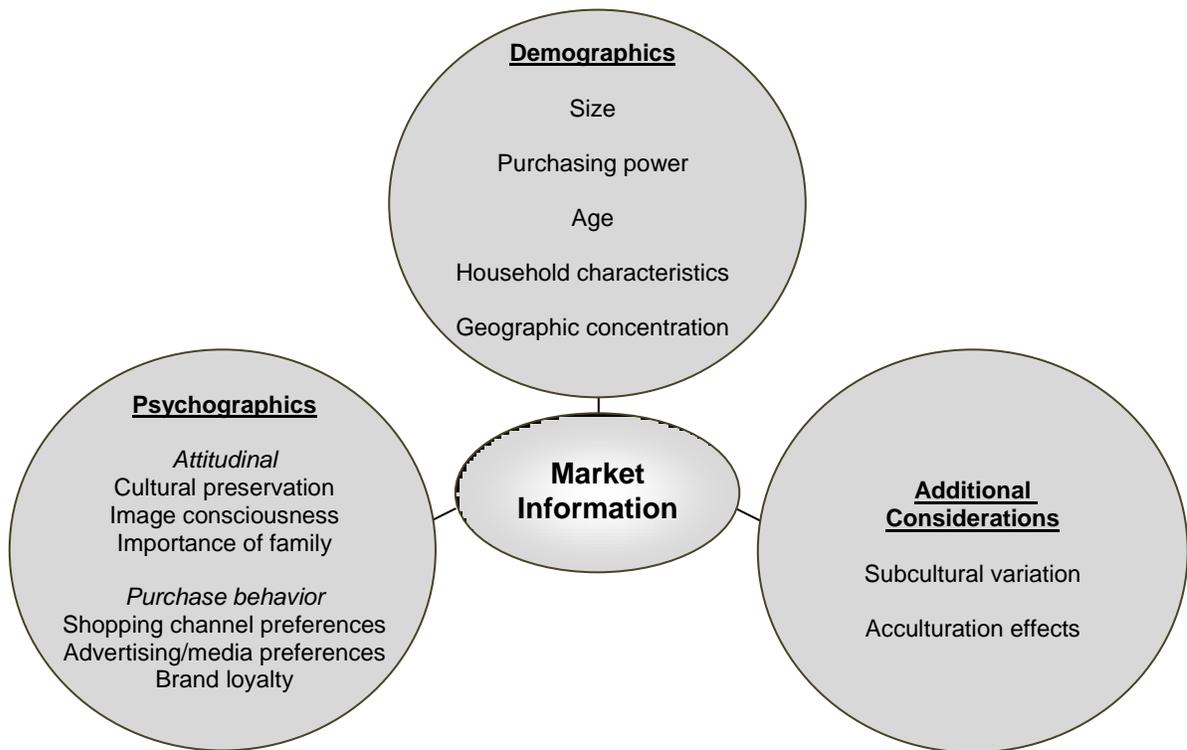
### Overview of the US Hispanic Market

The US Hispanic market is a consumer group garnering considerable attention from apparel marketers and product developers due to market characteristics and the effect of ethnicity on consumer behavior, the purchase decision process, product attribute evaluation, shopping preferences, and media usage (Becerra, 2002; Donthu & Cherian, 1994; Engel et

al., 1995; Faber & O'Guinn, 1987; Solomon & Rabolt, 2004). This section will present an overview of some of the most relevant market and product information that exists for Hispanic apparel consumers. This information will illustrate the motivating factors driving much of the interest in this target market as well as provide an overview of market and product information that is useful for targeted new product development and marketing strategies.

### *Market Information*

Market information is obtained through a demographic and psychographic market analysis as well as additional considerations as shown in Figure 4.



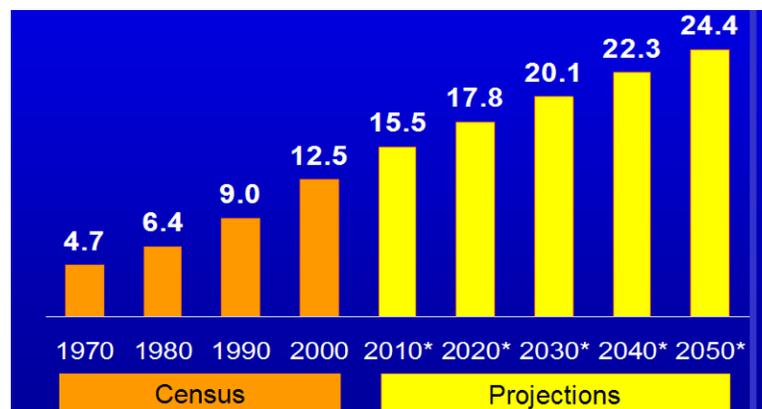
**Figure 4: Market information components**

Note: created by the author (Newcomb, 2008)

## *Demographic Profile of US Hispanics*

Certain demographic characteristics of the US Hispanic market, such as growth in size and purchasing power, the relative youth of the market, household characteristics, and the geographic concentration of the market, indicate that the market is not only targetable, but also a viable approach to expand or create market share. Each of these will be discussed.

*Size.* In recent years, the US Hispanic market has increased in size at alarming rates. The US Census reported that there were 45.5 million Hispanics in the US as of July 1, 2007, which represents about 15% of the total US population (Bernstein, 2008). Already the largest minority group in the country, this growth is expected to continue due to immigration and high birth rates (Kim, Jolly, & Kim, 2007), with a projected 25% of the total population being Hispanic by the year 2050. Figure 5 illustrates the past and projected growth in the market based on Census reports from 1970-2050. However, these figures underestimate the true US Hispanic population size due to the inability to count undocumented immigrants who are unlikely to respond to census investigations (Korzenny & Korzenny, 2005).



**Figure 5: Percent Hispanic of the total population in the United States: 1970 to 2050**

Note: Adapted from, "Hispanics in the United States," by the US Census Bureau, 2008, Retrieved from: [http://www.census.gov/population/www/socdemo/hispanic/files/Internet\\_Hispanic\\_in\\_US\\_2006.pdf](http://www.census.gov/population/www/socdemo/hispanic/files/Internet_Hispanic_in_US_2006.pdf).

*Purchasing Power.* Along with the population growth, Hispanic purchasing power is also increasing at a faster rate than any other racial or ethnic group. According to the Selig Center for Economic Growth, total US buying power will increase by 204% from 1990-2012, compared to Hispanic growth of 495%. Population increases and job and educational improvements are driving this growth, with Hispanic buying power projected to top \$1.2 trillion by 2012 (Humphreys, 2007).

The apparel industry is specifically aware of the growth of the Hispanic population and their considerable buying power, because as a group, Hispanics tend to spend more (proportionately) of their money on apparel than any other ethnicity. While overall spending by this group is only 85% of that documented for non-Hispanics, they spend proportionately more on several consumer goods, including men's, boys', children's, women's, and girl's clothing and footwear (Fan & Zuiker, 1998; Humphreys, 2007; Perkins, 2004). In a study conducted by Cotton Incorporated's Lifestyle Monitor, Hispanics indicated they would spend approximately \$308 of \$500 on apparel products, the highest portion for any racial/ethnic group (Cotton Incorporated, 2006b).

*Age.* The natural growth in the population is contributing to a US Hispanic market that is very young, particularly when compared to the average population. For example, the median age of Hispanics in 2007 was 27.6, nine years younger than the average population age of 36.6. Over one-third of the population is currently younger than age 18, compared to only one-quarter of the whole population (Bernstein, 2008). This distribution is also apparent within the female Hispanic population, with 42% of Hispanic women between the ages of 18 and 34 (compared to only 28% of non-Hispanic women) (Gonzales, 2008). The

youth of the market influences the type of clothing desired, as well as the fit, pricing, and brand preferences (Solomon & Rabolt, 2004). Hispanic youth are predicted to be the largest contributor of consumer spending growth in the next twenty years and will likely determine the success or failure of various youth-oriented products (Chattalas & Harper, 2007; Humphreys, 2007).

*Household Characteristics.* Hispanic household size is larger than the average US household due in part to the high fertility of the population and the role of family (which will be discussed in a later section). Hispanic households have an average of 3.5 people compared to 2.7 for other US households (Bernstein, 2008). In 2002, over 26% of all Hispanic households in the U.S had five or more people. Household composition affects the type of products demanded and the number of people involved in typical purchase decision processes (Solomon & Rabolt, 2004)

*Geographic Concentration.* The geographic concentration of US Hispanics enables more efficiently targeted product and marketing distribution. Eighty percent of Hispanics live in nine US states and two-thirds of Hispanics are located in four states - California, Texas, Florida, and New York (US Census Bureau, 2007). Within these states, Hispanics tend to concentrate in urban areas (Mediamark Research Inc., 2007; Solomon & Rabolt, 2004). While Hispanics are geographically concentrated, other areas are also experiencing disproportionate gains in their Hispanic population. Some of these states with increased market opportunities include North Carolina, Georgia, South Carolina, Florida, Nevada, Tennessee, Michigan, Minnesota, Indiana, Iowa, Kansas, and Kentucky and Colorado (Korzenny & Korzenny, 2005). An important facet of the geographic concentration of the

market is that Hispanics tend to congregate according to country of origin, or subcultural group. For instance, Cubans prefer the southern US, Mexicans prefer the South and West, and Puerto Ricans the Northeast (Mediamark Research Inc.). This affects the product and marketing strategies appropriate for these regions.

### *Psychographic Profile of US Hispanics*

Psychographic research has increased in prominence as marketers realize that strict demographic segmentation cannot fully explain market behavior and preferences.

Psychographic study encompasses attitudes, values, beliefs, lifestyles, and behavior.

Whereas demographics define “who,” psychographics define “why” (Engel et al., 1995).

This level of information has clear benefits in a market study. This section will present attitudinal and behavioral Hispanic psychographic characteristics that are useful for apparel new product development.

*Attitudinal.* As shown in Figure 4, certain attitudes are characteristic of US Hispanics, specifically cultural preservation, image consciousness, and the importance of family. A brief review of these attitudes is important because they could potentially affect apparel shopping behavior, including the product attributes desired and the factors considered before purchasing.

As a group, US Hispanics believe that cultural preservation is important. While Hispanics may participate in many aspects of US culture, most proclaim strong ties to the Hispanic culture and tradition. To preserve cultural identity, Hispanics may continue to speak Spanish (especially at home) or interact frequently with other Hispanics (Korzenny & Korzenny, 2005). Some researchers hypothesize that cultural preservation will become more

important for Hispanics as the US becomes more mixed in its composition (Pires & Stanton, 2005). The importance of cultural preservation may translate into demand of culturally-relevant or themed apparel products.

In addition, US Hispanics are a proud group and image is very important to them (Solomon & Rabolt, 2004). Many have immigrated to the US to better their lives and their families' lives. As a result, Hispanics may exhibit aspirational shopping behavior. This is reflected in their purchase of brand name apparel items because they are associated with prestige (Kim et al., 2007). In addition, some Hispanics may attempt to enhance their image through liberal spending habits and somewhat impulsive shopping behavior (Levitan, n.d.; Sanchez, 2002).

Family is also very important for US Hispanics, and is reflective of the Hispanic culture's collectivist ideals that contrast sharply with the traditional Anglo focus on individualism (Chattalas & Harper, 2007). As mentioned previously, Hispanic households are larger than average households in the US. This is due in part to high birth rates in the Hispanic population but also because many grandparents and relatives frequently live together (Korzenny & Korzenny, 2005). Research shows that Hispanics rely on the family unit as information sources for product advice and attribute evaluation (Pires & Stanton, 2005; Solomon & Rabolt, 2004). In addition, shopping is frequently a family affair, reinforcing the need for understanding the Hispanic family as a decision-making unit. However, the importance of family may decrease for Hispanic youth, especially those who consider themselves to be fully entrenched in US culture (Chattalas & Harper, 2007).

*Purchase Behavior.* Entire disciplines are devoted to purchase and consumer behavior, but specific aspects of Hispanic behavior are particularly relevant for apparel new product development processes. These include shopping channel preferences, advertising/media preferences, and brand loyalty, each of which will be briefly discussed.

In terms of shopping channel preferences, traditional stereotypes suggest that US Hispanics frequently shop at mass merchant or discount stores. However, this is not the case for apparel purchases, in which non-Hispanic Whites are far more likely to shop at discount stores (Cotton Incorporated, 2002). The majority of US Hispanics actually prefer to shop at department stores for apparel. US Hispanics (along with African-Americans) accounted for 25-30% of total department store sales in 2004 (PR Newswire Association, 2004). In addition to department store patronage, an area of increased growth for US Hispanics is on-line shopping. Forty-three percent of Hispanics report that they shop on-line regularly or occasionally (Korzenny & Korzenny, 2005).

Across industries, great effort and resources have been allocated to advertising strategies to target US Hispanics. These strategies include a consideration of preferences in language, message, and media to ensure the right message is being relayed and that it is accessible to target consumers.

Advertising approaches for the Hispanic market have traditionally revolved around language. Often considered the unifying factor for the Hispanic market, the Spanish language can be very emotional for some Hispanic consumers who continue to use their “home” language as a way to maintain cultural ties (Korzenny & Korzenny, 2005). In addition, most Hispanics respond favorably to advertising that appeals to them culturally,

which oftentimes includes wording in Spanish (Pires & Stanton, 2005). Given the market's placed importance on cultural preservation, use of the Spanish language to target Hispanics would seem judicious.

However, research in the area of language preferences illustrates wide variation within the Hispanic market depending on the length of residency in the US and whether the person is foreign-born or native. Foreign-born Hispanics prefer Spanish, while those who are native or long-time residents of the US tend to prefer English or bilingual targeting. Situational factors also affect language usage. While at work, many Hispanics use English, but Spanish is more commonly used in the home (Mediamark Research Inc., 2007; Pew Hispanic Center & Kaiser Family Foundation, 2004; US Census Bureau, 2007). The number of Hispanics who can proficiently speak English is also rising, along with the recognition that bilingualism will be critical in the future of Hispanic marketing (Korzenny & Korzenny, 2005).

Language is not the only consideration when developing the advertising approach. Just as important is the message behind the wording, or the context. Many ethnic groups, including Hispanics, are considered high-context cultures, with meanings extending beyond the spoken word. Thus, symbols and attitudes conveyed through an advertising message are just as important as the words themselves (Solomon & Rabolt, 2004). Since the proper context is also essential, most analysts advise against utilizing straight translation techniques to target Hispanics with advertising, as these methods rarely translate the meaning behind a message. Many examples of cultural misunderstandings and confusion exist from companies who have tried to simply translate their advertisements into Spanish to target Hispanic consumers (Valencia, 1983). According to many Hispanics, the strict translation method can

be risky and almost inevitably cannot relate the richness and emotion of the Spanish language as proficiently as messages constructed first in Spanish (Korzenny & Korzenny, 2005).

Even the most suitable advertising message is ineffective unless placed in a medium that is accessible and preferred by the target audience. Commonly used advertising media include print sources such as direct mail, newspapers, and magazines, as well as television, radio, in-store advertising and the internet. Overall, research shows that television and radio are preferred over print media and the internet by the Hispanic population (Bellenger & Valencia, 1982; Covkin, 2008). In particular, television is a useful medium for reaching Hispanics, with Hispanic viewership growing far more than average US viewership (Selbert, 2003). The internet also represents a growing opportunity for Hispanic marketing. In the past, the internet has not been commonly used to target Hispanics due to perceptions of low internet access and usage by this population. However, a 2005 study shows that 60% of Hispanic adults over 18 years of age used the internet. These numbers are even higher for Hispanic youth. Hispanics are also using the internet for shopping, with 43% reporting that they shop regularly or occasionally online (Korzenny & Korzenny, 2005).

The last purchase behavior characteristic that will be discussed is the brand loyalty of US Hispanics. Researchers widely report that Hispanics are a brand loyal market, tending to purchase brands they recognize and trust, and hesitating to switch from these brands (Herbig & Yelkur, 1997; Kim & Kang-Park, 1995). Brands popular in their home countries are especially marketable to US Hispanics since they already recognize them. Hispanics that display strong ethnic identification prefer Hispanic vendors and seek out Hispanic brands (Donthu & Cherian, 1994). Regardless of the brand origin, however, strong ethnic identifiers

are also more brand loyal in general than weak ethnic identifiers (Deshpande, Hoyer, & Donthu, 1986). This brand loyalty has been explained as a method Hispanics use to preserve their ethnic identity, reduce the perceived risk and communication difficulties attributed to product search, evaluation, and purchase, or as a way to positively enhance their image (Bellenger & Valencia, 1982; Pires & Stanton, 2005; Selbert, 2003). While the brand loyalty of the market is sometimes not questioned due to the numerous supporting studies, some studies suggest that this loyalty may not characterize the entire market (Minger, 1994). For instance, a study on Hispanic youth concluded that this group can be impulsive shoppers, switching brands often (Levitan, n.d.). In another study, results showed that Mexican-Americans are no more brand loyal than Anglo-Americans (Wilkes & Valencia, 1986).

#### *Additional Market Considerations*

The review presented above indicates various discrepancies in the literature, especially regarding Hispanic purchase behavior and preferences. These differences can be partially attributed to additional market characteristics such as widespread subcultural variation and the effect of acculturation within the Hispanic population. Because of their effect on behavior and preferences, they are very important considerations in any Hispanic-targeted marketing or product development.

#### *Subcultural Variation within the US Hispanic Market*

Unlike discrepancies that exist throughout psychographic research into the Hispanic market, almost all researchers agree on the importance of recognizing subcultural group variation within the Hispanic market (Schreiber & Lenson, 2000). Traditionally, marketers from various industries have attempted to target the Hispanic market in its entirety, assuming

that the Spanish language commonality would be the unifying factor for segmenting Hispanics from the overall market (Korzenny & Korzenny, 2005). However, the term 'Hispanic' actually refers to all people of Spanish ancestry and is considered an ethnic category rather than race. This means that people from at least 17 different countries and various racial categories are being grouped together under one name (Pires & Stanton, 2005). Recognizing this mixed composition requires a move from etic to emic market research approaches. In the past, many Hispanic market research studies have utilized an etic perspective, in which the Hispanic population is compared against other cultures. However, acknowledgement of subcultural variation actually necessitates the use of an emic perspective, in which the Hispanic population is studied within itself to uncover differences and similarities within the individual population (Korzenny & Korzenny, 2005; Luna & Gupta, 2001).

Further supporting the need for subcultural awareness, research shows that statistical differences exist in the shopping orientations, preferences, and advertising effectiveness between the unique Hispanic subcultural groups (most often designated by country of origin). In addition, language nuances can exist between subcultures, to the extent that Spanish words common in one subculture may be completely unknown within another subculture (Blackwell et al., 2006; Valencia, 1983). These differences challenge the practice of combining all Hispanics into one group for the purposes of marketing or product development, and illustrate the need for recognizing subcultural variation within the Hispanic market (Deshpande et al., 1986; Pasarell, 1995; Solomon & Rabolt, 2004).

Related to subcultural variation, another factor that widely varies within the Hispanic population is the preference for the term ‘Hispanic’ or ‘Latino’ which has been debated fervently. Since the term ‘Hispanic’ was originally created by the US Census Bureau, many Hispanics negatively relate this term to one *imposed* on them rather than *chosen* by them. For these people, ‘Latino’ is often preferred. However, research in two studies shows that the term ‘Hispanic’ is preferred overall to ‘Latino’ (Granados, 2000; Korzenny & Korzenny, 2005). In addition, if given the choice, most Hispanics would choose to be more specifically called ‘Mexican-American,’ ‘Chicano,’ or ‘Puerto Rican’ since these terms more closely represent their subcultural background. Thus, the decision to utilize any of these terms as identifiers should be made on a case-by-case target market basis (Granados).

#### *Acculturation within the US Hispanic Market*

Another critical market consideration that contributes to the wide variability within the Hispanic market is the process of acculturation. Many researchers have theorized that the importance of ethnic and cultural identity reduces for individuals the more they are exposed to a new culture in an acculturation process (Luna & Gupta, 2001; Padilla, 1979). In this process, one culture assumes traits from another culture (and vice versa), possibly resulting in a change in behavior, beliefs, values, or attitudes from the original or “home” culture. Acculturation is a natural occurrence in any migration process to a certain extent, though people typically acculturate at different rates, resulting in varying degrees of acculturation within ethnic markets in the US (Kang & Kim, 1998; Khairullah & Khairullah, 1999; Solomon & Rabolt, 2004; Valencia, 1985).

Based on the level of exposure to the US culture, some Hispanic market researchers have hypothesized that acculturation effects are more noticeable the longer a person resides in the US. This suggests a lower involvement and influence of Hispanic culture for those Hispanics who have resided in the US for many years or who were born in the US. A review of literature into the Hispanic market shows that acculturation effects have altered the importance of ethnic identity preservation by some Hispanics, but this is certainly not the case with all Hispanics. Often, Hispanics of different generations are equally involved in the culture of their home country, even if they have never physically resided there (Pires & Stanton, 2005). In addition, many Hispanics want to stay connected to their culture in some way and any acculturation process, especially in core values, is very slow (Minger, 1994; Perkins, 2004). Because of this importance of cultural preservation, many researchers doubt that Hispanics will ever fully assimilate into US culture and different levels of acculturation will characterize the market in the future (Schreiber & Lenson, 2000). Further immigration and extensive interracial and interethnic blending (through marriage, friendship, or other relationships) are projected to create future hybrid group dynamics that are certainly influenced by the acculturation process (Solomon & Rabolt, 2004).

Acculturation levels affect the purchasing behavior and product/marketing preferences of Hispanic (and other ethnic) consumers (Faber & O'Guinn, 1987; Kara & Kara, 1996; Ogden, Ogden, & Schau, 2004; Ueltschy & Krampf, 1997; Webster, 1992). For instance, research indicates that Hispanics with low acculturation rely on Spanish-language media, are more brand loyal and prefer well-known, prestigious brands, and are more persuaded by products and advertisements directly targeted to the Hispanic background

(Solomon & Rabolt, 2004). In addition, the acculturation process can cause consumers to change their patterns of dress, demanding different product features than may be considered “traditional.” Immigrants who attempt to fit in with the host culture may demand products more similar to the preferences of the host culture (Jun et al., 1993). On the other hand, consumers who try to resist acculturation may actually demand traditional or ethnic product features in apparel as a way to maintain cultural ties (Rajagopalan & Heitmeyer, 2005; Sproles, 1979). Thus, acculturation levels have clear implications in the development of marketing plans as well as new product development.

*Levels of Acculturation.* While many researchers recognize that ethnic markets (including Hispanics) are characterized by varying degrees of acculturation into the US mainstream culture, measurement and definition of these different levels can be difficult. Development of acculturation scales and measurement methods constitutes a major component of research in the social sciences and will not be discussed in depth in this section. However, this section will present some of the more basic research into levels of acculturation, factors that influence the acculturation process, and the development of acculturation measurement scales.

One of the earliest models of acculturation suggests that the process is linear. As a person becomes acculturated in a given host culture, they consequently lose their original ethnic identity. At any point in time a person can thus be placed on a continuum between no acculturation and entirely acculturated (Kim, 1979). Conversely, some researchers assert that acculturation should not be thought of linearly, and stress that the process of acculturation is instead multidimensional. These researchers assert that acculturation does not necessarily

entail a loss of original identity, but that many consumers adopt behaviors of the mainstream culture while at the same time maintaining ties with the host culture (Penaloza, 1994; Unger, Ritt-Olson, Wagner, Soto, & Baezconde-Garbanati, 2007). In research that supports this definition, Berry (1980) proposes four categories of acculturation based on the relative preference of an individual to maintain their original culture or ethnic identity and the amount of contact or participation with a new host culture. These categories are defined in Table 2.

**Table 2: Berry’s Four Categories of Acculturation**

	<b>Cultural Maintenance +</b>	<b>Cultural Maintenance -</b>
<b>Contact Participation +</b>	<i>Integration</i> Adoption of host culture while maintaining original culture	<i>Assimilation</i> Full adoption of the host culture at the expense of original culture
<b>Contact Participation -</b>	<i>Separation</i> Little interaction with host culture, but maintenance of original culture	<i>Marginalization</i> No interaction with host culture or original culture

Note: Created by the author and adapted from “Conceptual approaches to acculturation,” by J.W. Berry (2003), in K.M. Chun, P. B. Organista, & G. Marín (Eds.), *Acculturation: Advances in theory, measurement and applied research* (pp. 17-37). Washington, D.C.: American Psychological Association.

While Berry’s (1980) model of acculturation is progressive in its recognition of bi-dimensional acculturation, Unger et al. (2007) discuss various limitations of the model in their research on acculturation scales for Hispanic youth. For instance, the four categories are not mutually exclusive as they are presented by Berry, and immigrants may belong to overlapping categories depending on the circumstances. In addition, the model does not compensate for the acculturation environment many immigrants are exposed to in the US – mainly the fact that the host or “mainstream” US culture is frequently multicultural itself, and

this host culture is often affected by the immigrant culture as well. Furthermore, the model does not accommodate the role-specific acculturation behavior that characterizes many immigrants (Unger et al.). O'Guinn and Faber (1985) conducted research that supports this last criticism of Berry's acculturation model and suggests that an individual may exhibit different levels of acculturation depending on the role or situation. The researchers indicate that an individual may behave according to different acculturation levels when at work, home, or shopping, and in these different cases, consumption behavior can also vary (O'Guinn & Faber). As an example, Kang and Kim (1998) showed that preferences for social occasion apparel are more dependent on Hispanic culture, while work apparel is chosen to comply with predominant Anglo characteristic workwear.

*Factors that Influence the Acculturation Process.* The bi-dimensional acculturation model accommodates a basic principle underlying acculturation theories, which is the fact that the process is not only dependent on the individual's interaction with the host culture, but also the extent that the individual desires to maintain ties to the original culture. In this way, the speed and extent of acculturation is the result of individual characteristics (including motivations, desires, and decisions) and the interaction of these characteristics with population characteristics within the new host culture and the original culture (Berry, 1980; O'Guinn & Faber, 1985). Population characteristics, such as size, also influence acculturation rates, as shown in the acculturation rates within the Hispanic market. In this case, the Hispanic market is so large in the US that it has a significant impact on the mainstream culture in a similar way that the mainstream culture is expected to have on Hispanics. This certainly affects the speed and extent of Hispanic acculturation in the US.

Various factors influence an individual's acculturation process, including individual differences in the person and characteristics of the people and environment (known as "acculturation agents") that surround them (Penaloza, 1994). Frequently studied individual characteristics include demographic variables, such as age, religion, national origin, income, generation, neighborhood, and education (O'Guinn & Faber, 1985; Olmedo & Padilla, 1978; Szapocznik, Scopetta, Kurtines, & Aranalde, 1978). Research has shown that acculturation is faster and more extensive for younger immigrants (Kara & Kara, 1996; Penaloza), those who are more educated, have higher income levels and occupational status (Khairullah & Khairullah, 1999; Olmedo & Padilla), those who have resided in the US for a longer period of time (Penaloza), and for immigrants from urban areas (Khairullah & Khairullah).

Researchers also argue that communication variables are critical determinants in the acculturation process, since they provide the vehicle for interaction between the individual and members of the host or original culture (O'Guinn & Faber). Communication variables that influence acculturation include language use and proficiency and media use (Jun, Ball, & Gentry, 1993; Penaloza, 1994). As a reflection of the interaction between the individual and host and original cultures, acculturation is also affected by intermarriage and self-identity (Szapocznik, et al., 1978). Khairullah and Khairullah (1999) report that immigrants who marry someone of another ethnicity, especially of the host culture, acculturate faster than those who marry within their own ethnicity.

*Acculturation Scale Development.* The wide range of factors that influence the acculturation process has resulted in a somewhat fragmented approach to measurement, and the development of various acculturation scales. Most frequently, acculturation scales are

developed to measure the acculturation level of a specific ethnic target market, such as Hispanics or Hispanic subcultural groups (Kara & Kara, 1996; Marin & Marin, 1991; Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987; Szapocznik, Kurtines, & Fernandez, 1980; Szapocznik et al., 1978; Unger et al., 2007). This is because the acculturation process can vary across and within ethnic groups due to population characteristics of the immigrants within the groups (Penaloza, 1994).

Most of the developed acculturation scales focus on the factors previously discussed to measure and define acculturation level within target market segments – such as language use, culture, strength of ethnic self-identification, age, homogeneity of partner or spouse, and time since entry in the US (Kara & Kara, 1996; Valencia, 1985). The measurement of acculturation can be quite complex, but most developed acculturation measurement scales have been based on one (or a combination) of the factors just mentioned. When only one factor is used, the scale is typically centered on language use or proficiency. Research has shown that language is an appropriate measure of acculturation level (Epstein, Botvin, Dusenbury, Diaz, & Kerner, 1996; Serrano and Anderson, 2003). Language is one of the more easily measured effects of acculturation and many researchers have relied on the evaluation of English and Spanish language use and proficiency as a shorthand measure of acculturation level within the US Hispanic market (Marin & Marin, 1991). This measure assumes that greater use or proficiency of the English language is associated with higher levels of acculturation, while greater use of Spanish is indicative of lower levels (Marín et al., 1987). To improve acculturation scales based on language, Valencia (1985) and Marín and

Marín (1991) suggests questioning respondents about language use in different situations, such as at work, home, with friends, or while thinking.

Researchers also commonly use strength of ethnic identification as a single-measure indicator of acculturation (Penaloza, 1994). In this approach, respondents are questioned about how strongly they identify with their ethnic group, and are then placed in groups such as “Strong” or “Weak” Ethnic Identifiers (Deshpande et al., 1986; Donthu & Cherian, 1994).

While the single-factor scales have been utilized with some success, many researchers caution that acculturation should not be considered so narrowly, and that many factors other than language contribute to acculturation and should thus be included in a comprehensive scale (Donthu & Cherian, 1994; Kim, Laroche, & Joy, 1990; O’Guinn & Faber, 1985). A study by Unger et al. (2007) found that acculturation scales based on language alone did not strongly correlate to more complex acculturation scales that included additional factors. Some of these additional factors include appreciation of cultural objects or traditions, self-identification, and the importance of relationships with members of the host and original ethnic culture (Unger et al.). The Acculturation Rating Scale for Mexican-Americans II, known as ARMSA-II is a 30-item comprehensive acculturation scale that includes some of these additional factors (Cuellar, Arnold, & Maldonado, 1995). Within the apparel field specifically, Kang and Kim (1998) developed their own complex acculturation measure using a ratio of length of residency in the US to age, language use at home, work, and among friends, and use of American and ethnic media.

Though comprehensive scales may be more proficient in accommodating a wide variety of acculturation aspects, the length of many of these scales makes them difficult and

time-consuming to implement as part of larger survey studies. Marín and Marín (1991) also criticize some of these multi-factor approaches to acculturation measurement, specifically the inclusion of sociodemographic factors as a component of acculturation measurement scales. For instance, factors such as generation, length of residence, and age at arrival in the US are frequently included in multidimensional acculturation scales as a measurement of acculturation. However, Marín and Marín counter that these factors are associated with acculturation, but as a correlate, rather than a measurement of acculturation level. The researchers suggest that the use of these additional factors in scale development complicates validity and ultimate reliability in the use of these scales.

In addition to the debates over the choice between language-based and more complex acculturation scales, the field of acculturation research is also greatly complicated by the dimensionality of the acculturation process. As previously discussed, both unidimensional and multidimensional models of acculturation have been proposed in the literature. As a result, unidimensional and multidimensional scales also exist to measure acculturation. Differences between the two approaches are the source of much controversy and discrepancy within the field of acculturation measurement. Unidimensional scales are those that measure acculturation through evaluation of respondents on one dimension. These measures assume that respondents can be placed on a linear continuum ranging from total assimilation into the host culture to complete maintenance of original culture (Unger et al., 2007). The use of language (such as Spanish and/or English) is a commonly used unidimensional approach in the measurement of acculturation (Olmedo & Padilla, 1978; Webster, 1992). Additional

factors may be included in unidimensional scales, but respondents are limited to indicating their behavior as some level between host culture-dominant and original culture-dominant.

Proponents of a multidimensional approach to the development of acculturation scales note that since the acculturation process is complex, its measurement should not be restricted to one dimension. Unidimensional acculturation scales assume that the process of acculturation comes at the expense of the immigrant's relationship with his/her original culture. Because many researchers agree that many immigrants (and particularly Hispanics) wish to maintain original cultural ties and assimilate into US culture, acculturation scales should allow respondents to classify the strength of their identification with each culture independently (Unger et al., 2007). Bidimensional acculturation scales have been developed by Marín and Gamba (1996) and Oetting and Beauvais (1990) and allow respondents to indicate their association with host and original cultures separately. The discipline of acculturation research does not entirely agree on the use of unidimensional and multidimensional scales and research will likely continue in this area in the future.

In using the wide range of acculturation scales discussed above, researchers utilize different methods of analysis and classification of respondents into acculturation categories or levels. For instance, Kara and Kara (1996) used cluster analysis to group respondents into categories of high acculturation (Hispanics), low acculturation (Hispanics), and Anglos. Kang and Kim (1998) and Upchurch (2008) used a median-split method in which the median of respondent scores was calculated and any score greater than the median was considered high acculturation, and lower or equal than the median is low acculturation. Rajagopalan and Heitmeyer (2005) used a different approach, in which respondents were assigned to low,

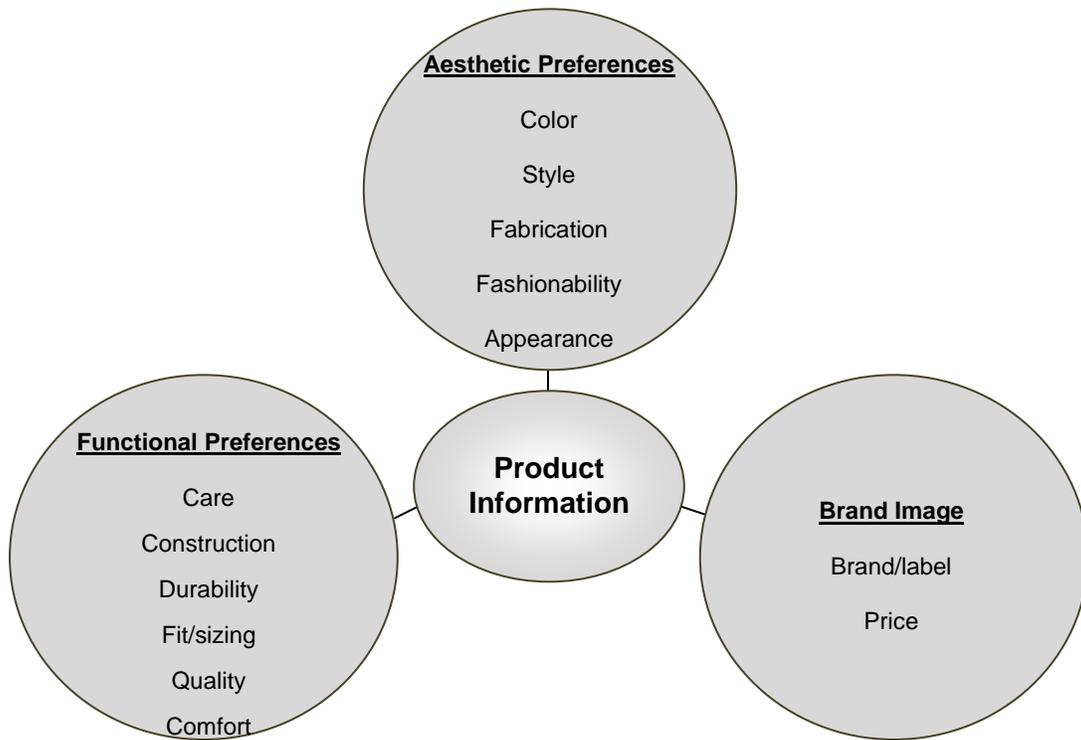
medium, and high acculturation categories based on dividing the sample size by the number of classes desired (this results in equal sample sizes within each class).

As shown, acculturation measurement is quite complex and no single, correct method of measurement or scale exists. Unger et al. (2007) notes this problem in their research and suggests that researchers include a variety of acculturation scales in their studies to obtain a more reliable, complete description of acculturation level. However, many studies cannot afford the limitations imposed by the inclusion of multiple measures, such as possible respondent fatigue, cross-contamination across scales, and time constraints in survey administration (Unger et al.).

### *Product Information*

In addition to a demographic and psychographic market evaluation and important considerations related to subculture and acculturation, Hispanic product preferences are especially pertinent to the development of targeted apparel products. The next section of the literature review will involve an extensive discussion of the range of evaluative criteria or product attributes that consumers use to evaluate and purchase apparel products. For the purposes of this section, product attribute preferences of Hispanic consumers will be organized into three categories: aesthetic, functional, and brand image qualities. Figure 6 illustrates May-Plumlee & Little's (2006) universal apparel product characteristics that will guide the organization of this section. Extensive information regarding Hispanic customer preference in these product areas is not available due to the proprietary nature of studies typically used to uncover these preferences. However the information that exists will be

reviewed as thoroughly as possible since this information is directly applicable to apparel new product development processes.



**Figure 6: Product information components**

Note: created by the author (Newcomb, 2008) but adapted from “Proactive product development integrating consumer requirements,” by T. May-Plumlee and T. Little, (2006), *International Journal of Clothing Science and Technology*, 18(1), 53-66.

### *Aesthetic Preferences*

The section of the literature review involves a more detailed discussion of the range of aesthetic apparel product attributes (color, product styling, fabrication, fashionability, and appearance) that may be used to evaluate apparel products. Academic researchers and apparel lines directed at Hispanics frequently report that Hispanics enjoy very colorful

designs and bold prints (D'Innocenzio, 1997; Korzenny & Korzenny, 2005; Perdomo, 2003; Pliagas, 2004). This belief is so widespread that dissertation research conducted by Pasarell (1995) was very surprising when it concluded that Hispanic women actually more frequently purchase neutral colors over brights, lights, and darks, even though they like to wear colorful clothing all year. To explain this discrepancy, market analysts have suggested that the focus on colorful clothing may be too simplistic. In reality, Hispanic apparel consumers desire “flavor” in their clothing. Flavor abounds in Hispanic culture, and it is this quality they seek out in their apparel products. Flavor can be conveyed through colors (not necessarily loud colors), clean lines, cosmopolitan elegance, and attention to detail or style (Jaramillo, 2005). This focus on attention to detail is supported in research that shows that embellishments such as lace, beading, and Hispanic verbiage or traditional designs are popular with Hispanic apparel consumers (D'Innocenzio, 1997; Perdomo, 2003; Pliagas, 2004; R. Stockley, personal communication, September 14, 2004).

Hispanics primarily purchase and wear casual clothing, with career and dressy clothing found to be less important for this market (Pasarell, 1995). This mirrors the preferences of the general US market. Urban wear, denim jeans, pants, and shorts are popular apparel items demanded by Hispanic consumers. Mediamark Research Inc. predicts that the size and youth of the Hispanic market will drive the majority of future sales in the urban fashion market (2007). Despite the fact that they are discouraged in some Hispanic cultures, pants and shorts are also increasingly demanded apparel items. This shift is perhaps the result of an acculturation process in which Hispanics are affected by the US mainstream culture (Korzenny & Korzenny, 2005).

Even with the popularity of jeans, pants, and shorts, Hispanic market studies show that femininity and sexuality is strongly desired by Hispanic women, reflecting the importance of distinguishing between male and female roles in Hispanic society (Korzenny & Korzenny, 2005; Solomon & Rabolt, 2004). In addition, traditional Hispanic garments are being incorporated into US Hispanic apparel lines. For instance, guayabera shirts once popular in Cuba are now being introduced in the US (Pliagas, 2004; Solomon & Rabolt, 2004). This suggests that Hispanic apparel styling preferences are also affected by Hispanic tradition and culture.

Little published information exists regarding Hispanic fabrication preferences. Traditional market assumptions suggest that Hispanics exhibit a preference for natural materials over man-made. This is apparent in several Hispanic apparel lines which have introduced linen and lightweight cotton garments to appeal to Hispanic consumers (Wexler, 2004). A 1995 study by Pasarell shows that Hispanic women prefer cotton and cotton blends over linen or man-made materials. The relatively limited research on Hispanic fabrication preferences may be the result of studies that have shown fabric content to be important for only half of Hispanic apparel consumers. Other ethnic/racial groups consider fabric content to be an important factor in apparel purchases more predominantly than Hispanics (Cotton Incorporated, 2002).

Fashion is very important for Hispanic women, many of whom think of themselves as trendsetters according to Cotton Incorporated's Lifestyle Monitor (Cotton Incorporated, 2005b; Pasarell, 1995). In a study of Hispanic youth who are strongly connected to both US and Hispanic cultures, uniqueness is highly desired in their fashion as a way of self-

expression (Chattalas & Harper, 2007). This is important given the overall youth of the population, though other studies have stressed that the newest fashion styles are not as appealing to some Hispanics who perceive more risk in purchasing. Hispanics who are more hesitant to undertake perceived risky purchases may not be as willing to try the newest fashion trends even though fashion and appearance are essential to them. In 2005, research showed that Hispanics consider their appearance in apparel to be more important than comfort. While this supports other research that discusses the importance of image for Hispanic consumers, this contrasts with findings for Caucasian and African-American apparel consumers who believe comfort is most important in any apparel purchase (Cotton Incorporated, 2005b).

#### *Functional Preferences*

Functional apparel preferences are incorporated into product and process design to affect characteristics such as the care requirements, construction, durability, fit/sizing, quality, and comfort. Many of these characteristics are interrelated and highly dependent on processes and methods used in the development of patterns, specification of production processes, and selection of materials. As discussed throughout this section of product information, relatively little information exists regarding Hispanic consumers' technical preferences in apparel products due to the proprietary nature of much of the research conducted. However, the information that exists is useful for technical product developers.

As mentioned already, comfort is not a critical factor for many Hispanic apparel consumers more concerned with the appearance of their garments. Another factor that seems to be relatively unimportant for Hispanics is the care requirements of their apparel. In a

study conducted by Cotton Incorporated on important factors when buying apparel, care instructions were less important for Hispanics than any other racial/ethnic group (Cotton Incorporated, 2002). However, durability and fine craftsmanship are highly desired. Quality is frequently cited as the most important characteristic for Hispanic consumers, and Hispanic consumers utilize quality to judge the perceived value of apparel products (Bellenger & Valencia, 1982; Cotton Incorporated, 2005b; Herbig & Yelkur, 1997).

Fit is also a critical factor in Hispanic apparel purchases. A 1995 study indicated that functionality (including fit and suitability for end use) is the most important product attribute for Hispanic women, followed by value, fashion, and impression. The researcher noted that these findings were against previous findings that stressed image and fashion for Hispanic apparel consumers (Pasarell). Supporting these findings, Hispanic consumers state that fit is critical in their selection of jeans, and they will pay the most of all racial/ethnic groups studied for good-fitting jeans (Cotton Incorporated, 2006b).

### *Brand Image Preferences*

As discussed in the section on brand loyalty, many Hispanics tend to purchase well-known, familiar brands as a way to reduce perceived risk and communication difficulties that can occur when shopping for new products (Herbig & Yelkur, 1997; Kim & Kang-Park, 1995). Certain brands, such as those created by Hispanic companies or utilizing Hispanic spokespersons may be appealing to Hispanic consumers who consider cultural maintenance and support of the Hispanic culture to be important (Donthu & Cherian, 1994). In addition, Hispanics may purchase popular branded products because of the prestige associated with own certain labels (Bellenger & Valencia, 1982; Pires & Stanton, 2005; Selbert, 2003).

While these findings suggest that brand is an important consideration for Hispanic apparel consumers, a study in 2002 indicates that brand is secondary to considerations such as price, fabrication, and care instructions (Cotton Incorporated).

In terms of pricing for Hispanic consumers, researchers typically note that Hispanics are price conscious (Minger, 1994). However, the importance of price compared to other apparel attributes has been disputed in the literature. A study in 2002 showed that price is the most important factor that Hispanics consider in apparel purchases, but that price appears to be even more important for other racial/ethnic groups (Cotton Incorporated). On the other hand, a 1997 study indicates that price is only considered after quality and durability and that it is used primarily to evaluate the value of a specific product (Herbig & Yelkur). Supporting this view, Kim et al. (2007) points out that Hispanics are more willing to pay regular price for apparel than Caucasian consumers, given the right mix of product attributes.

The importance of price in apparel purchases can differ due to the strength of ethnic identification and the importance of image. For instance, strong ethnic identifiers place high importance on the economy of apparel purchases (Minger, 1994). However, many other Hispanics seem to minimize their focus on price as a way to enhance their image and prove that they can provide for themselves and their families. This behavior is apparent by the overall market's lack of coupon usage, since some Hispanics believe that coupons suggest an inability to pay full price for an item (Blackwell, Miniard, & Engel, 2006).

To summarize, limited and sometimes conflicting information exists regarding the attributes Hispanics consider in apparel purchases. This suggests the need for additional research in this area and thus provides support for the need to conduct this research.

## **Apparel Evaluative Criteria Research**

Evaluative criteria are the product attributes consumers use to evaluate and compare product alternatives in their decision process. The number and relative importance of criteria vary based on individual customer preferences and characteristics, as well as the purchase situation (i.e. the type of product being evaluated, the variety of available alternatives, and customer experience and involvement). In addition, different criteria may be utilized to assess products during product evaluation, point of purchase, and after purchase (Engel et al., 1995). Research into the apparel attributes used as evaluative criteria is critical due to the high number and variety of attributes that individual consumers may choose to use in evaluation. An understanding of the most important and determinant criteria used by apparel consumers provides insight into product preferences and is thus useful for new product design processes (Lamb and Kallal, 1992; May-Plumlee and Little, 2006; Yoo, 2003) as well as marketing and merchandising strategic development (Forney, Park, & Brandon, 2005).

Apparel researchers in industry and academia have conducted extensive research to understand the type of evaluative criteria customers use in apparel purchases and as a result, a range of studies exist in the literature that focus on specific criteria or target customer groups. This section of the literature review will present an overview of some of these past studies into apparel evaluative criteria, highlighting major classes of criteria as well as factors that influence the selection and use of criteria.

### *Classes of Apparel Evaluative Criteria*

Numerous researchers have investigated the types of evaluative criteria consumers use to assess apparel options. Depending on the purpose of the individual study, the target

group studied, and the product type being considered, the apparel evaluative criteria chosen for a study can vary widely. Apparel researchers frequently organize evaluative criteria into unique categories based on dimensions of apparel research, individual research objectives, and presentation requirements. Table 3 provides a list of some of the past studies of apparel evaluative criteria and the categories used by researchers to organize and present the criteria.

**Table 3: Classes of apparel evaluative criteria**

Researcher	Evaluative Criteria Classes
Jenkins (1973)	<ol style="list-style-type: none"> <li>1. Product attributes</li> <li>2. Properties dependent on attributes</li> <li>3. Properties dependent on relation between textile and individual values</li> </ol>
Olson and Jacoby (1972) Szybillo and Jacoby (1974) Hatch and Roberts (1985) Eckman, Damhorst, and Kadolph (1990) May-Plumlee (1999)	<ol style="list-style-type: none"> <li>1. Intrinsic</li> <li>2. Extrinsic</li> </ol>
Swan and Combs (1976)	<ol style="list-style-type: none"> <li>1. Instrumental outcome</li> <li>2. Expressive outcome</li> </ol>
Norman (1976)	<ol style="list-style-type: none"> <li>1. Concrete</li> <li>2. Abstract</li> </ol>
Stemm (1980)	<ol style="list-style-type: none"> <li>1. Pragmatic</li> <li>2. Quality</li> <li>3. Aesthetic</li> </ol>
Myers and Shocker (1981)	<ol style="list-style-type: none"> <li>1. Product referent</li> <li>2. Outcome referent</li> <li>3. User referent</li> </ol>
Morganosky (1984)	<ol style="list-style-type: none"> <li>1. Aesthetic</li> <li>2. Utilitarian</li> </ol>
Francis and Dickey (1984)	<ol style="list-style-type: none"> <li>1. Expressive</li> <li>2. Instrumental</li> <li>3. Market</li> </ol>

**Table 3: continued**

O'Neal, Hines, and Jackson (1990)	<ol style="list-style-type: none"><li>1. Physical</li><li>2. Performance</li><li>3. Aesthetics</li><li>4. Affective</li><li>5. Connotative</li></ol>
Lamb and Kallal (1992)	<ol style="list-style-type: none"><li>1. Functional</li><li>2. Aesthetic</li><li>3. Expressive</li></ol>
Lee and Burns (1993)	<ol style="list-style-type: none"><li>1. Fashion and attractiveness</li><li>2. Quality</li><li>3. Brand name</li><li>4. Style and price</li></ol>
Abraham-Murali and Littrell (1995a)	<ol style="list-style-type: none"><li>1. Expectation / Point of Purchase measures<ul style="list-style-type: none"><li>• Fabric and garment construction</li><li>• Care, value, and style</li><li>• Appearance on the body</li><li>• Individuality and Expression</li></ul></li><li>2. Perception / After Use measures<ul style="list-style-type: none"><li>• Fabric properties</li><li>• Care</li><li>• Expressive</li><li>• Individuality</li></ul></li></ol>
Abraham-Murali and Littrell (1995b)	<ol style="list-style-type: none"><li>1. Physical appearance</li><li>2. Physical performance</li><li>3. Expressive</li><li>4. Extrinsic</li></ol>
Forney, Park, & Brandon (2005)	<ol style="list-style-type: none"><li>1. Image</li><li>2. Quality</li><li>3. Design / Beauty</li><li>4. Color / Style</li></ol>

As illustrated in Table 3, a variety of nomenclature is used to encompass the wide range of criteria consumers use to evaluate apparel. There is no established or accepted arrangement of criteria within categories in the literature, and because of the extensive research conducted in this area on a variety of topics, the same attributes are not always included by each researcher. Even so, researchers typically agree that apparel evaluation

involves the consideration of an item's ability to satisfy basic functions of dress, including adornment of the body, symbolic affiliation or differentiation, self-enhancement, utility, modesty, sexual attraction, and modernism. Consumers use both objective and subjective evaluation techniques to not only evaluate concrete product features such as fit, comfort, and style, but also to judge more personally-formed dimensions of value, taste, expression, and aesthetics (Sproles, 1979).

The next sections in this literature review will cover some of the most used (and researched) apparel evaluative criteria. The criteria will be organized into categories of intrinsic and extrinsic product attributes, similar to methods used by five researchers shown in Table 3. Intrinsic criteria are those inherent to the product, while extrinsic criteria are those supplied by retailers or manufacturers (Eckman et al., 1990).

#### *Intrinsic Evaluative Criteria*

As defined previously, intrinsic evaluative criteria refer to inherent, physical product attributes that if altered, would change the product itself (Szybillo & Jacoby, 1974). Research shows that intrinsic attributes, when compared to extrinsic attributes, are more influential and predominant in the evaluation of overall product quality (Eckman et al., 1990; Fiore and Damhorst, 1992; Szybillo & Jacoby). In addition, May-Plumlee (1999) notes that intrinsic criteria, such as fit/sizing, color, comfort, and style, are more frequently used to evaluate bras than extrinsic criteria. Understanding the types and importance of intrinsic product attributes in consumer evaluation and purchase decisions are critical for targeted development and design processes. Because they relate to physical product features, recognition of the most important intrinsic criteria throughout design processes enables the

design of apparel products engineered with the aesthetic and functional features most demanded by target customers. Adapting an organizational approach used by May-Plumlee (1999), intrinsic product attributes include two subcategories of aesthetic and functional product features, which will be profiled separately in the following sections.

*Aesthetic criteria.* The aesthetic dimension of clothing evaluation involves an assessment of the pleasing look or beauty of an apparel item (Lamb & Kallal, 1992; Morganosky, 1984). Aesthetic garment attributes are incorporated in design to enhance and adorn the body, while also serving to minimize actual or perceived figure flaws (Chattaraman & Rudd, 2006). Researchers began to recognize the importance of aesthetics in product evaluation and purchase in the early 1980s (Holbrook, 1981). Since then, apparel researchers have defined and studied a wide range of aesthetic apparel features, shown in Table 4. It is important to note that this list may be different from other researchers' lists of aesthetic criteria due to the inconsistency in naming and categorizing evaluative criteria that was discussed previously.

**Table 4: Aesthetic evaluative criteria for apparel**

Aesthetic Evaluative Criteria
<u>Design Principles</u>
Color
Silhouette
Line
Texture
Pattern
Form
Proportion
Rhythm
Unity
Balance

**Table 4: continued**

Aesthetic Fit
Style / Design / Uniqueness
Appearance
Fashionability
Attractiveness / Beauty

Note: Compiled by the author and based on the following resources:

- DeKlerk, 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.
- Eckman, M. (1997). Attractiveness of men's suits: the effect of aesthetic attributes and consumer characteristics. *Clothing and Textiles Research Journal*, 15(4), 193-202.
- Eckman, M., Damhorst, M. L., & Kadolph, S. J. (1990). Toward a model of the in-store purchase decision process: Consumer use of criteria for evaluating women's apparel. *Clothing and Textiles Research Journal*, 8(2), 13-22.
- Lamb, J. M., & Kallal, M. J. (1992). A conceptual framework for apparel design. *Clothing and Textiles Research Journal*, 10(2), 42-47.
- May-Plumlee, T. (1999). *Modeling apparel product development using consumer purchase criteria*. Unpublished doctoral dissertation, North Carolina State University.
- Morganosky, M. A., & Postlewait, D. S. (1989). Consumers' evaluations of apparel form, expression, and aesthetic quality. *Clothing and Textile Research Journal*, 7, 11-15.

Various studies have indicated the important role of aesthetics in overall product evaluation. In these studies, researchers determined that aesthetic attributes are often more determinant than utilitarian attributes in apparel choices (DeKlerk & Lubbe, 2008; Eckman, 1997; Eckman et al., 1990; Morganosky & Postlewait, 1989). In 1984, Morganosky found that consumers consider aesthetics more predominantly in determining apparel value, often at the expense of functional attributes. Consumers are willing to pay more for aesthetically pleasing apparel items, even if utility is not accordingly high. Functional attributes become more important in low aesthetic items, but do not correlate with willingness to pay a higher price (Morganosky). In addition, Lee and Burns (1993) concluded in their study of Korean and US college women that those with high public self-consciousness consider the aesthetic

criteria of fashion and attractiveness more important in apparel purchases than practical, functional apparel criteria.

Aesthetic attributes are also critical for their ability to attract customers initially to certain products, with strong aesthetics or style features being an indicator of potential overall quality (Abraham-Murali & Littrell, 1995b). DeKlerk and Lubbe noted in 2008 that if a garment is not aesthetically pleasing, consumers may not evaluate it further to discover any functional qualities. They propose that this finding may be due to a consumer's difficulty in accurately anticipating functional performance, whereas aesthetic characteristics are more immediately recognizable (DeKlerk & Lubbe).

While aesthetics are clearly important in overall product evaluation and purchase, measurement of aesthetic preferences and properties of fabrics and apparel can be difficult due to methodological concerns. For instance, physical test methods such as those used to measure other properties do not exist for aesthetic criteria. The aesthetic dimension is highly subjective, and evaluation should be centered on human (or consumer) perception, who is the ultimate judge of aesthetic success (Brand, 1964). In addition, respondents asked about their aesthetic preferences often have difficulty expressing (or possibly even recognizing) aesthetic preferences (DeKlerk & Lubbe, 2008; Eckman, 1997), or may be hindered by research methodologies that utilize words rather than pictures to question participants about aesthetic preferences. Even in studies that feature pictures or line drawings, black and white drawings are most commonly used, which ignores the critical aesthetic attribute of color (Eckman).

The multidimensionality of aesthetics also compounds its measurement. For instance, overall aesthetic preferences are often shaped by the interaction of individual aesthetic

elements, such as the combination of color, silhouette, form, and pattern (Eckman, 1997; Morganosky & Postlewait, 1989; Yoo, 2003). In addition, functional attributes such as fabrication, comfort, and fit also impact the overall aesthetic success of an apparel item (Brand, 1964). To illustrate this interaction, an important component of aesthetic evaluation is aesthetic fit (see Table 4). Fit is primarily considered a functional or utilitarian product attribute, but fit also impacts the appearance of a garment design due to its effect on dart and style line placement, hemlines, balance, and how the garment lays against the body (Outling, 2007). The connection between fit and appearance is a reflection of one of the most important functions of apparel in general – to enhance appearance. A garment that fits poorly does not typically enhance appearance, increasing the likelihood of a negative aesthetic response (Eckman et al., 1990).

As shown in this section, preference for aesthetic attributes can be difficult to ascertain, but are nonetheless critical for thorough market understanding and targeted product design due to their importance in shaping and directing overall product preferences.

*Functional criteria.* Evaluation of functional apparel attributes involves a consideration of an item's utility or performance (Lamb & Kallal, 1992). Because functional criteria are used to assess (potential) utility, preferences for these criteria are dependent on user needs or demands (Sproles, 1979). Table 5 shows the wide array of functional evaluative criteria assembled in the extensive literature review of apparel attributes. May-Plumlee (1999) suggests that consumers that consumers typically focus on the functional attributes of care, construction, durability, sizing and fit, quality, and comfort

in the majority of purchases, while reserving the remaining criteria for specialized functional products or purchases (May-Plumlee, 1999).

**Table 5: Functional evaluative criteria for apparel**

Functional Evaluative Criteria
Sizing / Functional Fit
Comfort
Fiber Content
Fabric Hand
Mobility
Donning / Doffing
Air Ventilation
<u>Protection / Safety</u> Warmth Resistance Wind Resistance Flammability Water Repellant Moisture Absorption
<u>Care Requirements / Laundering</u> Wrinkle Resistance Colorfastness Stain Resistance Shrink / Stretch Control
<u>Quality</u> Workmanship Construction Fabric Durability Reliability

Note: Compiled by the author using the following resources:

- Eckman, M., Damhorst, M. L., & Kadolph, S. J. (1990). Toward a model of the in-store purchase decision process: Consumer use of criteria for evaluating women's apparel. *Clothing and Textiles Research Journal*, 8(2), 13-22.
- Lamb, J. M., & Kallal, M. J. (1992). A conceptual framework for apparel design. *Clothing and Textiles Research Journal*, 10(2), 42-47.
- May-Plumlee, T. (1999). *Modeling apparel product development using consumer purchase criteria*. Unpublished doctoral dissertation, North Carolina State University.

The previous section established that aesthetic attributes are often considered more prominently than functional attributes in apparel decision processes, especially in attracting consumers to specific items. However, functional attributes play a critical role in the purchases of products that are themselves functional in nature. Examples of these categories are rainwear, exercise or sports apparel, intimate apparel, and military apparel. Apparel in these categories is specifically designed to serve a functional purpose, such as to provide protection against the elements or to support some physical activity (Lamb & Kallal, 1992). Some researchers recommend that highly functional apparel design such as those from the categories just mentioned, should be user-oriented, involving observation of the use-situation, definition of user needs, and testing and refinement of apparel products based on performance in the use-situation (Rosenblad-Wallin, 1985).

In general apparel purchase decisions (in this case referring to those not related to functional garments specifically), the importance of functional attributes should not be underestimated. DeKlerk and Lubbe (2008) hypothesize that even consumers who express a greater dependence on aesthetics in apparel evaluation may unconsciously consider functional attributes, such as construction, in terms of how they impact overall aesthetics. This is especially true at point of purchase, though functional attributes such as durability and care requirements also play an important role in long-term customer satisfaction. Thus, even though aesthetic attributes are important in attracting initial interest and affecting preliminary observations, the link between functional attributes and aesthetics as well as future product performance should not be forgotten (DeKlerk & Lubbe).

As the previous paragraph suggests, functional apparel attributes are multidimensional, as are aesthetic features (Morganosky, 1984). For instance, features such as comfort or fabric hand are actually the outcomes of other characteristics such as fit and fiber content (Abraham-Murali & Littrell, 1995a). In addition to functional attributes impacting each other, they also affect aesthetic qualities, as discussed in the previous section on aesthetic attributes.

The attribute of apparel quality is included in the functional category of evaluative criteria because quality is largely a measure of a product's performance and ability to meet consumer expectations or desires (Abraham-Murali & Littrell, 1995b). As shown in Table 5, quality is a multidimensional construct, assessed by evaluating quality of workmanship, construction, fabric, and product durability. At point of purchase, certain aspects of quality can be observed, but other aspects, such as durability, can only be determined during or after product use. Thus, consumer measurement of quality is abstract, and may be assessed (or predicted) using criteria other than functional attributes such as style, brand name, store service, price, and image (Abraham-Murali & Littrell, 1995b; Chen-Yu & Kincade, 2001; Cotton Incorporated, 2005a; DeKlerk & Lubbe, 2008). Research by Eckman et al (1990) shows that the concept of quality is so abstract and complex that many consumers do not specifically refer to "quality" as an attribute of concern in their evaluation and instead refer to other dimensions, predictors, or suggestions of quality. Typically, industry measurement of quality is more concrete and based on physical methods such as conformance to technical standards or quality management programs (Abraham-Murali & Littrell, 1995b).

This section shows the importance of functional apparel attributes throughout the decision process, including evaluation at point of purchase as well as their role in indicating future product performance. Because of the connection between functional attributes and long-term customer satisfaction (and subsequently consumer opinion), an understanding of the functional features desired by apparel consumers would support targeted apparel design and product development and improve the chances for future success.

#### *Extrinsic Evaluative Criteria*

As already defined, extrinsic criteria are the opposite of intrinsic criteria, meaning they are not physical components or aspects of the product. Categorization of extrinsic apparel attributes varies depending on the researcher and the study, but are generally considered to be those criteria applied by retailers or manufacturers, instead of incorporated into product design (Eckman et al., 1990). For presentation purposes, extrinsic criteria will be segmented into two categories: expressive/symbolic criteria and brand/situational criteria. This organization is somewhat different from that found in much of the literature. While brand and situational factors are commonly defined as extrinsic criteria in the literature, expressive or symbolic attributes are not always mentioned by researchers, and when they are, they may or may not be categorized as extrinsic criteria. However, the researcher decided to include expressive/symbolic attributes in the extrinsic category because they are not actually physical components of the product, but instead are based on the external interaction between the physical apparel product and the apparel consumer.

*Expressive / Symbolic criteria.* In addition to serving as adornment for the body and satisfying functional requirements, apparel is also an expressive or symbolic product. Based

on the interaction of aesthetic, functional, and brand/situational attributes with individual consumer values and motivations, apparel elicits a personal reaction or emotional response from the consumer as well as reactions from others (Abraham-Murali & Littrell, 1995a; Eckman, 1997). Consumers often select apparel products based on the image they have of themselves, or the image they want to project to others (Lamb & Kallal, 1992).

Expressive criteria encompass a broad range of product features, as shown in Table 6, which provides a list of expressive or symbolic apparel characteristics found in the literature. As shown in the table, expressive features are predominantly a reflection of the interaction of the product with the consumer, or the statement or message wearers seek to make with their clothing. Consumers evaluate and select apparel to enhance or protect their image or ego (Grubb & Grathwohl, 1967), project a sense of individuality or creativity, or to reinforce their confidence (Lamb & Kallal, 1992). In addition, apparel selection can support one's role in society, satisfy lifestyle, personal, or physical requirements, or communicate social standing or group membership or differentiation (Sproles, 1979).

**Table 6: Expressive / Symbolic evaluative criteria for apparel**

Expressive / Symbolic Evaluative Criteria
Group Membership / Social Affiliation
Fun / Excitement / Enjoyment / Entertainment
<u>Psychological Enhancement</u> Individuality Fashionability Creativity Confidence Taste Ego Prestige

**Table 6: continued**

<p style="text-align: center;"><u>Responses of Others</u> Approval Compliments Sexual Appeal or Attraction</p>
<p style="text-align: center;"><u>Appropriateness / Suitability</u> Individual: Occupation, Personality, Age, Body Occasion / End Use / Roles</p>
<p style="text-align: center;"><u>Feelings / Beliefs</u> Social Values Ethnocentrism Political Beliefs Religious Beliefs</p>

Note: Compiled by the author using the following resources:

- Abraham-Murali, L., & Littrell, M. A. (1995a). Consumers' conceptualization of apparel attributes. *Clothing and Textiles Research Journal*, 13(2), 65-74.
- Abraham-Murali, L., & Littrell, M. A. (1995b). Consumers' perception of apparel quality over time: An exploratory study. *Clothing and Textiles Research Journal*, 13(3), 149-158.
- Lamb, J. M., & Kallal, M. J. (1992). A conceptual framework for apparel design. *Clothing and Textiles Research Journal*, 10(2), 42-47.
- May-Plumlee, T. (1999). *Modeling apparel product development using consumer purchase criteria*. Unpublished doctoral dissertation, North Carolina State University.
- Morganosky, M. A., & Postlewait, D. S. (1989). Consumers' evaluations of apparel form, expression, and aesthetic quality. *Clothing and Textile Research Journal*, 7, 11-15.
- Sproles, G. B. (1979). *Fashion: Consumer behavior toward dress*. Minneapolis, MN: Burgess Publishing Company.

Expressive apparel attributes are often mentioned in the literature as important components of apparel product evaluation and purchase, but they do not appear to be as frequently studied as other, more measurable properties of aesthetics, functional, or brand-related attributes. However, they are no less important, and are sometimes more important, than other categories of evaluative criteria. For instance, consumers can be initially attracted to a garment because of anticipated emotional response to the item, or expected positive response from others. If the response or anticipated effect of the garment is negative, the

consumer will likely not investigate other functional, aesthetic, or brand/situational attributes (DeKlerk & Lubbe, 2008). The prominence of “punk” clothing demonstrates an apparel category wherein selection is primarily based on the need for expression through clothing – such as membership to a particular group or display of individuality. In addition, uniform selection is conducted to reinforce group identity as well as to ensure appropriateness for occupation, roles, or responsibilities. In cases such as these, expressive evaluative criteria may supersede others in product evaluation (Lamb & Kallal, 1992).

The interaction between the apparel product and the consumer determines the expressive capabilities of an apparel item (Abraham-Murali & Littrell, 1995a). Expressive qualities of apparel are strongly tied to more visual aspects of aesthetics and the appearance of a garment on the body (Abraham-Murali & Littrell, 1995b; DeKlerk & Lubbe, 2008; Eckman et al., 1990). Apparel communicates messages to the wearer and observers through visuals, such as attractiveness, color, styling, fit, and brand names or labels. In this way, aesthetic, functional, and brand or situational attributes combine to serve as a “vehicle for expression” (Morganosky & Postlewait, 1989).

Because of the connection between aesthetic and expressive characteristics, some researchers include expressive criteria as a subset or component of aesthetics (Fiore & Delong, 1994). Morganosky & Postlewait (1989) investigated this role of expressive criteria in overall aesthetic evaluation of apparel. Results showed that form (consisting of line, design, colors, shape, etc.) is more predominantly used in aesthetic evaluation of apparel, rather than expression (Morganosky & Postlewait). This finding supports the organization of

this section of the literature review, in which expressive criteria are classified separate from aesthetic criteria.

The fact that apparel expressive criteria are dependent on the interaction of multiple factors has contributed to the difficulty associated in evaluating this construct. In addition, measurement of expressive characteristics is highly subjective and individualistic, and consumers may have difficulty even expressing their underlying motives and messages being conveyed through their clothing purchases (Rosenblad-Wallin, 1985). To overcome this complexity of measurement and gain understanding of consumer preference for and use of expressive evaluative criteria, researchers suggest a combined qualitative and quantitative research approach. In this way, consumers are not only able to provide more detail and insight through qualitative free response, but will also be able to supply more abstract, underlying information about their decision process through quantitative measures using preselected criteria (Eckman et al., 1990).

This section has discussed the expressive characteristics of apparel and their ability to communicate messages about the wearer that words may not be able to convey. While expressive criteria are highly subjective and difficult to measure, an understanding of the expressive features that target consumers demand in apparel is important for product development processes.

*Brand Image / Situational criteria.* The category of extrinsic brand image/situational criteria encompasses a wide range of attributes that are not part of the physical product itself. As shown in Table 7, the category includes attributes related to the manufacturer or retailer of the product, such as price, brand, country of origin, and store, promotion, and service

attributes. In addition, the category includes the attribute of versatility, both of the item being evaluated, as well as its coordination with the consumers' existing clothing.

**Table 7: Brand Image/Situational evaluative criteria for apparel.**

Brand Image / Situational Evaluative Criteria
Price
Value / Economy
Brand
Country of origin
Competition
<u>Store</u> Prestige Familiarity Convenience Characteristics
<u>Promotion</u> Media Advertised features Hangtags
<u>Service</u> Warranty/Alterations Payment plans Quality of salesperson Store selection
<u>Versatility</u> As an individual item With existing wardrobe

Note: Compiled by the author using the following resources:

- Abraham-Murali, L., & Littrell, M. A. (1995a). Consumers' conceptualization of apparel attributes. *Clothing and Textiles Research Journal*, 13(2), 65-74.
- Eckman, M., Damhorst, M. L., & Kadolph, S. J. (1990). Toward a model of the in-store purchase decision process: Consumer use of criteria for evaluating women's apparel. *Clothing and Textiles Research Journal*, 8(2), 13-22.
- Jenkins, M. C. (1973). *Clothing and evaluative criteria: Basis for benefit segmentation and reflection of underlying values*. Unpublished doctoral dissertation, The Ohio State University.
- May-Plumlee, T. (1999). *Modeling apparel product development using consumer purchase criteria*. Unpublished doctoral dissertation, North Carolina State University.
- Sproles, G. B. (1979). *Fashion: Consumer behavior toward dress*. Minneapolis, MN: Burgess Publishing Company.

While external factors related to the retail environment and service, promotional strategies, competition, and versatility are important attributes that certainly impact the apparel decision process, the remaining factors in Table 7 (price, brand, country of origin) are the focus of much of the research in the area of brand image/situational attributes. As an example, a 1999 study by May-Plumlee classified thirteen universal apparel evaluative criteria based on an extensive review of the range of criteria that exist. While she noted the use of several extrinsic product characteristics including many of the attributes in Table 7, only the two attributes of brand name and price were included as “universal” criteria.

Price, brand, and country of origin are important considerations in apparel purchases by themselves, but are also often used in overall assessment and prediction of apparel quality. As discussed, quality is an abstract term that is sometimes difficult to evaluate and is dependent on the interaction of multiple factors (Chen-Yu & Kincade, 2001; Cotton Incorporated, 2005a; DeKlerk & Lubbe, 2008). When consumers are not equipped to wholly evaluate the many dimensions of quality, price may be used as an indirect measure (or predictor) of quality (Jenkins, 1973; Leavitt, 1954). However, some research suggests that price is diminishing in its use as an indicator of quality. In research conducted between 2000 and 2004, consumers indicated that they are less likely to associate higher prices with better quality and performance. This may be due to the increased importance that many consumers now place on economy and value, as they are more willing than ever to sacrifice quality for price (Cotton Incorporated, 2005a). In cases where price is not used to predict quality, research indicates that brand (Davis, 1985; Huddleston & Cassill, 1990) and country of origin (Chen-Yu & Kincade, 2001; Dickerson, 1987) may instead be used.

While some research suggests that price may no longer be used as often as a measure of quality, the importance of price in purchase decisions cannot be ignored. Frequently, it is the major purchase consideration and constraint, ultimately determining whether consumers are able to purchase a product (Cotton Incorporated, 2006a; Sproles, 1979). Price is also increasingly important for consumers who shop across retail levels and channels (Cotton Incorporated, 2002).

This section has overviewed the wide range of extrinsic brand image and situational attributes that may be used in the evaluation and purchase of apparel. These attributes are primarily the result of actions by the apparel manufacturer and retailer, and while not intrinsic to the product itself, are no less influential in the way consumers view the product.

As shown in this section, evaluative criteria are often complex and interrelated. This is likely the reason behind the inconsistent categorization evident throughout the literature. However, the organization of apparel attributes into specific categories is not as important as the recognition of the large number of criteria that are used in the apparel purchase decision process. The next section will include a discussion of the factors that determine or influence consumer preference for and use of individual criteria in their apparel purchases.

#### *Determinants of Preferences for Apparel Evaluative Criteria*

As discussed previously, evaluative criteria are the product attributes consumers use to evaluate and compare product alternatives in their decision process (Engel et al., 1995). The number and specific criteria used by consumers often varies by the individual consumer, product, and purchase decision (Eckman, 1997; May-Plumlee & Little, 2006). Those criteria that are influential in decision-making are known as important or salient, while those that are

the most important are termed as critical or determinant (Jenkins, 1973; Stemm, 1980).

Generally, consumers base their purchase decisions on the relative importance of each of the factors in the purchase decision, the potential interaction of the factors, and the alignment of these factors with personal values or motivations (Jenkins). Thus, the evaluative criteria used and the purchase decision itself clearly can differ based on consumer, purchase, or product characteristics.

Consumer behavior theories provide an understanding of the use and significance of evaluative criteria in the decision process as well as factors that may influence product preference formation and purchase. Consumer behavior researchers outline the decision process, starting with initial awareness of a need, moving to product search and evaluation of alternatives based on a set of evaluative criteria, and ending with purchase, consumption, and post-purchase assessment (Engel et al., 1995). The decision process, including the use of evaluative criteria and the ultimate product purchased (or not purchased), is dependent on a variety of factors. Sproles suggests that the decision process for fashion and apparel is affected by external factors such as climate, social, cultural, economic, and marketing systems, impersonal and personal communication, internal factors such as personal, social, and psychological characteristics of consumers, and the fashion cycles or trends of the time (Sproles, 1979). The Engel, Blackwell, and Miniard (EBM) model in Appendix A support Sproles' work by proposing that consumer decision processes are influenced by environmental aspects of culture, social class, personal influences, family, and situational factors, as well as individual consumer differences such as consumer resources, motivation/involvement, knowledge, attitudes, personality, values, and lifestyles.

This section of the literature review will examine the range of factors that influence apparel decision making processes, specifically the factors that may impact or determine consumer preferences for apparel evaluative criteria. Table 8 shows the organization of the factors into categories of demographic characteristics, psychographic features, physical body and related characteristics, and situational factors. Some of these categories, such as demographics and psychographics, are widely discussed by consumer behavior theorists, while the other categories of physical and situational factors are included for their significance in the study of apparel purchase decisions specifically. The intention of this section is not to provide a detailed discussion of each researcher’s findings related to all of these factors, but to direct the reader to additional research that supports the influence of these factors on use and preference for evaluative criteria.

**Table 8: Determinants of preferences for evaluative criteria**

<p><b><u>Demographic Characteristics</u></b>            Gender            Age            Geography            Occupation            Education            Income            Ethnicity</p>	<p><b><u>Psychographic Characteristics</u></b>            Lifestyle            Motivations / Benefits sought            Personality            Values</p>
<p><b><u>Physical Body and Related Characteristics</u></b>            Body size            Body shape            Body image or cathexis</p>	<p><b><u>Situational Factors</u></b>            Garment type            Purchase type            Study methodology            Environmental trends</p>

### *Demographic Characteristics*

The ease with which consumer segments may be defined according to demographic variables has driven much of the research into demographic influences on use and importance of apparel evaluative criteria. Table 9 serves as a resource for the reader, listing the major studies that have documented the effect of demographic characteristics on the use and importance of evaluative criteria in apparel purchase decisions.

**Table 9: Research into the effect of demographics on apparel evaluative criteria preferences**

<b>Demographic Characteristic Studied</b>	<b>Researcher</b>
Gender	Eckman (1997); Holbrook (1986); Williams and Slama (1995); Williams (2002); Holbrook (1986)
Age	Cotton Incorporated (2006a); Dutton (2006); Eckman (1997); Holbrook (1986); Yoo (2003)
Geography	Fiore and Kimle (1997); Yoo (2003)
Occupation	Cassill and Drake (1987); Jenkins (1973)
Education	Jenkins (1973)
Income	Morganosky (1987); Williams (2002)
Ethnicity	Cotton Incorporated (2002); Feather, Ford, and Herr (1996); Hsu and Burns (2002); Kang and Kim (1998); Kim and Arthur (2003); Kim and Kang-Park (1995); Lee and Burns (1993); Rajagopalan and Heitmeyer (2005); Yoo (2003)

Demographic variables such as gender, age, geography, occupation, education, income and ethnicity can impact the range and importance of criteria used to evaluate apparel. The effects of some of the variables are not surprising, such as gender, age, and income. A study by Cotton Incorporated (2006a) shows that older apparel consumers

consider fabric content, care, and country of origin more important than younger consumers, who focus on brand. In addition, income affects discretionary spending abilities, and thus, the attributes on which consumers can base purchase decisions (Sproles, 1979).

Some of the demographic factors shown in Table 9 are related to one another, such as education, occupation, and income. These variables have been considered together in the evaluation of the effect of social class on purchase preferences. Jenkins (1973) and Williams (2002) indicated that consumers of lower economic levels tend to focus on more concrete evaluative criteria such as price or fiber content, while those of higher economic levels use more abstract criteria such as suitability.

While not often studied, several researchers have noted the potential effect of geographic location on use of evaluative criteria (Fiore & Kimle, 1997; Yoo, 2003). For instance, consumers in metropolitan business districts may consider style and appropriateness more important than consumers in beaches or resorts, who may focus on comfort. Similarly, weather associated with these geographic locations may also influence preferences. Consumers living in the northeastern United States may consider functional properties of warmth and wind resistance more important than other attributes during the colder months of the year. At the same time, consumers in the far southern regions may not place such importance on these functional properties.

*Ethnicity.* Of particular interest to this research, the role of ethnicity in the use and importance of apparel evaluative criteria has been more frequently studied as the ethnic variation in the US population has increased (Solomon & Rabolt, 2004). In studies investigating the effect of ethnicity, research may focus within one ethnic, racial, or culture

group to assess apparel preferences based on within-group variation due to subculture (Kang & Kim, 1998; Rajagopalan & Heitmeyer, 2005) and acculturation level (Kim & Arthur, 2003; Rajagopalan & Heitmeyer; Upchurch, 2008). As an alternative approach, ethnic group classification may be used as a segmentation variable, enabling a comparison of preferences across different ethnic groups. This approach is evident in examples of studies citing differences in apparel preferences of Korean and US women (Lee & Burns, 1993), Taiwanese and US women (Hsu & Burns, 2002), and Caucasian and African-American US women (Feather et al., 1996).

In the previous section of the literature review, product preference information related to the US Hispanic market was presented and inconsistencies were noted throughout the literature in the area of aesthetic, functional, and brand image preferences. Overall, the literature review illustrates a relative scarcity of information regarding preference and use of a range of apparel evaluative criteria. Thus, a targeted study on the evaluative criteria that US Hispanic women consider important in their apparel purchases is clearly needed.

#### *Psychographic Characteristics*

The influence of demographic factors on evaluative criteria preferences may be more immediately observable, but many researchers within the apparel industry stress the importance of considering the effect of psychographic factors as well (Cassill & Drake, 1987; Shim & Bickle, 1994). Whereas demographic segmentation and analysis may indicate *who* uses specific evaluative criteria, psychographic analysis will help researchers understand *why* they are using them. Though the two factors relate to different dimensions, demographic characteristics often impact or determine psychographic characteristics. Thus, many

researchers combine demographic and psychographic analyses to analyze consumer preferences. Table 10 serves as a resource for the reader, listing the major studies that have focused on the effect of psychographic characteristics such as lifestyle, motivations/ benefits sought, personality, and values on the use and importance of evaluative criteria in apparel purchase decisions.

**Table 10: Research into the effect of psychographics on apparel evaluative criteria preferences**

Psychographic Characteristic Studied	Researcher
Lifestyle	Cassill and Drake (1987); Stemm (1980)
Motivations / Benefits sought	Alexander, Connell, and Presley (2005); Eckman (1997); Jenkins (1973); Shim and Bickle (1994)
Personality	Holbrook (1986); Lee and Burns (1993); Williams and Slama (1995)
Values	Jenkins (1973); Kim (2005); Lapitsky (1961); Morganosky (1987)

*Lifestyle.* The concept of “lifestyle” involves a consideration of way people live, including cultural, social, and economic interactions (Engel et al., 1995). In the earliest study of the effect of lifestyle on apparel preferences, Cassill and Drake (1987) identified seven lifestyle factors (such as self-confidence, traditional, modern traveling and spending, etc). Through statistical analysis, the researchers associated each of these factors with unique usage of apparel evaluative criteria for work and social apparel. For instance, respondents with a tradition-oriented lifestyle expressed more importance on economic criterion than appropriateness. On the other hand, those with a modern traveling and spending lifestyle did not consider economic factors in purchasing (Cassill and Drake). Lifestyle is dependent upon

demographic factors such as income, age, and occupation, as well as other psychographic factors such as personality (Sproles, 1979).

*Motivations / Benefits sought.* Research in this area has centered on the fact that during the purchase decision process, consumers are often motivated to satisfy certain needs or wants, or to seek out specific benefits. Depending on the individual consumer's motivations, the benefits he/she seeks, and the needs or desires for satisfaction, he/she may evaluate apparel attributes differently in the decision process (Sproles, 1979). Benefit segmentation research involves the identification of specific benefits that consumers may seek in apparel products. Once benefits are defined, demographics can be used to further define customer segments. In addition, these benefits may be linked with lifestyles, providing another method of customer profiling (Jenkins, 1973; Shim & Bickle, 1994).

Jenkins (1973) provided early support for the use of benefit segmentation in apparel evaluative criteria studies by showing that consumers who seek clothing to benefit their appearance consider different criteria important than those who are more practicality oriented. Specific benefits that consumers may seek in clothing include self-improvement, sex appeal, social status/prestige, perceived figure flaw compensation, role identification, individuality, and fashionability (Shim and Bickle, 1994). Shim and Bickle also distinguish person-based benefits (such as self-improvement or sex appeal) from situational-based benefits (role appropriateness), and illustrate that clothing benefits sought can be used to effectively segment consumers. In 2005, Alexander et al. reported that people who seek fashion innovativeness and satisfaction with clothing prefer fitted tops and jackets. Clearly, the benefits that consumers seek in apparel influence their apparel choices.

*Personality and Values.* As discussed previously, clothing is sometimes chosen for its expressive qualities, or its ability to convey something about the personality or the values of the consumer, which vary greatly. Various researchers have linked personality traits to apparel preferences. In 1986, Holbrook reported the effect of personality differences such as visual vs. verbal-oriented, intrinsic vs. extrinsic-oriented, and romanticism vs. classicism on the importance of aesthetic product characteristics in the evaluation of jacket and pants. Lee and Burns (1993) studied the role of self-consciousness on the use of criteria and found that consumers high in public self-consciousness consider fashion and attractiveness to be more important than practical criteria. In 1995, Williams and Slama studied the shopping behavior of market mavens and nonmavens across a range of product categories, including apparel. Results showed that mavens and nonmavens stress different brand and store attributes in their evaluation of products across categories.

Values which may be expressed through clothing include a sense of aesthetics or fashion, economic-mindfulness, religious belief, political awareness or activism, quality conscious, or social conformance (Jenkins, 1973; Lapitsky, 1961; Sproles, 1979). These underlying values influence consumer preferences and the importance of different evaluative criteria in apparel purchases (Jenkins). For instance, Morganosky (1987) reports that consumers who value fashion are more likely to stress product attributes (such as price) that will enable a high quantity of purchases, rather than quality attributes. These fashion-oriented consumers may also ignore criteria such as care considerations and wearability, whereas more function-oriented apparel consumers focus on these factors. In this study, Morganosky also noted the relationship between the demographic factor of income and these

apparel values, finding that high income consumers place more importance on aesthetic factors than functional criteria (1987). The research on the role of personality and values in determining evaluative criteria preferences suggests that consumers often evaluate and select clothing based on their internally-held personalities and values, as well as the characteristics they want to project to others.

*Physical Body and Related Characteristics*

The effects of demographic and psychographic factors on consumer behavior are widely reported throughout the consumer behavior discipline (Engel et al., 1995). However, the apparel industry also recognizes the importance of body shape and size, as well as related factors of body image and cathexis (satisfaction) on apparel preferences because of the inherent relationship between the garment and the body (Sproles, 1979). Table 11 serves as a resource for the reader, providing an indication of the range of research that has investigated this important connection between body shape, size, image and cathexis and apparel evaluative criteria preferences.

**Table 11: Research into the effect of physical body and related characteristics on apparel evaluative criteria preferences**

Physical Body or Related Characteristic Studied	Researcher
Body Size	Chattaraman and Rudd (2006); Brock (2007)
Body Shape	Alexander, Connell, and Presley (2005); Anderson et al. (2001); Feather, Ford, and Herr (1996); Pisut and Connell (2007); Yoo (2003)
Body Image and Cathexis	Alexander, Connell, and Presley (2005); Chattaraman and Rudd (2006); Feather, Ford, and Herr (1996); LaBat and DeLong (1990); Pisut and Connell (2007); Shim, Kotsiopulos, and Knoll (1991)

*Body Size and Shape.* Research in the area of body shape and size has generally focused on the effect of these dimensions on the apparel sizing/fit attribute, particularly on apparel fit preferences and fit satisfaction (Feather et al., 1996; Pisut & Connell, 2007). For instance, a study of apparel preferences of tween girls in overweight and normal size categories indicates that body size affects the relative importance allocated to certain attributes, particularly for the size/fit criterion (Brock, 2007). In a study that analyzed the effect of body size on the importance of aesthetic attributes, Chattaraman and Rudd (2006) show that larger body size is associated with preferences for styles that provide greater coverage, through less fitted silhouettes and long sleeves and lengths, and high waists.

Body shape is also an important influence on apparel preferences. Specifically related to the attribute of apparel fit, Alexander et al. (2005) shows that different body shapes experience fit issues at specific body sites, influencing body satisfaction and the clothing benefits sought by consumers. In a study that considered preferences for a broader range of apparel evaluative criteria, Anderson et al. (2001) indicate that Rectangular, Pear, and Hourglass shaped women select clothing to portray fashionability. In 2003, Yoo illustrated the effect of body shape on preferences for suit jacket design attributes, such as collar style, neckline, and silhouette.

*Body Image and Cathexis.* While body image and cathexis (satisfaction) is not actually a physical body characteristic, researchers have indicated a relationship between the physical dimensions of body size and shape and the psychological characteristics of image and cathexis (Alexander et al., 2005). As such, researchers within both fields of psychology and apparel have investigated the effects of body image and satisfaction on a variety of

issues. While researchers in psychology have focused on the role of body image and cathexis in shaping overall self-esteem, the opinions that consumers have regarding their body also influence apparel preferences. In general, research has indicated that lower body image and satisfaction is associated with more (perceived) garment fit issues (Feather et al., 1996) and lower fit satisfaction (LaBat & DeLong, 1990). In 2005, Alexander et al. found that consumers who were more satisfied with their body shape and size seek out clothing to enhance their figure, through fitted silhouettes in tops and dresses. In 2006, Chattaraman and Rudd reported similar findings, showing that consumers who have lower body image prefer apparel styles that provide greater body coverage.

In the same way that body shape and size studies tend to focus on preferences specifically related to apparel fit, apparel research into body image and cathexis also concentrates on this attribute. One exception is Shim, Kotsiopulos, and Knoll's (1991) study that researched the relationship between body cathexis to clothing values. Results showed that respondents who have higher body satisfaction are more likely to consider fashion innovativeness important and feel confident in clothing choices.

This section has illustrated the important role of physical body size and shape and related characteristics of body image and cathexis on apparel preferences. Much of the research conducted in this area focuses on the relationship between these factors and the attribute of apparel fit. However, due to the inherent body/garment relationship, the influence of physical body and related factors on a broader range of apparel evaluative criteria preferences warrants further investigation.

### *Situational Factors*

The three factors profiled above represent more consumer-oriented factors that influence apparel evaluative criteria preferences. However, external situational or environmental factors also influence the preferences that consumers express. These external influences include garment and purchase-specific characteristics, as well as environmental trends. In addition, the study methodology used to acquire and understand preferences can also influence the preferences expressed by consumers.

*Garment and Purchase Type.* Various researchers have reported that consumers may use different evaluative criteria depending on the garment type being evaluated for purchase (Abraham-Murali & Littrell, 1995a; Eckman, 1997; Stemm, 1980; Williams, 2002). For instance, the relative importance of criteria used in the selection of work apparel can differ substantially from those used in the selection of social apparel (Cassill & Drake, 1987; Stemm). In addition, evaluation can vary depending on the specific type of garment, such as tops or pants, being considered for purchase. This is especially apparent in the evaluation of apparel fit, which may vary depending on actual or perceived figure flaws at certain body locations. In these cases, style may become very important as a way to enhance or conceal the body, or color may be focused on as a way to direct attention to or away from certain body locations (Anderson et al., 2001; Chattaraman & Rudd, 2006).

The purchase situation can also impact the use and importance of evaluative criteria. Specifically, the decision process is likely different depending on the involvement level of the purchase and the previous experience that the consumer has with a particular type of purchase. Purchase “involvement level” is a feature commonly studied by retailing and

consumer behavior researchers. Purchase types may be considered high or low involvement based on the time, thought, and energy that consumers spend in the decision process. In addition, involvement relates to the risks involved in purchasing, such as those related to monetary costs and impact on self-confidence. Rothschild (1979) and Gensch and Javagli (1987) suggest that high involvement purchase decisions may necessitate a more extensive search and evaluation process, using a greater number and range of evaluative criteria.

The extent of the consumer's previous experience with a specific type of purchase also affects the evaluative criteria used (Bettman & Sujan, 1987). For instance, when consumers are evaluating apparel items that they have frequently purchased or have substantial experience in evaluating, the decision process may be abbreviated, focusing on only a few criteria, or a different combination of criteria, than a purchase type they may not have experienced before.

*Environmental Trends.* Environmental trends, such as economic and fashion trends, also impact the criteria used by consumers. The last several decades has witnessed a dramatic shift in consumer priorities, due to economic trends and the effect of globalization on the apparel industry and retail offerings. While consumers may have considered brand and fashionability critically important in the past, many are now more value driven, focused on price (DeKlerk & Lubbe, 2008). Fashion trends also influence the importance of specific criteria. For instance, when slim cut pants are considered in style, factors such as fit and style may be evaluated more importantly (Alexander et al., 2005; LaBat & DeLong, 1990; Yoo, 2003), while color may be a more important factor when shopping for a garment in a new, fashion color.

*Study Methodology.* Articles and reports that present consumer preference information base their findings on data from studies investigating specific consumer groups. Though not a factor typically included as a *determinant* of apparel preferences, the study methodology used to gather this consumer preference information is included in the current discussion for its important effect on the preferences that consumers express. Study methodology considerations include choices related to the presentation of evaluative criteria and stimuli used in data collection instruments, as well as the evaluation or purchase situation consumers are asked to recall.

Methods used to question consumers about their evaluative criteria preferences vary widely. To gather information about a broad range of criteria, researchers typically choose between two presentation approaches: a free-response approach or the use of pre-selected criteria. The free-response approach requires more effort by consumers, and is limited in its ability to obtain information about latent preferences. However, approaches that use pre-selected criteria to assess importance of evaluative criteria are also flawed. This approach may narrow the focus of the study to include only the factors that researchers consider important. This could potentially restrict respondents, forcing them to consider attributes they may never consider in an actual purchase decision, while possibly ignoring other attributes that are important (Abraham-Murali & Littrell, 1995a; Eckman et al., 1990).

As already discussed, consumers may use different evaluative criteria to evaluate different type of garments. To gather preferences about these different types of garments, researchers may choose to use a physical garment or a picture as stimuli during data collection. Abraham-Murali and Littrell (1995a) report that the choice of stimuli affects the

preferences that consumers express. For instance, when consumers can actually see and touch a garment in person, they tend to consider physical garment qualities primarily. In pictures, however, consumers often allocate as much importance to expressive qualities and performance estimates as these physical qualities (Abraham-Murali & Littrell). Eckman et al. (1990) note that some consumers also evaluate garments differently depending on whether they are directly viewed on a body or as a silhouette line drawing. Two-dimensional line drawings may limit the respondent's ability to fully assess the 3D body/garment relationship.

In a related consideration, criteria may be expressed differently if respondents are instructed to base their answers on an imagined vs. actual purchase situation (Eckman et al., 1990; Fiore & Damhorst, 1992). In addition, use of general garment categories (such as garments in general) in methodologies, rather than specific categories (such as pants and tops), can also affect the criteria expressed by consumers. These generalizations may also compromise the accuracy of the results, given the fact that consumers often use different criteria to evaluate products depending on the garment category (Eckman et al.).

Attribute importance may also differ depending on whether consumers are questioned about their preferences during product alternative evaluation, at point of purchase, or during use (Abraham-Murali & Littrell, 1995a). In Eckman et al.'s (1990) study on apparel evaluative criteria, the researchers show that color/pattern, styling, and fabric are more important in the early interest phase, while fit, styling, and appearance on the body are more important while trying garments on in the trial phase in the dressing room. Chen-Yu and Kincade (2001) provide further evidence of this behavior, showing that product image (measured by price, store, country of origin, and performance) is evaluated very differently

during alternative evaluation, purchase, and post-purchase. To illustrate this, attributes such as fabrication and care become more important in the consumer's mind during use (Abraham-Murali & Littrell, 1995b). Thus, if consumers are asked to discuss the criteria that were important in a past purchase experience, a certain amount of risk is involved since factors related to performance may be allocated more importance than they actually were given during product evaluation.

This section has presented the wide range of situational factors that influence consumer apparel preferences. While study methodology cannot be considered a determinant of consumer preferences in the traditional sense, its important effect on the preferences expressed by consumers also cannot be ignored. Thus, it is important to recognize this influence in the design of research studies focused on apparel evaluative criteria.

To summarize this portion of the literature review, the field of apparel evaluative criteria research is broad and complex, which may be a reflection of the multi-faceted, complex processes that many consumers use to assess product alternatives and select products to purchase. Consumers utilize a variety of apparel attributes in the evaluation and purchase of apparel products, ranging from aesthetic and functional intrinsic attributes to expressive and brand/situational extrinsic attributes (and most likely a combination of multiple factors within these categories) (Abraham-Murali & Littrell, 1995a). Researchers within this field have also noted substantial differences in the reported use and importance of these evaluative criteria based on consumer-oriented characteristics such as demographics, psychographics, and physical body characteristics. In addition, methodologies used to acquire and understand consumer preferences also affect the preferences reported by apparel

consumers. This section has therefore provided a greater understanding of the range of evaluative criteria that exist, as well as the factors that influence the importance allocated to these criteria in apparel purchases. The information presented here not only provides support for the research purpose of studying the apparel preferences of ethnic consumers (and the effect of physical body characteristics and other demographic variables), but also provides direction for methodologies used to uncover these preferences.

### **A Focus on the Attribute of Apparel Fit**

Apparel fit is defined as “the conformance of the garments to the shape and size of the individuals who wear them” (Keiser & Garner, 2003, p. 315). Research into concepts of apparel fit, including components, measurement, and evaluation of fit, constitutes a major research focus within apparel product development and design. To provide a theoretical background for the portion of this research that will center on fit preferences of US Hispanic women, this section of the literature review focuses on the attribute of apparel fit. The section begins with a discussion of the important role of apparel fit in overall product evaluation and the difficulty the industry is currently experiencing due to apparel fit issues. The next section briefly discusses the components of apparel fit, specifically introducing the concept of ease and the different levels of fit that result through ease manipulation. The section then continues with an overview of the evaluation of apparel fit with special attention on the methods used to better understand consumer fit preferences. The review concludes with a presentation of the role of body shape in apparel fit evaluation, specifically focusing on recent technologies enabling more sophisticated evaluation of fit.

As discussed previously, apparel fit affects the aesthetic success, functional performance, and expressive capabilities of a garment. In the previous section on apparel evaluative criteria, two types of apparel fit are defined: aesthetic fit, which relates to the appearance of the garment in relation to the body; and functional fit, which relates to the comfort and performance of the garment due to the fit (Brand, 1964; Eckman et al., 1990; Outling, 2007). Clearly, apparel fit is a critical factor in the appearance and utility of a final apparel product and it is frequently mentioned as the most important factor in apparel evaluative criteria studies (Brock, 2007; Hsu & Burns, 2002; May-Plumlee, 1999; Stemm, 1980). In addition, several researchers suggest that apparel fit may be critical enough to ultimately determine acceptance or rejection of an apparel product (Ashdown & O'Connell, 2006; Eckman, et al., 1990).

Despite the recognized importance of apparel fit, the apparel industry is plagued by fit issues and problems related to consumer dissatisfaction with apparel fit. A study by Kurt Salmon Associates indicates that 62% of US consumers are very dissatisfied with the fit of their apparel (Kurt Salmon Associates, 1999). These issues translate into financial concerns for the apparel industry, in the form of returns, lost sales, brand dissatisfaction, and time wasted in fitting rooms (Agin, 1994; Anderson et al., 2001; Desmarteau, 2000).

Multiple causes of the apparel fit problem have been identified and discussed by apparel researchers and the industry. For instance, apparel sizing standards issued by ASTM International are based on severely outdated data from 1939 that cannot accommodate the variation now apparent in the US population due to increased immigration, sedentary lifestyles, and changing nutrition and exercise habits (LaBat, 1987; Meek, 1994; Tamburrino,

1992). In addition, these standards are rarely used as published and are typically modified by apparel manufacturers to create unique sizing strategies for their individual target markets (Simmons, 2002). Problems are also compounded by the widespread practice of “vanity sizing” utilized across the industry. Manufacturers have realized the marketing and financial advantages associated with labeling and sizing garments smaller than actual measurements would suggest. Women are more likely to purchase garments of smaller sizes, simply for self-esteem enhancement and vanity purposes (Tamburrino, 1992). The result of this arbitrary approach to garment sizing and labeling, considered along with the inefficiencies and variability in current sizing strategies has resulted in widespread consumer confusion and dissatisfaction. This dissatisfaction is driving much of the industry and academic research in the area of apparel fit.

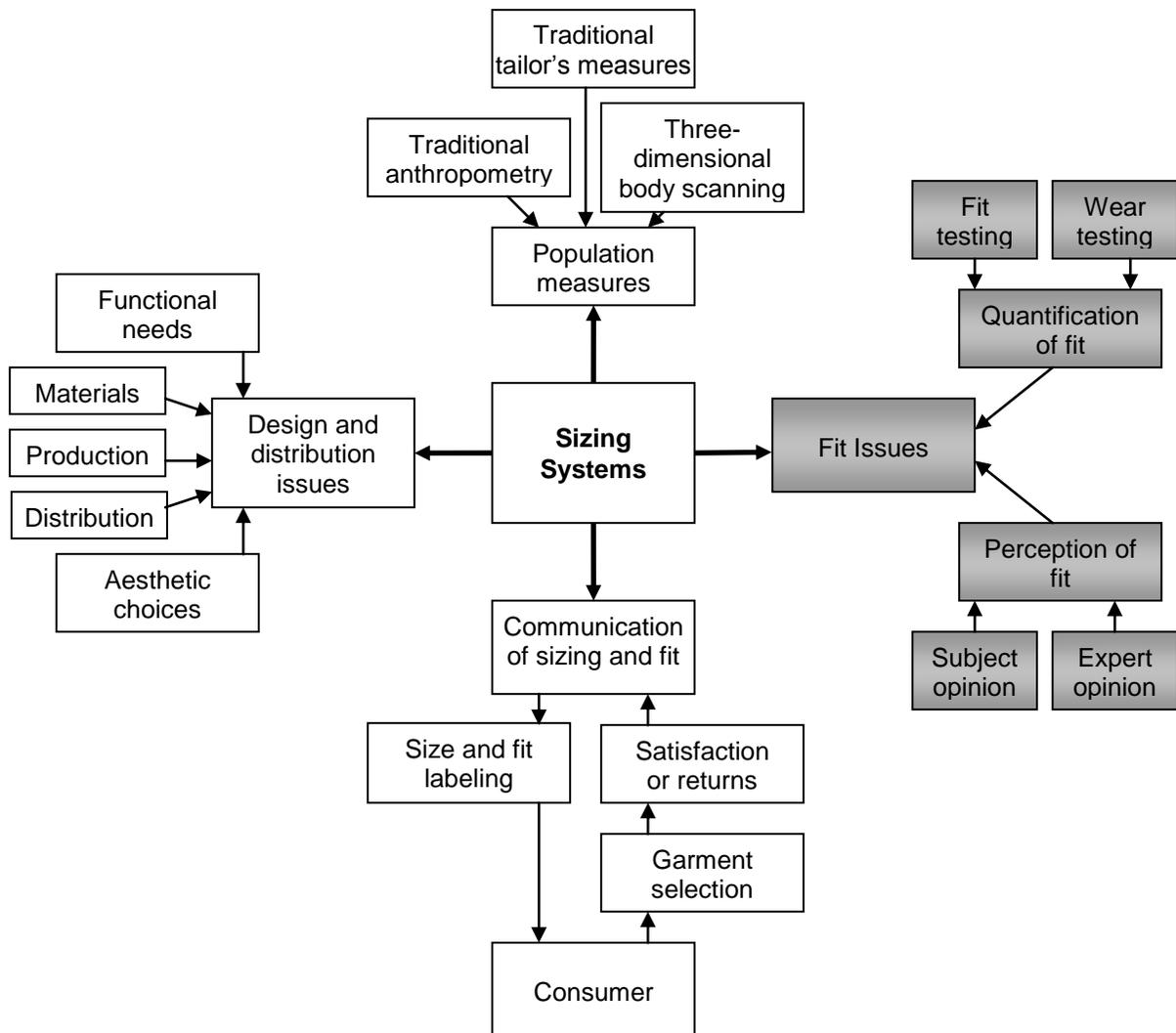
#### *Components of Apparel Fit*

Apparel fit is primarily engineered into garment patterns by technical and creative designers through the application and manipulation of ease. Ease is defined as “the amount of difference between the body measurements of the intended wearer and the measurements of the finished garment,” (Keiser & Garner, 2003, p. 316). Starting with base body measurements (such as those of a fit model or form), designers apply two types of ease to create final fit patterns. The first type of ease, known as functional or wearing ease, is the minimum amount added to allow for body movement. The second type of ease, known as design or style ease, is added to create the final style or silhouette intended by the fashion designer. Ease values may be manipulated to create various levels of fit, such as close-fitting, fitted, semi-fitted, loose-fitting, and very loose fitting (Keiser & Garner).

Though designers apply different amounts of ease to create different levels of fit and garment designs, additional factors combine to create the final fit of a garment. These factors include fabrication, such as knit or woven, fiber content, and grain, as well as set, line, and balance (Keiser & Garner, 2003). In addition, fit is dependent on the body dimensions, proportions, and posture of the anticipated target customer, the current fashion trends, and the fit preferences of the wearer (Ashdown & O'Connell, 2006). When creating garments for target consumers, designers should consider these additional components of fit when determining appropriate ease values for a desired garment style.

#### *Evaluation of Apparel Fit*

Ashdown (2007) outlines the concept of apparel fit evaluation in her conceptual framework of sizing systems research. Figure 7 illustrates this framework, with the factors related to fit highlighted by the gray background. As shown in this framework, apparel fit is a necessary component in the development of successful apparel sizing systems, and must be considered along with physical body measurements of the target population, design and distribution requirements of the target consumer, and development and communication of sizing and fit strategies to the target consumer (Ashdown).



**Figure 7: Ashdown's conceptual framework for sizing systems**

Note: From, *Sizing in clothing: Developing effective sizing systems for ready-to-wear clothing*, by S.P. Ashdown (Ed.), 2007, Woodhead Publishing Limited, Boca Raton, FL.

As shown in Figure 7, apparel fit evaluation involves the more objective evaluation of fit through fit and wear testing as well as the more subjective perception of fit by consumers and experts. Each of these aspects will be briefly discussed to present a clear picture of the range of considerations involved in fit evaluation. Fit tests are most commonly performed on

a live fit model (though a dress form may be used as well), who is representative of a manufacturer's target customer and their proportions. The fit model's physical proportions are used in pattern development and serve as the base pattern before grading to fit a range of sizes (Ashdown & O'Connell, 2006; Bye & LaBat, 2005; Workman & Lentz, 2000). During the fit session, designers, merchandisers, product developers, and patternmakers work together to determine acceptance, rejection, and modifications of sample patterns to better achieve desired fit (as well as design) (Bye & LaBat). In this evaluation of fit, team members assess the components of fit previously discussed, such as grain, line, balance, set, and ease on the human body and judge the aesthetic success of the sample as well as anticipated functionality. This may include a wear test in which fit models describe the comfort or ease of a garment during movement or donning and doffing (Bougourd, 2007). Industry-wide standards or methods for fit tests and evaluation do not exist (though they may exist for wear tests, such as ASTM International standards for abrasion and snagging resistance). As a result, fit sessions often vary across and even within manufacturers (Ashdown & O'Connell).

The widespread variability in fit evaluation methods is due in large part to the more subjective nature of fit perception and evaluation that is employed in fit sessions (Ashdown & O'Connell, 2006). To improve objective fit evaluation in apparel fit sessions, Ashdown and O'Connell investigated the possibility of utilizing training sessions focused on the five principles of fit (ease, grain, line, balance, and set) to assist paraprofessionals in objective fit evaluation and extend fit analysis beyond experts. In 2007, Outling created a fit assessment tool, outlining important fit locations on the body and garment, and the definition of good fit

in these areas based on design, fabric, appearance, and comfort. Each of these approaches is aimed to facilitate and improve fit evaluation.

Though standards may exist for certain types of wear tests and progress is being made in the development of objective fit assessment tools, fit evaluation is still dominated by largely subjective assessments of fit from the perception of experts as well as consumers. In the large majority of cases, fit evaluation, especially in the industry and academia, is performed through expert fit analysis. Experts are used to ensure that more subtle indicators of fit may be located, such as misalignment of grain or seam lines, imbalance, or wrinkles (Ashdown & O'Connell, 2006; Schofield, Ashdown, Hethorn, LaBat, & Salusso, 2006). While Ashdown & O'Connell (2006) found that paraprofessionals may be trained to use a fit assessment tool as successfully as expert fit evaluation, the researchers also noted that consumer fit preferences may not always align with fit evaluation by experts. In their study, consumer perception of fit differed from that of the experts or paraprofessionals trained by the experts. They suggest that differences in consumer fit preferences and physical body dimensions and proportions may contribute to the disagreement among consumers and experts in fit perception (Ashdown & O'Connell).

#### *Methodologies used to Assess Consumer Fit Preferences*

The conceptual framework for sizing systems shown in Figure 7 clearly indicates the important role that consumers play in the development of sizing systems. Target consumers provide body size and shape information upon which patterns are based. In addition, their design preferences and functional requirements should be incorporated into sizing strategies that are then communicated sufficiently to target consumers through sizing and labeling

(Ashdown, 2007). While the framework suggests the customer's role in providing more subjective perception of fit, the customer has not traditionally been included extensively in the development and evaluation of apparel fit. However, to combat widespread consumer dissatisfaction related to apparel fit, various researchers have started to move toward customer-focused fit research, specifically in the area of understanding the fit preferences of specific customer groups. Factors that may influence customer fit preferences include personal style preferences, current fashion trends, body image or satisfaction, attitudes, and other possible factors of age, culture, body type or size, and lifestyle (Alexander et al., 2005). These factors guide fit preference research and help researchers focus on individual consumer characteristics that may be targeted through a better understanding of preferences. As such, a range of fit preferences studies can be found in the literature, all using a variety of methods to obtain customer information. The point of this review is not to deeply discuss the variety of studies that exist, but instead to note the factors that may influence preferences and understand methods used to assess these consumer fit preferences.

Approaches to studying consumer fit preferences have been varied, as there is no standard method for obtaining this information. In addition, measurement of customer fit preferences is highly personal and subjective, involving analysis of both aesthetic and functional fit. In this evaluation, consumers analyze the garment on the body visually, as well the wearability of the garment, including how it feels against the body and during movement (Branson & Nam, 2007). Though fit evaluation is performed while garments are on the body, studies related to consumer fit preferences do not typically involve consumers actually trying on and evaluating garments. Rather, black and white line drawings or flats

are frequently used to assess preferences for different levels of fit or silhouettes, such as fitted or unfitted. For instance, Yoo (2003) illustrated three different silhouettes of business jackets, ranging from fitted to loose using simple black, white, and gray illustrations. Anderson et al. (2001), Alexander et al. (2005), and Pisut and Connell (2007) utilized a similar approach, creating black and white line drawings in three different fit levels (fitted, semi-fitted, and loosely fitted) to assess consumer fit preferences of jackets, skirts, dresses, tops, jeans, and pants. These drawings are easy to create in standard CAD programs such as Adobe Illustrator and allow researchers to control for factors such as color, style, and body shape that can influence fit preferences. However, these garment flats do not allow respondents to picture the garment on the body, and instead rely on the consumer to translate the flat image into an estimate of potential garment fit on a 3D body.

In a similar approach, Chattaraman and Rudd (2006) developed an original fit preference assessment scale for tops, skirts, and pants that is also based on basic black and white line drawings. However, instead of demonstrating a range of fit through separate flat drawings, one drawing is used for each of the garment categories, and the entire range of fit levels being studied is included in these drawings. This scale illustrates seven levels of fit (as well as style) at various body locations, including neckline (high to low), sleeves (sleeveless to full-length), length (short to long), waist level (high to low), and silhouette (fitted to unfitted). In their approach, respondents are asked to rate their preferences according to this seven point scale for each of the garment categories and the corresponding body/garment locations (Chattaraman & Rudd). This scale is similar to the line drawings discussed previously but is able to illustrate more levels of fit on one diagram. In addition, a

body form is included in the diagram to provide an indication of the relationship between the garment and the body, thus enhancing consumer fit preference evaluation.

Throughout the literature, black and white line drawings dominate consumer fit preference studies. One exception is a 2006 study by Schofield et al. which reports a more participatory environment in their analysis of consumer fit preferences and satisfaction with the fit of pants. In their study, participants assessed the fit of pants themselves, including satisfaction at the waist, hip, crotch, thigh, and overall, as well as their comfort level. While the study also includes expert fit evaluation at each of the body locations, it incorporates active consumer participation to assess overall fit satisfaction and preferences. These researchers stress the importance of aesthetic evaluation of fit in terms of how the garment looks on the body for the wearer and the viewer, as well as the fit performance of the garment in terms of comfort and wearability (Schofield et al.). These dimensions can be difficult to assess without actually viewing and wearing a garment on the body.

#### *The Role of Body Shape in Apparel Fit*

As previously discussed, apparel fit is engineered into garments by adding variable amounts of ease to base human body dimensions. As greater amounts of ease are added, the difference between the garment and body of the wearer also becomes larger, resulting in a more loosely fitted silhouette. To create garments that fit, product developers and designers must know the physical body dimensions and shapes that characterize their target customer groups as well as the more subjective fit preferences or requirements desired by consumers (Anderson et al., 2001; Pisut & Connell, 2007). Clearly, knowledge of the body sizes and shapes of target consumers is critical when determining apparel fit of a given garment style

or collection. But many researchers have also focused attention on the possible effect of body shape on fit preferences, and have reported a significant relationship. For instance, Yoo (2003) indicates that body shape influences fit preferences for business jackets at various locations including jacket silhouette, neckline drop, and collar style. In a study of female undergraduate students, Chattaraman and Rudd (2006) also report that fit preferences are influenced by body size. Respondents of a larger size tend to prefer garments with greater body coverage and looser silhouettes. In another study of college undergraduate students, Anderson et al. (2001) report a significant effect of body shape on fit preferences. Respondents who indicated that they have an Inverted Triangle shape prefer loose-fitting garments, while those with Hourglass shapes prefer more fitted clothing. Preference for loosely-fitting clothing may be an effort to conceal perceived figure flaws, while more fitted clothing may be used to enhance the figure (Anderson, et al.). Schofield, et al. (2006) consider the effect of seat shape on the fit of pants. They report that seat shape is an important determinant of overall fit satisfaction by consumers.

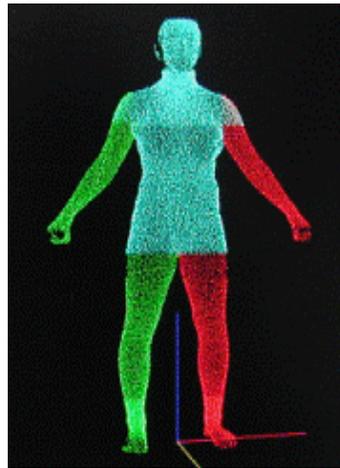
Because of the important relationship between body shape and fit preferences, and the important role that both play in determining apparel fit, apparel industry researchers have directed much attention to obtaining a better understanding of the body shapes and sizes of target customers. Many studies focus on underserved or niche populations such as plus-size (Baines-Love, 1982), petite (McRoberts, 2005), over-55 (Schofield et al., 2006; Shim & Bickle, 1993), and ethnic women (Lee, Istook, Nam, & Park, 2007; Newcomb, 2005; Shin & Istook, 2007). For instance, several studies related to body shape and fit satisfaction of women over the age of 55 are discussed in Shim and Bickle's (1993) study of fit satisfaction

and catalog preferences of catalog shoppers over 55. These studies reveal that not only does body shape drastically change as women age (in the form of prominent abdomen extension, lower bustlines, more rounded back, shorter stature, increased weight, wider upper back width, and narrower upper front width), but clothing style and fit preferences also change (Shim & Bickle). Other studies have also revealed body shape differences within certain target markets (Baines-Love; McRoberts; Newcomb). An understanding of the body shapes that predominate in target customer groups, as well as customer fit preferences (including any relationship between the two variables) provides useful information for designers and product developers creating design ideas and developing patterns and sizing strategies. This information also supports efforts to improve apparel fit by enabling designers to incorporate physical measurement data and consumer preferences into final apparel products.

Advancements in technology are revolutionizing apparel product development processes and are allowing industry and academic leaders to not only gain more knowledge about consumer characteristics and preferences, but also interact more closely with consumers during product development. Technologies including CAD/CAM, body scanning, rapid prototyping, and 3D virtual modeling and try-on have dramatic implications for the improvement of apparel fit (Fralix, 2001; Istook, 2000). The following paragraphs will profile some of the most relevant technologies shaping apparel fit evaluation in the future, including the role of 3D body scanning in body shape definition, virtual body modeling, and fit assessment. Coverage of these technologies is important because they illustrate approaches that may be used to obtain more current consumer body shape and fit preference information that can be used to improve the important attribute of apparel fit.

*Three-Dimensional Body Scanning.* Customer dissatisfaction and financial loss due to poor fitting apparel has prompted the apparel industry and academia to research solutions to the fit issues previously discussed. One of the most revolutionary technologies impacting the apparel industry today is 3D body scanning, and many industry players are hoping that it will enable greater research and improvements in apparel sizing and fit.

Three-dimensional body scanning is a method used to rapidly and accurately acquire a 3D image and measurements (Yu, 2004). Initial scanning attempts focused on specific body parts such as the head, face, hands, feet, and torso. This eventually moved into 3D whole body scanning, which is now the most advanced method of obtaining body data (Paquette, 1996). The 3D body scanning process utilizes optical devices to obtain 3D data and create a 3D surface image. Using structured light, laser, infrared, or photogrammetry as a light source, these systems deliver a collection of 3D points, known as a point cloud, that approximates the surface of the body (see Figure 8) (Hilton et al., 2000; Yu, 2004).



**Figure 8: 3D point cloud of body surface**

Note: From [TC]<sup>2</sup>, Retrieved 10/10/2007 from [http://www.tc2.com/products/body\\_scanner.html](http://www.tc2.com/products/body_scanner.html)

An advantage of 3D body scanning technology is the ease and speed with which an unlimited number of measurements can be extracted from point cloud output that represents the human body. These measurements are more precise and reproducible than traditional manual measurement techniques, and can be used to conduct body size and shape analysis of customers who are scanned (Simmons, 2002). These advantages have prompted apparel industry researchers to undertake sizing studies in the US aimed to provide more current anthropometric data about today's population in the US. The most recent sizing study performed in the US is known as SizeUSA, and was conducted by [TC]<sup>2</sup>, an apparel industry research company, using white-light 3D body scanners created by [TC]<sup>2</sup>. This study is the most extensive and representative sizing study ever performed in the US, providing anthropometric data and associated demographic and shopping behavior information for more than 10,000 subjects ([TC]<sup>2</sup>, 2004). Using segmentation strategies, subsegments of consumers may now be studied according to age, ethnicity, income level, weight, and other characteristics. This capability has been revolutionary for apparel fit and body shape research, allowing researchers in industry and academia to study the body shapes and proportions that actually exist in the current market (Schofield et al., 2006).

The following sections will discuss two areas heavily impacted by advancements in 3D body scanning technology – the field of body shape definition and classification, and the area of 3D body modeling and virtual fit assessment.

*Body Shape Definition.* Historically, apparel sizing standards and industry ideals focus on one body shape for women's apparel – the Hourglass shape, in which hips and bust are approximately equal, with a significant waist indentation that is between nine and eleven

inches smaller than the bust and hips (LaBat & DeLong, 1990). In a study of the measurements of fit models used in the apparel industry in 1986 and 1997, Workman and Lentz (2000) reported that the body proportions between bust and waist and bust and hips for fit models used in the industry corresponded to an hourglass body shape in both years. Despite the fact that size labels have changed in these years, such that a size 10 in 1986 was actually considered a size 8 in 1997, the proportions that manufacturers use to create and fit patterns has remained an hourglass shape across these years.

While the apparel industry has traditionally focused on this “ideal” hourglass proportion, analysis of 3D body scan data from SizeUSA has provided evidence that women in today’s US population do not predominantly fall into this shape category (Newcomb & Istook, 2004). Thus, there is a great need for understanding and classifying the body shapes and proportions that actually characterize women in the current US population. In the past, industry, trade, and academic publications have used a variety of terms to express unique body proportions. Some approaches use geometric shapes, such as Triangle and Rectangle, some use letters, such as A and O, while other approaches use fruit, such as Apple and Pear, to define body proportions (Simmons, 2002). A range of terms can thus be found across the literature, and there is no accepted standard terminology to describe human body shapes.

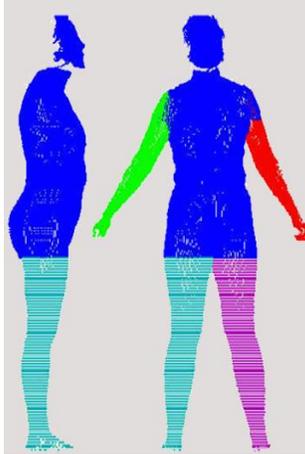
However, 3D body scanning has enabled more sophisticated analysis of human body sizes and shapes and has led to the development of two expert systems that can now be used to classify the unique proportions in the female human body today. The two programs were created by apparel researchers in academia at Auburn University and North Carolina State University. Both systems will be reviewed in this section, with most of the discussion

focused on the system created at North Carolina State University since it will be used to provide the body shape definitions used in this research.

The Auburn University system, known as the Body Shape Assessment Scale (BSAS<sup>®</sup>), defines four body shapes: Hourglass, Pear, Rectangle, and Inverted Triangle. The classification of body shape is only one component of the scale, which includes scales for whole body analysis (body build, body shape, and posture), and component body part analysis (front torso shape, hip shape, shoulder slope, bust shape, buttocks shape, back curvature). The BSAS<sup>®</sup> was created using expert analysis of 3D body scan data and was validated through practice and implementation of the scale to classify an additional 100 body scans (Connell, Ulrich, Brannon, Alexander, & Presley, 2006).

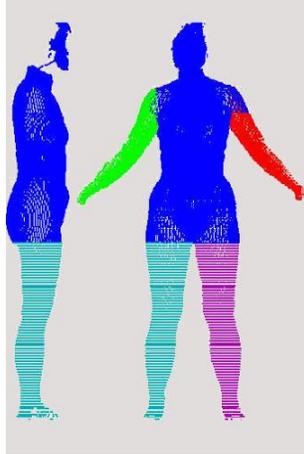
The other system, known as FFIT<sup>®</sup> for Apparel, was developed at North Carolina State University using Visual Basic Pro, Version 6.0 in 2002 and then validated in 2003 (Simmons, 2002, Devarajan, 2003). This software also uses body scan measurement data as inputs, and classifies subjects into one of nine distinct body shapes based on this data. Specifically, FFIT<sup>®</sup> for Apparel uses six circumferential body measurements (bust, waist, hip, high hip, stomach, and abdomen) to classify a person as one of nine identified body shapes: Hourglass, Bottom Hourglass, Top Hourglass, Spoon, Rectangle, Diamond, Oval, Triangle, and Inverted Triangle. Because it only relies on these six measurements, the shapes are defined at the most elemental level, without overly complicating matters by including torso length, posture, etc. (Simmons, 2002; Simmons, et.al, 2004). Devarajan and Istook (2004) report the validation of these nine shapes using discriminant analysis and MANOVA of 887 additional 3D body scan subjects. Figure 9 includes pictures and descriptions of each

of the nine shapes defined by FFIT<sup>®</sup> for Apparel. The classification of these body shapes is important for this research because these shape definitions will be used to obtain body shape perception of the sample of Hispanic women analyzed in this study.



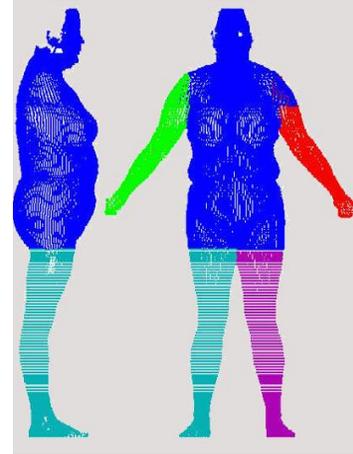
**Rectangle**

Little to no waist definition; balanced under arm and hips



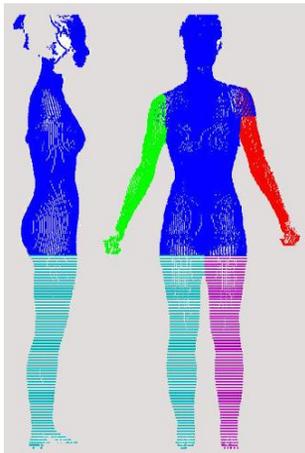
**Spoon**

Bust is small in proportion to waist; waist is well-defined; hips are large in proportion to waist



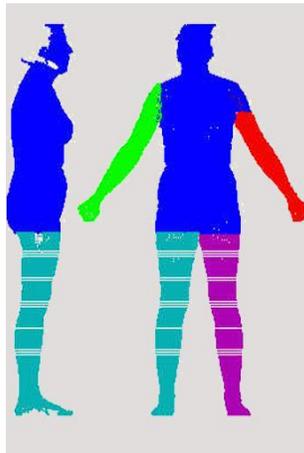
**Inverted Triangle**

Upper body is larger than lower body



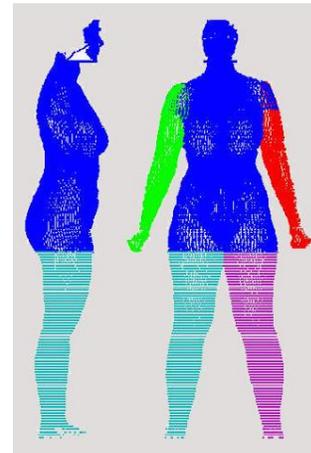
**Hourglass**

Bust and hips are balanced; waist is well-defined



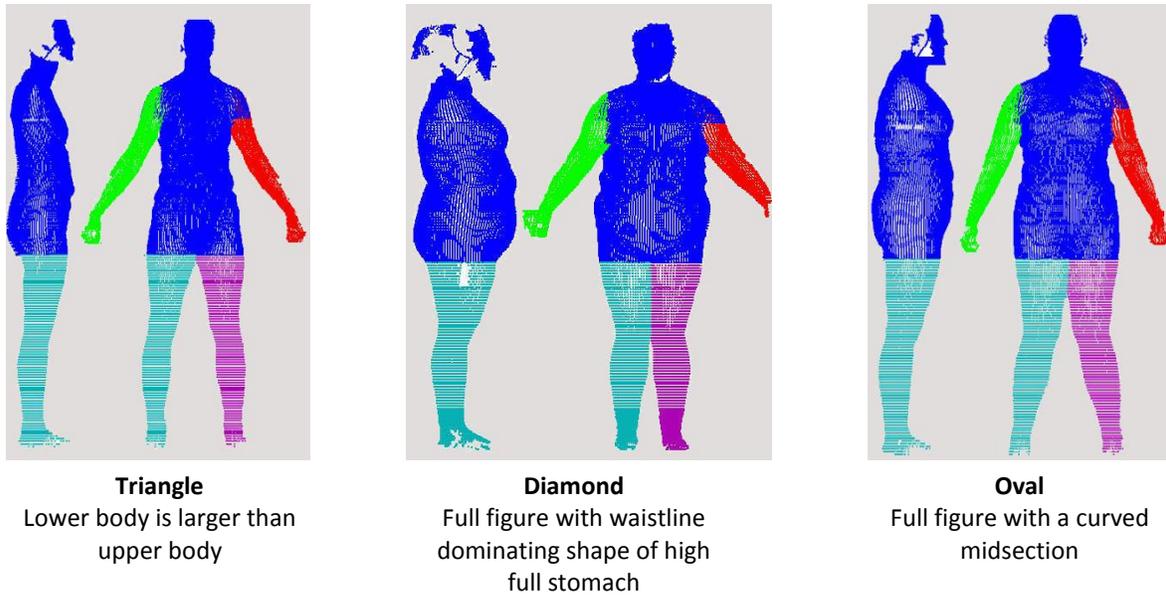
**Top Hourglass**

Bust is larger than hips; waist is well-defined



**Bottom Hourglass**

Hips are larger than bust; waist is well-defined



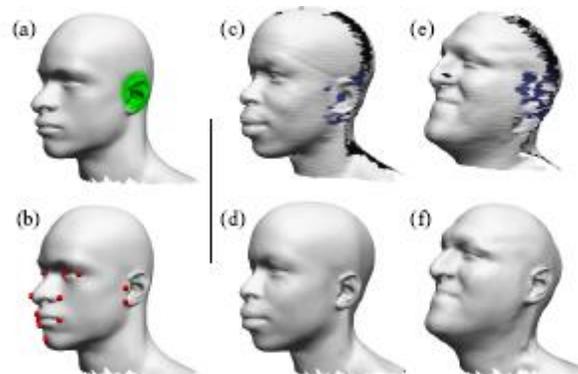
**Figure 9: Nine body shapes defined by FFIT<sup>®</sup> for Apparel**

Note: From “Body shape analysis using three-dimensional body scanning technology,” by K.P. Simmons, 2002, Unpublished doctoral dissertation, North Carolina State University.

*Three-Dimensional Human Body Modeling and Fit Assessment.* Perhaps the most recent advancement realized through 3D body scanning is in the area of 3D human body model development and virtual fit assessment. As previously mentioned, output from 3D body scanning is a 3D point cloud. Using this point cloud, 3D human body models can be developed from the measurement data or the actual 3D output itself. Through a series of steps such as imaging, body surfacing, application of skeletal structure, and animation, realistic 3D body models can be developed with great potential for more accurate 3D human body representations, use in 3D CAD systems, and virtual fit assessments (Newcomb, 2007).

In past research analyzing body shape or body shape perception, researchers have predominantly employed black and white, or silhouette line drawings to represent the range of possible body shapes. To better represent the individual shape categories, the torso

portion of the body may be shaded in a contrasting color, and a definition of the basic shape may be included (Yoo, 2003). However, advancements in 3D body scanning and body modeling now allow the development of more realistic human body models that precisely model actual human body shapes. In one such process, a generic 3D template human body model is applied to an individual 3D scan dataset using landmark or feature point extraction and matching. Once superimposed, the generic model is deformed to take on the individual data's shape, filling in missing data and enabling the creation of a smooth, surfaced body model based on individual 3D scan data (Allen, Curless, & Popovic, 2003; D. Bruner, personal communication, September 20, 2007; Seo & Magnenat-Thalmann, 2003). Figure 10 shows the process of using the template model to fill in missing scan data and create a surfaced model based on individualized body scan data. Three-dimensional body models developed in this type of process can be used to improve body shape visualization in apparel research studies. Instead of relying on silhouette line drawings of a 3D form, actual 3D body models can be used to more realistically simulate human body shapes.



**Figure 10:** (a) Template model, with standard ear in green. (b) Template model with landmark identification. (c) Body scan data, with missing information. (d) Final surfaced model, from combination of (a) and (c). (e) Body scan data, with missing information. (f) Final surfaced model, from combination of (a) and (e).

Note: From, “The space of human body shapes: Reconstruction and parameterization from range scans,” by B. Allen, B. Curless, and Z. Popovic, 2003, *International Conference on Computer Graphics*, pp. 587-594.

In addition to improving body model visualization, 3D body models can also be used in more sophisticated 3D CAD systems. Researchers have developed systems that allow for 2D pattern definition and subsequent “sewing” on a 3D virtual body (Cordier, Seo, & Magnenat-Thalmann, 2003; Imaoka, 1996; Okabe, Imaoka, Tomiha, & Niwaya, 1992; Yang, Thalmann, & Thalmann, 1992). In the opposite direction, researchers have also developed customized 3D to 2D patternmaking systems, in which virtual garments are created by drawing lines (or specifying them) that follow the shape of the body to create pattern pieces. Patterns are then “unwrapped” and flattened to create a 2D pattern (Cho et al., 2003; Griffey & Ashdown, 2006; Heisey, Brown, & Johnson, 1990; Hinds & McCartney, 1990; Kang & Kim, 2000; Xu, Huang, Yu, & Chen, 2002). These 2D to 3D and 3D to 2D systems to create patterns, virtually evaluate fit, and modify garment patterns in 3D can significantly reduce time spent in patternmaking and physical prototyping. Significant research is currently being conducted to fully integrate all components of a 3D CAD system, including the body model, patternmaking, fabric, and fit evaluation models within the system. The future potential of this work is extraordinary, with product development methods of the future relying on virtual prototypes rather than physical prototypes for garment style and fit evaluation.

This section has overviewed some of the major concepts related to apparel fit definition, evaluation of fit by experts, and methodologies used to assess consumer fit preferences. It has also discussed the important role of body shape in fit analysis and presented an overview of recent technologies directed at improving apparel fit for consumers

and transforming apparel fit evaluation. These topics are included in the literature review because they provide theoretical support for the need to research consumer fit preferences, illustrating the factors that may influence these preferences and the technological advancements that may be implemented in methodologies used to assess preferences.

### **Gap Identification from Review of Literature**

The literature review has revealed certain issues that indicate a need for the current research:

1. The US Hispanic market is experiencing substantial growth, providing the apparel industry with a unique opportunity. However, apparel-specific market and product information that currently exists is conflicting and limited.
2. A wide variety of apparel attributes are used to evaluate apparel products before purchasing. Consumers often utilize these attributes differently according to physical body characteristics, ethnicity and additional demographic variables, and psychographics. In addition, choices in study methodology significantly impact the preferences expressed by consumers.
3. The attribute of apparel fit is critical in many apparel purchases, influencing aesthetics, functional performance, and expressive qualities of the garment. Apparel fit preferences are highly personal and subjective, and may vary based on physical body characteristics and demographic and psychographic factors.

These issues indicate a place for this dissertation research. Knowledge of the US Hispanic consumers' use and preference for evaluative criteria and different levels of fit will provide product developers with information to enhance product development processes and meet the unique opportunities of the Hispanic consumer market. In addition, it will satisfy past researchers' suggestions in the literature which have noted the need to investigate apparel preferences of ethnic or cultural groups, specifically Hispanics (Alexander et al., 2005; Eckman, 1997; Forney et al., 2005; Jenkins, 1973, Pisut & Connell, 2007).

## **CHAPTER 3: METHODOLOGY**

This chapter will begin with a brief review of the purpose of this research, including a restatement of research objectives, with the addition of more specific, associated research questions. Next, the chapter will discuss the research design employed for this study, including sampling considerations and strategies, data collection instruments and plans, and data analysis procedures.

### **Purpose of Research**

The purpose of this research was to obtain information that can be used in apparel product development processes for US Hispanic women. Because of their value as inputs to the product development process (May-Plumlee & Little, 2006; Yoo, 2003), the study focused on understanding the market's preferences for and use of various intrinsic and extrinsic evaluative criteria in apparel purchase decisions. Due to the significance of the sizing/fit attribute in apparel selection and ultimate purchase satisfaction, the study also included a component aimed at understanding the fit preferences of Hispanic apparel consumers. The sample was restricted to Mexican-American females between the ages of 18 and 25 from the Southwestern US states of Arizona, California, New Mexico, and Texas. These restrictions were implemented to confront the well-documented variability within the Hispanic market and to allow the researcher to analyze for the effects of specific variables on consumer preferences without confounding variables of age, gender, subculture, and geography.

## **Research Objectives**

Four research objectives (RO1-RO4) directed this study. Specific research questions (RQ) were associated with the overarching research objectives, which guided the development of data collection instruments and analysis procedures. Tables 12 through 15 present the research objectives and associated questions that framed this dissertation research. It is important to reiterate that RO2 and RO3 were satisfied using a sample of Mexican-American females between the ages of 18 and 25 from the Southwestern states of Arizona, California, New Mexico, and Texas (to control for the effects of subculture, age, gender, and geography on the variables of interest in this study). As shown in Table 15, RO4, which represents the culmination of the entire study was not framed by any specific research questions.

**Table 12: Research Objective 1 and associated research questions**

<b>RO1</b>
To explore and model the range of factors that influence or determine consumer preferences and the use of apparel evaluative criteria in the purchase decision process.
<i>RQ1</i> : What factors, originating from consumer characteristics, determine consumer preferences for apparel evaluative criteria?
<i>RQ2</i> : What factors, originating from external or situational characteristics, determine consumer preferences for apparel evaluative criteria?

**Table 13: Research Objective 2 and associated research questions**

<b>RO2</b>
To determine the most important and determinant criteria used by Mexican-American women, ages 18-25 from the Southwestern US, when shopping for apparel.
<i>RQ1:</i> What criteria are important in the apparel purchase decisions of Mexican-American women when shopping for casual pants, tops, skirts, and dresses?
<i>RQ2:</i> What criteria are determinant in the apparel purchase decisions of Mexican-American women when shopping for casual pants, tops, skirts, and dresses?
<i>RQ3:</i> Do physical body characteristics, including body shape perception, BMI, or clothing size, impact the importance of criteria used by Mexican-American women in apparel purchases?
<i>RQ4:</i> Do ethnic factors, including acculturation level and generational status, impact the importance of criteria used by Mexican-American women in apparel purchases?
<i>RQ5:</i> Do the demographic variables of educational level, income, or occupation impact the importance of criteria used by Mexican-American women in apparel purchases?

**Table 14: Research Objective 3 and associated research questions**

<b>RO3</b>
To examine the fit preferences of Mexican-American women, ages 18-25 from the Southwestern US, across a range of apparel product categories.
<i>RQ1:</i> Do Mexican-American women prefer fitted, semi-fitted, or loose casual pants, tops, skirts, and dresses?
<i>RQ2:</i> Do physical body characteristics, including body shape perception, BMI, or clothing size, impact the fit preferences of Mexican-American women?
<i>RQ3:</i> Do ethnic factors, including acculturation level and generational status, impact the fit preferences of Mexican-American women?
<i>RQ4:</i> Do the demographic variables of educational level, income, or occupation impact the fit preferences of Mexican-American women?

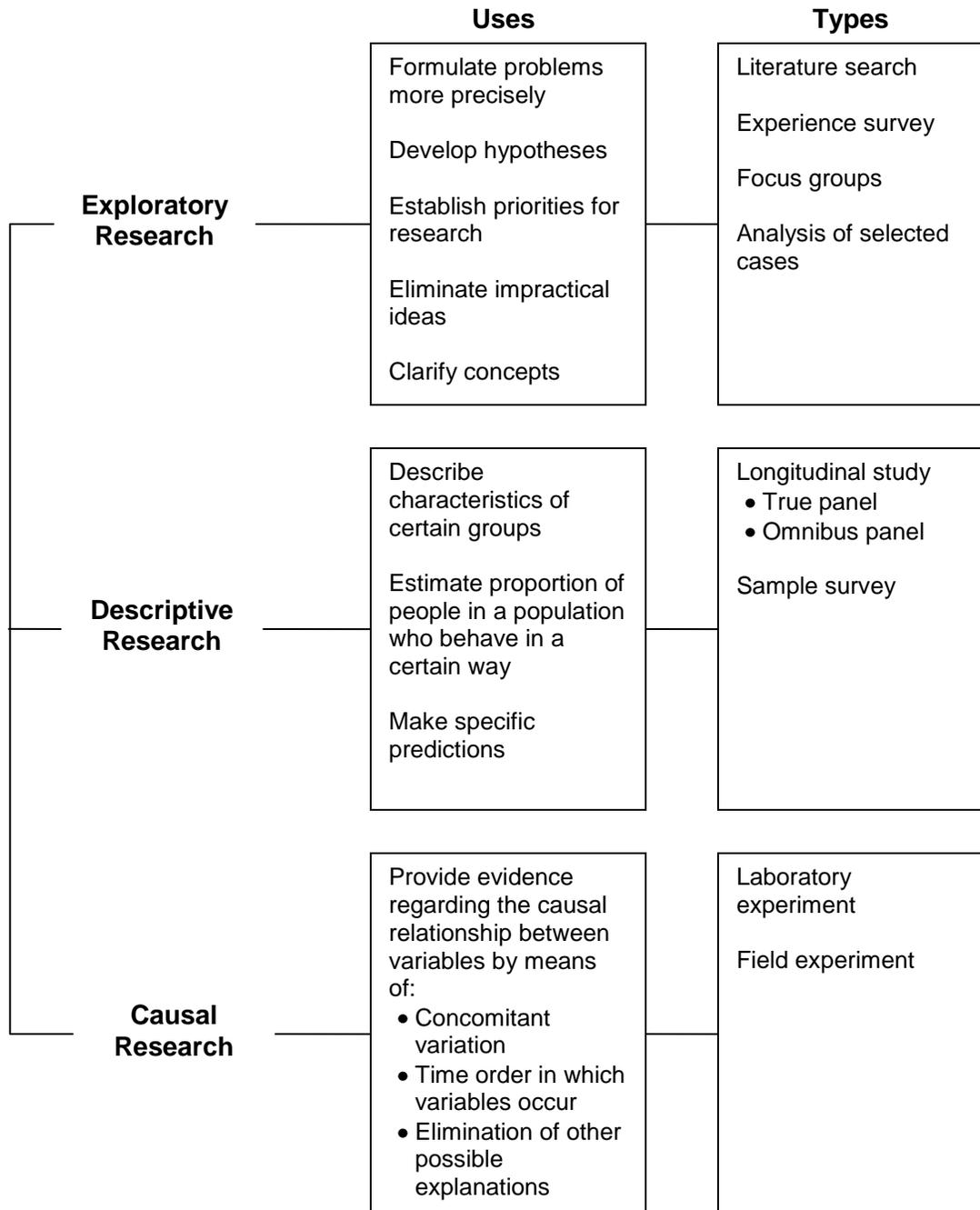
**Table 15: Research Objective 4**

<b>RO4</b>
To explore the practical applications of gathered market information and product preferences for apparel product development processes.

## **Research Design**

Sound research methods rely on the choice and use of appropriate research design processes, which can be considered the framework in conducting a particular study.

Churchill, Jr and Iacobucci (2002) specify three basic types of research designs used to conduct market research: exploratory, descriptive, and causal. Exploratory research is performed on a more broadly defined problem and may actually be performed to narrow the research focus and guide future descriptive or causal research studies. The selected research design guides methodological approaches of data collection and analysis procedures (Churchill, Jr. & Iacobucci). Figure 11, replicated from Churchill, Jr. and Iacobucci's marketing text, shows the purpose of each of the three types of research design as well as types of research methods involved with each design. This chart was used to design the methodology for this dissertation research



**Figure 11: Types of research designs**

Note: From *Marketing Research: Methodological Foundations, 8<sup>th</sup> ed.*, by G.A. Churchill, Jr. and D. Iacobucci, 2002. Mason, OH: South-Western Thomson Learning, pp. 123.

This study used both exploratory and descriptive research design approaches, selected based on the research objectives established at the beginning of this study. Research Objective 1 (RO1) was executed using an exploratory research design. Exploratory research methods involve an inductive approach to solving research questions, in which analysis of previously conducted research is performed to reveal themes and relationships about a given topic. An extensive literature review in the topic of apparel evaluative criteria allowed the researcher to model both consumer-related and situational factors that influence preferences expressed for evaluative criteria in purchase decisions. Use of secondary research is associated with several limitations, most importantly that secondary research analysis does not always adequately “fit” a new research problem and may be inappropriate to answer newly posed questions. However, collection and content analysis of secondary sources from the literature was appropriate for RO1 because the purpose of this objective was to better understand concepts related to preferences for apparel evaluative criteria. The model developed as the outcome of RO1 helped to clarify the basic considerations involved in determining consumer preferences for evaluative criteria in apparel purchases. This illustrates the primary advantages of secondary data analysis, including its use to guide future research questions and provide a point of reference upon which future primary research results may be compared (Churchill, Jr., & Iacobucci, 2002).

Research Objectives 2 through 4 (RO2 – RO4) were achieved through primary data collection using descriptive research design methods. Some of the relationships revealed in the exploratory research performed in RO1 were tested in a cross-sectional sample survey and subsequent quantitative data analysis. Sample surveys are useful for understanding and

describing the characteristics, attitudes, and behaviors of a specific group of people (Babbie, 2001). Thus, the sample survey performed as part of this research enabled the researcher to obtain information and analyze the apparel preferences of a sample of Mexican-American women, ages 18-25 from the Southwestern US. Creswell (2003) specifies several components of a sound survey research plan, including survey design, description of the population and sample, instrument design procedures, study variables, and data analysis of collected information. The following sections of the methodology will detail each of these components.

### *Survey Design*

Survey research is used to collect primary data from respondents in a way that is somewhat more versatile, faster, and more economical than observational data collection techniques (Babbie, 2001; Churchill, Jr., & Iacobucci, 2002). When observation is used to obtain primary data, information is gathered and recorded by humans or mechanical devices to better understand a target market, group, or phenomenon. On the other hand, sample surveys involve direct communication with respondents to obtain needed information (Churchill, Jr, & Iacobucci). The information being sought in this research, such as physical body shape characteristics, demographic information, and preferences for and use of evaluative criteria are very difficult to observe about a specific respondent. Thus, a self-administered sample survey was an appropriate choice of primary data collection for this study.

The questionnaire developed for this study consisted of structured, undisguised questions administered to sample respondents through a Web-based survey designed using

SurveyGizmo. The choice of structured, undisguised questions and a Web-based survey administration was based on a consideration of the advantages and disadvantages associated with these choices. Table 16 highlights the features, as well as advantages and disadvantages associated with structured, undisguised survey questions. While this type of survey is associated with some significant disadvantages, the advantages in ease of administration, analysis, and improved reliability contributed to the decision to use structured, undisguised questions in this survey.

**Table 16: Features, advantages, and disadvantages of structured, undisguised questionnaires**

<b>Structured, Undisguised Questionnaires</b>		
<i>Features</i>	<i>Advantages</i>	<i>Disadvantages</i>
<ul style="list-style-type: none"> <li>• Question wording is the same way for all respondents</li> <li>• Fixed number of alternatives are available as responses</li> <li>• Purpose of question is clearly communicated to respondents</li> </ul>	<ul style="list-style-type: none"> <li>• Easier to administer for the researcher</li> <li>• Easier and clearer to answer for the respondent</li> <li>• Responses are more efficiently coded and analyzed</li> <li>• Questions are more reliably analyzed</li> </ul>	<ul style="list-style-type: none"> <li>• Questions may force a response when a respondent does not have an opinion</li> <li>• Response alternatives may not include all possible replies</li> <li>• Forced or excluded choices may decrease validity of questions</li> </ul>

Note: From *Marketing Research: Methodological Foundations, 8<sup>th</sup> ed.*, by G.A. Churchill, Jr. and D. Iacobucci, 2002. Mason, OH: South-Western Thomson Learning, pp. 270-272.

The survey was administered to respondents on the Web. A Web-based survey is a type of written format (as opposed to personal interview or telephone formats), associated with specific advantages and disadvantages in sampling control, information control, and administrative control. Using Churchill, Jr. and Iacobucci's 2002 marketing text, Table 17 illustrates some of the advantages and disadvantages of Web-based survey administration.

**Table 17: Advantages and Disadvantages of Web-based Questionnaires**

<b>Web-Based Questionnaires</b>	
<b><i>Advantages</i></b>	<b><i>Disadvantages</i></b>
<ul style="list-style-type: none"><li>• Faster to administer than telephone interviews, mail surveys, or personal interviews</li><li>• Cheaper than mail surveys, phone interviews, and personal interviews.</li><li>• Respondents can complete survey at their own pace, possibly improving quality of responses</li><li>• Respondents feel more anonymous, increasing likelihood of truthful responses</li><li>• More control in ensuring that responses are from those intended, since surveys can be directed to individual email accounts</li><li>• May be programmed to contain “skip patterns” or control for “sequence bias” that exists in other written formats</li></ul>	<ul style="list-style-type: none"><li>• Low response rate, especially compared to more traditional methods of mail surveys, phone interviews, or personal interviews</li><li>• Cannot control speed of respondent completion</li><li>• Cannot entirely ensure that responses are from intended respondents</li><li>• Self-selection bias could be an issue</li><li>• Ambiguous, or misunderstood questions cannot be clarified</li><li>• Probing questions, to obtain more detail or clarification, are not possible</li><li>• Internet access is not guaranteed or likely in all populations</li><li>• May over-represent affluent, more educated populations</li></ul>

Note: From *Marketing Research: Methodological Foundations, 8<sup>th</sup> ed.*, by G.A. Churchill, Jr. and D. Iacobucci, 2002. Mason, OH: South-Western Thomson Learning, pp. 270-272.

The most significant disadvantages that affected this study were potential problems related to internet access within the Hispanic market. In the past, the internet has not been commonly used to target Hispanics in market research or marketing strategies due to perceptions of low internet access and usage by this population. Results of a study by the Pew Hispanic Center in 2007 provide an interesting profile of internet use in the US Hispanic population (Fox & Livingston, 2007). While internet use within the Hispanic market is lower than that for populations of non-Hispanic whites and blacks (56% versus 71% and 60%, respectively), internet use is higher within certain subsegments of the population. Table 18

demonstrates some of the factors that influence internet use within the Hispanic population. Compared to overall population usage rates presented above, internet use rises to 67% among Hispanics, ages 18-29, to 76% among US-born Hispanics, 78% among English language-dominant Hispanics, and to 89% among college graduates. This pattern of increased use among younger, more educated Hispanics mirrors patterns found in the rest of the population. The study that provided these results indicate that lower rates of internet use within the Hispanic population are largely the result of differences in education levels and English proficiency (Fox & Livingston, 2007). As discussed in the literature review, higher levels of education and English language usage are typically associated with a greater extent of acculturation. Thus, the choice of internet survey administration could influence the acculturation levels obtained in the sample, but seems appropriate for the 18-25 year olds studied in this research.

**Table 18: Internet use among Hispanics**

Effect of Population Characteristics on Internet Use among Hispanics	
Education	Higher levels of education are associated with increased internet use
Income	Higher income is associated with increased internet use
Age	Younger-aged members of the population are more likely to use the internet
Language	English language proficiency is associated with higher levels of internet use – both English dominant and bilinguals
Nativity / Generation	US-born Hispanics cite higher levels of internet use, as do second-generation Hispanics
National Origin / Subculture	Mexicans and Central Americans report lowest levels of internet use, with South Americans reporting the highest

Note: From “*Latinos online*,” by S. Fox & G. Livingston, 2007. Retrieved September 15, 2007 from [http://www.pewinternet.org/pdfs/Latinos\\_Online\\_March\\_14\\_2007.pdf](http://www.pewinternet.org/pdfs/Latinos_Online_March_14_2007.pdf)

While the statistics presented in Table 18 indicate significant concerns in the administration of a Web-based survey, an understanding of patterns affecting internet use enabled the researcher to implement sampling and instrumentation strategies to confront some of these concerns. These strategies will be discussed in further sections. However, limitations are unavoidable and interpretation and generalization of data should be performed with these limitations in mind. Despite the disadvantages involved in Web-based surveys, the advantages of reaching a wide range of respondents cheaply and quickly made this mode of administration attractive for use in this research study.

### *Sampling Strategies*

Sampling strategies involve the specification of the population of interest, the sampling frame and recruitment procedures, and the sample size determination. This section will profile the sampling strategies used in this research, beginning with the justification for the population of interest. The next section will present the sampling frame and all recruitment procedures employed to recruit participants, including an overview of recruitment materials and limitations involved in these methods. The section will conclude with a brief discussion of the sample size considerations involved in sampling.

### *Population of Interest Description and Justification*

The population of interest for this study was Mexican-American women between the ages of 18 and 25 from the Southwestern US states of Arizona, California, New Mexico, and Texas. The population was restricted in terms of gender and age because of the possible effect of these two factors on apparel preferences. In addition, due to the large variability that exists within the US Hispanic population because of subculture, the population was also

restricted to Mexican-Americans. This subculture was selected because it is the largest Hispanic subcultural group represented in the US. In 2008, this group accounted for 32% of all immigrants, while the next largest Hispanic subgroup, Filipinos, accounted for only 5% of the total population (Pew Hispanic Center, 2009a). The geographic restriction that specified that respondents were from the Southwestern US states of Arizona, California, New Mexico, and Texas was used because of the large Mexican-American population within each of these four states. The large population of Mexican-Americans in these Southwestern states is not surprising, giving their close proximity to the Mexican border. The Pew Hispanic Center reported that in 2007, 89% of Arizona's total Hispanic population of 1,893,000 was of Mexican origin. Eighty-three percent of California's huge Hispanic population of 13,219,000 was of Mexican origin, 52% of New Mexico's total Hispanic population of 832,000 was of Mexican origin, and 85% of Texas's Hispanic population of 8,591,000 was of Mexican origin (Pew Hispanic Center, 2009b). These four states featured very large numbers of Mexican-Americans who could potentially serve as study participants. Respondents were thus restricted in terms of gender, age, subculture and geographic region to confront the documented variability in the US Hispanic market and to reduce the influence of confounding variables that would complicate data analysis.

#### *Sampling Methods, Recruitment, and Limitations*

Sampling within the Hispanic market can be quite complex, due to variability in the market as well as the inaccessibility of some of the market due to language and immigration concerns. To obtain a sample of Mexican-American women between the ages of 18 and 25 from the Southwestern US, several approaches were considered. One of these possible

approaches included purchasing an established dataset that was representative of the population of interest and its given restrictions. Other approaches considered included recruitment through colleges and universities in the four Southwestern US states involved in this study, and recruitment via social networking sites or websites targeted to Hispanics. Each of these approaches was evaluated in terms of feasibility of data collection, precision, and generalizability of the results.

Due to monetary constraints, an established dataset could not be purchased, though this method was the only approach that ensured a representative sample and allowed the type of probability sampling necessary for the generalizability of results . In addition, online advertising can often be quite costly. Thus, the first (and primary) sampling method selected for this research involved the recruitment of subjects who fit the study criteria from colleges and universities in Arizona, California, New Mexico, and Texas. Hispanic Serving Institutions, whose total enrollment is more than 25% Hispanic, in the four US states of interest were initially targeted for their potential respondent pools. To supplement this group, large universities in these four states were also targeted due to their size and potential respondent pools. At these colleges and universities, administrators, faculty, and student leaders in multicultural/diversity/international offices, student organizations, sororities, and student government organizations were contacted through email and asked to forward the survey links to students at their institutions who may be interested in participating in the study. Additional faculty members from the International Textile and Apparel Organization and national leaders of Hispanic student organizations were also emailed due to their possible contacts with students meeting the study criteria. Appendix B shows the list of people

contacted through email, and shows the institution or organization name and the title of the person contacted. This recruitment method was initiated on February 26, 2009 and ended on May 15, 2009. The contacts shown in Appendix B were emailed once and then a second time at least one week later if they had not responded. Appendix B also shows the dates of contact, and the responses of those individuals who replied. This provides an indication of the origin of much of the final survey respondents. The email sent to request assistance from this initial group of people and the recruitment email (with survey links) that they could forward to potential respondents is also shown in Appendix B.

This sampling approach was used with some inherent limitations and issues. The most basic concern was the fact that this type of sampling is considered nonprobability sampling, since the researcher made a judgment in selecting the subjects and all members of the population of interest did not necessarily have a chance to be included in the sample. While subjects recruited from colleges, universities, and national organizations may likely fit the basic study criteria of age, gender, subculture, and geographic region, this type of recruitment excluded a significant portion of the actual population of interest – namely, those who do not attend an institution of higher education and/or belong to a national Hispanic organization. This means that there is no way to guarantee that the sample is representative of the population, and thus, the results are not generalizable to the entire population of interest (and are instead only representative of the submarket researched in this study). In particular, higher education is often associated with higher acculturation levels (Khairullah & Khairullah, 1999; Olmedo & Padilla, 1978). When this is considered along with the online survey distribution used to collect data in this study, this primary sampling method likely

over-represented Mexican-American females who are more highly acculturated and under-represented those in the low acculturation levels. In addition, the email recruitment method required that respondents click on a link to launch the survey (see Appendix B), and this process of self-selected participation also likely affected the type of person who chose to participate and possibly their responses.

Additional issues arose with this sampling method during survey administration. For instance, several of the institutions required additional review and approval by their Institutional Review Boards (IRB) before authorizing the survey links to be forwarded to their students. This additional approval required significant documentation and weeks (and in some cases, months) to proceed through the review process at each individual institution. Appendix B shows the institutions that required this additional approval. While several additional IRB applications were completed for some of these institutions, some of the schedules at other institutions would not allow for IRB review. This complication, in addition to notoriously low response rates for online surveys, contributed to very slow data collection.

To supplement the primary method of sampling, online advertisements were created to recruit subjects from social networking sites and websites dedicated to Hispanic interests. This online advertising approach was launched April 16, 2009, and was used until April 25, 2009. Two advertisements were created for MySpace advertising, one advertisement was created for Facebook advertising, and one was created for Google advertising. Each of these three companies outline slightly different methods of advertising, but the basic approach involved bidding a certain amount of money per click by potential respondent. The bid

needed to be high enough and competitive with other companies or individuals who were also advertising in order to show up more frequently. However, a bid that was too high was not effective, since each click on the advertisement cost money, regardless of whether the person clicking on the advertisement actually completed the survey. To improve the chances of advertising to the population of interest, MySpace, Facebook, and Google had “targeting features” that would allow the researcher to specify when (and to whom) the advertisements would appear. Table 19 shows the bids and targeting procedures used in advertising through all three companies, as well as the results of these procedures in terms of number of clicks achieved. Appendix C shows the actual advertisements and the website that was developed for this study that served as the landing page when potential respondents clicked on the advertisements in MySpace, Facebook, and Google.

**Table 19: Online advertising approach for sample recruitment**

Company	Advertisement (see Appendix C)	Bid Profile	Targeting Features Used	Results
MySpace	Horizontal Banner Advertisement	\$0.38 per click	Advertisements appeared to users who were: <ul style="list-style-type: none"> <li>• Female</li> <li>• 18-25</li> <li>• In Arizona, California, New Mexico, and Texas</li> </ul>	<ul style="list-style-type: none"> <li>• Based on targeting, and bidding, the advertisement was shown 167,698 times</li> <li>• 77 total clicks were obtained</li> </ul>
	Rectangle Advertisement	\$0.38 per click	Advertisements appeared to users who were: <ul style="list-style-type: none"> <li>• Female</li> <li>• 18-25</li> <li>• In Arizona, California, New Mexico, and Texas</li> </ul>	<ul style="list-style-type: none"> <li>• Based on targeting, and bidding, the advertisement was shown 10 times</li> <li>• 0 total clicks (due to low bid)</li> </ul>

**Table 19: continued**

Facebook	Vertical Advertisement	\$0.46 per click	Advertisements appeared to users who were: <ul style="list-style-type: none"> <li>• <i>Female</i></li> <li>• <i>18-25</i></li> <li>• <i>In Arizona, California, New Mexico, and Texas</i></li> </ul>	<ul style="list-style-type: none"> <li>• Based on targeting, and bidding, the advertisement was shown 297,358 times</li> <li>• 94 total clicks</li> </ul>
Google	Text Advertisement	\$0.25 per click	Advertisements appeared on websites that catered to interests of: <ul style="list-style-type: none"> <li>• <i>Females</i></li> <li>• <i>18-24 year olds</i></li> <li>• <i>In Arizona, California, New Mexico, and Texas</i></li> <li>• <i>English and Spanish-Language users</i></li> </ul> And showed up under keyword searches of: <ul style="list-style-type: none"> <li>• <i>Latina</i></li> <li>• <i>Spanish translation</i></li> <li>• <i>Latina fashion</i></li> <li>• <i>Hispanic</i></li> <li>• <i>Chicana fashion</i></li> </ul>	<ul style="list-style-type: none"> <li>• Based on targeting, and bidding, the advertisement was shown 57,068 times</li> <li>• 99 total clicks</li> </ul>

Note: The bid per click varied by company due to the competitive environment that existed for each company.

The online advertising approach through MySpace, Facebook, and Google was somewhat difficult to navigate, requiring multiple adjustments of the individual bids to determine the most competitive bid that balanced costs and effectiveness. The bids and targeting procedures shown in Table 19 reflect the final bid profile used for each advertisement and provides an indication of the effectiveness of these bids in the “Results” column. This sampling approach, however, suffered from similar limitations already discussed for the sampling method used at colleges and universities. This approach also involved non-probability sampling and depended on self-selected participation from

respondents who chose to click on the advertisements and complete the survey. In addition, users of these sites may not represent the same behavioral profile and preferences of the larger population of interest. These limitations affect the generalizability of final results, because the sample recruited was not representative of the entire population of interest (by excluding those who do not have internet access, who do not use Facebook, MySpace, or Google, or those who simply will not click on online advertisements).

Despite these limitations, time and monetary constraints were the main drivers in the decision to recruit respondents from colleges, universities, and national organizations in the Southwestern US and to use online advertising approaches to recruit additional respondents. These institutions (particularly the Hispanic-Serving-Institutions) and organizations featured a large and conveniently accessed respondent pool with greater internet access than some portions of the population of Mexican-American females between the ages of 18 and 25, from the Southwestern US. In addition, online advertising was a relatively inexpensive approach (compared to purchasing an entire dataset) of reaching large groups of potential respondents targeted based on the screening criteria used in this study.

Clearly, accurate sampling of the US Hispanic market is a complex process, and each of the possible approaches considered in this research were associated with significant advantages and disadvantages. The decision to recruit subjects primarily through colleges, universities, and national organizations and through online advertising was made after considering monetary and time constraints, as well as access to potential respondents and representativeness of the final sample. As discussed, representativeness was compromised because of monetary, time, and access concerns. The sampling approaches, when considered

with the method of online survey administration, excluded a significant portion of the entire population (of Mexican-American females, 18-25, from Arizona, California, New Mexico, and Texas). All subsequent data analysis and the presentation of results should be considered with these limitations in mind.

### *Sample Size Considerations*

The sample size desired for this research was dependent on the confidence level and the margin of error that is considered tolerable. Most formulas commonly used to calculate sample size are based on simple random sampling. Thus, the calculation of sample size may differ depending on the sampling plan that is selected. However, basic considerations involved in sample size determination are similar for random probability sampling and non-probability sampling (such as the type used to recruit the sample for this research). No matter the sampling type used, a higher confidence level and lower margin of error requires a larger sample size.

Initial sample size calculations yielded a desired size of 400, for a margin of error of 5% (at a 95% confidence level), according to random sampling. However, due to the sampling limitations and issues discussed above, sampling was stopped after approximately 3 ½ months of data collection. The final sample, of 212 respondents, resulted in a margin of error of around 7.5% (given random sampling calculations), which was higher than the original desired error, but still at an acceptable level for data analysis and interpretation.

### *Instrument Development*

As discussed previously, the survey instrument used in this research contained structured, undisguised questions with a fixed number of alternatives for each response. The

survey was created and deployed on the internet using SurveyGizmo. The instrument used in this research was developed by the researcher to achieve the objectives of this study. Some of the individual components were based on instruments or scales found in the literature, but the overall survey was uniquely designed for this research. To satisfy the research objectives and answer the questions posed in this study, the survey instrument contained the following components.

1. Informed Consent
2. Screening Questions
3. Evaluative Criteria Measure
4. Fit Preference Measure
5. Physical Body-Related Measure
6. Ethnic Measure
7. Additional Demographic Questions

The Evaluative Criteria and Fit Preference measures were created to provide the consumer preference information being sought, while the remaining measures and questions allowed the researcher to evaluate the determinants of these preferences within the Hispanic market. The development of these components will be overviewed in this section. Following the presentation of instrument components, the section will conclude with details related to the translation of the survey for Spanish language dominant respondents and the pilot testing procedures used to prepare the survey for final distribution (the completed survey, showing all components that will be discussed below, is shown in Appendix D; the appendix includes English and Spanish versions of the survey in the final format used in SurveyGizmo).

### *Informed Consent*

To adhere to university research requirements and ensure the confidentiality and protection of all respondents and their answers, the survey instrument and recruitment procedures were reviewed by North Carolina State University's Institutional Review Board before launching the study full-scale. The approval letter verifying this review is shown in Appendix E. As part of the process of ensuring confidentiality and the protection of any study participants, potential respondents were required to consent to participation in the study before being allowed to complete the survey. Thus, the first page of the survey required that potential participants read about the study's purpose, risks, and benefits, and then agree to participate before continuing with the survey.

### *Screening Questions*

The sample targeted in this study was Mexican-American women between the ages 18 and 25, from the Southwestern states of Arizona, California, New Mexico, and Texas. Therefore, screening questions were used to ensure that respondents were actually from the desired sample. The first was a question about gender, and second question asked for the respondent's age. This screened out any male respondents, as well as those not in the 18-25 year old age range. To guarantee the respondents were Mexican-American, the next question focused on ethnic origin. Measurement of "Hispanic-ness" can be very difficult, as researchers use a range of criteria for definitions, including use language, surname, religion, and ancestry. According to Marín & Marín (1991), ancestry or national origin is the most inclusive method of Hispanic definition, and was thus the approach utilized for this research. Respondents were asked to self-identify their ethnicity in a question borrowed from the

proposed US Census for 2010 (US Census Bureau, 2008). The question was used as a screening question, allowing the researcher to eliminate respondents who did not consider themselves a member of the Mexican-American subcultural group. The recruitment approach performed at colleges and universities in Arizona, California, Texas, and New Mexico ensured that respondents were from the Southwestern US, and thus a screening question was not needed at the beginning of the survey. Respondents were asked to provide their state of residence in the final portion of the survey, and their answers were reviewed (to verify that they were from the four states of interest) before incorporating them into the final dataset.

#### *Evaluative Criteria Measure*

In the development of the instrument component to measure consumer preferences for and use of evaluative criteria, two basic considerations were necessary. First, the method of measurement was selected based on strengths and weaknesses associated with available options. Second, the criteria of interest were chosen based on past research in the area of evaluative criteria and the specific objectives of this research. This section will detail both of these considerations (see Appendix D for the survey instrument that includes the evaluative criteria measure).

*Measurement of Evaluative Criteria Preferences.* As discussed previously, researchers have utilized a variety of measures to assess consumer preferences for and use of evaluative criteria in apparel purchases. In general, researchers have used two methods to measure consumer preferences – free response questions and rating of pre-selected criteria. In free response methods, respondents supply the criteria they use or consider in apparel purchases.

This is especially common as a first step in a study, in which researchers may compile a list of any attribute that is mentioned by a group of respondents. This list can then be refined to include the most important for the given research project (Jenkins, 1973). Researchers that have used the free response approach, in at least a portion of their research, include Jenkins (1973), Dickerson (1982), Davis (1987), and Eckman et al. (1990).

In ratings of pre-selected criteria, researchers supply respondents with the evaluative criteria they will be measuring, and respondents rate their preferences for and use of criteria using some type of rating scale. In 1973, Jenkins developed a unique rating scale consisting of concentric circle testing. In her research, respondents were told to place twelve criteria in the concentric circles based on their preferences. Placement of a criterion closer to the center indicates greater importance, while criteria outside the concentric circles indicate irrelevance in purchases. Because respondents place criteria themselves, they can indicate whether a criterion is important, how important it is compared to other criteria, and which criterion is most determinant in purchasing (Jenkins). While Jenkins' method of measurement is successful in measuring saliency, relative importance, and determinance, it requires more effort by the respondent as well as increases the time needed for coding, tabulation, and data analysis. Therefore, most researchers utilize a Likert-type rating scale to measure preferences for evaluative criteria (Cassill & Drake, 1987; Eckman et al., 1990; Forney et al., 2005; Hsu & Burns, 2002; Lee & Burns, 1993; Shim & Bickle, 1994; Stemm, 1980). Depending on the wording of the question, respondents may indicate agreement with certain statements, or may indicate the importance of individual attributes in purchases. These rating scales can be used to measure saliency and compare the importance of measured attributes.

Each of the methods discussed above are associated with their own strengths and weaknesses. As shown in Table 20, the primary advantage of free response methods, and associated disadvantage of rating scales, is that respondents are able to provide a range of possible criteria without being limited by pre-selected criteria. The primary advantage of rating scales of pre-selected criteria is the ease of tabulation and data analysis and the relative ease of survey completion for respondents.

**Table 20: Methods of measuring evaluative criteria**

<b>Methods of Measuring Consumer Preferences for Evaluative Criteria</b>		
<i>Method</i>	<i>Strengths</i>	<i>Weaknesses</i>
Free-response questions	<ul style="list-style-type: none"> <li>• Provides broader focus on all possible attributes – may present more complex or complete consumer information</li> </ul>	<ul style="list-style-type: none"> <li>• Coding, tabulation, and analysis is more difficult</li> <li>• Consumers may not be able to express latent preferences</li> <li>• Consumers may include or exclude attributes to please the researcher or protect themselves</li> <li>• Respondents must expend more effort to answer</li> </ul>
Rating of pre-selected criteria	<ul style="list-style-type: none"> <li>• Easier to tabulate and analyze data quantitatively</li> <li>• Respondents do not have to expend much effort to answer</li> </ul>	<ul style="list-style-type: none"> <li>• Narrow focus may exclude attributes that are important for consumers, thus not simulating the actual purchase decision</li> <li>• Respondents may place too much importance on attributes, simply because of their inclusion in the survey, when they may not be used in actual purchase decisions</li> </ul>

Note: Created by the author using the following resources:

Eckman, M., Damhorst, M. L., & Kadolph, S. J. (1990). Toward a model of the in-store purchase decision process: Consumer use of criteria for evaluating women's apparel. *Clothing and Textiles Research Journal*, 8(2), 13-22.

Fiore, A. M., & Damhorst, M. L. (1992). Intrinsic cues as predictors of perceived quality of apparel. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 5, 168-178.

Jenkins, M. C. (1973). *Clothing and evaluative criteria: Basis for benefit segmentation and reflection of underlying values*. Unpublished doctoral dissertation, The Ohio State University.

After considering the advantages and disadvantages of each method of measuring consumer preferences for evaluative criteria, the researcher decided to use Likert-type rating scales to measure the importance/unimportance of pre-selected evaluative criteria in apparel purchase decisions. The scale used was a 5-point rating scale, from not at all important (1) to critical (5). In this type of itemized rating scale, descriptors were only included on the two extremes of the scale (1 and 5). This allowed the respondent to determine the values associated with each category and answer accordingly. This type of rating scale was selected because research suggests that Hispanic respondents have traditionally experienced difficulty and confusion when self-reporting agreement or disagreement with statements (Korzenny and Korzenny, 2005).

The rating scale allowed the researcher to analyze the importance that respondents place on selected evaluative criteria. Because the criteria used may be different depending on the type of garment being evaluated (Abraham-Murali & Littrell, 1995a; Eckman, 1997; Stemm, 1980; Williams, 2002) the evaluative criteria measure included the separate rating of each of the selected attributes when purchasing casual pants, top, skirts, and dresses. To obtain the most accurate results, respondents were first asked whether they ever wore casual pants, tops, skirts, or dresses. If they did not wear the apparel item, they did not progress to the evaluative criteria rating portion of the survey for that item. This decision was based on the suggestion of a pilot test participant, who expressed difficulty in rating the attributes for a given garment item since she never wore that type of garment (see Appendix F for more information about the pilot test).

To assess the determinance of the attributes, respondents were also asked to provide the top three most important attributes in their purchases of casual tops, pants, skirts, and dresses. Analysis of these rankings, in addition to the ratings for each of the criteria in the pre-selected lists provided an indication of the *importance, relative importance, and determinance* of selected evaluative criteria in apparel purchase decisions.

*Selected Evaluative Criteria.* As discussed in the literature review, researchers have defined a wide range of evaluative criteria that consumers use in the evaluation and purchase of apparel. The criteria used may differ based on consumer characteristics, situational characteristics, as well as product characteristics. Instead of inquiring about the entire range of possible criteria, which may contribute to respondent fatigue, the researcher pre-selected 20 criteria to test in this study. These criteria are shown in Table 21, and include various criteria from each of the four categories of evaluative criteria profiled in the literature review.

**Table 21: Evaluative criteria measured in this study**

Intrinsic		Extrinsic	
Aesthetic	Color / pattern * Styling * Appearance * Beauty / attractiveness *	Brand / Situational	Versatility with existing wardrobe Price * Brand name / store name * Country of origin
Functional	Fit / sizing* Quality (construction, durability, workmanship) * Ease of care * Comfort * Fiber content / fabrication *	Expressive / Symbolic	Appropriateness for end use Suitability for the individual Sexy Fashionability * Individuality / uniqueness * Promotes high self-esteem Pleasing to others

The list of criteria were selected based on an extensive review of past research, including May-Plumlee’s (1999) list of universal apparel evaluative criteria with additions

based on particular interests of this research and the Hispanic market. The attributes marked with an asterisk (\*) are those from May-Plumlee's universal apparel evaluative criteria list. The remaining attributes were added for various reasons. For instance, brand/situational criteria of versatility with existing wardrobe and country of origin were added based on the interests involved in this research. Expressive/symbolic criteria such as appropriateness and suitability, as well as contributions of apparel to sex-appeal, self-esteem, and social approval were added because of Hispanic market research that suggests that some of these criteria may be important in apparel selection (Korzenny & Korzenny, 2005; Solomon & Rabolt, 2004).

#### *Fit Preference Measure*

The purpose of the fit preference measure was to gather information about Hispanic preferences for loose, semi-fitted, and fitted garments. Appendix D contains the survey instrument, which includes the fit preference measure discussed in this section.

Researchers have noted that many common methodological approaches in measuring consumer apparel preferences do not provide respondents with a realistic setting in which to think about and express their preferences (Eckman et al. 1990). This is largely due to the method of inquiry and how much detail respondents are given regarding the apparel items that are being evaluated. For instance, Eckman et al. (1990) notes that much of the research into apparel evaluative criteria preferences only uses verbal stimuli, and often inquires about apparel or garments in general. This fails to accommodate the fact that apparel preferences are typically shaped by highly visual evaluation of specific categories of products or specific garment characteristics. Holbrook (1983) suggests that certain properties of apparel products cannot be evaluated verbally or strictly visually, but instead rely on tactile evaluation or

physical assessment of the garment on the body. In these cases, Holbrook advises researchers to conduct interviews with respondents in real-life, real-time purchase situations in an actual retail environment.

While the approach of inquiry at the purchase setting may provide more accurate information about the consumers' purchase decision process, it was not a practical approach for this study, given the population of interest in the Southwestern US. In addition, this can be a time-consuming approach, requiring personal interaction that may not support full disclosure of actual fit preference by all respondents. Thus, this study used verbal descriptions and digital images to represent three different levels of fit (loose, semi-fitted, and fitted). To eliminate issues associated with generalized apparel considerations, respondents were asked about preferences within four specific garment categories of casual tops, pants, skirts, and dresses. Color pictures of selected garments on an actual human body were provided to correspond with each of the three levels of fit. While most of the research into consumer fit preferences has utilized black and white line drawings or silhouettes (Alexander et al., 2005; Anderson et al., 2001; Pisut & Connell, 2007), this research attempted to provide a more realistic image of the garment on the body for fit assessment. Front, back, and side views were provided for all the fit levels and garment categories. The online survey did not include fit level descriptors under the images. This prevented respondents from being swayed by the terms "Fitted," "Semi-fitted," or "Loose" and ensured that their preference based on the image alone. Figure 12 shows the images of the three fit levels (with descriptors) used to assess fit preferences for casual pants. Figure 13 shows the images for casual tops, Figure 14 for casual skirts, and Figure 15 for casual dresses.

Fitted



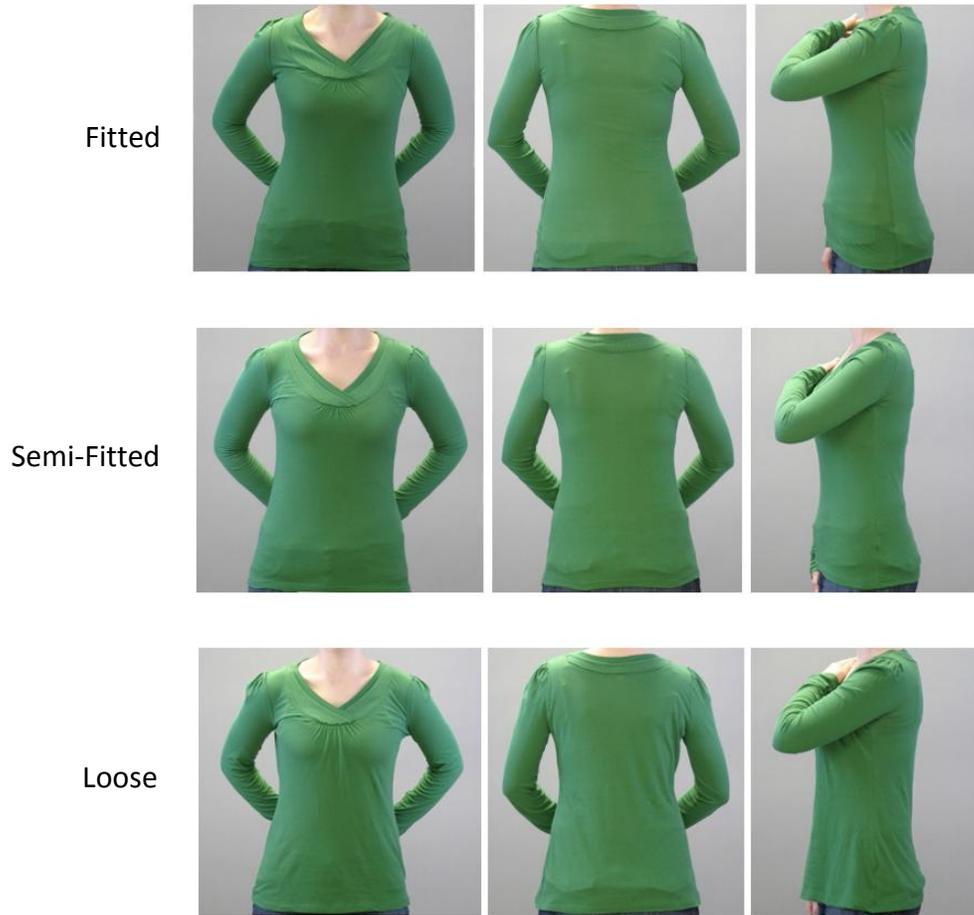
Semi-Fitted



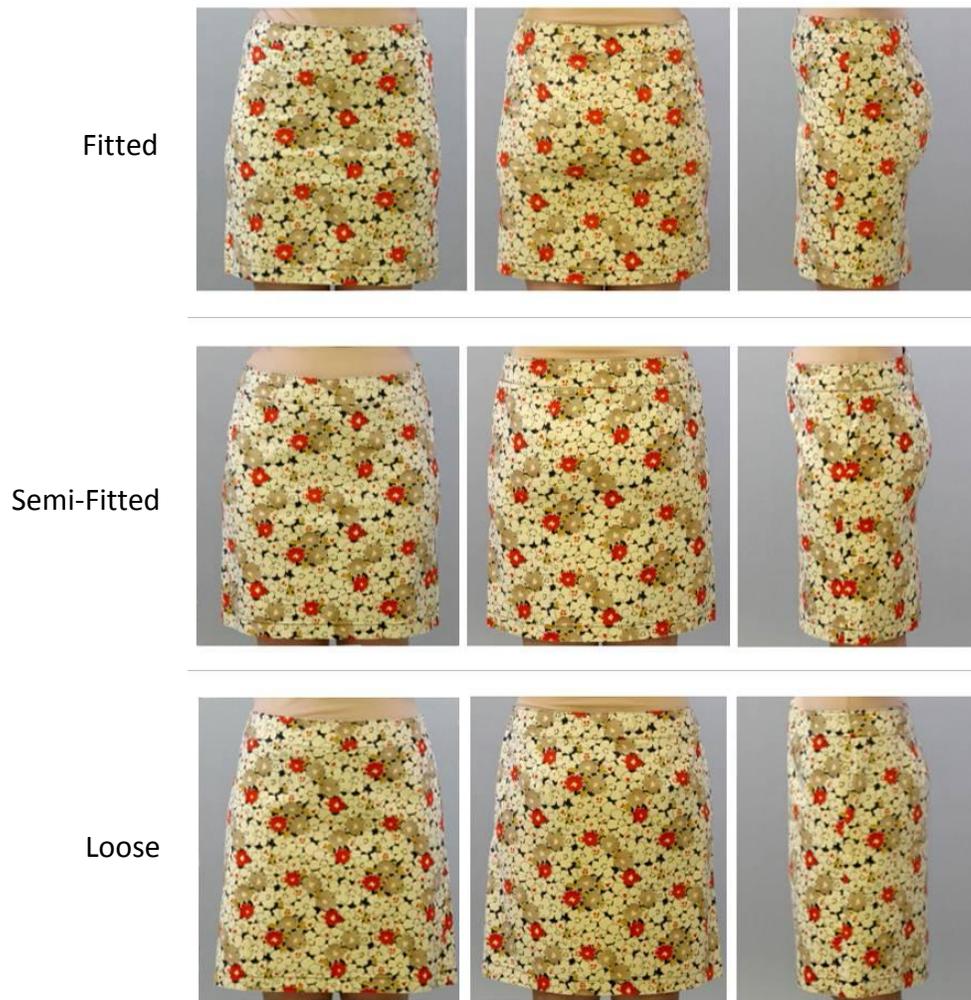
Loose



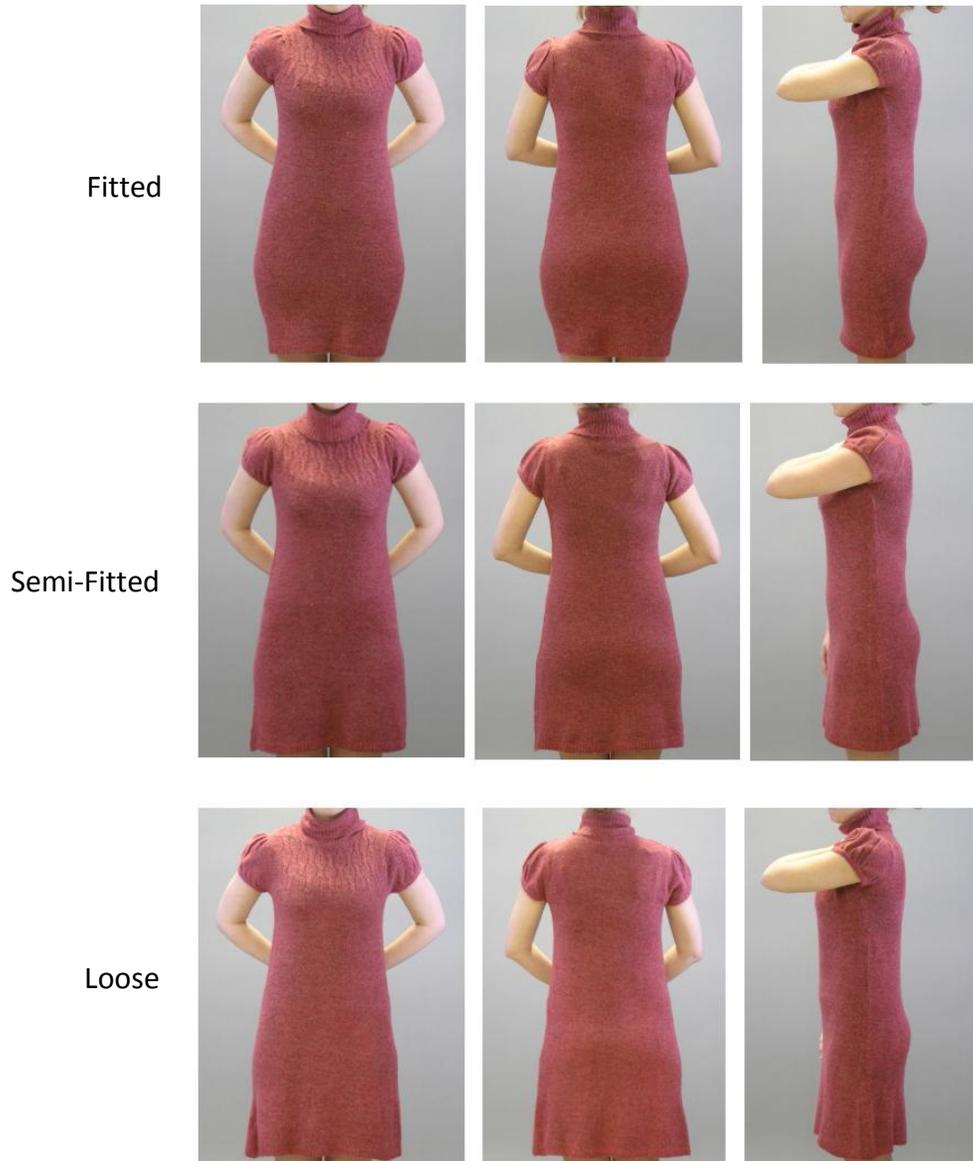
**Figure 12: Fit preference levels for casual pants**



**Figure 13: Fit preference levels for casual tops**



**Figure 14: Fit preference levels for casual skirts**



**Figure 15: Fit preference levels for casual dresses**

As discussed in the literature review and limitations, body shape and size affect fit preferences for apparel (Alexander et al., 2005; Anderson et al., 2001; Chattaraman & Rudd, 2006; Feather et al., 1996; Pisut & Connell, 2007; Yoo, 2003). As such, it is important to

note that the same person was utilized to represent all levels of fit for each garment category (see Figures 12-15). This choice may have influenced the fit preferences expressed by respondents. However, a standardized body shape and size was preferred to control for bias that could be introduced if garments of different fit levels were pictured on different body shapes and sizes. In addition, garments of the same style and color were selected to control for any effect of these attributes and to limit the respondent's focus to the actual fit of the garment and expression of fit preferences. Three different sized garments were selected for each style in order to create the fitted, semi-fitted, and loose fit levels. While efforts were made to control for the effect of external factors, apparel evaluation is highly multi-dimensional and dependent on the inter-relation of a variety of factors and product attributes. Thus, all external factors could not be completely controlled.

#### *Physical Body-Related Measure*

One of the purposes of this research was to investigate the possible effect of body shape and size on apparel evaluative criteria preferences and fit preferences within the Hispanic market. In analyzing this facet, researchers may choose to focus on *actual* physical body shape and dimensions, or on consumer *perceptions* of these characteristics. To obtain physical body measurements, researchers utilize technologies such as 3D body scanning, or may rely on manual measurement performed by practitioners trained in anthropometry. Accurate and repeatable physical measurement methods, whether performed by a 3D body scanner or human, require identification of landmarks, which are key locations on the body that guide measurement (Simmons & Istook, 2003). In a survey instrument distributed over the internet, accurate physical body measurement is not likely, as consumers are not trained

in proper landmark identification and manual measurement methods. In addition, studies have shown that consumers frequently report that they are unaware of their physical body measurements, even at locations such as the waist and hip (Alexander et al., 2005). Thus, this survey will collect information regarding consumer perception of their body shape and size characteristics, rather than actual physical measurement data which would likely be inaccurate. Consumer perception of these features is often used in research, since the perception that consumers have regarding their body shape and size is assumed to influence behavior and the way they respond to questions as significantly as actual physical measurements (Shim & Bickle, 1993)

This research will ultimately assess the potential effect of body shape and size perception on evaluative criteria preferences and fit preferences. To gather this type of information, the physical body-related measure included questions about body shape perception, height and weight, and clothing size. Appendix D contains the survey instrument, which includes this physical body-related measure.

In the body shape perception portion, respondents were instructed to select the body shape that they felt most closely corresponded to their own body shape. The shapes that respondents chose from were those body shapes defined through the FFIT<sup>®</sup> for Apparel software system discussed in the literature review. In this system, nine body shapes are defined to describe the range of possible female shapes using distinct combinations of bust, waist, hip, stomach, and abdomen circumferential body measurements (Simmons, Istook, & Devarajan, 2004). Validated in 2003 (Devarajan), FFIT<sup>®</sup> for Apparel specifies individual

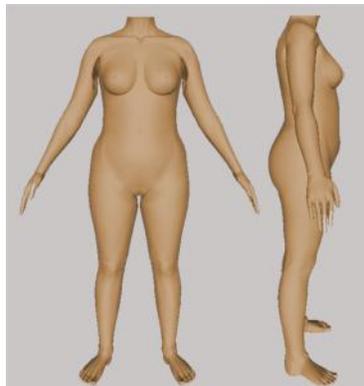
shape categories of Hourglass, Bottom Hourglass, Top Hourglass, Spoon, Rectangle, Diamond, Oval, Triangle, and Inverted Triangle (Simmons et al., 2004).

The survey contained a 3D image of each of the shape categories along with a description of each shape, to aid respondents in choosing the shape that most closely corresponded with their own. Past studies that have gathered body shape perception information from respondents have utilized silhouette illustrations or sketches, frequently overlaying a geometric shape on a 2D sketch of the body (Alexander et al., 2005; Anderson et al., 2001; Feather et al., 1996; Pisut & Connell, 2007). The current research was unique in that silhouettes and sketches were replaced with 3D avatars, or virtual body models, to represent each of the nine shape categories. As discussed previously, 3D virtual technologies hold great promise as product development and visualization tools, and many methods of 3D body model development exist. This research utilized [TC]<sup>2</sup>'s Avatar Creation Engine to develop 3D models of the body shapes based on actual 3D measurement data. In this approach, the researcher provided 3D measurement data representing each of the nine shape categories to [TC]<sup>2</sup> representatives (see Appendix G for a chart showing the measurement data used to create the body models). This measurement data was used to morph a template mesh and body surface into a 3D body model that replicated each shape category (Bruner, 2008). All efforts were made to constrain the measurement data and ensure that the body models were as similar as possible in body size, to make sure that respondents would be able to compare the body models in terms of body shape rather than size. Once the 3D models were made, the files (which were in the .obj format) were opened in MeshLab, an open source program for editing and processing of 3D mesh structures. This program was used to

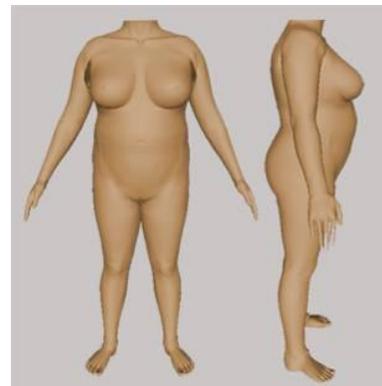
smooth out the body surface and to create front and side view snapshots for each of the body models. Skin color was then added to these images by manipulating the hue, saturation, and light levels in Adobe Photoshop to provide a more realistic skin surface, since the original 3D skin surface was a shaded grey in color. For this research, front and side views of the skinned 3D body models generated for each of the shape categories were included (along with a shape description) on the survey instrument (see Figure 16). This allowed respondents to select the shape that most closely matched their perception of their body shape.



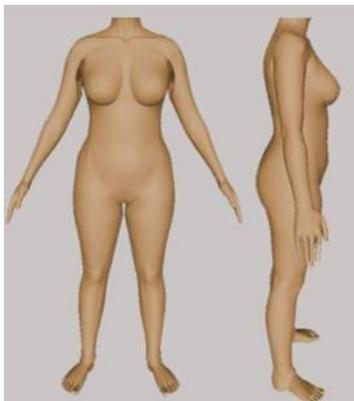
**Rectangle**  
Little to no waist definition;  
balanced under arm  
and hips



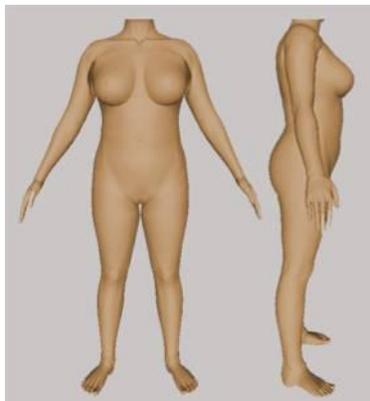
**Spoon**  
Bust is small in proportion  
to waist; waist is well-  
defined; hips are large in  
proportion to waist



**Inverted Triangle**  
Upper body is larger  
than lower body



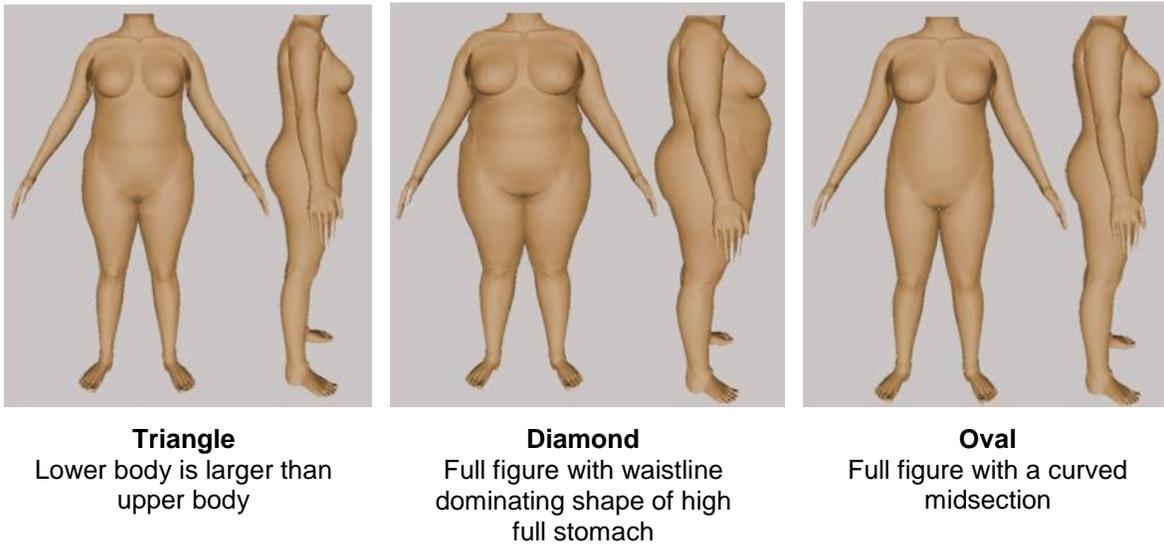
**Hourglass**  
Bust and hips are balanced;  
waist is well-defined



**Top Hourglass**  
Bust is larger than hips;  
waist is well-defined



**Bottom Hourglass**  
Hips are larger than bust;  
waist is well-defined



**Figure 16: 3D avatars of the nine body shapes defined by FFIT<sup>®</sup> for Apparel**

Note: Body shape definitions are from “Body shape analysis using three-dimensional body scanning technology,” by K.P. Simmons, 2002, Unpublished doctoral dissertation, North Carolina State University.

In addition to measuring the effect of body shape perception on consumer preferences, the effect of Body Mass Index (BMI) was evaluated. BMI is used internationally and nationally by the US Department of Health and Human services as a reliable measure of body fatness. Using height and weight as input, BMI classifies a person into one of four weight status categories (Centers For Disease Control and Prevention, 2008). Table 22 shows the formula for BMI and resulting weight status categories based on BMI output. Based on the formula requirements, respondents were asked to provide their weight (in pounds) and their height (in feet and inches). Using this data, respondents’ BMI and weight status category were calculated.

**Table 22: BMI calculation and classification**

Formula	BMI	Weight Status
$\text{weight (lb)} / [\text{height (in)}]^2 \times 703$	Below 18.5	Underweight
	18.5 – 24.9	Normal
	25.0 – 29.9	Overweight
	30.0 and above	Obese

Note: created by the author from the following source:

Centers for Disease Control and Prevention. (2008). About BMI for adults. In *Body Mass Index (BMI)*. Retrieved October 28, 2008, from Department of Health and Human Services Web Site: [http://www.cdc.gov/nccdphp/dnpa/healthyweight/assessing/bmi/adult\\_BMI/about\\_adult\\_BMI.htm#Interpreted](http://www.cdc.gov/nccdphp/dnpa/healthyweight/assessing/bmi/adult_BMI/about_adult_BMI.htm#Interpreted)

The final component of the physical-body related measure obtained clothing size information from respondents. As mentioned several times, self-report of physical measurements can be flawed due to inaccuracy in measurement methods. However, this study gathered clothing size information as an indicator of body size. As used in previous studies, respondents were asked to provide the clothing size that they generally wear (Chattaraman & Rudd, 2006). Due to variability that may exist across clothing styles and brands, choices included letter and number-based sizing, ranging from XS (0-2) to 3X (26W-28W). In addition, because consumers may wear different sizes depending on the garment category, the clothing size question was repeated across the four garment categories of interest in this research: casual pants, tops, skirts, and dresses.

The use of self-reported clothing size is not without limitations. For instance, several researchers have reported that consumers may be confused by clothing size questions, since they may wear more than one size of garment, depending on the style, manufacturer, or vanity sizing practices that disregard standard sizing practices to label garments smaller than

actual measurements traditionally suggest (Tamburrino, 1992). In addition, respondents may answer with their ideal clothing size, or on the smaller end of the range, because they consider their “true” size to be discouraging (Apeagyei, Otieno, & Tyler, 2007). However, due to the difficulty associated with asking respondents to supply physical measurements, the use of ready-to wear clothing size as an approximation of body size was considered appropriate for the type of instrument and data collection procedures used in this research.

### *Ethnic Measure*

To assess the impact of ethnic factors on evaluative criteria and apparel fit preferences, the survey included questions to measure acculturation level and generational status. The important ethnic dimension of subculture was held constant in this study, with all respondents required to identify themselves as Mexican-American in order to qualify as a study participant. The two ethnic factors researched for their effect on evaluative criteria and apparel fit preferences were calculated using scales discussed below.

As discussed at length in the review of literature, a variety of acculturation scales exist that may be used to measure the acculturation level of respondents. The scale selected for this study was a short acculturation scale of four questions published by Marín & Marín (1991). The scale measures language use in a variety of situations, with respondents answering on a 5-point scale from only Spanish (1) to only English (5). In the original scale, Marín & Marín used phrases “Spanish better than English” (2) and “English better than Spanish” (4). However, the word “better” was changed to “more” in the proposed survey based on advice from a survey consultant at North Carolina State University (Nancy Whelchel, personal communication, September 9, 2008). Respondents were then labeled

high acculturation or low acculturation using the median split method. In this approach, respondents' answers were averaged across the 4-item scale. Respondents with a score of 3.00 or below were labeled low acculturation while those with scores 3.01 and above labeled high acculturation (Marín & Marín). While limitations have been discussed in the use of an acculturation scale based only on language and in one dimension, the short length of the scale contributed to the decision to use this scale over other more comprehensive measures. In this way, respondent fatigue and the length of the survey was better controlled. In addition, the 4-item scale has been shown to have validity when measuring acculturation across a range of Hispanic subcultures (Marín & Marín).

Generational status was included within the ethnic measure to ascertain the generational history of respondents. This section of the survey included three questions, asking respondents for their country of birth, their mother's, and their father's country of birth. Answers were limited to United States and Other, and those who selected "Other" were asked write in the name of an alternate country. Based on the answers to these questions, respondents were labeled as First, Second, Mixed, or Third-generation+ Hispanics. Table 23 defines the generational descriptors that were used to classify respondents' generational status and segment the group for data analysis.

**Table 23: Generational descriptors and associated definitions**

Generational Status Definitions	
First-generation Hispanic	Respondents born in Latin America
Second-generation Hispanic	Respondents born in the United States and both parents born in Latin America
Mixed second-generation Hispanic	Respondents born in the United States and one parent born in Latin America
Third-generation+ Hispanic	Respondents and both parents born in the United States

Note: From *Research with Hispanic populations*, by G. Marín & B.V. Marín, 1991, Sage Publications: Newbury Park, CA, pp. 35.

#### *Additional Demographic Questions*

Demographic questions regarding educational level, income level, occupation, and location of residence were included at the end of the survey. Several demographic questions (related to gender, age, and subculture) were positioned at the beginning of the survey as screening questions. The last questions were included to measure the effect of educational level, income, and occupation on evaluative criteria and fit preferences, and also to verify that respondents were from one of the four Southwestern US states targeted in this study.

Educational level was assessed using five categories (Less than high school; High school graduate; Some college; College graduate; Post graduate work). In assessing income, five categories of income were included (Under \$25,000; \$25,000-49,999; \$50,000-74,999; \$75,000-99,999; Over \$100,000). Occupation was assessed using eight categories (Professional/managerial; Office; Crafts; Service/sales; Student; Military; Homemaker; Not employed). To determine location of residence, respondents selected their answer from a

drop-down menu including each of the US states and “Other.” Responses for this question were reviewed to ensure that any respondents were from one of the four states of Arizona, California, New Mexico and Texas before being included in the final dataset.

#### *Survey Translation and Pilot Testing*

Once the proposed survey instrument was developed, the survey questions were translated into Spanish using a back translation technique. In this approach, two bilingual translators were hired through the Foreign Language Department at North Carolina State University. One translator first translated the survey from English into Spanish. Once translated into Spanish, the other bilingual translator translated the Spanish version back into English. At the end of the process, the original English version and the version translated back into English were compared to identify any inconsistencies or mistranslations. In addition, translators were able to identify phrases that seem awkward or that may have multiple meanings. Any problems that were identified in this process were then corrected with the help of a Spanish instructor. This process of back translation is advised by many Hispanic market researchers (Donthu & Cherian, 1994; Marín & Marín, 1991). Translation was necessary in order to provide respondents with the ability to take the final survey in their preferred language of Spanish or English.

Once the final survey was translated and English and Spanish-language versions were finalized, the survey was then pilot-tested. Details about the pilot test, including recruitment methods, survey format, and changes made as a result of the pilot test are shown in Appendix F. The details presented in the preceding sections of instrument development reflect the changes made in the survey due to pilot testing.

### *Study Variables*

This section will include a brief presentation of the variables being studied in this research. Because RO1 and RO4 involved a content analysis and interpretation of literature and results from this study, respectively, this section will only focus on the study variables used in the inferential analysis for RO2 and RO3.

Table 24 shows the variables that were used in data analysis procedures to achieve RO2 and RO3. The table provides the variable name, defines whether the variable was used as a dependent or independent variable, and the level of measurement of the variable. The level of measurement dictates the type of data analysis procedures that were appropriate to investigate the relationships among dependent and independent variables. The variables were then matched with overall Research Objectives and specific Research Questions, illustrating how the primary research goals were to be satisfied. The next section of the methodology will discuss the actual data analysis procedures used to achieve each of the Research Objectives.

**Table 24: Variables and Associated Research Objectives**

<b>Variable Name</b>	<b>Type of Variable</b>	<b>Level of Measurement</b>	<b>Research Objective</b>
Evaluative Criteria	Dependent	Importance: Ordinal Determinance: Nominal	RO2: RQ1-RQ5
Fit Preference	Dependent	Ordinal	RO3: RQ1-RQ4
Body Shape Perception	Independent	Nominal	RO2: RQ3 RO3: RQ2
BMI	Independent	Ordinal	RO2: RQ3 RO3: RQ2
Clothing Size	Independent	Ordinal	RO2: RQ3 RO3: RQ2

**Table 24: continued**

Acculturation Level	Independent	Ordinal	RO2: RQ4 RO3: RQ3
Subculture	Screening Question	Nominal	RO2: RQ4 RO3: RQ3
Generational Status	Independent	Ordinal	RO2: RQ4 RO3: RQ3
Educational Level	Independent	Ordinal	RO2: RQ5 RO3: RQ4
Income	Independent	Ordinal	RO2: RQ5 RO3: RQ4
Occupation	Independent	Nominal	RO2: RQ5 RO3: RQ4
Location of Residence	Screening Question	Nominal	RO2: RQ5 RO3: RQ4
Gender	Screening Question	Nominal	Screening Question
Age	Screening Question	Ordinal	Screening Question

*Data Analysis*

As previously discussed, a combination of exploratory and descriptive research was performed to satisfy RO1 – RO4. For RO2 and RO3, the statistical software program JMP was used for all data analysis procedures. Specific analysis and interpretation methods for each Research Objective will be profiled in this section.

*Research Objective 1*

Research Objective 1 (See Table 12) involved an exploration of the range of factors that influence or determine the preferences that consumers express for apparel evaluative criteria. This objective was satisfied using exploratory research methods, specifically an extensive literature review and synthesis of past research findings. Content analysis of the

past research conducted on apparel evaluative criteria allowed the researcher to identify the factors (both consumer-oriented and external/situational-oriented) that impact consumer preferences for and use of evaluative criteria in apparel purchase decisions.

Based on the extensive literature review and interpretation of past research, a model was created to satisfy RO1. This model illustrated the consumer characteristics and situational considerations that influence the preferences that consumers express for evaluative criteria. This model highlighted possible relationships that were quantitatively studied in RO2 and RO3.

### *Research Objective 2*

Research Objective 2 relied on primary data collection through the Web-based survey. Using descriptive inferential statistics, relationships between independent and dependent variables were analyzed to determine the most important and determinant criteria used by Mexican-American women (between the ages of 18-25 and from the Southwestern US) when shopping for apparel across a range of product categories. Additional analysis determined whether these preferences were dependent on physical body characteristics, ethnic factors, or additional demographic variables (see Table 13). Table 25 summarizes the variables involved in the analysis of RO2: RQ1 – RQ5. The variables used in the analysis are linked to the individual survey questions used to gather information from the respondents (see Appendix D for the survey). Analysis procedures used to determine the relationship among variables are shown in the last column of Table 25.

**Table 25: Variables, Survey Items, and Data Analysis for Research Objective 2**

<b>Research Objective 2</b>			
<i>Research Question</i>	<i>Variables Involved</i>	<i>Data Collection – Associated Survey Item</i>	<i>Analysis</i>
RQ1	Dependent • Evaluative Criteria Importance	Questions 6,9,12,15	Descriptive Statistics  Wilcoxon Signed Rank
RQ2	Dependent • Evaluative Criteria Determinance	Questions 7,10,13,16	Descriptive Statistics
RQ3	Independent • Body Shape Perception • BMI • Clothing Size  Dependent • Evaluative Criteria Importance	Question 21  Questions 22,23 Questions 24,25,26,27  Questions 6,9,12,15	Descriptive Statistics  Non-parametric ANOVA (Kruskal-Wallis)
RQ4	Independent • Acculturation Level • Generational Status  Dependent • Evaluative Criteria Importance	Questions 28,29,30,31 Questions 32,33,34  Questions 6,9,12,15	Descriptive Statistics  Non-parametric ANOVA (Kruskal-Wallis)
RQ5	Independent • Educational Level • Income • Occupation  Dependent • Evaluative Criteria Importance	Question 36 Question 35 Question 37  Questions 6,9,12,15	Descriptive Statistics  Non-parametric ANOVA (Kruskal-Wallis)

Because the ratings of evaluative criteria are ordinal in nature (see Table 24), descriptive statistics presented for this variable used the median as the primary measure of central tendency. Mean ratings were also presented, to allow for further comparison of evaluative criteria ratings and to highlight smaller differences among the ratings. Variance

was also included as a measure of statistical dispersion, illustrating the agreement/disagreement of the sample in regards to the ratings.

To respond to RQ1, these descriptive statistics were presented for the overall sample of Mexican-American women, to provide an indication of the importance of the individual evaluative criteria across the four garment categories. To determine whether respondents considered evaluative criteria significantly different in importance depending on garment category, Wilcoxon signed rank tests were used. In this test, median ratings given to each criterion were statistically compared across garment categories using multiple pairwise comparisons. For instance, the rating for Color / pattern was compared for pants vs. tops, pants vs. skirts, and pants vs. dresses to determine if it was significantly different in any of the comparisons. This type of test was performed for each criterion across all possible pairs of garment categories. If significance was found, the median ratings were then compared to understand the relationship. In cases in which the median ratings were the same, the mean was then used for the comparison. Providing another dimension of understanding about how the evaluative criteria ratings compare across garment categories, the criteria were also ranked and compared according to relative importance in the purchase of pants, tops, skirts, and dresses.

To respond to RQ2, and indicate the determinance of the individual criteria, descriptive statistics only included counts. As shown in Table 24, the questions related to determinance resulted in nominal data, which only allows the use of counts. Thus, to illustrate the determinance of the individual criteria, the number of times each attribute was cited as the first, second, or third most important attribute in their apparel purchases was presented.

To respond to RQ3 through RQ5, median ratings of the criteria were first presented for the individual groups of interest being studied (segmented by physical body characteristics, ethnic factors, and demographic variables). To assess the impact of physical body characteristics, ethnic factors, and demographic variables, non-parametric analysis of variance (ANOVA) was then used.

The non-parametric ANOVA test that was appropriate for these questions was the Kruskal-Wallis test. This procedure is a non-parametric method of determining the significance of any differences among 3 or more groups, and was thus an appropriate approach to analyze the effect of the factors expressed in RQ3 through RQ5 on evaluative criteria preferences across garment categories. Significance was assessed by comparing the p-value resulting from the Kruskal-Wallis tests to the alpha value of 0.05 used in this research. Significant relationships identified in the Kruskal-Wallis tests (i.e. p-values of less than 0.05) only indicated that at least one of the pairs of groups tested was significantly different. Therefore, multiple pairwise comparisons were used to follow up any significant finding and determine the pair(s) that was significantly different. Once the significantly different pairs were isolated, median ratings were then compared to determine the nature of the difference. When the median ratings were the same, mean ratings were instead compared. This process was performed in any case in which the physical body characteristics, ethnic factors, or demographic variables significantly affected evaluative criteria ratings.

*Research Objective 3*

Research Objective 3 was also satisfied using primary data collection through the web-based survey. Using inferential statistics, relationships between independent and dependent variables were analyzed to determine the fit preferences of Mexican-American women (18-25 years old, from the Southwestern US) across a range of product categories and determine if these preferences are affected by physical body characteristics, ethnic factors, or additional demographic variables (see Table 14). Table 26 summarizes the variables involved in the analysis of RO3: RQ1 – RQ4. The variables used in the analysis are linked to the individual survey questions used to gather information from the respondents (see Appendix D for the survey instrument used in this research). Analysis procedures used to determine the relationship among variables are shown in the last column of Table 26.

**Table 26: Variables, Survey Items, and Data Analysis for Research Objective 3**

<b>Research Objective 3</b>			
<i>Research Question</i>	<i>Variables Involved</i>	<i>Data Collection – Associated Survey Item</i>	<i>Analysis</i>
RQ1	Dependent • Fit Preference	Questions 17,18,19,20	Descriptive Statistics
RQ2	Independent • Body Shape Perception • BMI • Clothing Size  Dependent • Fit Preference	Question 21  Questions 22,23 Questions 24,25,26,27  Questions 17,18,19,20	Descriptive Statistics  Chi-Square

**Table 26: continued**

RQ3	Independent <ul style="list-style-type: none"><li>• Acculturation Level</li><li>• Generational Status</li></ul> Dependent <ul style="list-style-type: none"><li>• Fit Preference</li></ul>	Questions 28,29,30,31 Questions 32,33,34  Questions 17,18,19,20	Descriptive Statistics  Chi-Square
RQ4	Independent <ul style="list-style-type: none"><li>• Educational Level</li><li>• Income</li><li>• Occupation</li></ul> Dependent <ul style="list-style-type: none"><li>• Fit Preference</li></ul>	Question 36 Question 35 Question 37  Questions 17,18,19,20	Descriptive Statistics  Chi-Square

Though fit preference was an ordinal variable (fitted, semi-fitted, loose), descriptive statistics presented for this variable only included counts showing the number of respondents indicating their preference for each fit level across garment categories. In this way, the fit preference variable was treated as a nominal variable, even though it had ordinal properties.

Because fit preference was treated as a nominal variable for statistical analysis, RQ1 was answered by presenting the number of respondents (in the entire sample) who indicated their preference for each fit level in the purchase of casual pants, tops, skirts, and dresses. Descriptive statistics for RQ2 through RQ4 involved the presentation of contingency tables showing the frequency of respondents in each combination of fit preference level and independent variable category. To assess the impact of these variables on fit preferences, Chi-Square analyses were used.

For these Chi-Square testing procedures, the distribution of respondents across fit preference levels (and by physical body characteristics, ethnic factors, and demographic variables) was analyzed to highlight any significant differences across groups. The Pearson

Chi-Square test statistic was calculated to summarize the relationship among fit preference and the independent variables studied in this research. Using the Chi-Square distribution, this test statistic was then converted into a p-value, known as “Prob>ChiSq.” This p-value was the probability of obtaining, by chance alone, a Chi-Square value greater than the one computed if no relationship existed between fit preference and the dependent variables. Thus, a p-value of less than the alpha value of 0.05 suggested a significant relationship between the independent variable and fit preference.

Once a significant relationship was identified through Chi-Square testing, post-hoc comparisons were performed to describe the nature of this relationship. While many approaches can be used for these post-hoc comparisons, the approach used in this research involved a comparison of expected versus observed values across the contingency table. In the process of Chi-Square testing, JMP identifies an expected distribution of values across each fit preference level and within each independent variable category based on the total distribution of respondents in the fit preference levels and independent variable categories (the Totals in the rows and columns of the contingency table). These *expected* cell frequency values can be compared to the *observed* frequency values to identify locations in which the deviation of observed versus expected values were high. Locations of highest deviations (or trends in deviations) were analyzed to better understand any significant relationship identified in Chi-Square testing. In this way, the comparison of the observed and expected values were used to as the post hoc analyses to understand the nature of any significant effect of physical body characteristics, ethnic factors, or demographic variables on fit preference.

#### *Research Objective 4*

Research Objective 4 involved the interpretation of the results from RO1 – RO3 to determine any practical applications of these results for targeted apparel product development processes (see Table 15). Because this Research Objective represents the culmination of the primary research conducted in this study, results related to this objective will be presented in the Conclusions chapter. For this objective, the findings from RO1 – RO3 were applied to the basic apparel product development process illustrated in the Conceptual Framework (see Figure 3). A discussion of the impact of these findings on the apparel product development process for Mexican-American females (between the ages of 18 and 25, from the Southwestern US) will also be included in this final chapter. In addition, product development suggestions specifically related to any particular subgroups' preferences (segmented by physical body characteristics, ethnic factors, and additional demographic variables) will also be discussed in the Conclusions chapter. These discussions satisfy RO4 by focusing on the practical application of the evaluative criteria and fit preference information gathered in this study in apparel product development processes.

## **CHAPTER 4: RESULTS**

Results of this research will be presented in three sections, corresponding to the first three research objectives directing this study. The first section will present a model of the consumer-oriented factors and situation-oriented factors that may influence consumer preference for and use of evaluative criteria in apparel purchase decisions (RO1).

Quantitative analysis of some of the relationships modeled in Research Objective 1 will then be presented in the following two sections (RO2 and RO3). These two sections will present the apparel evaluative criteria preferences and fit preferences of Mexican-American women between the ages of 18 and 25 from the Southwestern US. Results from the final objective, RO4, will not be presented in this chapter and will instead be satisfied in the conclusions in Chapter 5. The focus of the fourth objective is the practical application of the results from RO1 – RO3 and is thus most appropriately placed in the conclusions as the culmination of this research.

### **Research Objective 1 Results**

*To explore and model the range of factors that influence or determine consumer preferences and the use of apparel evaluative criteria in the purchase decision process.*

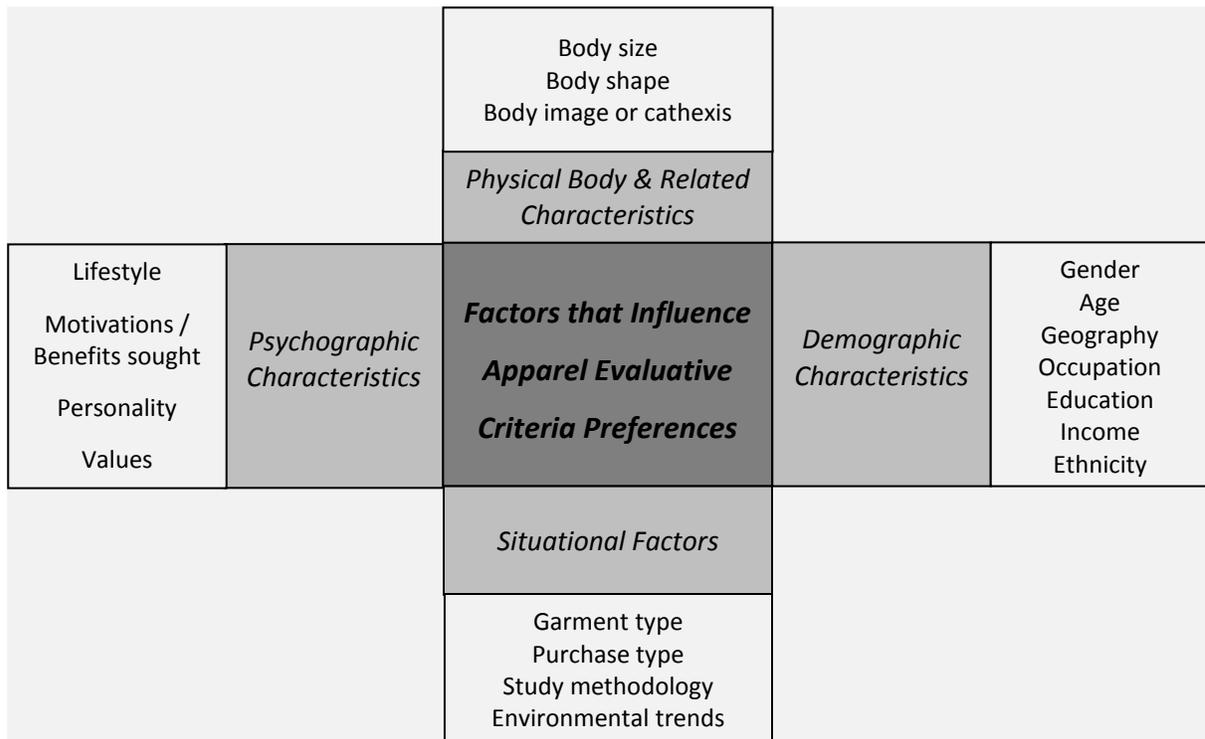
As discussed in the methodology, RO1 involved an exploration of the range of factors that influence or determine the preferences that consumers express for apparel evaluative criteria. Consumer behavior theorists have long presented models of the purchase decision process, in which consumers identify a need, search for products to fulfill these needs, and evaluate the array of options according to some type of criteria before determining to purchase an item. Appendix A contains an example of a widely renowned model of

consumer behavior by Engel, Blackwell, & Miniard (1995), which illustrates the factors that may influence the evaluation of various product alternatives in a purchase decision process.

While models such as the one included in Appendix A adequately portray a range of factors that influence the decision process, most consumer behavior models are not product-specific, and are thus somewhat generic. However, the content analysis of past research conducted on apparel evaluative criteria influences has allowed the researcher to identify the factors that impact consumer preferences for and use of evaluative criteria specifically in apparel purchase decisions. An overview of some of the findings from this past research was included in the literature review.

Based on the extensive literature review and interpretation of past research presented in Chapter 2, a model was created to satisfy RO1. The model, shown in Figure 17 illustrates the consumer characteristics and situational considerations that influence the preferences that consumers express for evaluative criteria in apparel purchase decisions. Consumer characteristics included in this model that have been shown to influence apparel evaluative criteria preferences include demographic, psychographic, and physical body and related characteristics. Demographic and psychographic characteristics are commonly used to describe consumers and populations in market research, and their impact on purchase decisions is widely discussed in the consumer behavior discipline. However, physical body and related characteristics are not typically modeled explicitly in traditional decision process models. Given the extent of past research that demonstrates the influence of characteristics such as body shape and size, as well as image and cathexis, physical body and related characteristics warrants specific inclusion in a model of apparel evaluative criteria

preferences. Past research related to the apparel shopping behavior and evaluative criteria preferences of target market groups has also shown the dramatic influence of external, or situational factors on consumer preferences. Some of these situational factors include environmental trends external to the consumer (such as the economic environment), the details of the purchase decision itself (such as the garment or purchase type), as well as the methodology used to ask consumers about their preferences. While the effect of situational factors may often be modeled in traditional consumer behavior models, the model created as part of this research explicitly includes apparel-specific situational factors.



Note: created by the author, 2009

**Figure 17:** Model of factors that influence apparel evaluative criteria preferences

The model developed as part of this research objective was used to frame the second research objective. For the next research objective, the apparel evaluative criteria preferences of Mexican-American women were studied to determine the importance of intrinsic and extrinsic attributes in apparel purchases and to assess the impact of selected demographic and physical body-related characteristics on these preferences. Situational factors that could influence these preferences were also considered in the design of the methodology (see Chapter 3 for more information).

### **Research Objective 2 Results**

*To determine the most important and determinant criteria used by Mexican-American women, ages 18-25 from the Southwestern US, when shopping for apparel.*

As mentioned in the chapter outlining the research methodology, RO2 – RO4 were studied through the collection of information through a sample survey administered online via SurveyGizmo. Before presenting the results of these Research Objectives, it is necessary to describe the sample that provided the information for this study.

#### *Description of the Sample*

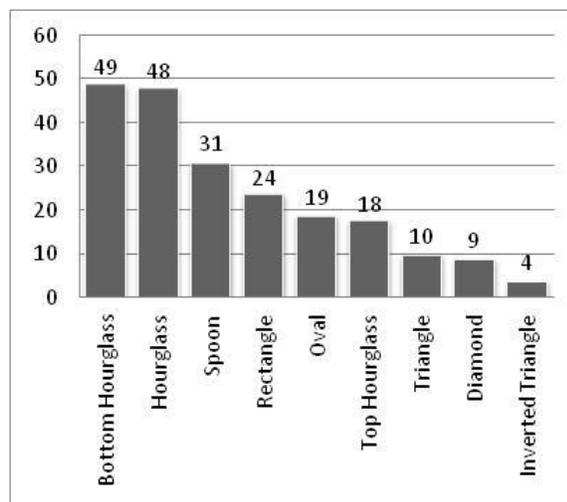
A total sample of 212 respondents was recruited with the following restrictions: Mexican-American, female, between the ages of 18 and 25, and from the four Southwestern states of Arizona, California, New Mexico, and Texas. Thus, variables related to subculture, gender, age, and geographic region were standard throughout the sample. As mentioned, the online surveys were offered in English and Spanish languages to accommodate respondent preference. Of the 212 completed surveys, 196 were completed in English, and 16 in Spanish. Eleven of these surveys were obtained through online advertising at MySpace,

Facebook, and Google, while the remainder resulted from sampling at colleges, universities, and national organizations. A description of the physical body characteristics, ethnic characteristics, and additional demographic variables follows.

### *Physical Body Characteristics*

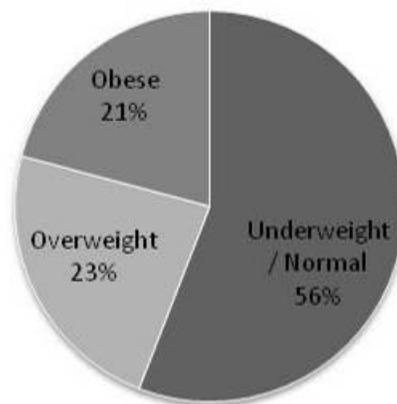
Body shape, body mass index (BMI), and clothing size were the physical body characteristics obtained from the sample in the online survey. It is important to reiterate that these characteristics were self-reported by respondents, rather than physically measured by the researcher. Thus, the reported values may not adequately represent reality.

Respondents were asked to classify their own physical body shape as one of nine body shapes presented to them in the online survey. Figure 18 shows the distribution of the sample in the nine body shape categories. As shown in the chart, almost half of the respondents identified themselves as Bottom Hourglass or Hourglass shapes. Spoon and Rectangle shapes constituted approximately another 25% of the sample, with the remaining respondents scattered throughout the other five shape categories.



**Figure 18:** Body shape perception of sample

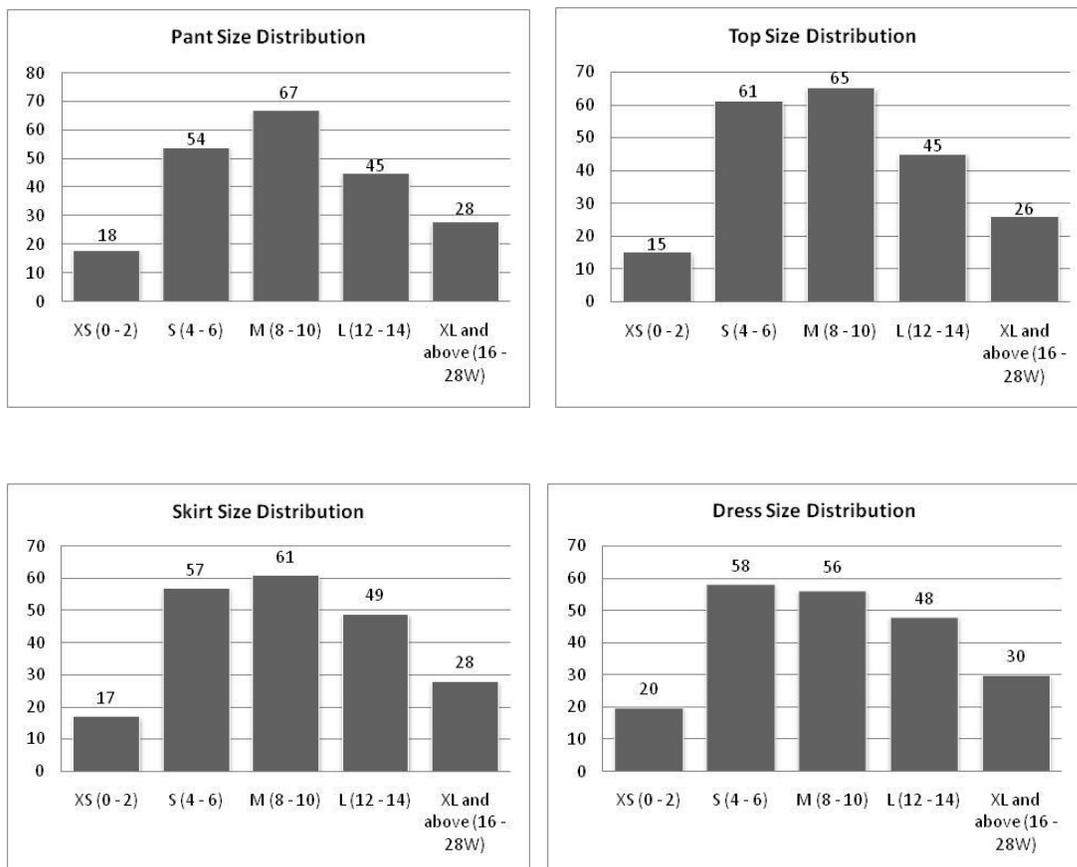
Using respondent input of height and weight, body mass index (BMI) was calculated and respondents were classified into one of four BMI categories (see Table 22 for the formula and categories). Due to the low number of respondents in the Underweight category, and the potential issues this small size could cause in data analysis, this category was combined with the Normal category. Figure 19 shows the distribution of the sample across these three BMI categories used in data analysis in this study. The majority of the sample was classified as Underweight / Normal, with slightly less than 25% of respondents in each of the Overweight and Obese categories.



**Figure 19: BMI distribution of sample**

Respondents were also asked to provide their clothing size across the garment categories of casual pants, tops, skirts, and dresses. In the online survey, respondents selected their size from nine categories. However, very few responses were distributed through the larger end of the sizing scale, particularly in sizes XL, 0X, 1X, 2X, and 3X. To

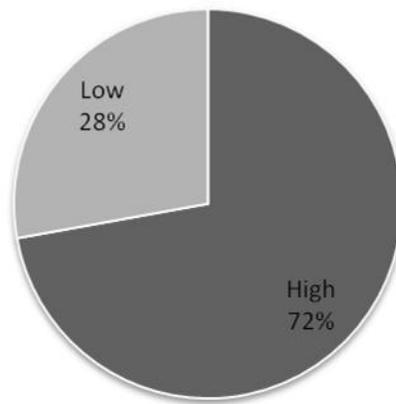
improve data analysis procedures, respondents answering in these larger sizes were grouped into one category, labeled “XL and above (16 – 28W).” Figure 20 shows the distribution of the sample across the five clothing sizes for the four garment categories analyzed in this study. In all garment categories, at least 75% of the sample indicated that they wore sizes S (4 – 6), M (8 – 10), or L (12 – 14). For pants, tops, and skirts, M (8 – 10) was the most frequently cited clothing size, while S (4 – 6) was the most frequently cited size for dresses. The two extreme size categories of XS (0 – 2) and XL and above (16 – 28W) contain the fewest number of respondents across all garment categories.



**Figure 20: Clothing size distribution of sample**

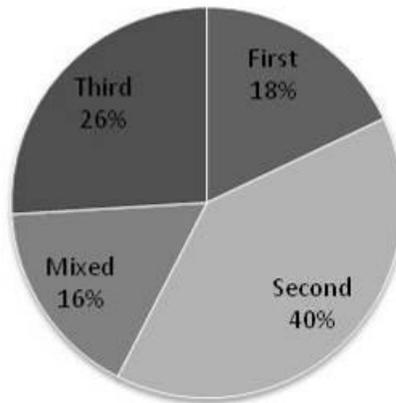
### *Ethnic Characteristics*

Acculturation level and generational status were the ethnicity-related characteristics calculated for the sample. As discussed at length in the review of literature, various methods can be used to determine the acculturation levels of individuals. For this study, acculturation level was calculated based on the individual's responses to a series of questions about language use in a variety of situations. Figure 21 illustrates the distribution of the sample into the high and low categories of acculturation. The chart clearly shows that almost 75% of the sample was highly acculturated. This result is not surprising, given the youth of the sample (18-25 years old), the recruitment method that primarily relied on colleges and universities, and the online format of the survey – all of which tend to be associated with higher levels of acculturation. However, the number of respondents classified in the low acculturation category is certainly sufficient to analyze the effect of acculturation on evaluative criteria and apparel fit preferences.



**Figure 21: Acculturation level of sample**

Generational status was determined by considering the country of birth of each respondent, her mother, and her father (refer to Table 23 for generation definitions). Figure 22 shows that the majority of the sample was classified as either second or third generation. The largest portion of the sample (around 40%) included those respondents who were born in the United States, while both of their parents were born in Latin America (second generation). Approximately 25% of the sample was third generation residents, in which they and both of their parents were born in the United States. The remaining respondents were almost split evenly between first and mixed-second generation categories.



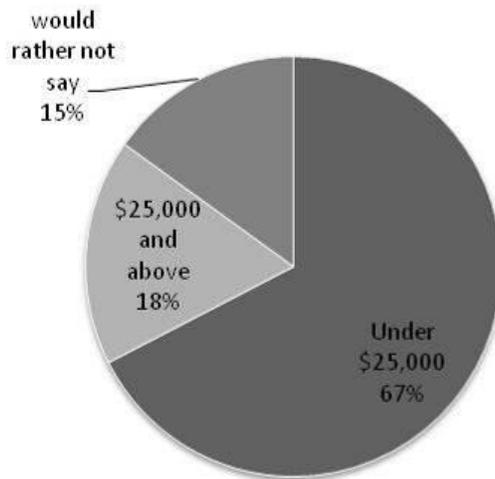
**Figure 22: Generational status of sample**

### *Demographic Characteristics*

The demographic variables of gender, age, ethnic subculture, and basic geographic region were used as screening questions in the online survey, standardizing all responses in these categories and ensuring that respondents were Mexican-American females between the ages of 18 and 25 and from the Southwestern US states of Arizona, California, New Mexico,

and Texas. Additional demographic information, including educational attainment, income, occupation, and state of residence, was also gathered to enable the researcher to assess the effect of these variables on apparel evaluative criteria and fit preferences.

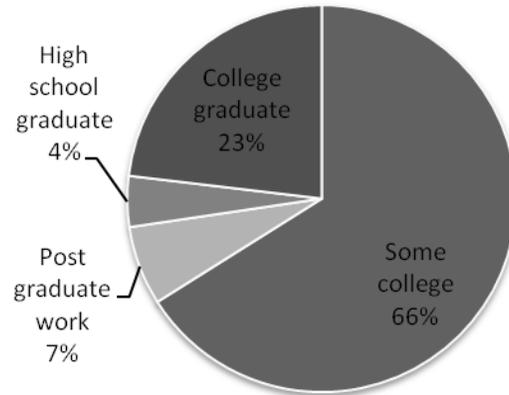
Respondents were asked to provide their annual income level, selecting from six choices ranging from under \$25,000 to over \$100,000 and including an option for “would rather not say.” Due to the primary recruitment method at colleges and universities, the vast majority of respondents earned less than \$25,000, with very few indicating that they earned more than \$25,000. Thus, the income categories were collapsed for data analysis, and Figure 23 shows the distribution of the sample in the three levels used in the analysis for this study. Figure 23 clearly illustrates the skewed income profile of the sample, with almost 70% indicating that they earn less than \$25,000 per year.



**Figure 23: Income distribution of sample**

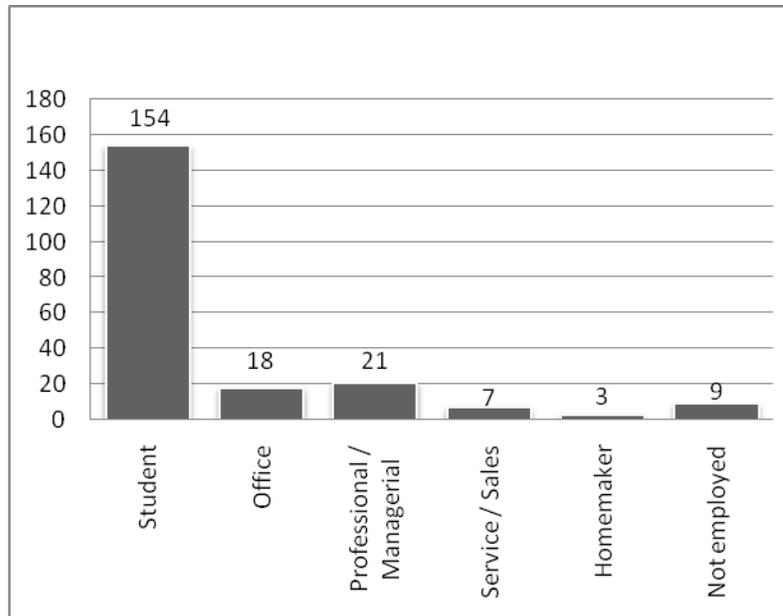
Recruitment procedures at colleges and universities also resulted in a sample predominated by respondents who specified an educational attainment of “Some college.”

Figure 24 shows that more than 65% of the sample fell into this category, while almost 25% were college graduates. The sample consisted of a relatively low number of respondents whose educational attainment was “High school graduate” or “Post graduate work.”



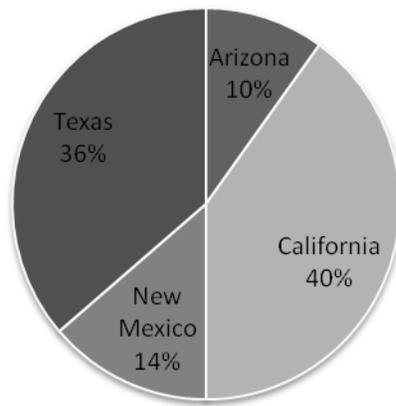
**Figure 24: Educational attainment of sample**

Sample recruitment methodology also significantly impacted the variety of occupations of the sample. As shown in Figure 25, more than 70% of the sample identified their occupation as student. Another 20% considered their occupation to be in the areas of office or professional /managerial. Very few people specified their occupational status as service / sales, homemaker, or not employed. While listed as an option in the online survey (see Appendix D for the survey questions), none of the respondents identified themselves in the crafts or military occupations.



**Figure 25: Occupation of sample**

The sample was deliberately recruited from the Southwestern United States due to the large number of Mexican-Americans that reside in this area (Guzman, 2001). In particular, respondents were recruited from the four states of Arizona, California, New Mexico, and Texas, and Figure 26 shows the distribution of the sample across these states. Mirroring the pattern seen in the overall population, the largest majority of the sample came from the two states of California and Texas, with 40% and 36% of the sample from these states, respectively. The remaining ~25% were almost evenly split between the states of Arizona and New Mexico.



**Figure 26: State of residence of sample**

The profile of the sample collected for this research is different from the larger population of 18-25 year old Mexican-American females living in Arizona, California, New Mexico, and Texas. This is due in large part to the survey instrument used to collect the data and the recruitment procedures used to recruit the sample. For instance, because the physical body-related characteristics were self-reported by respondents, they only capture the respondents' perceptions of these characteristics, which may not be reality. In addition, recruitment through colleges and universities provided a sample that skewed toward lower income levels, and students who had completed some college. This may not parallel the actual population of 18-25 year old Mexican-Americans in these states, and the data analysis presented in the following sections should take this into consideration.

### *Research Question 1*

*What criteria are important in the apparel purchase decisions of Mexican-American women when shopping for casual pants, tops, skirts, and dresses?*

To address RQ1, respondents were asked to rate the importance of 20 intrinsic and extrinsic attributes in their purchases of casual pants, tops, skirts, and dresses (see Table 21 for a complete list of the attributes). They were able to specify the level of importance on a 5-point Likert-scale ranging from not at all important to critical in their apparel purchases. Before rating the attributes' importance in the purchase of pants, tops, skirts, and dresses, respondents were asked whether they ever wore the individual garment type. If they answered, "No, I never wear \_," they did not rate the evaluative criteria for that particular garment type. This section will present the importance of the attributes in the purchase of the individual garment categories first, and will then follow with a comparison of the importance and the relative importance of the attributes across garment categories.

#### *Casual Pants*

Of the total 212 respondents, 196 (or 92%) indicated that they wear casual pants. Table 27 summarizes the respondents' opinions regarding the importance of the 20 attributes studied in their purchase of casual pants. This table presents the median, mean, and variance of the ratings given to each of the criteria, and the criteria are ordered from most to least important (based on the median). As mentioned in the methodology, the ordinal nature of the rating scale governs the primary use of the median for sorting and data analysis, but the mean is also useful to differentiate between criteria when the medians are the same. The variance

is provided as an indication of the dispersion of the distribution, or the extent of agreement or disagreement within the sample.

**Table 27: Evaluative criteria ratings summary statistics – Casual pants**

N = 196				
Criteria	Type	Median	Mean	Variance
Fit / sizing	Intrinsic (F)	5	4.867	0.187
Appearance	Intrinsic (A)	5	4.551	0.526
Comfort	Intrinsic (F)	5	4.367	0.685
Price	Extrinsic (B/S)	5	4.260	0.850
Styling	Intrinsic (A)	4	4.301	0.591
Color / pattern	Intrinsic (A)	4	4.245	0.668
Beauty / attractiveness	Intrinsic (A)	4	4.133	0.803
Quality (construction, durability, workmanship)	Intrinsic (F)	4	4.102	0.964
Suitability for the individual	Extrinsic (E/S)	4	4.000	0.892
Versatility with existing wardrobe	Extrinsic (B/S)	4	3.980	0.995
Fashionability	Extrinsic (E/S)	4	3.821	1.060
Promotes high self esteem	Extrinsic (E/S)	4	3.755	1.468
Ease of care	Intrinsic (F)	4	3.612	1.244
Individuality / uniqueness	Extrinsic (E/S)	4	3.536	1.389
Appropriateness for end use	Extrinsic (E/S)	3	3.444	1.253
Fiber content / fabrication	Intrinsic (F)	3	3.260	1.332
Sexy	Extrinsic (E/S)	3	3.260	1.445
Pleasing to others	Extrinsic (E/S)	3	2.832	1.607
Brand name / store name	Extrinsic (B/S)	3	2.556	1.499
Country of origin	Extrinsic (B/S)	1	1.862	1.114

Note: Criteria are ordered from highest to lowest median rating, and by mean rating when the medians are the same. For Intrinsic criteria, (A) stands for Aesthetic and (F) for Functional. For Extrinsic criteria, (B/S) stands for Brand / Situational and (E/S) stands for Expressive / Symbolic

As shown in Table 27, the data was largely skewed toward the high end of the rating scale, indicating that the sample considered most of the criteria important in their purchase of casual pants. Only the Country of origin criteria had a median rating below 3, and it was considered not at all important based on its median rating of 1. The intrinsic criteria of Fit /

sizing featured the highest rating in terms of median and mean, and also had the lowest variance, indicating that the large majority of respondents considered these criteria to be critical in their purchase of casual pants. Other criteria receiving “Critical” median ratings of 5 included the intrinsic criteria of Appearance and Comfort, and the extrinsic criteria of Price.

Overall, intrinsic criteria seemed to be considered more important than extrinsic criteria in the purchase of casual pants (when considering median and mean ratings). Seven out of the top 10 rated attributes were intrinsic criteria, while 8 out of the bottom 10 were extrinsic. However, considering the skewed pattern that can clearly be observed in Table 27, in which most of the criteria are rated from 3 to 5, these trends do not necessarily indicate that extrinsic criteria are unimportant. In addition, the criteria rated the lowest seem to be associated with higher variance than the criteria rated the highest. This simply indicates that the sample was in greater agreement about the importance of the highest rated attributes.

### *Casual Tops*

Of the total 212 respondents, 207 (or 98%) indicated that they wear casual tops. Table 28 presents the median, mean, and variance of the ratings given to the 20 criteria investigated in this study. The table is organized in the same way as Table 27, ordering the attributes from the most to least important (by median rating first, and then mean) in the purchase of casual tops. Similar to the ratings expressed for casual pants, the sample indicated that most of the attributes were skewing toward the high end of the scale in importance. Nineteen of the twenty attributes exhibited median ratings from 3 to 5, with only the Country of origin attribute receiving less than 3.

**Table 28: Evaluative criteria ratings summary statistics – Casual tops**

N = 207				
Criteria	Type	Median	Mean	Variance
Fit / sizing	Intrinsic (F)	5	4.841	0.162
Appearance	Intrinsic (A)	5	4.652	0.383
Styling	Intrinsic (A)	5	4.473	0.493
Color / pattern	Intrinsic (A)	5	4.415	0.662
Beauty / attractiveness	Intrinsic (A)	5	4.343	0.683
Price	Extrinsic (B/S)	5	4.184	1.024
Comfort	Intrinsic (F)	4	4.299	0.657
Quality (construction, durability, workmanship)	Intrinsic (F)	4	4.048	0.988
Fashionability	Extrinsic (E/S)	4	3.957	1.100
Versatility with existing wardrobe	Extrinsic (B/S)	4	3.942	1.113
Individuality / uniqueness	Extrinsic (E/S)	4	3.850	1.167
Promotes high self esteem	Extrinsic (E/S)	4	3.845	1.432
Suitability for the individual	Extrinsic (E/S)	4	3.754	1.080
Ease of care	Intrinsic (F)	4	3.643	1.318
Sexy	Extrinsic (E/S)	4	3.488	1.591
Fiber content / fabrication	Intrinsic (F)	3	3.362	1.523
Appropriateness for end use	Extrinsic (E/S)	3	3.329	1.406
Pleasing to others	Extrinsic (E/S)	3	2.966	1.693
Brand name / store name	Extrinsic (B/S)	3	2.551	1.550
Country of origin	Extrinsic (B/S)	1	1.884	1.152

Note: Criteria are ordered from highest to lowest median rating, and by mean rating when the medians are the same. For Intrinsic criteria, (A) stands for Aesthetic and (F) for Functional. For Extrinsic criteria, (B/S) stands for Brand / Situational and (E/S) stands for Expressive / Symbolic

The attribute of Fit / sizing was rated the most important attribute in terms of the median and mean rating, and once again had the lowest variance, suggesting widespread agreement on the importance of this attribute in the purchase of casual tops. In addition to this attribute, Appearance, Styling, Color / pattern, Beauty / attractiveness and Price were also considered critically important when purchasing casual tops, receiving median ratings of

5. The sample clearly believed intrinsic aesthetic attributes were important in particular, with each of the criteria in this category receiving the highest possible rating.

Overall, intrinsic attributes seemed to receive slightly higher ratings than extrinsic attributes, with 7 of the top 10 criteria being intrinsic in classification. This does not, however, diminish the fact that all of the attributes except one received ratings from 3 to 5, suggesting that most of the attributes were considered at least slightly important in the purchase of casual tops. In considering the variance, a similar pattern was apparent in the ratings of criteria for casual tops as seen for casual pants – variance was lowest for the criteria given the highest ratings, and seemed to increase (though not consistently) as the median ratings decreased. This indicates that the respondents were generally in more agreement regarding the importance of the highest rated attributes.

#### *Casual Skirts*

Of the total 212 respondents, only 88 (or 42%) said that they wear casual skirts. This sharp decrease from the percentages displayed for casual pants and tops could be the result of a number of factors, including the somewhat conflicting definition of “casual skirts,” the youth of the sample, and the increasing prominence of casual attire that some people do not associate with skirts. In addition, the order in which respondents were presented questions was not randomized, increasing the chance of respondent fatigue for this garment category (which was ordered after pants and tops in the online survey).

Table 29 displays the median, mean, and the variance of the ratings given to each of the 20 attributes in the purchase of casual skirts (ordered from most to least important according to median first, then mean). The ratings were heavily skewed towards the high end of the

rating scale, with only two of the twenty criteria receiving less than a median rating of 3. In fact, 15 of the 20 were rated either a 4 or a 5, demonstrating the importance of most of these attributes in the purchase of casual skirts. Brand name / store name and Country of origin were rated lower in terms of importance, receiving median ratings of 2 and 1, respectively.

**Table 29: Evaluative criteria ratings summary statistics – Casual skirts**

N = 88				
Criteria	Type	Median	Mean	Variance
Fit / sizing	Intrinsic (F)	5	4.864	0.1651
Appearance	Intrinsic (A)	5	4.557	0.5025
Styling	Intrinsic (A)	5	4.409	0.6813
Comfort	Intrinsic (F)	5	4.364	0.7398
Color / pattern	Intrinsic (A)	5	4.273	0.8903
Beauty / attractiveness	Intrinsic (A)	4	4.261	0.6321
Fashionability	Extrinsic (E/S)	4	4.205	0.8312
Price	Extrinsic (B/S)	4	4.148	0.9549
Promotes high self esteem	Extrinsic (E/S)	4	3.989	1.1838
Individuality / uniqueness	Extrinsic (E/S)	4	3.875	1.2371
Quality (construction, durability, workmanship)	Intrinsic (F)	4	3.864	1.1996
Suitability for the individual	Extrinsic (E/S)	4	3.795	1.1991
Versatility with existing wardrobe	Extrinsic (B/S)	4	3.795	1.291
Sexy	Extrinsic (E/S)	4	3.636	1.4984
Ease of care	Intrinsic (F)	4	3.511	1.4252
Appropriateness for end use	Extrinsic (E/S)	3	3.318	1.5298
Fiber content / fabrication	Intrinsic (F)	3	3.250	1.592
Pleasing to others	Extrinsic (E/S)	3	3.171	1.7752
Brand name / store name	Extrinsic (B/S)	2	2.364	1.5214
Country of origin	Extrinsic (B/S)	1	1.671	0.9361

Note: Criteria are ordered from highest to lowest median rating, and by mean rating when the medians are the same. For Intrinsic criteria, (A) stands for Aesthetic and (F) for Functional. For Extrinsic criteria, (B/S) stands for Brand / Situational and (E/S) stands for Expressive / Symbolic

In purchasing casual skirts, data showed that many of the intrinsic criteria were considered most important, with the top 6-rated attributes belonging to this category. The

attribute of Fit / sizing was once again the top rated attribute based on median and mean ratings, and featured the lowest variance. Other attributes receiving a median rating of 5, and thus considered critical in the purchase of casual skirts included Appearance, Styling, Comfort, and Color / pattern. However, given the high ratings given to most of the attributes, many of the remaining attributes were also clearly important. As observed in the ratings for casual pants and tops, the highest-rated attributes were associated with lower rates of variance, suggesting that respondents consistently considered these attributes important in the purchase of skirts.

### *Casual Dresses*

Of the 212 respondents who completed the survey, 113 (or 53%) said that they wear casual dresses. This portion is higher than that expressed for casual skirts, suggesting that respondent fatigue is not solely responsible for the decreased numbers shown in the last two garment categories' questions. However, the relatively sharp drop in the percentage who wears dresses as opposed to pants and tops may also be partially explained through some effect from respondent fatigue, the youth of the population, the seemingly conflicting definition of "casual dresses," and the prominence of casual attire that people may not associate with dresses.

Table 30 presents the median, mean, and variance of the ratings given to the 20 attributes when the sample was questioned about their purchases of casual dresses. The attributes are ordered from most to least important using the median rating first, followed by the mean in cases in which the medians are the same. This table demonstrates that most of the attributes were considered quite important when purchasing casual dresses, with only

four of the attributes receiving median ratings below 4. Six attributes were considered critically important (with median ratings of 5) in the purchase of casual dresses, including Fit / sizing as the highest rated, followed by Appearance, Styling, Color / pattern, Beauty / attractiveness, and Comfort. Similar to the casual skirt findings, Brand name / store name and Country of origin were considered to be the least important, having median ratings of 2 and 1, respectively.

**Table 30: Evaluative criteria ratings summary statistics – Casual dresses**

N = 113				
Criteria	Type	Median	Mean	Variance
Fit / sizing	Intrinsic (F)	5	4.894	0.096
Appearance	Intrinsic (A)	5	4.735	0.286
Styling	Intrinsic (A)	5	4.655	0.514
Color / pattern	Intrinsic (A)	5	4.566	0.569
Beauty / attractiveness	Intrinsic (A)	5	4.549	0.482
Comfort	Intrinsic (F)	5	4.292	0.905
Fashionability	Extrinsic (E/S)	4	4.230	0.911
Individuality / uniqueness	Extrinsic (E/S)	4	4.150	0.933
Promotes high self esteem	Extrinsic (E/S)	4	4.089	1.064
Quality (construction, durability, workmanship)	Intrinsic (F)	4	4.071	0.924
Price	Extrinsic (B/S)	4	3.965	1.249
Suitability for the individual	Extrinsic (E/S)	4	3.885	0.978
Sexy	Extrinsic (E/S)	4	3.708	1.316
Ease of care	Intrinsic (F)	4	3.611	1.490
Appropriateness for end use	Extrinsic (E/S)	4	3.345	1.657
Fiber content / fabrication	Intrinsic (F)	4	3.345	1.710
Pleasing to others	Extrinsic (E/S)	3	3.230	1.643
Versatility with existing wardrobe	Extrinsic (B/S)	3	3.186	2.081
Brand name / store name	Extrinsic (B/S)	2	2.310	1.555
Country of origin	Extrinsic (B/S)	1	1.797	1.110

Note: Criteria are ordered from highest to lowest median rating, and by mean rating when the medians are the same. For Intrinsic criteria, (A) stands for Aesthetic and (F) for Functional. For Extrinsic criteria, (B/S) stands for Brand / Situational and (E/S) stands for Expressive / Symbolic

The top six criteria were all intrinsic criteria, further reinforcing the slightly increased level of importance attributed to this category of criteria in the purchase of apparel. The lowest five-rated attributes belonged in the extrinsic category of criteria. However, this does not diminish the importance that should be noted for some of these criteria, considering the large percentage of the criteria that featured ratings of 4 and 5. The pattern exhibited for variance that was apparent in the ratings for casual pants, tops, and skirts was also apparent for dresses. The top-rated attributes, in terms of median and mean, seemed to correspond to lower rates of variance, while the lower rated attributes featured slightly higher variance.

#### *Importance of Evaluative Criteria Across Garment Categories*

In the previous four sections, results that describe the importance of 20 intrinsic and extrinsic evaluative criteria in the purchase of casual pants, tops, skirts, and dresses were presented. Table 31 summarizes some of this information by showing the median ratings given to each of these attributes across garment categories, with the intrinsic attributes in the aesthetic and functional categories highlighted in green and the extrinsic attributes in the brand / situational and expressive / symbolic categories highlighted in orange. Several trends are evident in this table, primarily the importance attributed to the majority of the criteria. Across the four garment categories, most of the criteria received median ratings of 3 and higher, implying that the respondents largely considered most of the attributes at least somewhat important in their apparel purchases. In addition, many of the intrinsic criteria, particularly in the aesthetic subcategory, received median ratings of 5, indicating that these are critically important in apparel purchases. Of the extrinsic criteria, only Price featured a median rating of 5 in any garment category. However, the majority of extrinsic criteria were

still considered somewhat important, with many median ratings of 4 in this category as well. The extrinsic criteria of Brand name / store name and Country of origin consistently received the lowest median ratings, suggesting that this sample does not consider these attributes important in the purchase of apparel.

**Table 31: Median rating of evaluative criteria across garment categories**

Garment Category		Pants	Tops	Skirts	Dresses
		Evaluative Criteria			
Aesthetic	Color / pattern	4	5	5	5
	Styling	4	5	5	5
	Appearance	5	5	5	5
	Beauty / attractiveness	4	5	4	5
Functional	Fit / sizing	5	5	5	5
	Quality (construction, durability, workmanship)	4	4	4	4
	Ease of care	4	4	4	4
	Comfort	5	4	5	5
	Fiber content / fabrication	3	3	3	4
Brand / Situational	Versatility with existing wardrobe	4	4	4	3
	Price	5	5	4	4
	Brand name / store name	3	3	2	2
	Country of origin	1	1	1	1
Expressive / Symbolic	Appropriateness for end use	3	3	3	4
	Suitability for the individual	4	4	4	4
	Sexy	3	4	4	4
	Fashionability	4	4	4	4
	Individuality / uniqueness	4	4	4	4
	Promotes high self esteem	4	4	4	4
	Pleasing to others	3	3	3	3

Note: Intrinsic attributes are shaded in green, while extrinsic attributes are shaded in orange

While broad trends in the evaluative criteria ratings are easily apparent in Table 31, further testing using the Wilcoxon signed rank test allowed more extensive analysis of how the ratings compared across garment categories. Procedural details about this test were presented in the methodology, but the basic test involved the statistical comparison of the ratings given to each criterion across pants, tops, skirts, and dresses categories using pairwise comparisons. Results from the Wilcoxon signed rank test performed over the full range of data are shown in Table 32. This table clearly illustrates the pairings in which a significant difference was found by featuring an asterisk beside any p-value ( $\text{Prob} > |z|$ ) that was less than the 0.05 alpha value used for a 95% confidence level in this research. If significance was found, the median ratings were then compared to understand the relationship. The table also clearly demonstrates the large number of pairwise comparisons performed through Wilcoxon signed rank testing, which increases the possibility of a Type I error (in which a significant difference is found when in truth there is none).

**Table 32: Results from the Wilcoxon Signed Rank Test – Comparison of Evaluative Criteria ratings by garment category**

Garment Comparison		Pants / Tops df=191		Pants / Skirt df=75		Pants / Dresses df=101		Tops / Skirts df=85		Tops / Dresses df=109		Skirts / Dresses df=65	
		z	Prob >  z	z	Prob >  z	z	Prob >  z	z	Prob >  z	z	Prob >  z	z	Prob >  z
Aesthetic	Color / pattern	516.00	0.0027*	102.50	0.0204*	248.50	0.0002*	-30.00	0.2691	51.50	0.3474	36.00	0.2484
	Styling	594.50	0.0016*	58.50	0.1848	257.00	<.0001*	15.00	0.7598	130.00	0.0033*	58.50	0.0236*
	Appearance	160.50	0.0674	-27.50	0.2860	125.50	0.0165*	-21.50	0.4550	50.50	0.1891	30.00	0.1347
	Beauty / attractiveness	498.00	<.0001*	93.50	0.0884	285.00	<.0001*	-11.00	0.8741	136.50	0.0040*	31.50	0.1341
Functional	Fit / sizing	-40.50	0.2201	0.00	1.0000	2.50	1.0000	3.00	0.2500	0.00	1.0000	1.50	1.0000
	Quality (construction, durability, workmanship)	-111.0	0.5399	-90.00	0.0460*	23.50	0.7583	-59.50	0.3311	-1.50	0.9748	42.00	0.1364
	Ease of care	143.50	0.4229	75.50	0.3468	88.50	0.4142	21.00	0.7538	-17.00	0.8564	-20.50	0.6385
	Comfort	-191.0	0.1151	26.50	0.3987	-9.00	0.8837	81.00	0.0254*	56.00	0.3220	-15.50	0.1445
	Fiber content / fabrication	378.00	0.1101	14.50	0.8250	91.00	0.4584	-8.00	0.8936	54.50	0.5323	8.50	0.8056
Brand / Situational	Versatility with existing wardrobe	-145.5	0.4798	-68.00	0.2839	-750.0	<.0001*	-55.50	0.3584	-789.5	<.0001*	-139.0	0.0003*
	Price	-229.0	0.0359*	-26.00	0.4406	-162.5	0.0043*	-22.00	0.4705	-127.0	0.0383*	-47.00	0.1274
	Brand name / store name	3.00	0.9835	-100.5	0.0232*	-235.0	0.0018*	-55.00	0.0340*	-143.0	<.0001*	-15.50	0.4846
	Country of origin	73.50	0.2487	-42.00	0.0979	-27.50	0.4362	-48.50	0.0175*	-33.50	0.2270	6.50	0.5313
Expressive / Symbolic	Appropriateness for end use	-317.0	0.1315	-48.50	0.4408	-102.5	0.2374	2.00	0.9539	101.50	0.1539	25.00	0.3113
	Suitability for the individual	-643.5	0.0002*	-115.0	0.0425*	-147.0	0.1214	6.00	0.8596	17.00	0.7876	28.50	0.0969
	Sexy	734.00	<.0001*	181.50	0.0036*	468.00	<.0001*	28.50	0.5232	138.00	0.0412*	25.50	0.2657
	Fashionability	420.50	0.0060*	186.00	<.0001*	356.50	<.0001*	45.50	0.1199	172.50	0.0052*	4.50	0.7899
	Individuality / uniqueness	735.00	<.0001*	127.00	0.0057*	421.50	<.0001*	-44.00	0.3865	121.50	0.0193*	79.50	0.0012*
	Promotes high self esteem	138.50	0.2595	-17.00	0.6669	129.00	0.0041*	-18.00	0.5215	78.50	0.0093*	32.00	0.2060
	Pleasing to others	320.00	0.0524	137.00	0.0462*	328.50	0.0002*	64.50	0.2652	162.00	0.0365*	18.00	0.4081

Note: \* Indicates significance at the 95% confidence level. Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

*Aesthetic Evaluative Criteria.* Several significant relationships were uncovered when comparing the ratings of the intrinsic aesthetic attributes across garment categories (see Table 32). For instance, the median rating for the Color / pattern attribute was significantly lower for casual pants than for tops, skirts, and dresses. For tops, skirts, and dresses, the median rating for this attribute was 5, indicating that respondents considered Color / pattern critically important in the purchase of these types of garments. For pants, the median rating for this attribute was 4, meaning that it was still important, but not as critical in the purchase of pants as other garments.

Similar results were found for the Styling and Beauty / attractiveness attributes. Median ratings for both of these attributes were significantly lower for pants than for tops and dresses. For tops and dresses, both attributes were considered critically important, while they were considered slightly less important (though still important) in the purchase of pants, which had a median rating of 4 for both attributes. Additional findings related to the Styling attribute indicated that this attribute was significantly more important in the purchase of dresses compared to tops and skirts. As shown in Table 31, the median rating for this attribute was the same (5) for tops, skirts, and dresses. Thus, while it was considered critical in the purchases of these garment types, a closer investigation of the mean ratings showed that the rating was slightly higher for dresses than tops and skirts, with a mean rating of 4.65 for dresses compared to 4.47 and 4.40 for tops and skirts, respectively. The Beauty / attractiveness attribute was also rated significantly higher for dresses than for tops. However, the median rating for this attribute was 5 for both of these garment categories as well, necessitating a comparison of the mean rating. In this comparison, the mean rating for

this attribute was slightly higher for dresses, at 4.55, than for tops, at 4.34. In each of these comparisons in which a significant difference was found, but in which the median ratings were the same at 5, the practical implication of the significant findings are somewhat low. For all practical purposes, these attributes should still be recognized as important in the purchase of the apparel categories studied in this research, regardless of the significant differences found.

The median ratings of the Appearance attribute were also found to be significantly different when comparing pants to dresses. However, a comparison of the medians (shown in Table 31) shows that this attribute received ratings of 5 for both garment types. A closer comparison of the mean ratings reveals slightly higher ratings for Appearance in the purchase of dresses (4.73) than pants (4.55). Again, while the ratings were significantly different according to the Wilcoxon signed rank test, the difference is not practically important, as this attribute was considered critical in the purchase of both dresses and pants.

*Functional Evaluative Criteria.* Overall, very few significant differences were noted when comparing intrinsic functional attribute ratings across garment categories (see Table 32). For instance, no significant differences were found in the ratings given to the attributes of Fit / sizing, Ease of care, and Fiber content / fabrication across garment categories. Quality (construction, durability, workmanship) was considered significantly more important in the purchase of pants than skirts, despite the fact that the median rating was 4 for both garment categories. Comparison of the mean rating showed that this attribute was rated higher for pants (at 4.10) than for skirts (3.86). Comfort was considered significantly more important for the purchase of skirts than tops, with median ratings of 5 and 4, respectively.

As the only two significant differences noted for any comparison of median ratings across garment categories, it appears that most of the ratings for the functional criteria were very similar for the garment types studied.

*Brand / Situational Evaluative Criteria.* Several interesting significant differences were found in the comparison of extrinsic brand / situational attributes across garment categories (see Table 32). Versatility with existing wardrobe was considered significantly less important for dresses than for the other garment categories, with a median rating of 3 for dresses compared to 4 for the other garments. Price was also rated significantly less important for dresses than for pants and tops. While the median rating of Price for dresses still suggested its importance in the purchase of this type of garment (with a rating of 4), it was significantly lower than the median ratings of 5 given to Price for pants and tops. In comparisons of pants vs. tops, Price was further found to be the most important for pants. While the median ratings were 5 for both pants and tops purchases, closer inspection of the mean showed a higher rating of 4.26 for pants compared to 4.18 for tops.

Results showed that Brand name / store name was considered more important for pants and tops (3) than for skirts and dresses (2). However, the median rating for this attribute falls in the middle of the rating scale for both pants and tops, which does not lend overwhelming evidence for its importance in the purchase of these garment types. For the consistently lowest-rated attribute (of all 20 studied), Country of origin was considered even less important for skirts than for tops. While the median ratings indicated that this attribute was not at all important in the purchase of any garment, a consideration of the mean rating showed that it was even less so for skirts (mean = 1.67), than for tops (mean = 1.86).

*Expressive / Symbolic Evaluative Criteria.* As shown in Table 32, a large number of significant differences were found when comparing the ratings of expressive / symbolic criteria among all pairings of garment categories. The only attribute that did not differ significantly in importance across garment categories was Appropriateness for end use.

Analysis of the remaining attributes yielded interesting patterns. A common finding showed that many expressive / symbolic criteria were significantly less important in the purchase of pants than in purchases of tops, skirts, and dresses. For instance, the attribute of Sexy was rated significantly lower, with a median rating of 3, for pants than for the remaining garment categories, which featured medians of 4. For two other attributes, specifically Fashionability and Individuality / uniqueness, the median ratings were the same (4) for each attribute across all garment categories. However, consideration of the mean ratings permitted the findings that these attributes were significantly less important for pants than other garment types. For Fashionability, the mean rating for pants was 3.82, 3.96 for tops, 4.21 for skirts, and 4.23 for dresses. For Individuality / uniqueness, the mean rating for pants was 3.54, 3.85 for tops, 3.88 for skirts, and 4.15 for dresses. Similarly, the attribute Pleasing to others was rated significantly less important for pants than skirts and dresses. While the median rating was the same (3) across these garment categories, inspection of the mean revealed a significantly lower rating for pants (2.83) than for skirts (3.17) and dresses (3.23).

Relationships already discussed illustrate that many of the expressive / symbolic criteria were significantly less important in the purchase of pants than the remaining garment categories. For these same attributes, results showed that the ratings observed in the dresses

category were higher, some significantly higher according to Wilcoxon signed rank tests. For instance, the Sexy attribute was significantly more important for dresses than for tops. Median ratings for Sexy were the same (4) in these garment categories, but the mean ratings revealed a higher importance for dresses (3.71) than tops (3.49). Identical results were observed for the Fashionability attribute, which featured median ratings of 4 across all garment types, but had a significantly higher mean rating of 4.23 for dresses than the 3.96 observed for tops. Individuality / uniqueness was significantly more important in the purchase of dresses than any other garment item, despite having the same median rating. Inspection of the mean showed a rating of 4.15 for dresses, which was significantly higher than the means of 3.54 for pants, 3.85 for tops, and 3.88 for skirts. In addition, the Pleasing to others attribute was significantly more important for dresses than tops and pants. Identical median ratings of 3 necessitated the use of the mean in further comparisons, which showed a mean rating of 3.23 for dresses that was significantly higher than the 2.83 rating and 2.97 rating observed for pants and tops, respectively.

Additional results in this category of evaluative criteria indicate that the attribute Promotes high self esteem is considered more important for dresses than pants and tops, despite featuring the same median ratings of 4 across garment categories. Closer consideration of the mean revealed a significantly higher rating of 4.09 for dresses compared to 3.76 for pants and 3.85 for tops. While most of the data presented in this section suggest that expressive / symbolic criteria were less important for pants than the remaining garment categories, the opposite was true for the Suitability for the individual attribute. In this case, median ratings of 4 were observed for all garment types, but Wilcoxon signed rank tests

indicated a significant difference in comparisons of pants vs. tops and skirts. Inspection of the mean ratings show a significantly higher rating of 4 for pants, compared to 3.75 for tops and 3.79 for skirts.

As shown in this section, respondents clearly expressed different preferences depending on the garment categories presented to them.

#### *Relative Importance of Evaluative Criteria Across Garment Categories*

The previous section discussed the importance attributed to the 20 evaluative criteria studied in this research in the purchase of casual pants, tops, skirts, and dresses. As shown in Table 31 and discussed at length, most of the attributes had very high median ratings across garment categories and the data was very much skewed toward the higher end of the rating scale used to indicate importance. This suggests that respondents largely considered almost all of the 20 attributes at least somewhat important.

The skewed pattern clearly observable in the median ratings across garments complicated the ability to discern among these important attributes and fully understand the preferences that Mexican-American women display in their apparel purchases. To obtain a more complete picture of the use and importance of these attributes in apparel purchases, the *relative* importance of each of the attributes may also be considered. In this evaluation, the median ratings were used to rank the 20 attributes in order from most to least important in every garment category. In cases in which the medians were tied, the mean rating was used instead. The result is a ranking from 1 through 20 that illustrates the relative importance of each of the attributes in the purchase of the individual types of garments (see Table 33).

**Table 33: Relative importance of evaluative criteria by garment category**

Evaluative Criteria		Garment Category											
		Pants			Tops			Skirts			Dresses		
		Relative Importance	Median	Mean									
Aesthetic	Color / pattern	6	4	4.245	4	5	4.415	5	5	4.273	4	5	4.566
	Styling	5	4	4.301	3	5	4.473	3	5	4.409	3	5	4.655
	Appearance	2	5	4.551	2	5	4.652	2	5	4.557	2	5	4.735
	Beauty / attractiveness	7	4	4.133	5	5	4.343	6	4	4.261	5	5	4.549
Functional	Fit / sizing	1	5	4.867	1	5	4.841	1	5	4.864	1	5	4.894
	Quality (construction, durability, workmanship)	8	4	4.102	8	4	4.048	11	4	3.864	10	4	4.071
	Ease of care	13	4	3.612	14	4	3.643	15	4	3.511	14	4	3.611
	Comfort	3	5	4.367	7	4	4.3	4	5	4.364	6	5	4.292
	Fiber content / fabrication	16	3	3.26	16	3	3.362	17	3	3.25	15	4	3.345
Brand / Situational	Versatility with existing wardrobe	10	4	3.98	10	4	3.942	12	4	3.795	18	3	3.186
	Price	4	5	4.26	6	5	4.184	8	4	4.148	11	4	3.965
	Brand name / store name	19	3	2.556	19	3	2.551	19	2	2.364	19	2	2.31
	Country of origin	20	1	1.862	20	1	1.884	20	1	1.67	20	1	1.796
Expressive / Symbolic	Appropriateness for end use	15	3	3.444	17	3	3.329	16	3	3.318	16	4	3.345
	Suitability for the individual	9	4	4	13	4	3.754	13	4	3.795	12	4	3.885

**Table 33: Continued**

Sexy	17	3	3.26	15	4	3.488	14	4	3.636	13	4	3.708
Fashionability	11	4	3.821	9	4	3.957	7	4	4.205	7	4	4.23
Individuality / uniqueness	14	4	3.536	11	4	3.85	10	4	3.875	8	4	4.15
Promotes high self esteem	12	4	3.755	12	4	3.845	9	4	3.989	9	4	4.088
Pleasing to others	18	3	2.832	18	3	2.966	18	3	3.17	17	3	3.23

Note: Intrinsic criteria are shaded in green. Extrinsic criteria are shaded in orange. The relative importance of the attributes is determined by ranking from most to least important using the median first, then the mean in the case of ties.

Many of the same trends were apparent in Table 33 as discussed in the previous sections related to the overall importance of the attributes. For instance, the attribute of Fit / sizing was consistently ranked the number one attribute across all garment categories studied. Appearance was also consistently ranked second for all types of garments. These top two attributes hint at the greater importance attributed to most intrinsic attributes over extrinsic attributes (with the exception of Ease of care and Fiber content / fabrication). Within the intrinsic category of criteria, aesthetic attributes were the highest ranked across garment categories, making this category of criteria the most important group in apparel purchases relative to functional, brand / situational, and expressive / symbolic criteria. Within the extrinsic category of criteria, the attributes of Price and Fashionability were ranked much higher than other extrinsic criteria. Reflective of the overall lower relative importance attributed to extrinsic criteria, the three

extrinsic attributes of Pleasing to others, Brand name / store name, and Country of origin were consistently the lowest ranked attributes among the entire range of 20 attributes.

Other interesting findings from the comparison of relative importance of the attributes across garment categories are also clear in Table 33. For example, while the median ratings for Quality (construction, durability, workmanship) were the same across garments, this attribute was relatively more important for pants and tops than skirts and dresses. In addition Comfort and Suitability for the individual were ranked relatively more important for pants than tops, skirts, and dresses. On the other hand, Fashionability, Individuality / uniqueness, Color / pattern, and Styling were ranked relatively less important for pants. The rankings of the attributes of Sexy, Individuality / uniqueness, and Promotes high self esteem exhibited a pattern in which relative importance was lower for pants and then tended to increase in relative importance across the remaining categories of tops, then skirts, and then dresses. The rankings indicated the highest relative importance of these extrinsic attributes in the purchase of dresses. Conversely, the extrinsic attributes of Versatility with existing wardrobe and Price were relatively less important for dresses than for the other garment categories.

Many of the trends apparent in Table 33 were identified in the earlier discussion of attribute importance within and across garment categories. However, analysis of the relative importance also yields further insight into some trends and relationships that a simple look at median ratings and comparison through Wilcoxon signed rank testing may not immediately reveal. In this way, relative importance and importance can be studied together to completely understand the use and importance of the attributes studied in this research.

## *Research Question 2*

*What criteria are determinant in the apparel purchase decisions of Mexican-American women when shopping for casual pants, tops, skirts, and dresses?*

The previous section offered two approaches that were used to assess the importance of the 20 intrinsic and extrinsic evaluative criteria studied in this research. Comparison of the median ratings gave an indication of the *importance* that the Mexican-American respondents attributed to the individual criteria in their purchases of casual pants, tops, skirts, and dresses. However, as discussed at length, the median ratings for most of the 20 attributes across garment categories were heavily skewed towards the high end of the rating scale, implying that many respondents considered most of the attributes at least partially (if not critically) important in their apparel purchases. Consideration of the *relative importance* of each attribute in the purchase of the various garments allowed even further analysis of the relative use of the criteria in apparel purchases.

To provide a more comprehensive picture of the use and importance of the attributes in apparel purchase decisions, respondents were also asked to specify the top three attributes (from the list of 20 pre-selected criteria) that were most important in their purchases of casual pants, tops, skirts, and dresses. This question of “most importance” indicated the *determinance* of the attributes in apparel purchases, and provided an interesting dimension to the study by discerning the most important criteria among a list of criteria that overall seemed very important.

To demonstrate the determinance of the attributes, the number of times that each attribute was specified as one of the top three most important was recorded. Tables 34 through 37 were then constructed, which show the number of times that each attribute was

specified as the first, second, or third most important. The tables were then organized according to the frequency with which each attribute was found in the top three. In this way, Tables 4 through 7 indicate the determinance of the attributes in the purchase of casual pants, tops, skirts, and dresses. The number of respondents who indicated that they wore the types of garments was also shown on the individual tables, to serve as a reference point for the reader when considering the responses.

**Table 34: Evaluative criteria determinance – Casual pants**

N = 196				
Criteria	1 <sup>st</sup> most important	2 <sup>nd</sup> most important	3 <sup>rd</sup> most important	Frequency cited in top 3
Fit / sizing	95	41	18	154
Price	36	32	35	103
Comfort	24	32	30	86
Appearance	7	21	22	50
Styling	5	16	12	33
Quality (construction, durability, workmanship)	5	9	13	27
Color / pattern	5	8	10	23
Fashionability	0	7	10	17
Versatility with existing wardrobe	1	5	10	16
Beauty / attractiveness	3	3	6	12
Individuality / uniqueness	3	4	5	12
Promotes high self esteem	3	5	3	11
Sexy	4	2	3	9
Ease of care	0	1	6	7
Fiber content / fabrication	1	2	3	6
Brand name / store name	1	0	3	4
Pleasing to others	0	0	4	4
Suitability for the individual	0	3	0	3
Country of origin	1	1	0	2
Appropriateness for end use	1	0	1	2

Note: Table organization is determined by the number of times each attribute was cited as one of the top three most important in an apparel purchase decision. In this way, the table illustrates the determinance of the attributes, ranked from most to least determinant.

**Table 35: Evaluative criteria determinance – Casual tops**

N = 207				
Criteria	1 <sup>st</sup> most important	2 <sup>nd</sup> most important	3 <sup>rd</sup> most important	Frequency cited in top 3
Fit / sizing	70	44	17	131
Price	41	31	29	101
Comfort	24	33	21	78
Appearance	8	18	24	50
Color / pattern	17	11	14	42
Styling	11	16	12	39
Fashionability	6	8	20	34
Versatility with existing wardrobe	2	11	13	26
Quality (construction, durability, workmanship)	4	6	11	21
Individuality / uniqueness	5	6	9	20
Beauty / attractiveness	1	4	9	14
Sexy	3	2	8	13
Promotes high self esteem	5	3	4	12
Brand name / store name	1	2	3	6
Ease of care	1	2	2	5
Fiber content / fabrication	0	2	3	5
Suitability for the individual	1	2	1	4
Pleasing to others	0	0	4	4
Country of origin	2	0	0	2
Appropriateness for end use	2	0	0	2

Note: Table organization is determined by the number of times each attribute was cited as one of the top three most important in an apparel purchase decision. In this way, the table illustrates the determinance of the attributes, ranked from most to least determinant.

**Table 36: Evaluative criteria determinance – Casual skirts**

N = 88				
Criteria	1 <sup>st</sup> most important	2 <sup>nd</sup> most important	3 <sup>rd</sup> most important	Frequency cited in top 3
Fit / sizing	24	28	5	57
Price	15	11	12	38
Comfort	11	12	8	31
Styling	7	2	10	19
Appearance	3	5	8	16
Fashionability	0	6	9	15
Versatility with existing wardrobe	5	2	6	13
Color / pattern	7	3	2	12
Sexy	3	3	4	10
Beauty / attractiveness	1	3	2	6
Individuality / uniqueness	1	1	4	6
Promotes high self esteem	4	0	2	6
Quality (construction, durability, workmanship)	1	0	4	5
Appropriateness for end use	1	2	2	5
Suitability for the individual	0	2	3	5
Ease of care	0	2	1	3
Fiber content / fabrication	0	2	1	3
Brand name / store name	0	0	2	2
Country of origin	2	0	0	2
Pleasing to others	1	0	1	2

Note: Table organization is determined by the number of times each attribute was cited as one of the top three most important in an apparel purchase decision. In this way, the table illustrates the determinance of the attributes, ranked from most to least determinant.

**Table 37: Evaluative criteria determinance – Casual dresses**

N = 113				
Criteria	1 <sup>st</sup> most important	2 <sup>nd</sup> most important	3 <sup>rd</sup> most important	Frequency cited in top 3
Fit / sizing	32	18	10	60
Price	19	14	15	48
Comfort	15	13	10	38
Appearance	6	9	14	29
Fashionability	4	14	10	28
Styling	10	6	7	23
Color / pattern	9	8	4	21
Sexy	2	2	10	14
Individuality / uniqueness	2	4	6	12
Quality (construction, durability, workmanship)	2	4	5	11
Beauty / attractiveness	2	7	0	9
Versatility with existing wardrobe	3	0	4	7
Appropriateness for end use	1	3	3	7
Promotes high self esteem	2	1	4	7
Ease of care	0	1	5	6
Suitability for the individual	0	3	1	4
Fiber content / fabrication	0	2	1	3
Brand name / store name	0	0	1	1
Country of origin	1	0	0	1
Pleasing to others	0	0	0	0

Note: Table organization is determined by the number of times each attribute was cited as one of the top three most important in an apparel purchase decision. In this way, the table illustrates the determinance of the attributes, ranked from most to least determinant.

The determinance of the Fit / sizing attribute across garment categories is obvious in Tables 34 through 37. For each garment type, at least half of the respondents indicated that Fit / sizing was either the first, second, or third most important attribute in their purchase decision, ranking this attribute at the top in terms of determinance for all garments. The attributes listed as the second and third most determinant was also consistent across all garment categories. Price and Comfort were ranked second and third most determinant,

respectively, based on the frequency with which they were cited in the top three. As shown in Tables 34 through 37, these top three most determinant attributes received very large portions of the responses, providing a general consensus regarding their determinance in the purchase of apparel.

With the exception of the extrinsic attribute of Price, intrinsic criteria were more likely overall to be considered determinant in apparel purchases. In particular, the intrinsic aesthetic attributes of Appearance and Styling were consistently ranked at the top of the list in terms of determinance for all garments studied, while Color / pattern was ranked very high in determinance in the purchase of tops and dresses specifically. The intrinsic functional attribute of Quality (construction, durability, workmanship) was also frequently cited as determinant in the purchase of casual pants specifically. Despite this broad trend of increased determinance for intrinsic attributes, the functional attributes of Ease of care and Fiber content / fabrication were consistently ranked low in terms of determinance, receiving very few notations as the most important attributes in the purchase of any garment type.

As mentioned, Price was clearly the most determinant extrinsic attribute, consistently ranked second in determinance for all garment categories. Other extrinsic attributes that were ranked relatively high in determinance included Fashionability, Versatility with existing wardrobe, and Sexy. Fashionability was more determinant in the purchase of tops, skirts, and dresses, but was also ranked in the top ten in terms of determinance in pants purchases. Versatility with existing wardrobe was also in the top ten in the purchase of pants, tops, and skirts. While many respondents were not likely to mention Sexy as a determinant attribute in the purchase of apparel overall, this extrinsic expressive / symbolic criteria was relatively

more determinant in the purchase of skirts and dresses, ranking in the top ten in these two garment categories. The remaining extrinsic attributes were ranked very low in terms of determinance, being cited in the top three in importance on the survey on very few occasions across garment categories.

### *Research Question 3*

*Do physical body characteristics, including body shape perception, BMI, or clothing size, impact the importance of criteria used by Mexican-American women in apparel purchases?*

To assess the effect of physical body characteristics on evaluative criteria preferences, the online survey featured questions regarding body shape, height and weight (used to calculate BMI), and typical clothing sizes worn in casual pants, tops, skirts, and dresses. Respondents self-reported this information, resulting in physical body-related information that is more accurately defined as physical body *perception* rather than *actual, confirmed information*. Using this self-reported information, median ratings across body shape, BMI, and clothing size categories were statistically analyzed using the Kruskal-Wallis one-way analysis of variance. Complete details about this procedure were included in the “Data Analysis” portion of the methodology.

#### *Body Shape Perception*

In the online survey, respondents identified their body shape perception by selecting the body shape that they thought most closely resembled their own from a selection of 3D avatars used to represent nine body shape categories. To determine the effect of this information on the importance attributed to any of the intrinsic and extrinsic criteria studied in this research, median ratings given to each attribute were statistically analyzed across body

shape categories, for the entire range of garment categories studied. Tables 38 through 41 show these median ratings for the attributes in the purchase of casual pants (Table 38), tops (Table 39), skirts (Table 40), and dresses (Table 41). The number of respondents in each body shape category is also shown in the tables, to clearly indicate the number of people influencing each median rating. The numbers in each body shape category differs depending on the garment type because the total number of respondents indicating that they wear the garment types in question also differs. For instance, 196 (of the 212) respondents indicated that they wear casual pants, while 207 wore casual tops, 88 wore casual skirts, and 113 wore casual dresses.

**Table 38: Median ratings of evaluative criteria by body shape perception – Casual pants**

Body Shape		Bottom Hourglass	Diamond	Hourglass	Inverted Triangle	Oval	Rectangle	Spoon	Top Hourglass	Triangle
		N = 46	N = 6	N = 47	N = 4	N = 18	N = 21	N = 28	N = 16	N = 10
Evaluative Criteria										
Aesthetic	Color / pattern	5	4.5	4	5	4	5	4	4	5
	Styling	4	4.5	4	5	4	4	4.5	4	5
	Appearance	5	4.5	5	5	5	5	5	5	5
	Beauty / attractiveness	4	4.5	4	4	4	5	4	4	4.5
Functional	Fit / sizing	5	5	5	5	5	5	5	5	5
	Quality (construction, durability, workmanship)	4	5	4	4	4.5	4	4	5	4.5
	Ease of care	4	4	3	4	3.5	3	4	4	4
	Comfort	5	5	4	4	5	5	4	5	5
	Fiber content / fabrication	3	4.5	3	2	3	3	3	3	4
Brand / Situational	Versatility with existing wardrobe	4	5	4	3	4	5	4	4	4.5
	Price	4.5	5	4	4.5	4.5	5	5	4	5
	Brand name / store name	3	3	2	2	3	2	3	3	2.5
	Country of origin	1.5	3	1	3	2	1	2	1	1
Expressive / Symbolic	Appropriateness for end use	3.5	3	4	4.5	3.5	4	3	3	3
	Suitability for the individual	4	4.5	4	4	4	5	4	4	4
	Sexy	3	4	3	4	3	3	4	3	3
	Fashionability	4	4	4	4	3.5	4	4	4	4
	Individuality / uniqueness	4	4.5	4	4	3	4	4	3	3.5
	Promotes high self esteem	4	4.5	4	2.5	4	5	4	4	4
	Pleasing to others	3	2.5	3	1.5	3	3	3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 39: Median ratings of evaluative criteria by body shape perception – Casual tops**

Body Shape		Bottom Hourglass	Diamond	Hourglass	Inverted Triangle	Oval	Rectangle	Spoon	Top Hourglass	Triangle
		N = 49	N = 8	N = 47	N = 4	N = 18	N = 24	N = 29	N = 18	N = 10
Evaluative Criteria										
Aesthetic	Color / pattern	5	5	4	4.5	4.5	4.5	4	5	5
	Styling	5	4.5	5	4.5	5	5	5	5	5
	Appearance	5	5	5	5	5	5	5	5	5
	Beauty / attractiveness	4	4.5	5	4	4	5	4	5	5
Functional	Fit / sizing	5	5	5	5	5	5	5	5	5
	Quality (construction, durability, workmanship)	4	4	4	2.5	4.5	4.5	4	4	4.5
	Ease of care	4	4	4	4	4	4	4	4	4
	Comfort	4	4.5	4	4.5	4.5	5	4	5	5
	Fiber content / fabrication	3	4.5	3	1.5	4	3.5	4	3	3.5
Brand / Situational	Versatility with existing wardrobe	4	5	4	3.5	4	4	4	4	5
	Price	5	5	4	4.5	5	5	4	4	5
	Brand name / store name	3	2.5	2	2	2	2	3	3	2
	Country of origin	2	2.5	1	3	2	1	2	1	1
Expressive / Symbolic	Appropriateness for end use	3	4	3	3.5	3.5	3	3	3	4
	Suitability for the individual	4	4.5	4	3	4	4	4	4	4
	Sexy	4	4.5	3	4	3	3	4	4	3
	Fashionability	4	5	4	4	3.5	4	4	4	4.5
	Individuality / uniqueness	4	4.5	4	4	3.5	4	4	4	3.5
	Promotes high self esteem	4	5	4	3	4	5	4	4.5	4.5
	Pleasing to others	3	2.5	3	2	3	3	3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 40: Median ratings of evaluative criteria by body shape perception – Casual skirts**

Body Shape		Bottom Hourglass	Diamond	Hourglass	Inverted Triangle	Oval	Rectangle	Spoon	Top Hourglass	Triangle
		N = 20	N = 5	N = 21	N = 1	N = 6	N = 11	N = 14	N = 7	N = 3
Evaluative Criteria										
Aesthetic	Color / pattern	4.5	5	5	5	4	4	4.5	4	5
	Styling	5	5	5	5	4.5	5	4.5	4	5
	Appearance	4.5	5	5	5	5	5	4.5	5	5
	Beauty / attractiveness	4	5	5	5	4	4	4	5	5
Functional	Fit / sizing	5	5	5	5	5	5	5	5	5
	Quality (construction, durability, workmanship)	4	4	4	3	4	4	3.5	5	5
	Ease of care	3	4	4	3	2.5	4	3	4	5
	Comfort	5	5	4	4	4.5	5	4	5	5
	Fiber content / fabrication	3	4	3	2	3.5	2	3	3	5
Brand / Situational	Versatility with existing wardrobe	4	5	4	3	3.5	3	4	4	5
	Price	4	5	4	4	5	5	4	5	5
	Brand name / store name	2.5	1	2	3	1	2	2	3	1
	Country of origin	1.5	1	1	1	1.5	1	1.5	2	1
Expressive / Symbolic	Appropriateness for end use	4	4	3	4	3	3	3.5	3	5
	Suitability for the individual	4	5	4	4	3.5	4	4	4	5
	Sexy	4	5	4	5	2	5	3	4	5
	Fashionability	4	5	5	5	3.5	5	4	5	5
	Individuality / uniqueness	3	4	4	5	4	5	4	4	5
	Promotes high self esteem	3.5	5	4	5	4	5	4	5	5
	Pleasing to others	3	1	3	2	1.5	4	3.5	4	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 41: Median ratings of evaluative criteria by body shape perception – Casual dresses**

Body Shape		Bottom	Diamond	Hourglass	Inverted	Oval	Rectangle	Spoon	Top	Triangle
		Hourglass N = 32	N = 5	N = 32	Triangle N = 0	N = 6	N = 9	N = 16	Hourglass N = 7	N = 6
Evaluative Criteria										
Aesthetic	Color / pattern	5	5	5	.	4.5	5	5	5	5
	Styling	5	5	5	.	5	5	5	5	5
	Appearance	5	5	5	.	5	5	5	5	5
	Beauty / attractiveness	4	5	5	.	5	5	5	5	5
Functional	Fit / sizing	5	5	5	.	5	5	5	5	5
	Quality (construction, durability, workmanship)	4	4	4.5	.	5	4	4	4	5
	Ease of care	4	4	3.5	.	4	5	3.5	4	5
	Comfort	5	5	4.5	.	4.5	5	4	5	5
	Fiber content / fabrication	4	3	3	.	4.5	4	3	4	3.5
Brand / Situational	Versatility with existing wardrobe	3	5	3.5	.	2	4	2.5	4	4.5
	Price	4	5	4	.	3.5	5	4	5	5
	Brand name / store name	2	1	2	.	2	3	2.5	3	2.5
	Country of origin	2	1	1	.	2	1	1	1	1
Expressive / Symbolic	Appropriateness for end use	3.5	3	4	.	2.5	4	3	4	4.5
	Suitability for the individual	4	4	4	.	3.5	5	3	4	4.5
	Sexy	4	5	4	.	3	4	3	4	4
	Fashionability	4	5	5	.	4	5	4.5	4	5
	Individuality / uniqueness	4	5	4	.	4	5	4	4	5
	Promotes high self esteem	4	5	4	.	4	5	4	4	5
	Pleasing to others	3	2	3	.	2.5	4	3	4	4.5

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

The most obvious pattern apparent throughout the ratings shown in Tables 38 through 41 is that most of the evaluative criteria ratings were skewed towards the high end of the 5-point rating scale used to assess importance. This skewed nature of the data has been discussed at length in the previous sections related to evaluative criteria importance across the entire sample – and the skew is evident across the individual body shape categories as well. Because the data was so skewed, with much of the sample considering most of the attributes at least moderately important, it is difficult to notice any effect of body shape even within the attributes one might think would be affected by body shape (such as Fit / sizing, for instance). One interesting trend was particularly noticeable in the ratings of the two attributes Promotes high self esteem and Pleasing to others. Across all garment categories, respondents indicated greater importance to Promotes high self esteem than Pleasing to others. However, specifically in skirts and dress purchases, the difference in importance was greater for respondents in the Diamond and Oval body shape categories than the remaining categories. Though sample sizes were comparatively low in these two categories, this finding could be of importance, given the fact that Diamond and Oval shape categories are typically composed of large people (in terms of size and weight). This suggests that, particularly when shopping for skirts and dresses, individuals with Diamond and Oval shapes were far more likely to consider the effect of the garment on their own self esteem rather than others' opinions.

When overall skew apparent in the ratings is considered along with the uneven distribution of the sample across the body shape categories, any assessment of the effect of

body shape perception on the ratings becomes more complicated. Despite these concerns, Kruskal-Wallis ANOVA testing was used in this research to point out any possible effect of body shape on evaluative criteria ratings across garment categories. Table 42 shows the compiled results of Kruskal-Wallis ANOVAs performed for each attribute and garment type studied. The table presents the “ChiSq” test statistic and associated p-value that summarizes the effect of body shape perception on each criterion’s ratings. P-values below an alpha value of 0.05 suggest a significant effect of body shape perception on that particular attribute rating (at 95% confidence level).

**Table 42: Kruskal-Wallis test results - The effect of body shape perception on evaluative criteria ratings**

Garment Category \ Evaluative Criteria		Pants		Tops		Skirts		Dresses	
		ChiSq	Prob > ChiSq						
Aesthetic	Color / pattern	9.9604	0.2678	9.2885	0.3185	8.2870	0.4059	6.5800	0.4739
	Styling	6.1312	0.6325	3.1780	0.9227	3.8174	0.8732	3.8021	0.8023
	Appearance	8.9609	0.3456	9.0529	0.3379	6.6088	0.5794	9.7530	0.2030
	Beauty / attractiveness	5.9869	0.6487	5.4784	0.7054	11.9809	0.1521	9.3254	0.2301
Functional	Fit / sizing	8.0500	0.4286	10.3163	0.2435	8.3306	0.4019	11.1360	0.1328
	Quality (construction, durability, workmanship)	5.5982	0.6921	5.7018	0.6806	6.3830	0.6044	6.2800	0.5075
	Ease of care	4.7214	0.7869	4.4390	0.8155	7.0539	0.5308	10.6376	0.1552
	Comfort	12.9857	0.1123	10.5713	0.2272	11.9708	0.1525	6.9573	0.4333
	Fiber content / fabrication	9.5662	0.2968	5.4352	0.7102	3.4203	0.9053	6.7790	0.4523
Brand / Situational	Versatility with existing wardrobe	10.4524	0.2347	8.6192	0.3754	9.4126	0.3087	12.2528	0.0925
	Price	7.5410	0.4795	16.1187	0.0407*	5.8115	0.6683	8.0213	0.3307
	Brand name / store name	5.1893	0.7372	7.0940	0.5265	12.5439	0.1285	5.6952	0.5758
	Country of origin	14.7090	0.0651	10.3360	0.2422	6.2408	0.6203	8.1745	0.3175
Expressive / Symbolic	Appropriateness for end use	10.9989	0.2018	5.0061	0.7569	3.7447	0.8794	6.0744	0.5311
	Suitability for the individual	7.4692	0.4870	7.4515	0.4888	4.7851	0.7803	8.4102	0.2978
	Sexy	9.1195	0.3323	2.9797	0.9356	15.0497	0.0582	6.1182	0.5260
	Fashionability	4.4278	0.8166	9.3639	0.3125	9.6888	0.2876	5.1939	0.6363
	Individuality / uniqueness	13.2381	0.1039	9.0193	0.3407	13.7787	0.0877	6.5642	0.4756
	Promotes high self esteem	4.7980	0.7789	7.6429	0.4691	15.1736	0.0559	14.8059	0.0386*
	Pleasing to others	2.7759	0.9476	6.4153	0.6008	10.5895	0.2261	11.4277	0.1210

Note: \* Indicates significance at the 95% confidence level. Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

Table 42 shows that body shape perception significantly affected only two evaluative criteria ratings: Price in the purchase of casual tops, and Promotes high self esteem in the purchase of casual dresses. To further analyze these potential effects of body shape perception, post hoc multiple pairwise comparisons were completed. Appendix H shows the results of the post hoc comparisons performed for the two significant relationships.

As shown in Appendix H, post hoc comparisons indicated that Price was less important for respondents in the Spoon and Hourglass shape categories when specifically compared to the Triangle and Rectangle categories. Promotes high self esteem was more important in the purchase of casual dresses for respondents who perceived themselves to be Rectangle in shape versus respondents in the Bottom Hourglass, Top Hourglass, Hourglass, Spoon, and Oval shapes. In addition, Promotes high self esteem was considered more important by respondents in the Diamond shape category when compared to the Spoon category.

#### *Body Mass Index (BMI)*

The BMI for each respondent was calculated using the self-reported height and weight values and the formula shown in Table 22. While four BMI categories are defined according to the raw BMI values, the researcher has chosen to perform all data analysis by combining the Underweight and Normal categories into one category, and comparing the preferences of this group to the Overweight group and the Obese group. Very few respondents were actually classified in the Underweight category according to raw BMI values, and thus, data analysis was stronger with it collapsed together with the Normal category.

Tables 43 through 46 show the median ratings indicating the importance of each of the 20 intrinsic and extrinsic attributes in the purchase of casual pants (Table 43), tops (Table

44), skirts (Table 45), and dresses (Table 46) across the three BMI levels. The number of respondents in each BMI category differs depending on the garment category because the total number of respondents who stated that they wore each individual garment type also varied. BMI could not be calculated for one respondent due to issues with the height and weight values they input to the survey. Thus, the total number of respondents across BMI categories should add up to 195 for pants, 206 for tops, 87 for skirts, and 112 for dresses.

**Table 43: Median ratings of evaluative criteria by BMI category – Casual pants**

Evaluative Criteria		BMI Category		
		Underweight / Normal N = 108	Overweight N = 47	Obese N = 40
Aesthetic	Color / pattern	4	4	4.5
	Styling	4	4	4
	Appearance	5	5	5
	Beauty / attractiveness	4	4	4
Functional	Fit / sizing	5	5	5
	Quality (construction, durability, workmanship)	4	5	4.5
	Ease of care	4	4	3.5
	Comfort	4	5	5
	Fiber content / fabrication	3	3	3
Brand / Situational	Versatility with existing wardrobe	4	4	4
	Price	4	5	5
	Brand name / store name	3	3	2.5
	Country of origin	1.5	1	2
Expressive / Symbolic	Appropriateness for end use	3	3	4
	Suitability for the individual	4	4	4
	Sexy	3	3	3
	Fashionability	4	4	4
	Individuality / uniqueness	4	3	4
	Promotes high self esteem	4	4	4
	Pleasing to others	3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 44: Median ratings of evaluative criteria by BMI category – Casual tops**

Evaluative Criteria		BMI Category	Underweight / Normal N = 115	Overweight N = 49	Obese N = 42
Aesthetic	Color / pattern		5	5	5
	Styling		5	5	5
	Appearance		5	5	5
	Beauty / attractiveness		5	4	5
Functional	Fit / sizing		5	5	5
	Quality (construction, durability, workmanship)		4	5	4
	Ease of care		4	4	4
	Comfort		4	5	5
	Fiber content / fabrication		3	3	4
Brand / Situational	Versatility with existing wardrobe		4	4	4
	Price		4	5	5
	Brand name / store name		3	2	2
	Country of origin		2	1	2
Expressive / Symbolic	Appropriateness for end use		3	3	4
	Suitability for the individual		4	4	4
	Sexy		3	4	4
	Fashionability		4	4	4
	Individuality / uniqueness		4	4	4
	Promotes high self esteem		4	4	4
	Pleasing to others		3	3	2.5

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 45: Median ratings of evaluative criteria by BMI category – Casual skirts**

Evaluative Criteria		BMI Category	Underweight / Normal N = 56	Overweight N = 12	Obese N = 19
Aesthetic	Color / pattern		5	4	5
	Styling		5	5	4
	Appearance		5	5	5
	Beauty / attractiveness		4	4	4
Functional	Fit / sizing		5	5	5
	Quality (construction, durability, workmanship)		4	3.5	4
	Ease of care		4	2	3
	Comfort		5	4	5
	Fiber content / fabrication		3	2.5	3
Brand / Situational	Versatility with existing wardrobe		4	4	3
	Price		4	4	5
	Brand name / store name		3	2	1
	Country of origin		1	1	1
Expressive / Symbolic	Appropriateness for end use		3	3	3
	Suitability for the individual		4	4	4
	Sexy		4	4	4
	Fashionability		4	4	5
	Individuality / uniqueness		4	3	4
	Promotes high self esteem		4	3	5
	Pleasing to others		4	3	2

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 46: Median ratings of evaluative criteria by BMI category – Casual dresses**

Evaluative Criteria		BMI Category	Underweight / Normal N = 79	Overweight N = 14	Obese N = 19
Aesthetic	Color / pattern		5	5	5
	Styling		5	5	5
	Appearance		5	5	5
	Beauty / attractiveness		5	5	5
Functional	Fit / sizing		5	5	5
	Quality (construction, durability, workmanship)		4	4	5
	Ease of care		4	4	4
	Comfort		5	4	5
	Fiber content / fabrication		3	4	4
Brand / Situational	Versatility with existing wardrobe		3	3	4
	Price		4	4	4
	Brand name / store name		2	2	1
	Country of origin		1	1	1
Expressive / Symbolic	Appropriateness for end use		3	4	3
	Suitability for the individual		4	4	4
	Sexy		4	4	4
	Fashionability		4	4	5
	Individuality / uniqueness		4	4	5
	Promotes high self esteem		4	4	5
	Pleasing to others		3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

The concentration of median ratings from 3 to 5 for many of the attributes is evident across BMI levels and garment categories. The fact that the majority of respondents tended to agree on the importance of most of the attributes certainly limits the likelihood of finding a

significant effect from BMI on the attribute ratings across garment types. However, results from the Kruskal-Wallis ANOVA's performed for each attribute (and garment category) showed that BMI significantly affected the importance attributed to several intrinsic and extrinsic criteria in the purchase of tops and skirts (see Table 47 for Kruskal-Wallis results for all attributes and garments). BMI significantly affected the ratings for the attributes of Price in the purchase of tops, Pleasing to others in the purchase of tops and skirts, and Ease of care, Comfort, and Promotes high self esteem in the purchase of skirts – for a total of six significant relationships.

Results from the post hoc pairwise comparisons performed to determine the source of these significant findings are shown in Appendix H. The comparison of median ratings (necessitated by the Kruskal-Wallis and post hoc analysis) showed that respondents in the Underweight / Normal BMI category considered Price less important in the purchase of casual tops than the Overweight category. In addition, Pleasing to others was considered less important for Obese respondents than Overweight and Underweight / Normal respondents in the purchase of tops. Similar results were found for this attribute in skirts purchases, which showed that Obese respondents rated Pleasing to others significantly lower than Underweight / Normal respondents. Respondents in the Overweight category deemed the two attributes Ease of care and Promotes high self esteem, less important in their purchases of skirts than the Underweight / Normal and Obese respondents. For the last significant relationship identified through the Kruskal-Wallis tests, Overweight respondents rated Comfort lower in importance than Obese respondents in skirts purchases.

**Table 47: Kruskal-Wallis test results - The effect of BMI category on evaluative criteria ratings**

Evaluative Criteria		Pants		Tops		Skirts		Dresses	
		ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq
Aesthetic	Color / pattern	0.9929	0.6087	1.4781	0.4776	1.7466	0.4176	2.1131	0.3476
	Styling	0.9428	0.6241	1.4151	0.4929	2.4775	0.2897	1.6325	0.4421
	Appearance	0.4982	0.7795	2.1638	0.3389	0.6663	0.7167	0.1044	0.9492
	Beauty / attractiveness	0.5609	0.7554	1.2169	0.5442	0.6426	0.7252	0.5403	0.7633
Functional	Fit / sizing	1.7691	0.4129	1.4013	0.4963	1.0033	0.6055	0.9732	0.6147
	Quality (construction, durability, workmanship)	2.7071	0.2583	2.9894	0.2243	1.1418	0.5650	2.0010	0.3677
	Ease of care	2.0817	0.3531	1.9307	0.3808	7.3785	0.0250*	1.7131	0.4246
	Comfort	4.7369	0.0936	3.7045	0.1569	6.2601	0.0437*	3.4833	0.1752
	Fiber content / fabrication	0.1822	0.9129	0.7864	0.6749	1.7468	0.4175	4.0604	0.1313
Brand / Situational	Versatility with existing wardrobe	0.7036	0.7034	2.0199	0.3642	2.7267	0.2558	1.0898	0.5799
	Price	5.1116	0.0776	9.3281	0.0094*	1.3841	0.5006	0.1561	0.9249
	Brand name / store name	0.5405	0.7632	4.7478	0.0931	5.9870	0.0501	3.3089	0.1912
	Country of origin	1.9460	0.3780	3.0056	0.2225	4.0299	0.1333	3.1189	0.2102
Expressive / Symbolic	Appropriateness for end use	0.0672	0.9670	2.5906	0.2738	0.7032	0.7036	0.8034	0.6692
	Suitability for the individual	3.7028	0.1570	1.4903	0.4747	4.5360	0.1035	1.3645	0.5055
	Sexy	0.7394	0.6909	0.9225	0.6305	0.2001	0.9048	0.9911	0.6092
	Fashionability	0.5040	0.7772	0.1674	0.9197	1.2387	0.5383	0.8025	0.6695
	Individuality / uniqueness	3.0476	0.2179	4.0002	0.1353	4.1822	0.1236	3.0406	0.2186
	Promotes high self esteem	2.9567	0.2280	0.3128	0.8552	8.9685	0.0113*	2.6290	0.2686
	Pleasing to others	2.8175	0.2445	6.6911	0.0352*	7.8782	0.0195*	1.7285	0.4214

Note: \* Indicates significance at the 95% confidence level. Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

### *Clothing Size*

The third and final physical body-related characteristic analyzed for this research question was clothing size. Respondents self-reported their usual clothing size in the categories of casual pants, tops, skirts, and dresses. Because very few respondents identified their clothing size as 0X, 1X, 2X, or 3X for any of the garment types, these categories were combined with the XL category to create one category defined as “XL and above (16 - 28W).” By collapsing these categories, the strength of data analysis procedures was improved.

Tables 48 through 51 show the median ratings for the individual attributes across the 5 categories of clothing size. For each of these tables, the garment type is matched for the clothing size and evaluative criteria ratings. For instance, Table 48 shows the evaluative criteria ratings for pant purchases by pant clothing size categories. Table 49 shows the ratings related to tops, Table 50 for skirts, and Table 51 for dresses. Again, the number of respondents in each clothing size category varies by garment type because the total number of respondents who wear each garment type also varies.

**Table 48: Median ratings of evaluative criteria by clothing size category – Casual pants**

Evaluative Criteria		Clothing Size	XS (0 – 2)	S (4 – 6)	M (8 – 10)	L (12 – 14)	XL and Above (16 – 28W)
			N = 15	N = 49	N = 63	N = 45	N = 24
Aesthetic	Color / pattern		4	4	4	4	4
	Styling		4	5	4	5	4
	Appearance		5	5	5	5	5
	Beauty / attractiveness		4	5	4	4	4
Functional	Fit / sizing		5	5	5	5	5
	Quality (construction, durability, workmanship)		4	4	4	4	5
	Ease of care		4	3	4	4	4
	Comfort		5	4	5	5	5
	Fiber content / fabrication		3	3	3	3	3.5
Brand / Situational	Versatility with existing wardrobe		4	4	4	4	4.5
	Price		5	5	4	5	5
	Brand name / store name		3	3	3	2	2.5
	Country of origin		1	2	1	1	2
Expressive / Symbolic	Appropriateness for end use		4	4	3	4	3
	Suitability for the individual		4	4	4	4	4
	Sexy		3	4	3	3	3
	Fashionability		4	4	4	4	4
	Individuality / uniqueness		4	4	4	4	4
	Promotes high self esteem		4	4	4	4	4
	Pleasing to others		3	3	3	3	2.5

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 49: Median ratings of evaluative criteria by clothing size category – Casual tops**

Evaluative Criteria		Clothing Size	XS (0 – 2)	S (4 – 6)	M (8 – 10)	L (12 – 14)	XL and Above (16 – 28W)
			N = 15	N = 61	N = 62	N = 45	N = 24
Aesthetic	Color / pattern		4	5	5	5	5
	Styling		4	5	5	5	5
	Appearance		5	5	5	5	5
	Beauty / attractiveness		4	5	5	4	5
Functional	Fit / sizing		5	5	5	5	5
	Quality (construction, durability, workmanship)		4	4	4	5	4
	Ease of care		4	4	4	4	4
	Comfort		4	4	5	5	5
	Fiber content / fabrication		3	3	4	4	3
Brand / Situational	Versatility with existing wardrobe		4	4	4	4	4.5
	Price		5	4	5	5	5
	Brand name / store name		2	3	2.5	2	2
	Country of origin		1	1	1.5	2	1.5
Expressive / Symbolic	Appropriateness for end use		3	3	4	3	4
	Suitability for the individual		4	4	4	4	4
	Sexy		3	4	3	4	3
	Fashionability		4	4	4	4	4
	Individuality / uniqueness		4	4	4	4	4
	Promotes high self esteem		4	4	4	4	4
	Pleasing to others		3	3	3	3	2

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 50: Median ratings of evaluative criteria by clothing size category – Casual skirts**

Evaluative Criteria		Clothing Size	XS (0 – 2)	S (4 – 6)	M (8 – 10)	L (12 – 14)	XL and Above (16 – 28W)
			N = 9	N = 29	N = 24	N = 13	N = 13
Aesthetic	Color / pattern		4	5	5	4	5
	Styling		5	5	5	4	5
	Appearance		5	5	5	4	5
	Beauty / attractiveness		5	4	4	4	5
Functional	Fit / sizing		5	5	5	5	5
	Quality (construction, durability, workmanship)		4	4	4	3	4
	Ease of care		3	4	3.5	3	4
	Comfort		4	4	5	5	5
	Fiber content / fabrication		3	3	4	3	5
Brand / Situational	Versatility with existing wardrobe		4	4	4	3	4
	Price		5	4	4	4	5
	Brand name / store name		2	3	2.5	2	1
	Country of origin		1	1	1	1	1
Expressive / Symbolic	Appropriateness for end use		4	3	4	3	4
	Suitability for the individual		4	4	4	4	4
	Sexy		3	4	3.5	3	4
	Fashionability		4	5	4	4	5
	Individuality / uniqueness		4	4	4	4	4
	Promotes high self esteem		4	4	4	4	5
	Pleasing to others		3	3	4	2	2

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 51: Median ratings of evaluative criteria by clothing size category – Casual dresses**

Evaluative Criteria		Clothing Size	XS (0 – 2)	S (4 – 6)	M (8 – 10)	L (12 – 14)	XL and Above (16 – 28W)
			N = 13	N = 42	N = 30	N = 16	N = 12
Aesthetic	Color / pattern		5	5	5	5	5
	Styling		5	5	5	5	5
	Appearance		5	5	5	5	5
	Beauty / attractiveness		5	5	5	5	5
Functional	Fit / sizing		5	5	5	5	5
	Quality (construction, durability, workmanship)		4	4	4	4	5
	Ease of care		4	4	4	4	5
	Comfort		4	5	5	5	5
	Fiber content / fabrication		3	3	3	4	4.5
Brand / Situational	Versatility with existing wardrobe		3	3	4	3	4.5
	Price		4	4	4	4	4.5
	Brand name / store name		2	3	2	2	1
	Country of origin		1	2	1	1.5	1
Expressive / Symbolic	Appropriateness for end use		3	3	4	3.5	3.5
	Suitability for the individual		4	4	4	4	4.5
	Sexy		3	4	3.5	4	4
	Fashionability		4	5	4	4	5
	Individuality / uniqueness		4	4	4	4	5
	Promotes high self esteem		4	4	4	4	5
	Pleasing to others		3	3	3	3	3.5

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

Tables 48 through 51 also clearly demonstrate the concentration of median ratings towards the upper end of the 5-point rating scale, with respondents largely indicating that most of the attributes were somewhat important in apparel purchases, no matter their clothing size. Thus, not surprisingly, Kruskal-Wallis ANOVA testing only revealed four significant relationships among attribute ratings and clothing size, and only in the two garment categories of tops and skirts (see Table 52 for the full results of this testing across garment categories). In the purchase of tops, top clothing size significantly affected the importance attributed to the criteria of Fiber content / fabrication, Price, and Pleasing to others. In the purchase of skirts, skirt clothing size significantly affected the importance attributed to Quality (construction, durability, workmanship).

**Table 52: Kruskal-Wallis test results - The effect of clothing size on evaluative criteria ratings**

Garment Category		Pants		Tops		Skirts		Dresses	
		ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq
Aesthetic	Color / pattern	1.1383	0.8882	1.9611	0.7429	3.3314	0.5040	4.6749	0.3223
	Styling	2.0178	0.7325	0.9932	0.9108	3.8957	0.4203	5.8769	0.2085
	Appearance	0.9328	0.9198	3.4105	0.4916	4.0092	0.4048	1.9626	0.7426
	Beauty / attractiveness	4.2455	0.3738	5.9460	0.2032	6.7175	0.1516	1.5677	0.8146
Functional	Fit / sizing	2.4302	0.6572	3.2341	0.5194	3.2665	0.5143	5.6005	0.2310
	Quality (construction, durability, workmanship)	4.5444	0.3373	8.4844	0.0754	10.4639	0.0333*	3.6914	0.4494
	Ease of care	3.2673	0.5141	7.6179	0.1066	5.2114	0.2663	4.3952	0.3552
	Comfort	6.3322	0.1757	9.3089	0.0538	8.8580	0.0647	8.1411	0.0865
	Fiber content / fabrication	1.3270	0.8568	11.9713	0.0176*	7.6070	0.1071	6.1580	0.1877
Brand / Situational	Versatility with existing wardrobe	1.5636	0.8153	3.6490	0.4556	5.4066	0.2481	3.5271	0.4738
	Price	5.9106	0.2059	9.8332	0.0433*	2.7652	0.5978	2.2110	0.6970
	Brand name / store name	1.9713	0.7410	5.5359	0.2366	7.8006	0.0992	6.4116	0.1704
	Country of origin	1.5327	0.8208	0.2307	0.9938	2.6652	0.6153	3.7001	0.4481
Expressive / Symbolic	Appropriateness for end use	6.9272	0.1398	3.4040	0.4926	4.6632	0.3236	0.7586	0.9439
	Suitability for the individual	2.9762	0.5618	1.7518	0.7813	6.3500	0.1745	3.8837	0.4220
	Sexy	8.9765	0.0617	3.2140	0.5227	2.5718	0.6318	9.2884	0.0543
	Fashionability	7.6267	0.1063	9.2850	0.0544	1.7840	0.7754	1.8914	0.7557
	Individuality / uniqueness	3.1016	0.5410	4.6500	0.3251	1.7131	0.7883	4.4733	0.3457
	Promotes high self esteem	1.7085	0.7892	1.9223	0.7501	8.6821	0.0696	4.8078	0.3076
	Pleasing to others	4.0836	0.3948	16.4772	0.0024*	8.7330	0.0681	1.8060	0.7714

Note: \* Indicates significance at the 95% confidence level. Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

Results from the post hoc comparisons performed to determine how clothing size affected these attributes are shown in Appendix H. These comparisons indicate that Fiber content / fabrication was less important in tops purchases for respondents in the XS (0 -2) and S (4 – 6) size categories compared to the respondents in the L (12 – 14) size category. In addition, Price was less important in tops purchases for those respondents in the S (4 – 6) size category when compared to respondents in the M (8 – 10), L (12-14), and XL and above (16 – 28W) categories. Results were reversed for the Pleasing to others attribute, which was considered more important in tops purchases for respondents in the S (4 – 6) size category when compared to respondents in the M (8 – 10), L (12 - 14), and XL and above (16 – 28W) categories. As shown in Table 49, median ratings for the Pleasing to others attribute was the same (3) for the S (4 – 6), M (8 – 10), and L (12 – 14) size categories, and the mean ratings had to be used instead to identify the differences. The mean ratings for S (4 – 6), M (8 – 10), and L (12 – 14) size categories was 3.46, 2.85, and 2.82, respectively, which explains the conclusion presented above. In terms of skirt purchases, respondents in the L (12 – 14) size range considered Quality (construction, durability, workmanship) less important than respondents in the S (4 – 6), M (8 – 10), and XL and above (16 – 28W) categories.

#### *Research Question 4*

*Do ethnic factors, including acculturation level and generational status, impact the importance of criteria used by Mexican-American women in apparel purchases?*

To evaluate the effect of ethnic factors on evaluative criteria ratings for casual pants, tops, skirts, and dresses, the acculturation level and generational status of respondents was

first calculated using information that respondents provided in the online survey. Once established, the median ratings (indicating the importance of the intrinsic and extrinsic attributes in apparel purchases) across ethnic categories were statistically analyzed to determine the effect of acculturation level or generational status on these ratings. Because the acculturation level analysis contained only two levels (high/low), the non-parametric test procedure used to determine the significance of any difference in median ratings is known as the Wilcoxon rank sum test, or the Mann-Whitney test. While this test is named differently than the Kruskal-Wallis test used to evaluate the effect of characteristics with three or more levels, the basic purpose behind the tests are the same – to compare the median ratings of the attributes across a certain number of levels and determine if any significant difference in ratings exists. Due to the different numbers of levels used to describe the independent variables, the Wilcoxon rank sum test was used for the comparisons related to acculturation and the Kruskal-Wallis test was used for the comparisons related to generational status.

#### *Acculturation Level*

As discussed in the methodology, respondents were identified as either highly or lowly acculturated based on their Spanish/English language use in a variety of situations. Median ratings indicating the importance of each of the 20 intrinsic and extrinsic attributes by acculturation level are shown in Table 53 for the purchase of casual pants, Table 54 for tops, Table 55 for skirts, and Table 56 for dresses. The number of respondents labeled “High” and “Low” in the comparisons across garment categories is different, because the total number of respondents who indicated that they wore each garment item is different.

**Table 53: Median ratings of evaluative criteria by acculturation level – Casual pants**

Evaluative Criteria		Acculturation Level	High N = 143	Low N = 53
Aesthetic	Color / pattern		4	4
	Styling		4	4
	Appearance		5	5
	Beauty / attractiveness		4	4
Functional	Fit / sizing		5	5
	Quality (construction, durability, workmanship)		4	4
	Ease of care		4	4
	Comfort		5	5
	Fiber content / fabrication		3	3
Brand / Situational	Versatility with existing wardrobe		4	4
	Price		5	5
	Brand name / store name		3	3
	Country of origin		1	1
Expressive / Symbolic	Appropriateness for end use		3	4
	Suitability for the individual		4	4
	Sexy		3	3
	Fashionability		4	4
	Individuality / uniqueness		4	4
	Promotes high self esteem		4	4
	Pleasing to others		3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 54: Median ratings of evaluative criteria by acculturation level – Casual tops**

Evaluative Criteria		Acculturation Level	High N = 151	Low N = 56
Aesthetic	Color / pattern		5	5
	Styling		5	5
	Appearance		5	5
	Beauty / attractiveness		4	5
Functional	Fit / sizing		5	5
	Quality (construction, durability, workmanship)		4	4
	Ease of care		4	4
	Comfort		4	4
	Fiber content / fabrication		3	3
Brand / Situational	Versatility with existing wardrobe		4	4
	Price		5	4.5
	Brand name / store name		3	3
	Country of origin		2	1
Expressive / Symbolic	Appropriateness for end use		3	4
	Suitability for the individual		4	4
	Sexy		3	4
	Fashionability		4	4
	Individuality / uniqueness		4	4
	Promotes high self esteem		4	4
	Pleasing to others		3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 55: Median ratings of evaluative criteria by acculturation level – Casual skirts**

Evaluative Criteria		Acculturation Level	
		High N = 56	Low N = 32
Aesthetic	Color / pattern	4	5
	Styling	5	5
	Appearance	5	5
	Beauty / attractiveness	4	4
Functional	Fit / sizing	5	5
	Quality (construction, durability, workmanship)	4	4
	Ease of care	3	4
	Comfort	5	5
	Fiber content / fabrication	3	3.5
Brand / Situational	Versatility with existing wardrobe	4	4
	Price	4	4
	Brand name / store name	2	2
	Country of origin	1	1
Expressive / Symbolic	Appropriateness for end use	3	3.5
	Suitability for the individual	4	4
	Sexy	4	4
	Fashionability	4	4
	Individuality / uniqueness	4	4
	Promotes high self esteem	4	4
	Pleasing to others	3	4

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 56: Median ratings of evaluative criteria by acculturation level – Casual dresses**

Evaluative Criteria		Acculturation Level	
		High N = 79	Low N = 34
Aesthetic	Color / pattern	5	5
	Styling	5	5
	Appearance	5	5
	Beauty / attractiveness	5	5
Functional	Fit / sizing	5	5
	Quality (construction, durability, workmanship)	4	4
	Ease of care	4	4
	Comfort	5	5
	Fiber content / fabrication	3	4
Brand / Situational	Versatility with existing wardrobe	3	4
	Price	4	4
	Brand name / store name	2	2
	Country of origin	1	1.5
Expressive / Symbolic	Appropriateness for end use	3	4
	Suitability for the individual	4	4
	Sexy	4	4
	Fashionability	4	5
	Individuality / uniqueness	4	4
	Promotes high self esteem	4	4.5
	Pleasing to others	3	4

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

A comparison of the median ratings across acculturation levels shows that most respondents agreed on the importance (and occasionally the unimportance) of the attributes studied. Very few attributes, in any of the garment categories, featured different median ratings, suggesting that the respondents, regardless of their acculturation level, tended to rate the attributes similarly. Not surprisingly, Wilcoxon rank sum tests only revealed three significant relationships, each involving expressive / symbolic attributes (see Table 57 for the full results of this testing for all attributes and garment categories studied). Acculturation

level significantly affected the importance attributed to Appropriateness for end use in the purchase of pants and tops, as well as Pleasing to others in the purchase of dresses.

Because acculturation level contained only two levels, extensive post hoc pairwise comparisons were not needed, and median ratings could be compared to determine the nature of the significant relationships. For all three of the significant relationships identified, the respondents who were identified as highly acculturated considered the attribute in question less important than respondents in the low acculturation category. Thus, Appropriateness for end use was more important for lowly acculturated respondents in their pants and tops purchases, and Pleasing to others was also more important for them in their dresses purchases.

**Table 57: Wilcoxon rank sum test results – The effect of acculturation level on evaluative criteria ratings**

Garment Category \ Evaluative Criteria		Pants		Tops		Skirts		Dresses	
		ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq
Aesthetic	Color / pattern	0.5772	0.4474	1.8484	0.1740	0.7185	0.3966	0.5774	0.4473
	Styling	0.0329	0.8562	0.0504	0.8223	0.3398	0.5600	0.7020	0.4021
	Appearance	0.0257	0.8725	0.1269	0.7216	0.0960	0.7567	0.1450	0.7034
	Beauty / attractiveness	0.0195	0.8889	2.0044	0.1568	0.0200	0.8876	0.3458	0.5565
Functional	Fit / sizing	0.0044	0.9471	0.9519	0.3292	0.8942	0.3443	0.0666	0.7963
	Quality (construction, durability, workmanship)	0.4896	0.4841	1.1293	0.2879	2.9800	0.0843	0.6822	0.4088
	Ease of care	0.0602	0.8061	0.2908	0.5897	0.8229	0.3643	1.9612	0.1614
	Comfort	0.0029	0.9571	0.0823	0.7742	0.0377	0.8460	0.0365	0.8486
	Fiber content / fabrication	0.0005	0.9824	0.1122	0.7377	0.7650	0.3818	0.0695	0.7920
Brand / Situational	Versatility with existing wardrobe	0.7650	0.3818	1.0197	0.3126	0.3595	0.5488	0.1172	0.7321
	Price	0.4372	0.5085	0.0001	0.9943	0.5617	0.4536	0.0944	0.7587
	Brand name / store name	0.9467	0.3306	0.2737	0.6009	0.0234	0.8784	0.0186	0.8915
	Country of origin	0.0396	0.8423	0.1772	0.6738	0.2245	0.6356	0.0003	0.9863
Expressive / Symbolic	Appropriateness for end use	6.7484	0.0094*	5.3969	0.0202*	0.0024	0.9607	2.2188	0.1363
	Suitability for the individual	0.4165	0.5187	0.1886	0.6641	0.1763	0.6745	0.6547	0.4184
	Sexy	0.0049	0.9440	2.4103	0.1205	0.3344	0.5631	3.5705	0.0588
	Fashionability	0.0496	0.8238	1.1492	0.2837	0.3206	0.5713	0.3926	0.5309
	Individuality / uniqueness	0.3666	0.5449	0.1322	0.7162	0.2780	0.5980	0.1738	0.6767
	Promotes high self esteem	0.0030	0.9565	0.0503	0.8226	0.0176	0.8943	1.9217	0.1657
	Pleasing to others	0.0614	0.8043	0.6114	0.4343	0.6117	0.4341	6.7894	0.0092*

Note: \* Indicates significance at the 95% confidence level. Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

### *Generational Status*

To determine the impact of the ethnic factor of generational status on evaluative criteria importance, respondents were first identified as first, second, mixed-second, or third generation using the information they provided in the online survey about their parents' and their own country of birth. Table 23 shows the rules that were used to guide the generational status definitions.

Tables 58 through 61 show the median ratings indicating the importance of each of the 20 intrinsic and extrinsic attributes in the purchase of casual pants (Table 58), tops (Table 59), skirts (Table 60), and dresses (Table 61) across the four generational status definitions. Once again, the number of respondents in each generational status category differs depending on the garment category because the total number of respondents who stated that they wore each individual garment type also varied. These tables once again demonstrate the overall skew apparent in the attribute ratings across garment categories, in which most respondents, regardless of generation, considered the large majority of the attributes at least somewhat important in their apparel purchases. Only a few attributes received median ratings of 3 or below in any of the garment categories or generational categories, and very few received a rating of 2 or below. This concentration of ratings from 3 to 5 on the 5-point scale used to indicate importance reduced the likelihood of finding a significant effect from generational status on evaluative criteria importance.

**Table 58: Median ratings of evaluative criteria by generational status – Casual pants**

Evaluative Criteria		Generational Status			
		First N = 36	Second N = 75	Mixed N = 32	Third N = 53
Aesthetic	Color / pattern	5	4	5	4
	Styling	5	4	5	4
	Appearance	5	5	5	5
	Beauty / attractiveness	4	4	4	4
Functional	Fit / sizing	5	5	5	5
	Quality (construction, durability, workmanship)	4	4	4.5	4
	Ease of care	3.5	4	4	3
	Comfort	4	5	5	5
	Fiber content / fabrication	3	3	4	3
Brand / Situational	Versatility with existing wardrobe	4	4	4.5	4
	Price	5	5	5	4
	Brand name / store name	2	3	3	3
	Country of origin	1	2	1	2
Expressive / Symbolic	Appropriateness for end use	4	3	4	3
	Suitability for the individual	4	4	4	4
	Sexy	3	3	3	3
	Fashionability	4	4	4	4
	Individuality / uniqueness	4	4	4	4
	Promotes high self esteem	4	4	4	4
	Pleasing to others	3	3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 59: Median ratings of evaluative criteria by generational status – Casual tops**

Generational Status		First N = 38	Second N = 81	Mixed N = 35	Third N = 53
Evaluative Criteria					
Aesthetic	Color / pattern	5	5	5	5
	Styling	5	5	5	5
	Appearance	5	5	5	5
	Beauty / attractiveness	5	4	5	5
Functional	Fit / sizing	5	5	5	5
	Quality (construction, durability, workmanship)	4	4	5	4
	Ease of care	4	4	4	4
	Comfort	4	5	5	4
	Fiber content / fabrication	3	3	4	3
Brand / Situational	Versatility with existing wardrobe	4	4	4	4
	Price	5	5	4	4
	Brand name / store name	2	3	3	3
	Country of origin	1	1	1	2
Expressive / Symbolic	Appropriateness for end use	4	3	4	3
	Suitability for the individual	4	4	4	4
	Sexy	3.5	4	3	3
	Fashionability	4	4	4	4
	Individuality / uniqueness	4	4	4	4
	Promotes high self esteem	4.5	4	4	4
	Pleasing to others	3	3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 60: Median ratings of evaluative criteria by generational status – Casual skirts**

Generational Status		First N = 17	Second N = 34	Mixed N = 14	Third N = 23
Evaluative Criteria					
Aesthetic	Color / pattern	5	5	5	4
	Styling	5	5	5	4
	Appearance	5	5	5	5
	Beauty / attractiveness	4	4	5	4
Functional	Fit / sizing	5	5	5	5
	Quality (construction, durability, workmanship)	4	4	4	4
	Ease of care	4	3	3	4
	Comfort	5	4.5	5	5
	Fiber content / fabrication	3	3.5	3.5	3
Brand / Situational	Versatility with existing wardrobe	4	4	4	4
	Price	5	4	4	5
	Brand name / store name	2	2.5	2.5	2
	Country of origin	1	1	1	2
Expressive / Symbolic	Appropriateness for end use	4	3	4	3
	Suitability for the individual	4	4	4	4
	Sexy	4	4	3.5	3
	Fashionability	4	4	5	4
	Individuality / uniqueness	4	4	4	4
	Promotes high self esteem	5	4	4.5	4
	Pleasing to others	3	3	4	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 61: Median ratings of evaluative criteria by generational status – Casual dresses**

Evaluative Criteria		Generational Status	First N = 20	Second N = 52	Mixed N = 17	Third N = 24
Aesthetic	Color / pattern		5	5	5	5
	Styling		5	5	5	5
	Appearance		5	5	5	5
	Beauty / attractiveness		5	5	5	5
Functional	Fit / sizing		5	5	5	5
	Quality (construction, durability, workmanship)		4	4	4	4
	Ease of care		3	4	4	4
	Comfort		4	5	5	5
	Fiber content / fabrication		3.5	4	3	4
Brand / Situational	Versatility with existing wardrobe		3	3	4	3
	Price		4	4	5	4
	Brand name / store name		2	2	2	2
	Country of origin		1	1	1	2
Expressive / Symbolic	Appropriateness for end use		4	3	4	3.5
	Suitability for the individual		4	4	4	4.5
	Sexy		4	4	4	3.5
	Fashionability		4	4	5	5
	Individuality / uniqueness		4	4	5	4
	Promotes high self esteem		4	4	4	4.5
	Pleasing to others		3	3	4	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

Table 62 shows the results of the Kruskal-Wallis tests performed to determine the effect from generational status on any of the 20 attributes studied in the purchase of casual apparel. As shown, seven significant relationships were identified among the attributes across all four garment categories. Generational status significantly impacted the importance of Color / pattern, Fiber content / fabrication, Appropriateness for end use, and Suitability for the individual in the purchase of pants. In addition, generation significantly affected the

importance attributed to Quality in tops purchases, Styling was significantly affected in skirts purchases, and Suitability for the individual was significantly affected in dresses purchases.

**Table 62: Kruskal-Wallis test results – The effect of generational status on evaluative criteria ratings**

Garment Category		Pants		Tops		Skirts		Dresses	
		ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq
Evaluative Criteria									
Aesthetic	Color / pattern	12.0104	0.0073*	4.0378	0.2574	6.8576	0.0766	2.5089	0.4737
	Styling	4.2979	0.2310	2.4305	0.4880	10.0597	0.0181*	4.1790	0.2428
	Appearance	2.7265	0.4358	7.5460	0.0564	3.2987	0.3478	7.2123	0.0654
	Beauty / attractiveness	2.1377	0.5443	5.3711	0.1466	3.4265	0.3304	2.6656	0.4461
Functional	Fit / sizing	3.5127	0.3191	5.5782	0.1340	2.1986	0.5322	4.6792	0.1969
	Quality (construction, durability, workmanship)	0.4625	0.9270	8.9687	0.0297*	0.2810	0.9636	1.5676	0.6668
	Ease of care	4.0235	0.2589	4.4887	0.2133	1.1703	0.7601	6.7427	0.0806
	Comfort	6.0908	0.1073	5.5783	0.1340	0.9035	0.8246	4.2970	0.2311
	Fiber content / fabrication	11.8030	0.0081*	5.6994	0.1272	2.2626	0.5197	1.4612	0.6913
Brand / Situational	Versatility with existing wardrobe	4.0995	0.2509	0.2238	0.9737	2.9594	0.3979	0.5629	0.9049
	Price	1.6335	0.6518	2.2658	0.5191	2.2161	0.5288	0.8067	0.8479
	Brand name / store name	0.8027	0.8488	1.7731	0.6208	0.7996	0.8496	1.9273	0.5876
	Country of origin	1.1917	0.7550	4.3868	0.2226	4.4428	0.2175	3.6281	0.3045
Expressive / Symbolic	Appropriateness for end use	10.9880	0.0118*	5.0369	0.1691	3.8781	0.2749	3.0361	0.3861
	Suitability for the individual	7.9817	0.0464*	2.1192	0.5480	3.8799	0.2747	9.4968	0.0234*
	Sexy	0.6331	0.8888	1.0941	0.7785	0.3930	0.9417	0.6647	0.8815
	Fashionability	0.8883	0.8282	1.0545	0.7881	3.2309	0.3574	3.9238	0.2698
	Individuality / uniqueness	0.7354	0.8648	2.4994	0.4754	1.4867	0.6853	0.7868	0.8526
	Promotes high self esteem	2.9212	0.4039	4.0539	0.2557	2.2859	0.5152	2.4651	0.4816
	Pleasing to others	1.2304	0.7457	2.2620	0.5198	5.3147	0.1501	2.0511	0.5619

Note: \* Indicates significance at the 95% confidence level. Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

For each of the seven significant relationships identified, post hoc multiple pairwise comparisons were performed to determine the source of the significance. The results of these comparisons are shown in Appendix I. These results do not indicate any overwhelming pattern related to the significance of generational status on attribute importance. First and mixed-second generation respondents considered Color / pattern critically important in their purchase of pants, which was significantly more important than the ratings given by second and third generation respondents. Mixed-second generation respondents rated Fiber content / fabrication significantly higher in importance than first, second, and third generation respondents in pants purchases. Also related to pants purchases, first generation respondents considered Appropriateness for end use more important than second and third generation; for the same criteria, mixed-second generation considered it more important than second generation respondents. The final attribute significantly impacted by generational status in pants purchases was Suitability for the individual, despite featuring equal median ratings of 4. A comparison of mean ratings showed that second generation respondents considered this attribute significantly less important in pants purchases than first, mixed-second, and third generation respondents (the mean ratings for this attribute were 3.75 for second, 4.17 for first, 4.21 for mixed-second, and 4.11 for third generation categories).

In tops purchases, mixed-second generation respondents considered Quality (construction, durability, workmanship) critically important, which was significantly higher than the importance attributed by second generation respondents. In skirts purchases, third generation respondents considered Styling significantly less important (with a median rating of 4) than second and mixed-second generation respondents, who considered the attribute

critical. In dresses purchases, third generation respondents considered Suitability for the individual significantly more important than second generation respondents.

#### *Research Question 5*

*Do demographic variables of educational level, income, or occupation impact the importance of criteria used by Mexican-American women in apparel purchases?*

The demographic variables of geography, gender, and age were controlled in this research by limiting the sample to Mexican-American females between the ages of 18 and 25 from the Southwestern US states of Arizona, California, New Mexico, and Texas.

Additional demographic variables that may influence evaluative criteria importance in apparel purchases include educational level, income, and occupation – this research question aimed to determine the impact, if any, of these variables on the importance of the 20 intrinsic and extrinsic attributes studied. All of this information was self-reported by respondents in the online survey. Kruskal-Wallis ANOVA was used to determine the significance of any of these dependent variables on evaluative criteria ratings across garment categories.

#### *Educational Level*

Respondents indicated their education level by selecting their educational attainment from a group of five descriptors, ranging from “Less than high school” to “Post graduate work.” None of the respondents indicated that they had an educational level of less than high school, so all data analysis performed using this variable involved the four educational levels of High school graduate, Some college, College graduate, and Post graduate work.

Tables 63 through 66 show the median ratings indicating the importance of the individual attributes across educational levels in the purchase of casual pants (Table 63), tops

(Table 64), skirts (Table 65), and dresses (Table 66). The number of respondents in each educational category differs by garment type because the total number of respondents who stated that they wore each individual garment type also varied. Due to the primary recruitment of respondents from colleges and universities, the majority of the sample was in college (and was in the “Some college” educational category). The relatively small sample sizes in the remaining categories, particularly the “High school graduate” and “Post graduate work” categories, somewhat reduces the efficacy of data analysis procedures.

**Table 63: Median ratings of evaluative criteria by educational level – Casual pants**

Educational Level		High School Graduate	Some College	College Graduate	Post Graduate Work
		N = 6	N = 130	N = 46	N = 14
Aesthetic	Color / pattern	4.5	4	4	4
	Styling	4.5	5	4	4
	Appearance	5	5	5	5
	Beauty / attractiveness	4	4	4	4
Functional	Fit / sizing	5	5	5	5
	Quality (construction, durability, workmanship)	5	4	4	4
	Ease of care	5	4	3	3
	Comfort	5	5	5	5
	Fiber content / fabrication	4	3	3	3
Brand / Situational	Versatility with existing wardrobe	5	4	4	4
	Price	5	5	4	5
	Brand name / store name	1.5	3	2.5	2
	Country of origin	1.5	1	2	1.5
Expressive / Symbolic	Appropriateness for end use	3	4	3	4
	Suitability for the individual	4	4	4	4
	Sexy	3	3	3	3
	Fashionability	3.5	4	4	3.5
	Individuality / uniqueness	3.5	4	4	3.5
	Promotes high self esteem	3	4	3.5	4
	Pleasing to others	1.5	3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 64: Median ratings of evaluative criteria by educational level – Casual tops**

Evaluative Criteria		Educational Level			
		High School Graduate N = 9	Some College N = 137	College Graduate N = 47	Post Graduate Work N = 14
Aesthetic	Color / pattern	5	5	4	5
	Styling	5	5	5	5
	Appearance	5	5	5	5
	Beauty / attractiveness	5	5	4	5
Functional	Fit / sizing	5	5	5	5
	Quality (construction, durability, workmanship)	4	4	4	4
	Ease of care	4	4	4	3.5
	Comfort	5	4	5	5
	Fiber content / fabrication	4	3	3	3.5
Brand / Situational	Versatility with existing wardrobe	5	4	4	4.5
	Price	5	4	4	5
	Brand name / store name	2	3	3	2.5
	Country of origin	1	1	1	2
Expressive / Symbolic	Appropriateness for end use	3	4	3	4
	Suitability for the individual	4	4	4	4
	Sexy	3	4	3	3
	Fashionability	4	4	4	3.5
	Individuality / uniqueness	4	4	4	3
	Promotes high self esteem	4	4	3	3.5
	Pleasing to others	3	3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 65: Median ratings of evaluative criteria by educational level – Casual skirts**

Evaluative Criteria		Educational Level			
		High School Graduate N = 6	Some College N = 53	College Graduate N = 23	Post Graduate Work N = 6
Aesthetic	Color / pattern	5	5	4	4
	Styling	5	5	4	5
	Appearance	5	5	5	4.5
	Beauty / attractiveness	5	4	4	4
Functional	Fit / sizing	5	5	5	5
	Quality (construction, durability, workmanship)	4.5	4	4	4
	Ease of care	4.5	4	3	3
	Comfort	5	4	5	5
	Fiber content / fabrication	4	3	3	2.5
Brand / Situational	Versatility with existing wardrobe	4.5	4	4	4
	Price	5	4	4	4.5
	Brand name / store name	2	2	2	2
	Country of origin	1	1	1	1.5
Expressive / Symbolic	Appropriateness for end use	3	4	3	4.5
	Suitability for the individual	3.5	4	4	4
	Sexy	4.5	4	3	3.5
	Fashionability	5	4	4	4
	Individuality / uniqueness	5	4	4	3
	Promotes high self esteem	5	4	4	3.5
	Pleasing to others	3.5	3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 66: Median ratings of evaluative criteria by educational level – Casual dresses**

Evaluative Criteria		Educational Level			
		High School Graduate N = 6	Some College N = 68	College Graduate N = 33	Post Graduate Work N = 6
Aesthetic	Color / pattern	5	5	5	5
	Styling	5	5	5	5
	Appearance	5	5	5	5
	Beauty / attractiveness	5	5	5	5
Functional	Fit / sizing	5	5	5	5
	Quality (construction, durability, workmanship)	5	4	4	4
	Ease of care	4	4	4	3.5
	Comfort	4.5	5	5	4.5
	Fiber content / fabrication	4	4	3	3
Brand / Situational	Versatility with existing wardrobe	4	3.5	3	4.5
	Price	4.5	4	4	4.5
	Brand name / store name	2	2	2	1.5
	Country of origin	1	1	2	1.5
Expressive / Symbolic	Appropriateness for end use	3	4	3	5
	Suitability for the individual	4	4	4	4.5
	Sexy	4.5	4	3	4
	Fashionability	5	5	4	4
	Individuality / uniqueness	5	4	4	3.5
	Promotes high self esteem	4.5	4.5	3	4
	Pleasing to others	3.5	3	3	4

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

Kruskal-Wallis tests revealed 13 significant effects of educational level on several attribute ratings (see Table 67). Of the 13 significant relationships, 12 involved extrinsic attributes, and 11 of these were expressive / symbolic attributes. Educational level significantly affected the importance of the expressive / symbolic attributes of Fashionability

in the purchase of casual pants and skirts, the importance of Appropriateness for end use, in the purchase of casual tops and dresses, the importance of Suitability for the individual in casual tops, and the importance of Individuality / uniqueness and Promotes high self esteem in the purchase of casual tops, skirts, and dresses. Educational level also affected the importance of the brand / situational attribute Versatility with existing wardrobe in skirt purchases, as well as the aesthetic attribute of Beauty / attractiveness in skirt purchases.

**Table 67: Kruskal-Wallis test results – The effect of educational level on evaluative criteria ratings**

Evaluative Criteria \ Garment Category		Pants		Tops		Skirts		Dresses	
		ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq
Aesthetic	Color / pattern	2.3588	0.5013	5.8664	0.1183	6.8471	0.0769	6.0401	0.1097
	Styling	4.9114	0.1784	3.1165	0.3740	6.5802	0.0866	1.1115	0.7743
	Appearance	1.6629	0.6452	6.5279	0.0886	4.0158	0.2598	2.2938	0.5137
	Beauty / attractiveness	1.6237	0.6540	0.7861	0.8528	7.8454	0.0493*	5.4160	0.1438
Functional	Fit / sizing	1.0789	0.7822	2.2863	0.5152	1.7625	0.6231	1.0209	0.7962
	Quality (construction, durability, workmanship)	2.9451	0.4002	2.3446	0.5040	2.0662	0.5588	1.6782	0.6418
	Ease of care	2.9259	0.4032	0.5809	0.9008	1.9314	0.5868	1.4159	0.7018
	Comfort	2.985	0.3939	0.7915	0.8515	3.0833	0.3790	0.2831	0.9632
	Fiber content / fabrication	3.7926	0.2848	1.6130	0.6564	3.6643	0.3001	4.9785	0.1734
Brand / Situational	Versatility with existing wardrobe	1.9193	0.5893	7.6460	0.0539	8.1228	0.0435*	4.5058	0.2118
	Price	0.4702	0.9254	1.6904	0.6391	1.9749	0.5776	1.8597	0.6020
	Brand name / store name	1.7602	0.6236	0.3991	0.9404	1.1255	0.7709	1.5895	0.6618
	Country of origin	1.1262	0.7708	0.9880	0.8042	2.1355	0.5448	2.8038	0.4229
Expressive / Symbolic	Appropriateness for end use	6.2314	0.1009	8.5451	0.0360*	6.2856	0.0985	12.157	0.0069*
	Suitability for the individual	3.1535	0.3686	7.8596	0.0490*	2.8150	0.4210	7.5410	0.0565
	Sexy	3.3693	0.3381	7.7220	0.0521	2.9673	0.3967	6.2592	0.0997
	Fashionability	7.9515	0.0470*	7.5392	0.0566	8.1609	0.0428*	5.0949	0.1650
	Individuality / uniqueness	2.0339	0.5654	9.5444	0.0229*	8.2225	0.0416*	8.9721	0.0297*
	Promotes high self esteem	6.8795	0.0758	13.8995	0.0030*	8.3733	0.0389*	17.412	0.0006*
	Pleasing to others	6.7559	0.0801	5.6587	0.1294	0.5316	0.9119	4.4728	0.2147

Note: \* Indicates significance at the 95% confidence level. Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

Post hoc comparisons performed to further investigate the significant findings from the Kruskal-Wallis tests are included in Appendix J. When purchasing casual pants, respondents who had completed post graduate work considered Fashionability less important than respondent who had completed some college. In the purchase of skirts, high school graduates considered the same attribute significantly more important than respondents who had completed some college, college graduates, and those who had completed post graduate work. This suggests a trend in which Fashionability was considered more important for Mexican-American women with lower educational levels and less important for those with higher educational levels – though this trend is not demonstrated definitively across garment categories.

Results also showed that respondents who had completed some college considered Appropriateness for end use more important in the purchase of tops than college graduates. When purchasing dresses, respondents who had completed post graduate work considered this same attribute significantly more important than respondents in the lower three educational levels.

Post hoc comparisons revealed a fairly consistent pattern in the importance of Individuality / uniqueness when purchasing tops, skirts, and dresses. For tops, respondents who had completed post graduate work considered this attribute significantly less important than high school graduates, those who had completed some college, and college graduates. For skirts, respondents who had completed post graduate work also considered the attribute significantly less important than those who had completed some college and college graduates. When purchasing dresses, Individuality / uniqueness was also considered

significantly less important by respondents who completed post graduate work than high school graduates and those who had completed some college. These three significant relationships clearly suggest that respondents with the highest educational level do not consider Individuality / uniqueness as important as those with lower educational levels when purchasing tops, skirts, and dresses.

When considering the attribute Promotes high self esteem in the purchase of casual tops, results showed that the attribute was significantly more important for respondents who had completed some college compared to those who had graduated from college or completed post graduate work. In addition, the attribute was considered significantly more important in the purchase of skirts by high school graduates and respondents who had completed some college than college graduates. As shown in Table 65, the median ratings for this attribute are the same (4) for respondents who had completed some college and for college graduates. Thus, a comparison of the mean ratings (4.17 for “Some college” and 3.57 for “College graduates”) provided an indication of the actual effect of educational level. In the purchase of casual dresses, the attribute was considered significantly more important by high school graduates and those who had completed some college than by college graduates. These three significant relationships suggests a trend in which respondents with higher educational levels do not consider Promotes high self esteem as important as respondents with lower educational levels when purchasing tops, skirts, and dresses.

Post hoc analysis also showed that Suitability for the individual was considered more important by respondents who had completed some college than by college graduates when purchasing tops. While median ratings for this attribute across educational levels were all 4,

further comparison of the mean ratings showed the nature of the significant difference. The mean rating of the attribute for those in the “Some college” category was 3.91, and the rating for those in the “College graduate” category was 3.45. While this significant relationship was revealed in the statistical analysis for this research question, the practical importance of the result may not be great given the closeness of the median and mean ratings.

Even though all respondents, regardless of educational level, considered the brand / situational attribute Versatility with existing wardrobe at least somewhat important in skirt purchases, significant differences were found among some of the levels. High school graduates and those who had completed some college considered this attribute significantly more important than did college graduates. The median ratings for this attribute were the same among college graduates and those who had completed some college. Thus, mean ratings (3.96 for “Some college” and 3.26 for “College graduates”) were used to understand the significant effect from educational level.

High school graduates considered the aesthetic attribute Beauty / attractiveness critically important in the purchase of skirts, while the remaining educational groups considered this attribute significantly less important (though still important).

### *Income*

Respondents provided their income level in the online survey by selecting the appropriated range from under \$25,000 to over \$100,000. A category for “would rather not say” was also included, which respondents were able to choose if they wanted to keep their income private. While several income ranges were used as choices in the online survey, very few respondents reported an income over \$25,000. This was likely due to the recruitment

method used at colleges and universities, which resulted in a sample largely made up of students who may not earn as much money. To improve data analysis, all respondents reporting an income over \$25,000 were collapsed into one category named “\$25,000 and above.” Data analysis was performed using three income categories, Under \$25,000, \$25,000 and above, and would rather not say.

Median ratings of the 20 intrinsic and extrinsic attributes across income levels are shown in Table 68 for pants purchases, Table 69 for tops, Table 70 for skirts, and Table 71 for dresses. The number of respondents in each income category varies across tables because the total number of respondents who wore each garment type also varied. The tables also clearly indicate the consistency in the median ratings for each attribute across income levels. This implies that respondents largely agree on the importance or unimportance of the attributes in apparel purchases, regardless of income. Not surprisingly, Kruskal-Wallis tests did not show any significant effect from income for any attribute or garment type (see Table 72). Obviously, income did not impact the importance of evaluative criteria in Mexican-American women’s apparel purchases.

**Table 68: Median ratings of evaluative criteria by income – Casual pants**

Evaluative Criteria		Income		
		Under \$25,000 N = 133	\$25,000 and above N = 35	Would rather not say N = 28
Aesthetic	Color / pattern	4	4	4
	Styling	4	4	4
	Appearance	5	5	5
	Beauty / attractiveness	4	4	4
Functional	Fit / sizing	5	5	5
	Quality (construction, durability, workmanship)	4	4	4
	Ease of care	4	4	3
	Comfort	5	5	5
	Fiber content / fabrication	3	3	4
Brand / Situational	Versatility with existing wardrobe	4	4	4
	Price	5	5	4.5
	Brand name / store name	3	2	3
	Country of origin	1	1	2
Expressive / Symbolic	Appropriateness for end use	3	4	3.5
	Suitability for the individual	4	4	4
	Sexy	3	3	3
	Fashionability	4	4	4
	Individuality / uniqueness	4	3	4
	Promotes high self esteem	4	4	4
	Pleasing to others	3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 69: Median ratings of evaluative criteria by income – Casual tops**

Evaluative Criteria		Income		
		Under \$25,000 N = 140	\$25,000 and above N = 35	Would rather not say N = 32
Aesthetic	Color / pattern	5	5	5
	Styling	5	5	5
	Appearance	5	5	5
	Beauty / attractiveness	5	4	4.5
Functional	Fit / sizing	5	5	5
	Quality (construction, durability, workmanship)	4	4	4
	Ease of care	4	4	3.5
	Comfort	4	4	5
	Fiber content / fabrication	3	3	3
Brand / Situational	Versatility with existing wardrobe	4	4	4
	Price	5	5	4
	Brand name / store name	2	3	3
	Country of origin	1	1	2
Expressive / Symbolic	Appropriateness for end use	3	4	3
	Suitability for the individual	4	4	4
	Sexy	4	3	3
	Fashionability	4	4	4
	Individuality / uniqueness	4	4	4
	Promotes high self esteem	4	4	4
	Pleasing to others	3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 70: Median ratings of evaluative criteria by income – Casual skirts**

Evaluative Criteria		Income		
		Under \$25,000 N = 58	\$25,000 and above N = 15	Would rather not say N = 15
Aesthetic	Color / pattern	4	4	5
	Styling	5	4	5
	Appearance	5	5	5
	Beauty / attractiveness	4	5	4
Functional	Fit / sizing	5	5	5
	Quality (construction, durability, workmanship)	4	4	4
	Ease of care	4	4	3
	Comfort	5	5	5
	Fiber content / fabrication	3	3	3
Brand / Situational	Versatility with existing wardrobe	4	4	4
	Price	4.5	4	4
	Brand name / store name	2	2	3
	Country of origin	1	1	2
Expressive / Symbolic	Appropriateness for end use	3.5	3	3
	Suitability for the individual	4	3	4
	Sexy	4	4	4
	Fashionability	4.5	4	4
	Individuality / uniqueness	4	4	4
	Promotes high self esteem	4	4	5
	Pleasing to others	3	3	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 71: Median ratings of evaluative criteria by income – Casual dresses**

Evaluative Criteria		Income		
		Under \$25,000 N = 77	\$25,000 and above N = 14	Would rather not say N = 22
Aesthetic	Color / pattern	5	5	5
	Styling	5	5	5
	Appearance	5	5	5
	Beauty / attractiveness	5	5	5
Functional	Fit / sizing	5	5	5
	Quality (construction, durability, workmanship)	4	4.5	4
	Ease of care	4	4	3
	Comfort	4	5	5
	Fiber content / fabrication	4	3.5	3
Brand / Situational	Versatility with existing wardrobe	4	3	3
	Price	4	4	4
	Brand name / store name	2	1.5	3
	Country of origin	1	1	2
Expressive / Symbolic	Appropriateness for end use	3	4	4
	Suitability for the individual	4	4	4
	Sexy	4	4	3.5
	Fashionability	4	5	4.5
	Individuality / uniqueness	4	4	4
	Promotes high self esteem	4	4	4
	Pleasing to others	3	4	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 72: Kruskal-Wallis test results – The effect of income on evaluative criteria ratings**

Garment Category \ Evaluative Criteria		Pants		Tops		Skirts		Dresses	
		ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq
Aesthetic	Color / pattern	0.9113	0.6340	0.1244	0.9397	2.9437	0.2295	0.8585	0.6510
	Styling	0.0099	0.9951	0.4525	0.7975	4.7649	0.0923	0.1343	0.9350
	Appearance	0.0526	0.9740	3.6943	0.1577	1.6517	0.4379	4.7015	0.0953
	Beauty / attractiveness	0.3584	0.8359	0.2929	0.8638	0.6529	0.7215	3.0385	0.2189
Functional	Fit / sizing	2.5405	0.2808	0.8476	0.6546	2.2998	0.3167	1.4749	0.4783
	Quality (construction, durability, workmanship)	0.7238	0.6964	0.4875	0.7837	0.0546	0.9731	1.1198	0.5713
	Ease of care	0.5947	0.7428	1.5987	0.4496	3.1246	0.2097	1.9602	0.3753
	Comfort	0.4139	0.8130	0.3078	0.8574	0.0284	0.9859	2.6290	0.2686
	Fiber content / fabrication	2.4365	0.2957	0.2183	0.8966	0.1362	0.9342	1.0610	0.5883
Brand / Situational	Versatility with existing wardrobe	0.0273	0.9865	0.6698	0.7154	0.0818	0.9599	0.4046	0.8169
	Price	0.7378	0.6915	2.6224	0.2695	0.0917	0.9552	0.2331	0.8900
	Brand name / store name	2.0434	0.3600	1.2393	0.5381	1.7083	0.4256	2.3568	0.3078
	Country of origin	3.4855	0.1750	1.1929	0.5508	2.6313	0.2683	2.4183	0.2985
Expressive / Symbolic	Appropriateness for end use	0.3920	0.8220	1.9208	0.3827	0.2070	0.9017	0.9984	0.6070
	Suitability for the individual	0.7556	0.6854	1.1765	0.5553	2.9695	0.2266	0.5012	0.7783
	Sexy	0.1739	0.9167	1.4283	0.4896	0.5081	0.7757	3.2567	0.1963
	Fashionability	0.1583	0.9239	0.5215	0.7705	1.046	0.5928	0.5350	0.7653
	Individuality / uniqueness	4.4112	0.1102	5.6145	0.0604	4.016	0.1343	0.7327	0.6933
	Promotes high self esteem	1.2063	0.5471	5.6605	0.0590	4.4444	0.1084	0.8828	0.6431
	Pleasing to others	4.8193	0.0898	0.9048	0.6361	0.0143	0.9929	2.0205	0.3641

Note: \* Indicates significance at the 95% confidence level. Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

### *Occupation*

Respondents identified their occupation as one of eight categories (see Appendix D). None of the respondents indicated crafts or military as their occupation, and thus all data analysis related to occupation only involved the six categories of student, office, professional / managerial, service / sales, homemaker, and unemployed. Due to the recruitment method used to recruit respondents, the large majority of respondents identified their occupation as student. Results of the statistical analyses involving the categories with very low sample sizes (service / sales, homemaker, and unemployed) should be interpreted with some caution and acknowledgement of these concerns.

Tables 73 through 76 show the median ratings for the intrinsic and extrinsic attributes studied in this research across occupational categories and for each of the four garment types studied (casual pants, tops, skirts, and dresses). The number of respondents in each category is also shown in the tables, to illustrate the number of people influencing the median ratings. The low sample sizes for some of the occupational categories that have already been discussed are easily apparent in these tables. As shown in Tables 73 through 76, the actual number of respondents in each category varied by garment type, because the total number of respondents saying that they wore the garment type in question also varied.

Kruskal-Wallis ANOVA's revealed seven significant effects from occupation on the importance of a few attributes across garment categories (see Table 77). Occupation significantly affected the median ratings of Fit / sizing in the purchase of dresses, Individuality / uniqueness in the purchase of tops, skirts, and dresses, and Promotes high self esteem in the purchase of pants, tops, and skirts.

**Table 73: Median ratings of evaluative criteria by occupation – Casual pants**

Occupation		Student N = 140	Office N = 18	Professional / Managerial N = 21	Service / Sales N = 7	Homemaker N = 3	Not Employed N = 7
Evaluative Criteria							
Aesthetic	Color / pattern	4	4	4	4	4	5
	Styling	4	5	4	4	4	5
	Appearance	5	5	5	5	5	5
	Beauty / attractiveness	4	4	4	4	4	4
Functional	Fit / sizing	5	5	5	5	5	5
	Quality (construction, durability, workmanship)	4	4	5	5	5	4
	Ease of care	4	3.5	4	4	5	4
	Comfort	5	4	5	5	5	5
	Fiber content / fabrication	3	3	3	4	3	3
Brand / Situational	Versatility with existing wardrobe	4	4	4	4	4	4
	Price	5	5	5	4	5	4
	Brand name / store name	3	2	2	2	3	3
	Country of origin	1	1	2	2	3	1
Expressive / Symbolic	Appropriateness for end use	3	4	3	3	4	4
	Suitability for the individual	4	4	4	4	4	4
	Sexy	3	3	3	4	4	3
	Fashionability	4	3.5	4	4	4	4
	Individuality / uniqueness	4	3	4	4	4	5
	Promotes high self esteem	4	3.5	4	4	4	3
	Pleasing to others	3	3	3	2	4	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 74: Median ratings of evaluative criteria by occupation – Casual tops**

Occupation		Student N = 150	Office N = 18	Professional / Managerial N = 20	Service / Sales N = 7	Homemaker N = 3	Not Employed N = 9
Evaluative Criteria							
Aesthetic	Color / pattern	5	5	5	4	5	5
	Styling	5	5	5	5	5	4
	Appearance	5	5	5	4	5	5
	Beauty / attractiveness	5	4	4	5	3	4
Functional	Fit / sizing	5	5	5	5	5	5
	Quality (construction, durability, workmanship)	4	4	4	4	4	4
	Ease of care	4	3	4	4	5	4
	Comfort	4	4	5	4	5	4
	Fiber content / fabrication	3	3	3	3	5	3
Brand / Situational	Versatility with existing wardrobe	4	4	4	4	4	4
	Price	4	5	4.5	3	5	5
	Brand name / store name	3	2	2	3	3	2
	Country of origin	1	2	1.5	1	3	1
Expressive / Symbolic	Appropriateness for end use	3	4	3.5	4	5	4
	Suitability for the individual	4	4	3.5	4	4	4
	Sexy	4	3	3	4	3	3
	Fashionability	4	4	4	4	5	4
	Individuality / uniqueness	4	3	3	4	4	4
	Promotes high self esteem	4	4	3	4	4	4
	Pleasing to others	3	3	2.5	2	2	3

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 75: Median ratings of evaluative criteria by occupation – Casual skirts**

Occupation		Student N = 64	Office N = 8	Professional / Managerial N = 10	Service / Sales N = 2	Homemaker N = 1	Not Employed N = 3
Evaluative Criteria							
Aesthetic	Color / pattern	5	4	4	3.5	3	4
	Styling	5	4	4.5	4	4	5
	Appearance	5	4.5	5	4.5	4	5
	Beauty / attractiveness	4	4.5	4	3.5	4	5
Functional	Fit / sizing	5	5	5	4.5	5	5
	Quality (construction, durability, workmanship)	4	3.5	4	2.5	4	3
	Ease of care	4	3	3	3.5	4	2
	Comfort	4.5	5	5	4.5	4	5
	Fiber content / fabrication	3	3	4	2	3	3
Brand / Situational	Versatility with existing wardrobe	4	4	4	2	4	4
	Price	4	5	4	3.5	4	4
	Brand name / store name	2.5	2	1	1.5	3	1
	Country of origin	1	2	1	1	2	1
Expressive / Symbolic	Appropriateness for end use	3	4	4	2	4	4
	Suitability for the individual	4	4	3.5	3.5	4	5
	Sexy	4	4	3	2.5	3	5
	Fashionability	5	4	4	4.5	4	5
	Individuality / uniqueness	4	3	4	3	5	3
	Promotes high self esteem	4	4	3.5	3	3	5
	Pleasing to others	3	4	3	1.5	2	4

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 76: Median ratings of evaluative criteria by occupation – Casual dresses**

Occupation		Student N = 84	Office N = 9	Professional / Managerial N = 12	Service / Sales N = 1	Homemaker N = 1	Not Employed N = 6
Evaluative Criteria							
Aesthetic	Color / pattern	5	5	4.5	3	1	5
	Styling	5	5	5	4	1	5
	Appearance	5	5	5	4	4	5
	Beauty / attractiveness	5	5	5	3	4	5
Functional	Fit / sizing	5	5	5	4	4	5
	Quality (construction, durability, workmanship)	4	4	4	3	4	4.5
	Ease of care	4	3	4	4	5	5
	Comfort	5	4	5	4	5	5
	Fiber content / fabrication	3.5	4	3.5	3	5	3.5
Brand / Situational	Versatility with existing wardrobe	3	3	4	1	1	5
	Price	4	4	5	3	5	4.5
	Brand name / store name	2	2	2	2	1	3.5
	Country of origin	1	2	2	1	4	1.5
Expressive / Symbolic	Appropriateness for end use	3	4	4	3	3	4
	Suitability for the individual	4	4	4	3	3	4.5
	Sexy	4	4	4	2	1	3.5
	Fashionability	5	4	4	4	1	5
	Individuality / uniqueness	4	4	3.5	3	1	5
	Promotes high self esteem	4	4	4	3	1	4.5
	Pleasing to others	3	4	3	2	1	4

Note: Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

**Table 77: Kruskal-Wallis test results – The effect of occupation on evaluative criteria ratings**

Garment Category		Pants		Tops		Skirts		Dresses	
		ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq	ChiSq	Prob > ChiSq
Aesthetic	Color / pattern	3.5903	0.6098	6.2629	0.2815	7.7451	0.1709	10.494	0.0624
	Styling	6.4572	0.2642	3.4469	0.6314	3.8441	0.5721	8.5065	0.1304
	Appearance	5.3635	0.3731	9.9352	0.0771	4.2383	0.5156	7.7414	0.1711
	Beauty / attractiveness	1.9306	0.8587	4.4777	0.4829	4.1958	0.5216	5.1715	0.3953
Functional	Fit / sizing	5.8731	0.3188	5.7937	0.3268	3.2968	0.6543	18.31	0.0026*
	Quality (construction, durability, workmanship)	2.4466	0.7845	2.1049	0.8344	5.5360	0.3540	3.3455	0.6469
	Ease of care	4.9892	0.4172	5.2671	0.3842	1.9501	0.8560	3.9655	0.5544
	Comfort	3.4763	0.6270	2.5262	0.7725	5.9923	0.3070	6.9414	0.2250
	Fiber content / fabrication	2.0058	0.8483	3.3550	0.6454	1.9703	0.8532	2.1705	0.8251
Brand / Situational	Versatility with existing wardrobe	2.3259	0.8025	0.8163	0.9760	4.6234	0.4635	10.987	0.0516
	Price	6.4716	0.2630	7.8383	0.1654	3.8899	0.5654	4.6987	0.4537
	Brand name / store name	6.2254	0.2849	1.9160	0.8606	6.9556	0.2240	4.4689	0.4841
	Country of origin	3.8131	0.5766	4.5265	0.4763	4.1442	0.5288	3.763	0.5840
Expressive / Symbolic	Appropriateness for end use	5.0452	0.4104	2.4603	0.7825	5.6282	0.3441	6.2162	0.2857
	Suitability for the individual	2.1759	0.8243	6.0270	0.3036	3.2732	0.6579	3.9782	0.5526
	Sexy	1.9023	0.8625	6.3299	0.2754	4.4909	0.4811	5.699	0.3366
	Fashionability	3.7649	0.5837	1.9198	0.8601	2.4808	0.7794	6.7641	0.2388
	Individuality / uniqueness	7.3321	0.1971	16.964	0.0046*	13.3070	0.0207*	15.479	0.0085*
	Promotes high self esteem	14.6810	0.0118*	13.944	0.0160*	11.631	0.0402*	9.3939	0.0943
	Pleasing to others	8.6563	0.1236	5.9917	0.3070	5.0680	0.4076	6.2196	0.2854

Note: \* Indicates significance at the 95% confidence level. Intrinsic attributes are shaded in green. Extrinsic attributes are shaded in orange.

Post hoc multiple pairwise comparisons indicated the occupation pairs which influenced the significant effect, and results of these comparisons are shown in Appendix J. These comparisons showed that students and unemployed respondents considered Fit / sizing more important when purchasing dresses than service / sales workers and homemakers. However, this finding should be interpreted with caution, given the sample sizes of 1 in the service / sales and homemaker categories. Considering that the ratings for these categories are based on one person's opinion, the significant finding is not of practical importance.

Results related to the attribute Individuality / uniqueness did not appear to be affected as drastically by the small sample sizes in some occupational categories as the Fit / sizing attribute. When shopping for tops and skirts, students considered Individuality / uniqueness significantly more important than office and professional / managerial workers. Comparison of the median ratings was sufficient to determine this relationship for tops purchases, which showed that students considered this attribute important while office and professional / managerial workers neither considered it important nor unimportant in tops purchases. However, median ratings for this attribute in skirt purchases were the same (4) for the student and professional / managerial categories. A comparison of the mean ratings yielded the necessary insight into the relationship, showing the greater importance of the attribute for students, and the relatively neutral opinion expressed by professional / managerial workers (mean ratings were 4.09 for students and 3.3 for professional / managerial). When purchasing dresses, students also considered this attribute significantly more important than professional / managerial workers. Other significant relationships concerning this attribute

involved other pairs of occupational categories. For instance, respondents with service / sales jobs and those not employed also considered Individuality / uniqueness more important than office workers in tops purchases. In addition, unemployed respondents considered this attribute significantly more important in the purchase of tops and skirts than professional / managerial workers.

Post hoc analysis and subsequent comparison of medians showed that students considered Promotes high self esteem significantly more important in pants purchases than office workers. Students also considered this attribute significantly more important than respondents in professional / managerial occupations when purchasing tops and skirts. In all three significant relationships, median ratings indicated that this attribute was important in the apparel purchases of students, but was neither important nor unimportant for office or professional / managerial workers.

### *Summary and Discussion*

Research Objective 2 focused on obtaining an understanding of the importance and determinance of 20 intrinsic and extrinsic criteria (shown in Table 21) in the purchase of casual pants, tops, skirts, and dresses. Within this objective, five research questions specified the approach and the data analysis needed to sufficiently meet the objective. This section will summarize the findings from RO2 by first reviewing the importance and determinance of each of the 20 attributes (RQ1 and RQ2). This will be organized according to intrinsic (aesthetic and functional) and extrinsic (brand / situational and expressive / symbolic) criteria, with each attribute considered individually. The results of inferential statistics

performed for RQ3 – RQ5 will then be presented to show the effect of physical body-related characteristics, ethnic characteristics, or demographic variables on the importance expressed for the individual attributes in the purchase of pants, tops, skirts, and dresses.

Before delving into the findings for each criterion, it is important to discuss the most notable result obtained when considering the importance ascribed to the criteria across garment categories. As clearly shown in Table 31, many of the median ratings were skewed toward the high end of the 5-point rating scale used to assess the importance of the individual attributes. This implies that the majority of the sample considered most of these attributes at least somewhat important in the purchase of apparel. This concentration of results towards the high end of the scale could partially be explained by one of the risks involved in questioning respondents using pre-selected criteria (see Table 20). In rating lists of pre-selected criteria, it is sometimes common for respondents to express higher importance for the criteria than may actually be involved in the actual purchase decision. Because of this tendency, a consideration of the relative importance and determinance of the attributes provides an essential dimension of understanding.

#### *Importance, Relative Importance, and Determinance of Intrinsic Aesthetic Attributes*

Analysis of broad trends in the evaluative criteria ratings and rankings across garment categories indicated that intrinsic attributes were, in large part, considered very important in the purchase of apparel. Specifically, aesthetic attributes received very high ratings and were considered very important, and often critical, in the purchase of casual pants, tops, skirts, and dresses (see Table 31 for a comparison of the median ratings). While median ratings used to denote importance were consistently high across garment categories, comparative and

statistical analysis performed in this research suggest that aesthetic attributes may be relatively less important in the purchase of pants and more critical in the purchase of dresses.

*Color / pattern.* This attribute was considered critical in the purchase of casual tops, skirts, and dresses (median rating of 5), and was slightly less important, though still important, in the purchase of casual pants. Wilcoxon signed rank tests indicated that Color / pattern was significantly less important for pants than for tops, skirts, and dresses, and this finding was supported when considering the relative importance rankings as well. This attribute also ranked in the top ten in determinance for each garment category, but was ranked highest for casual tops.

*Styling.* This attribute received median ratings of 5 in the purchase of casual tops, skirts, and dresses, meaning that it was considered critical in these apparel purchases. A rating of 4 for pants suggests decreased importance (though not unimportance) for this attribute in pants purchases. Wilcoxon signed rank tests showed that the median rating for pants was significantly lower for pants than tops and dresses, while significantly higher for dresses than tops and skirts. This suggests that Styling was most important, comparatively, in the purchase of dresses, and less important for pants – though the median ratings clearly indicate the importance of the attribute for all garment types. Styling also ranked between fourth and sixth in terms of determinance across garment categories.

*Appearance.* This attribute was clearly considered critical in the purchase of apparel, receiving median ratings of 5 for all garment types studied. While Wilcoxon signed rank tests revealed a significantly lower rating for pants than dresses, this difference is not practically important, given the high ratings of 5 across garments. A consideration of the

relative importance and determinance supports this, with Appearance consistently ranked second in relative importance, and in the top five in determinance across garment categories.

*Beauty / attractiveness.* This attribute was considered critically important in the purchase of casual tops and dresses according to median ratings. While median ratings indicated this attribute was slightly less important for pants and skirts, each with ratings of 4, Wilcoxon signed rank tests actually indicated a significant difference between the ratings of tops and dresses. Given the larger number of individual signed rank tests performed, this may be evidence of a Type I error, or at the least, an unimportant finding since both tops and dresses received ratings of 5. This attribute, however, did not appear to be determinant in the apparel purchases of the respondents, recording its highest ranking in determinance at 10 out of the possible 20 criteria.

#### *Importance, Relative Importance, and Determinance of Intrinsic Functional Attributes*

Whereas the aesthetic attributes studied were consistently considered important, and often critical, in apparel purchases, more disparity was apparent in the category of functional attributes.

*Fit / sizing.* Of all of the attributes studied in this research, Fit / sizing was clearly considered the most important and determinant attribute in apparel purchases. For every garment category studied, this attribute received the highest ratings in importance, as well as the highest rankings in relative importance and determinance. In addition, the Fit / sizing attribute featured substantially lower variances than any of the remaining attributes, suggesting a consensus among many of the respondents regarding its importance in apparel purchases.

*Quality (construction, durability, workmanship).* In terms of median ratings, this attribute was important, though not critical, in the purchase of casual pants, tops, skirts, and dresses. While median ratings were the same across garment categories, Wilcoxon signed rank tests showed that the attribute was rated significantly higher (by mean) for pants than skirts. By looking at the relative importance of this attribute for the range of garment types, this trend was also apparent, with Quality (construction, durability, workmanship) being relatively more important in the purchase of pants and tops than skirts and dresses. However, this attribute was not particularly determinant in apparel purchases – its highest determinance ranking was sixth, for pants, and it was located towards the middle and end of the list of criteria for the remaining garment types.

*Ease of care.* This attribute received median ratings of 4 across all garment categories, suggesting that while important, Ease of care was not critical in the purchase of apparel. Closer inspection of the relative importance and the determinance of this attribute revealed that it was one of the lowest ranked in relative importance and not determinant in the apparel purchases of many respondents. In fact, this attribute was among the lowest ranked of any of the nine intrinsic attributes studied. This suggests that, while the median ratings used to assess overall importance indicated that respondents consider this attribute important, Ease of care is likely not an attribute that is heavily influencing apparel purchases for Mexican-American women given the attributes that are ranked substantially higher.

*Comfort.* This attribute was deemed critically important in the purchase of casual pants, skirts, and dresses, and at least moderately important in the purchase of casual tops according to median ratings (5 for pants, skirts, dresses vs. 4 for tops). Wilcoxon signed rank

tests showed that this attribute was significantly more important in the purchase of casual skirts than tops. In terms of relative importance, the Comfort attribute was highest ranked in the purchase of pants, followed by skirts, dresses, and finally, tops. These findings suggest a decreased importance for Comfort in the purchase of casual tops, specifically compared to pants and skirts. Nevertheless, this attribute was consistently considered as a determinant attribute across garment categories, ranking third in determinance for all garments studied.

*Fiber content / fabrication.* This attribute was consistently the lowest rated of all of the intrinsic criteria studied, receiving median ratings of 3 in the casual pants, tops, and skirts purchases, and a median rating of 4 in dresses purchases. Because only the minimum (1) and maximum (5) points on the rating scales featured labels, it is impossible to definitively know what respondents associated with a rating of 3. However, as the mid-point on the 5-point scale, it is likely that median ratings of 3 indicate some degree of neutrality or indecisiveness on the respondents' parts, which should not be construed as either importance or unimportance. Wilcoxon signed rank tests did not reveal any significant differences in these ratings across garment categories. Consistently ranked at the bottom of the attribute listings in the relative importance and determinance comparisons, Fiber content / fabrication was neither a particularly important nor determinant attribute in the purchase of casual pants, tops, skirts, nor dresses.

*Importance, Relative Importance, and Determinance of Extrinsic Brand / Situational Attributes*

As summarized above, almost all of the intrinsic attributes were considered quite important, and often determinant, in the purchase of each of the four garment types studied.

While median ratings ascribed to the entire range of intrinsic and extrinsic attributes tended to skew to indicate almost widespread importance, more variability in the ratings and lower degrees of importance and determinance were observed overall for many extrinsic attributes.

*Versatility with existing wardrobe.* This attribute was considered important (with a median rating of 4) in the purchase of casual pants, tops, and skirts. However, its rating in the purchase of dresses fell in the middle of the 5-point scale, suggesting that the sample considered this attribute neither unimportant nor important when purchasing dresses.

Assessment of the Wilcoxon signed rank tests and the relative importance rankings further support the decreased importance placed on this attribute in the purchase of dresses. While this attribute was not overwhelmingly determinant in the purchase of any particular garment type, it was ranked in the top ten in determinance rankings for pants, tops, and skirts.

Clearly, Versatility with existing wardrobe is a consideration for many Mexican-American women when shopping.

*Price.* The criteria of Price was the highest rated of all extrinsic attributes studied and among the highest rated of all of the 20 attributes. This attribute was consistently rated towards the higher end of the rating scale, and was considered critically important in the purchase of pants and tops. Wilcoxon signed rank tests showed that Price was significantly less important (though not unimportant) in the purchase of dresses than for pants and tops. Relative importance rankings support this finding, indicating that Price is relatively less important in the purchase of dresses. Though these differences in importance and relative importance were apparent, Price was clearly determinant in apparel purchases, ranking second in determinance, regardless of the garment type studied.

*Brand name / store name.* This attribute was one of only two to receive a median rating below 3. For two garments, casual skirts and dresses, ratings were 2, indicating very little importance of Brand name / store name when shopping for these items. Comparison of the median ratings through Wilcoxon signed rank tests showed significantly higher importance for Brand name / store name in purchases of pants and tops (with ratings of 3 compared to 2 for skirts and dresses). However, given the low ratings for this attribute overall, which were further supported by relative importance and determinance rankings, this attribute does not appear to be important for Mexican-American women in apparel purchases.

*Country of origin.* This attribute consistently received the lowest median ratings, lowest relative importance rankings, and next to the lowest determinance rankings across garment categories. While Wilcoxon signed rank tests specified a decreased importance for Country of origin in the purchase of skirts, compared to tops, the median ratings were identical (1) for all garment types studied. Clearly, the most important finding related to this attribute is the fact that it is considered not at all important for all apparel purchases.

*Importance, Relative Importance, and Determinance of Extrinsic Expressive / Symbolic Attributes*

Analysis of the seven expressive / symbolic attributes showed that when considered as a group, these criteria were comparatively less important in the purchase of apparel than the other categories of criteria. While at least one of the attributes in each of the other categories was considered critical in the purchase of certain apparel items, none of the seven expressive

/ symbolic attributes posted a median rating of 5 for any of the garment types studied.

However, many of the attributes were at least moderately important.

*Appropriateness for end use.* Based on median ratings, this attribute was only important in the purchase of casual dresses, with a median rating of 4. In shopping for casual pants, tops, and skirts, respondents neither expressed importance nor unimportance for this attribute, with median ratings of 3. While this median rating was different for dresses than the remaining garment types, Wilcoxon signed rank tests did not indicate any significance to these differences. Overall, Appropriateness for end use was not an important, relatively important, or determinant attribute in the purchase of apparel.

*Suitability for the individual.* With median ratings of 4 across garment categories, this attribute was considered important in the purchase of casual pants, tops, skirts, and dresses. Despite identical ratings, Wilcoxon signed rank tests (and relative importance rankings) indicated that Suitability for the individual was significantly more important in the purchase of pants compared to tops and skirts. While this attribute was considered important when considering median ratings, it was ranked very low in relative importance and determinance.

*Sexy.* The attribute Sexy was considered important in all garment categories except pants, with median ratings of 4 in the purchase of tops, skirts, and dresses. Wilcoxon signed rank tests revealed that this difference was significant, with significantly lower importance attributed to Sexy when shopping for casual pants. Additional comparisons made through the Wilcoxon signed rank tests showed that Sexy was significantly more important for dress purchases than top purchases, despite having the same median ratings. This pattern of lower importance in pants, with greater importance when moving from the categories of tops to

skirts, then dresses was also supported by the relative importance rankings. Sexy was not an overwhelmingly determinant attribute in the purchase of any garment type studied, though it ranked in the top ten in determinance in the purchase of casual skirts and dresses.

*Fashionability.* This attribute was considered important, with median ratings of 4, for all of the garment types studied. Though these median ratings were the same, Wilcoxon signed rank tests revealed identical findings just discussed for the Sexy attribute. Thus, Fashionability was considered significantly less important in the purchase of pants than tops, skirts, and dresses. In addition, this attribute was significantly more important when purchasing dresses compared to tops. A similar pattern was noted in the relative importance rankings as well, in which Fashionability was ranked lower in relative importance for pants, and increased in relative importance when moving from the categories of tops to skirts, and then dresses. Nevertheless, Fashionability was the second-highest ranked extrinsic attribute (and the highest expressive / symbolic attribute) in terms of relative importance and determinance. This, considered along with the median ratings, clearly indicate the importance of Fashionability in apparel purchases.

*Individuality / uniqueness.* This attribute received median ratings of 4 across garment categories, indicating its importance in the purchase of apparel. Even so, Wilcoxon signed rank tests showed that Individuality / uniqueness was significantly less important for pants than tops, skirts, and dresses, and significantly more important for dresses than tops, skirts, and pants. This pattern was reflected in the relative importance rankings, which indicated the lowest relative importance for this attribute in the purchase of pants, with greater importance for tops, skirts, and then dresses (with the highest). Individuality / uniqueness was not

considered a determinant criteria overall, with its highest determinance ranking observed in the garment category of dresses (with a ranking of 9).

*Promotes high self-esteem.* Respondents considered this attribute important in the purchase of casual pants, tops, skirts, and dresses, with identical median ratings of 4 for all garments. Wilcoxon signed rank tests illustrated that while median ratings were the same, importance was significantly greater in the purchase of casual dresses when compared to pants and tops. In addition, relative importance rankings revealed a similar pattern as observed for several other attributes in this category, in which Promotes high self esteem was considered relatively less important for pants and tops, and relatively more important for skirts and dresses. While this attribute was relatively more important for skirts and dresses, Promotes high self esteem was not a determinant attribute. For all garment categories studied, this attribute was ranked in the bottom ten in terms of determinance.

*Pleasing to others.* According to the median ratings for this attribute, Pleasing to others was neither considered important nor unimportant in garment purchases (with ratings of 3 for all garment categories). It was also ranked low in relative importance and determinance, suggesting that this attribute is not very important in the purchase of apparel, particularly compared to other attributes used in the apparel purchase decision. While the median ratings were the same across garment categories, Wilcoxon signed rank tests supported previous patterns noted among many of the expressive / symbolic attributes. Pleasing to others was considered significantly more important for dresses than tops and pants, and significantly less important for pants than skirts and dresses.

### *Effect of Physical Body-Related Characteristics on Evaluative Criteria Ratings*

To evaluate the impact of physical body-related characteristics on the importance attributed to intrinsic and extrinsic criteria when purchasing casual pants, tops, skirts, and dresses, the effect of body shape perception, BMI category, and clothing size was analyzed. Overall, very little evidence was uncovered to indicate a significant effect of any of these characteristics on evaluative criteria ratings.

For instance, results from the Kruskal-Wallis tests indicated very little, if any, real affect from body shape perception on the evaluative criteria ratings for any of the garment types. Only the two attributes of Price and Promotes high self esteem seemed to be affected by body shape in the purchase of casual tops and dresses, respectively. Given the very large number of Kruskal-Wallis tests performed, and the large number of subsequent pairwise comparisons performed to determine the source of the significance, these significant results should be interpreted with some hesitation. The lack of any strong pattern in significance for any attribute or garment category certainly suggests that body shape perception had little effect on the evaluative criteria ratings provided by the sample in this study.

In addition, results of Kruskal-Wallis tests and subsequent post hoc comparisons did not provide overwhelming evidence of an effect of BMI on evaluative criteria importance. Only six significant relationships were noted, and only in the garment categories of tops and skirts. Given the multiple Kruskal-Wallis and pairwise comparisons conducted as part of this research question, it is quite likely that some of the significant relationships uncovered are actually the result of random error, rather than actual effects of BMI. The only possible pattern revealed through this testing related to the importance of the attribute Pleasing to

others in the purchase of tops and skirts. Obese respondents considered this attribute less important than their Underweight / Normal and Overweight counterparts. Other than this pattern, none of the remaining significant relationships suggested any particularly relevant pattern in attribute importance by BMI category.

Finally, very little evidence exists to suggest a significant effect of clothing size on the importance attributed to any criteria studied. Out of the 80 Kruskal-Wallis tests performed to assess the effect of clothing size on ratings, only four significant relationships were identified. All of the relationships involved attribute importance in the purchase of tops and skirts, though no overwhelming pattern emerged in these relationships. Findings suggest that respondents in the smaller size ranges consider Fiber content / fabrication and Price less important in tops purchase than respondents in the larger size ranges. The opposite pattern was suggested for the Pleasing to others attribute, which seemed more important for respondents in the smaller size ranges and less important for those in the larger size ranges. However, these findings should be analyzed with caution, considering the large number of Kruskal-Wallis ANOVA's and subsequent pairwise comparisons performed for this research question and the small number of significant relationships found overall.

#### *Effect of Ethnic Characteristics on Evaluative Criteria Ratings*

To evaluate the impact of ethnic factors on the importance attributed to intrinsic and extrinsic criteria when purchasing apparel, the effect of acculturation level and generational status was analyzed. Overall, very little evidence was uncovered to indicate a significant effect of any of these characteristics on evaluative criteria ratings.

When considering the impact of acculturation level, median ratings of the evaluative criteria studied in this research were largely similar, no matter the acculturation level of the respondent. Wilcoxon rank sum tests identified only three significant relationships across all attributes and garment categories studied. This very small number provides little evidence for an effect of acculturation level on attribute importance, though the significant relationships found suggested the possibility of an acculturation effect on the importance of Appropriateness for end use and Pleasing to others in some garment purchases. Wilcoxon rank sum tests revealed that highly acculturated respondents consider Appropriateness for end use significantly less important in their purchases of pants and tops than lowly acculturated respondents. While significance was not noted for this attribute in skirts and dresses purchases, the same trend was apparent, in which highly acculturated respondents rated the attribute lower than those in the low acculturation category. Considering the overall agreement among respondents in the two acculturation levels, this trend does highlight a possible effect of acculturation on the importance attributed to Appropriateness to end use. In addition, highly acculturated respondents considered Pleasing to others significantly less important in the purchase of dresses than lowly acculturated respondents. While this attribute's ratings were not deemed significantly different in the purchase of any other garment category, the same trend was noted for the importance of the attribute in skirts purchases. Given the small number of significant relationships found overall, this research suggests that acculturation level does not significantly impact the importance attributed to the evaluative criteria studied, though further research should be conducted to fully understand any possible effect on the two expressive / symbolic attributes discussed above.

The Kruskal-Wallis and subsequent post hoc comparisons performed for this research question yielded seemingly scattered results regarding the impact of generational status on evaluative criteria importance. Results showed that the majority of the significant effects of generational status on attribute ratings involved pants purchases (with four of the seven significant findings in this category alone). The three remaining significant findings included one in each of the other garment categories. This suggests that generational status most commonly affected evaluative criteria preferences in the purchase of casual pants. Though several instances of significance were found, no overwhelming pattern emerged either within or across garment categories or attributes. The only semblance of a pattern involved the importance attributed to Suitability for the individual in the purchase of pants and dresses, in which third generation respondents considered the attribute significantly more important than second generation respondents. However, this finding was the only one of its kind. The otherwise lack of any pattern, when considered with the overall low number of significant relationships identified seems to suggest very little, if any, real effect of generational status on evaluative criteria importance in apparel purchases.

In summary, the ethnic factors of acculturation level and generational status did not overwhelmingly impact the importance attributed to the 20 intrinsic and extrinsic evaluative criteria in apparel purchases. When the findings from the two characteristics are considered together, the only “trend” that emerges involves the importance of Appropriateness for end use in pants purchases. Respondents in the low acculturation category considered this attribute significantly more important than respondents in the high acculturation category. Similarly, first generation respondents (likely composed of some of the same respondents in

the low acculturation category) considered this attribute more important than second and third generation respondents.

#### *Effect of Demographic Characteristics on Evaluative Criteria Ratings*

To assess the impact of the demographic variables on evaluative criteria importance in apparel purchases, Kruskal-Wallis ANOVA's were performed to compare median ratings of attributes across a variety of educational levels, income levels, and occupational categories. Several significant relationships were discovered through statistical analysis, though some of these should be interpreted with caution. Methods utilized to recruit respondents enlisted the help of representatives at colleges and universities across the Southwestern US, resulting in a sample made up of predominantly college students, with relatively low income levels. Thus, sample sizes for some of the other categories used to define educational level, income, and occupation were quite low, and occasionally contributed to significant findings that were of little practical importance.

No significant effect from income was found in any of the 80 Kruskal-Wallis tests performed across garment categories and attributes. Obviously, this research showed that income did not impact the importance of evaluative criteria in Mexican-American women's apparel purchases.

Kruskal-Wallis and subsequent post hoc analysis revealed 13 significant relationships in which educational level affected evaluative criteria ratings. Only one of the 13 involved an intrinsic attribute, while the remaining involved extrinsic attributes. Of the relationships that noted a significant effect of educational level on extrinsic attributes, 11 involved

expressive / symbolic attributes. This suggests that educational level more commonly impacts the importance of expressive / symbolic attributes in apparel purchases.

Many of the significant relationships uncovered through statistical analysis may not be of practical importance given the large number of Kruskal-Wallis tests and multiple post hoc comparisons performed, and the fact that many of the findings lacked any real pattern across garment categories, attributes, or educational levels. However, several possible trends related to the impact of educational level on evaluative criteria importance were suggested by this research. For instance, in the purchase of pants and skirts, Fashionability was considered more important for Mexican-American women with lower educational levels and less important for those with higher educational levels. In addition, Individuality / uniqueness appeared to be more important for respondents with lower educational levels than for respondents with the highest educational level when purchasing tops, skirts, and dresses. A very similar trend was noted for the attribute Promotes high self esteem. In the purchase of tops, skirts, and dresses, results suggested that respondents with higher educational levels did not consider this attribute as important as respondents with lower educational levels. These trends all seem to indicate that the expressive / symbolic attributes of Fashionability, Individuality / uniqueness, and Promotes high self esteem are more important for Mexican-American women with lower educational levels, and less important as educational level increases. However, given the low number of respondents in some of the educational levels, particularly “High school graduate” and “Post graduate work,” and the multiple statistical procedures performed, these trends should be further investigated in future research to provide more convincing evidence.

Statistical analysis of the effect of occupation on evaluative criteria importance was also somewhat compromised by the small sample sizes in a number of occupational categories, including service / sales, homemaker, and not employed. However, a few trends were apparent in Kruskal-Wallis tests which suggest that occupation may indeed influence the importance attributed to the two criteria of Individuality / uniqueness and Promotes high self esteem. Results showed that students consistently considered Individuality / uniqueness significantly more important than office and professional / managerial workers when shopping for tops, skirts, and dresses. Similarly, students also considered Promotes high self esteem significantly more important than office and professional / managerial workers in pants, tops, and skirts purchases.

While results of this research seem to suggest a few effects of education and occupation on evaluative criteria importance, more extensive research (with larger sample sizes across all categories) is needed. Additional research could potentially strengthen these findings and would provide the support needed for the information to be most useful for apparel firms.

### **Research Objective 3 Results**

*To examine the fit preferences of Mexican-American women, ages 18-25 from the Southwestern US, across a range of apparel product categories*

Apparel fit is critical in apparel purchases, influencing multiple dimensions including aesthetics, functionality, and expressive qualities of a final garment. This study alone showed the high importance and determinance of the Fit / sizing attribute in Mexican-American women's apparel purchases. However, apparel fit preferences are highly personal

and subjective, varying based on physical body and related characteristics, current fashion trends, and demographic and psychographic factors. Many stereotypes also exist regarding Hispanic apparel fit preferences, complicating product development for this market.

This research objective evaluated the apparel fit preferences of Mexican-American females (18 – 25 from the Southwestern US) using an original fit preference assessment scale developed for this research. This scale assessed fit preference by demonstrating three levels of fit for a pair of casual pants, a top, skirt, and dress. The fit levels included fitted, semi-fitted, and loose and respondents were able to select the level they were most likely to choose for themselves in a purchase situation. The scale developed for this research was unique in its use of a human body model and digital photographs.

This section will present the results for RO3, by first reporting the respondents' fit preferences for casual pants, tops, skirts, and dresses (RQ1). Results of statistical analyses to determine the effect (if any) of physical body-related characteristics, ethnic characteristics, or demographic variables on these fit preferences will then be presented, satisfying RQ2 – RQ4 of this research objective.

#### *Research Question 1*

*Do Mexican-American women prefer fitted, semi-fitted, or loose casual pants, tops, skirts, and dresses?*

As discussed, respondents expressed their fit preference for casual pants, tops, skirts, and dresses by indicating whether they would choose to purchase and wear the fitted, semi-fitted, or loose versions of the garments in the online survey. Table 78 shows the compiled fit preference results across the four garment categories studied.

**Table 78: Fit preference by garment category (all subjects)**

Fit Preference \ Garment Category	Fitted		Semi-Fitted		Loose		Totals	
	Number	% of total	Number	% of total	Number	% of total	Number	% of total
Pants	66	31.13	108	50.94	38	17.92	212	100.00
Tops	46	21.70	123	58.02	43	20.28	212	100.00
Skirts	67	31.60	88	41.51	57	26.89	212	100.00
Dresses	50	23.58	110	51.89	52	24.53	212	100.00

*Casual Pants*

Slightly over half of the respondents indicated their preferences for semi-fitted casual pants, making this fit level the most preferred across the entire sample. The next most preferred was fitted, with almost one-third of the sample indicating this fit level as their preference for casual pants. The loose fit level was the least preferred among respondents, with only 18% of the sample choosing this level of fit. Figure 12 shows the three fit levels used in the survey to assess the fit preference of casual pants.

*Casual Tops*

The clear majority of respondents preferred the semi-fitted casual top when asked about their fit preference. About 60% of respondents selected this middle fit level, with the remaining respondents almost evenly split between the upper and lower extreme fit levels (with approximately 20% selecting the fitted top and 20% selecting the loose top). Figure 13 shows the three levels of fit used to assess the fit preference of casual tops.

### *Casual Skirts*

Results indicated that respondents in this sample largely preferred semi-fitted casual skirts, with slightly more than 40% of the sample indicating this fit level preference. The next most preferred fit level for casual skirts was fitted, with approximately one-third of the respondents preferring this fit in skirts. A sizable portion of the sample (~25%) preferred the loose fit in casual skirts, though this level was the least preferred in this garment category. Figure 14 shows the three levels used to assess the fit preference of casual skirts.

### *Casual Dresses*

Over half of the respondents preferred semi-fitted casual dresses. The remaining respondents were fairly evenly split over the remaining two categories, with about one-quarter of the sample preferring fitted skirts, and another one-quarter preferring loose skirts. Figure 15 shows the three levels used to determine the fit preference of casual dresses.

### *Research Question 2*

*Do physical body characteristics, including body shape perception, BMI, or clothing size, impact the fit preferences of Mexican-American women?*

To assess the effect of physical body characteristics on apparel fit preferences, the online survey featured questions regarding body shape, height and weight (used to calculate BMI), and typical clothing sizes worn in casual pants, tops, skirts, and dresses. It is critical to reiterate that respondents self-reported this information, resulting in physical body-related information that is more accurately defined as physical body *perception* rather than *actual, confirmed information*.

Because the fit preference responses were considered nominal data for analysis purposes (fitted, semi-fitted, loose), the Chi-Square test was used to assess the possible impact of the relationship between physical body characteristics and fit preferences. Details related to this test were presented in the “Data Analysis” portion of the methodology.

### *Body Shape Perception*

As discussed, respondents indicated their body shape as one of nine possible categories illustrated in the online survey. Tables 79 through 82 were then constructed to show the fit preference distribution within these shape categories for each of the four garment categories studied (Table 79 focused on fit preference for pants, Table 80 for tops, Table 81 for skirts, and Table 82 for dresses). The top value in each cell is the number of respondents indicating their preference for the specific fit level in each body shape category. The other value is the “% of row,” meaning the percentage of respondents in each body shape category who chose each fit level as their preferred fit. The last column shows the total number of respondents in each body shape category, which is a useful reminder of the uneven distribution of the sample across the shape categories. The bottom row shows the total number of respondents who indicated each level as their fit preference for the individual garment type.

**Table 79: Fit preference by body shape contingency table – Casual pants**

<b>Count % of row</b>	<b>Fitted</b>	<b>Semi-Fitted</b>	<b>Loose</b>	<b>Totals</b>
Bottom Hourglass	15 30.61%	28 57.14%	6 12.24%	49
Diamond	2 22.22%	6 66.67%	1 11.11%	9
Hourglass	14 29.17%	22 45.83%	12 25.00%	48
Inverted Triangle	3 75.00%	0 0.00	1 25.00%	4
Oval	3 15.79%	9 47.37%	7 36.84%	19
Rectangle	7 29.17%	15 62.50%	2 8.33%	24
Spoon	10 32.26%	17 54.84%	4 12.90%	31
Top Hourglass	8 44.44%	8 44.44%	2 11.11%	18
Triangle	4 40.00%	3 30.00%	3 30.00%	10
<b>Totals</b>	<b>66</b>	<b>108</b>	<b>38</b>	<b>212</b>

**Table 80: Fit preference by body shape contingency table – Casual tops**

<b>Count % of row</b>	<b>Fitted</b>	<b>Semi-Fitted</b>	<b>Loose</b>	<b>Totals</b>
Bottom Hourglass	10 20.41%	31 63.27%	8 16.33%	49
Diamond	0 0.00%	5 55.56%	4 44.44%	9
Hourglass	12 25.00%	29 60.42%	7 14.58%	48
Inverted Triangle	1 25.00%	1 25.00%	2 50.00%	4
Oval	5 26.32%	6 31.58%	8 42.11%	19 8.96
Rectangle	2 8.33%	16 66.67%	6 25.00%	24
Spoon	8 25.81%	20 64.52%	3 9.68%	31
Top Hourglass	8 44.44%	9 50.00%	1 5.56%	18
Triangle	0 0.00%	6 60.00%	4 40.00%	10
<b>Totals</b>	<b>46</b>	<b>123</b>	<b>43</b>	<b>212</b>

**Table 81: Fit preference by body shape contingency table – Casual skirts**

<b>Count % of row</b>	<b>Fitted</b>	<b>Semi-Fitted</b>	<b>Loose</b>	<b>Totals</b>
Bottom Hourglass	15 30.61%	21 42.86%	13 26.53%	49
Diamond	0 0.00%	5 55.56%	4 44.44%	9
Hourglass	16 33.33%	17 35.42%	15 31.25%	48
Inverted Triangle	1 25.00%	2 50.00%	1 25.00%	4
Oval	3 15.79%	9 47.37%	7 36.84%	19
Rectangle	6 25.00%	9 37.50%	9 37.50%	24
Spoon	12 38.71%	15 48.39%	4 12.90%	31
Top Hourglass	12 66.67%	6 33.33%	0 0.00%	18
Triangle	2 20.00%	4 40.00%	4 40.00%	10
<b>Totals</b>	<b>67</b>	<b>88</b>	<b>57</b>	<b>212</b>

**Table 82: Fit preference by body shape contingency table – Casual dresses**

<b>Count % of row</b>	<b>Fitted</b>	<b>Semi-Fitted</b>	<b>Loose</b>	<b>Totals</b>
Bottom Hourglass	11 22.45%	24 48.98%	14 28.57%	49
Diamond	1 11.11%	6 66.67%	2 22.22%	9
Hourglass	11 22.92%	28 58.33%	9 18.75%	48
Inverted Triangle	1 25.00%	2 50.00%	1 25.00%	4
Oval	3 15.79%	7 36.84%	9 47.37%	19
Rectangle	5 20.83%	11 45.83%	8 33.33%	24
Spoon	12 38.71%	14 45.16%	5 16.13%	31
Top Hourglass	6 33.33%	11 61.11%	1 5.56%	18
Triangle	0 0.00%	7 70.00%	3 30.00%	10
<b>Totals</b>	<b>50</b>	<b>110</b>	<b>5</b>	<b>212</b>

Based on the distributions shown in Tables 79 through 82, a Chi-Square test statistic and associated p-values were calculated to represent the possible effect of body shape on fit preference in each garment category. Table 83 shows the test statistic (“ChiSquare”) and the p-value (“Prob>ChiSq”) calculated in each garment category. P-values below the alpha value of 0.05 used in this research indicate a significant effect of body shape on respondents’ fit preferences. As shown in Table 83, body shape seemed to significantly affect the respondents’ fit preferences for casual tops. However, it is important to note that the statistical software program used in this research issued cautions for each of the four Chi-Square analyses performed to assess the effect of body shape. The large number of body

shape categories resulted in expected cell counts of less than 5 for at least 20% of the cells shown in Tables 79 through 82. Since this Chi-Square testing aims to compare these expected versus actual values to identify possibly relationships, the results are somewhat suspect.

**Table 83: Chi-Square test results – Effect of body shape on apparel fit preferences**

Pants		Tops		Skirts		Dresses	
ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq
19.700	0.2340	30.952	0.0136*	25.384	0.0633	19.787	0.2300

Note: \* Indicates significance at the 95% confidence level

Even though expected cell counts were less than 5 in 20% of cells, post-hoc comparisons were still performed to identify any trends regarding the effect of body shape on the fit preferences for casual tops. As discussed in the methodology, the post-hoc comparisons performed for the Chi-Square tests involved a comparison of the cell counts expected (under a theoretical distribution) and those actually observed (in the distribution of the sample across cells in this research). Cells that featured high deviations between expected and actual counts suggest a possible effect of body shape on fit preference and can be used to describe the nature of the relationship between these factors. Table 84 shows the post hoc comparison performed for the casual tops category, and each cell shows the observed count (“Count”), the expected count (“Expected”), and the deviation among observed versus expected counts (“Deviation”). A “Totals” column and row is also shown as a reminder of the overall distribution of the respondents across body shape categories and fit preference levels.

**Table 84: Fit preference by body shape post hoc evaluation – Casual tops**

<b>Count Expected Deviation</b>	<b>Fitted</b>	<b>Semi-Fitted</b>	<b>Loose</b>	<b>Totals</b>
Bottom Hourglass	10 10.632 -0.632	31 28.429 2.571	8 9.939 -1.939	49
Diamond	0 1.953 -1.953	5 5.223 -0.223	4 1.825 2.175	9
Hourglass	12 10.415 1.585	29 27.849 1.151	7 9.736 -2.736	48
Inverted Triangle	1 0.868 0.132	1 2.321 -1.321	2 0.811 1.189	4
Oval	5 4.123 0.877	6 11.024 -5.024	8 3.854 4.146	19
Rectangle	2 5.208 -3.208	16 13.925 2.075	6 4.868 1.132	24
Spoon	8 6.726 1.274	20 17.986 2.014	3 6.288 -3.288	31
Top Hourglass	8 3.906 4.094	9 10.443 -1.443	1 3.651 -2.651	18
Triangle	0 2.170 -2.170	6 5.802 0.198	4 2.028 1.972	10
<b>Totals</b>	46	123	43	212

Several trends were apparent when looking at the fit preferences expressed by respondents in the individual body shape categories (Table 84). For instance, respondents in the Diamond shape category preferred more loosely fitted tops than expected, and less fitted than expected. A similar pattern occurred for those in the Oval shape category, in which

more respondents than expected chose the loose fit and less than expected chose the semi-fitted casual top. In addition, respondents in the Rectangle and Triangle shape categories chose fitted less often than expected, and semi-fitted and loose more often than expected.

On the other hand, in the Hourglass and Spoon shape categories, more respondents than expected chose the fitted and semi-fitted casual top and fewer than expected chose the loose fit. Similarly, in the Top Hourglass shape category, more respondents than expected chose the fitted top and fewer than expected chose the semi-fitted and loose fit levels.

No trends such as those discussed above were present in the deviations between observed versus expected counts in the Bottom Hourglass and Inverted Triangle categories.

#### *Body Mass Index (BMI)*

As discussed, the BMI for each respondent was calculated using the self-reported height and weight values and the formula shown in Table 22. To determine the effect of BMI on fit preferences across garment categories, the three BMI levels of Underweight / Normal, Overweight, and Obese were used in the Chi-Square data analysis procedures. Contingency tables showing the distribution of the respondents within these BMI categories and their fit preferences across the three fit levels are shown in Tables 85 through 88. Table 85 shows the respondents' fit preferences (by BMI level) for casual pants, Table 86 for casual tops, Table 87 for casual skirts, and Table 88 for casual dresses. These tables show the raw count for each combination of BMI category and fit level, in addition to the percentage of the respondents in each BMI category who selected the individual fit level.

**Table 85: Fit preference by BMI category contingency table – Casual pants**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Underweight / Normal	36 30.51%	62 52.54%	20 16.95%	118
Overweight	17 34.69%	26 53.06%	6 12.24%	49
Obese	13 29.55%	20 45.45%	11 25.00%	44
<b>Totals</b>	<b>66</b>	<b>108</b>	<b>37</b>	<b>211</b>

**Table 86: Fit preference by BMI category contingency table – Casual tops**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Underweight / Normal	31 26.27%	70 59.32%	17 14.41%	118
Overweight	12 24.49%	27 55.10%	10 20.41%	49
Obese	3 6.82%	26 59.09%	15 34.09%	44
<b>Totals</b>	<b>46</b>	<b>123</b>	<b>42</b>	<b>211</b>

**Table 87: Fit preference by BMI category contingency table – Casual skirts**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Underweight / Normal	41 34.75%	49 41.53%	28 23.73%	118
Overweight	17 34.69%	21 42.86%	11 22.45%	49
Obese	9 20.45%	18 40.91%	17 38.64%	44
<b>Totals</b>	<b>67</b>	<b>88</b>	<b>56</b>	<b>211</b>

**Table 88: Fit preference by BMI category contingency table – Casual dresses**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Underweight / Normal	30 25.42%	65 55.08%	23 19.49%	118
Overweight	15 30.61%	24 48.98%	10 20.41%	49
Obese	4 9.09%	21 47.73%	19 43.18%	44
<b>Totals</b>	49	110	52	211

Based on the distribution of respondents across cells in Tables 85 through 88, Chi-Square test statistics and associated p-values were calculated to provide an indication of the possible effect of BMI category on apparel fit preferences. Table 89 shows the test statistic and the p-value summarizing the relationship between BMI and fit preference for casual pants, tops, skirts, and dresses. As shown in this table, Chi-Square testing suggests that BMI category significantly affected the fit preference expressed for casual tops and dresses (the p-values were below 0.5). These findings necessitate the post hoc evaluation of expected versus observed values within BMI categories and across fit levels to identify the nature of the relationship between these two variables. Table 90 shows the data necessary for the post hoc evaluation of the fit preferences for casual tops (actual observed count, expected count, and deviation), while Table 91 shows the same information for dress fit preferences.

**Table 89: Chi-Square test results – Effect of BMI category on apparel fit preferences**

Pants		Tops		Skirts		Dresses	
ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq
2.8092	0.5902	12.133	0.0164*	5.3445	0.2537	13.400	0.0095*

Note: \* Indicates significance at the 95% confidence level

**Table 90: Fit preference by BMI category post hoc evaluation – Casual tops**

Count Expected Deviation	Fitted	Semi-Fitted	Loose	Totals
Underweight / Normal	31 25.725 5.275	70 68.787 1.213	17 23.488 -6.488	118
Overweight	12 10.683 1.317	27 28.564 -1.564	10 9.754 0.246	49
Obese	3 9.592 -6.592	26 25.649 0.351	15 8.758 6.242	44
<b>Totals</b>	46	123	42	211

**Table 91: Fit preference by BMI category post hoc evaluation – Casual dresses**

Count Expected Deviation	Fitted	Semi-Fitted	Loose	Totals
Underweight / Normal	30 27.403 2.597	65 61.517 3.483	23 29.081 -6.081	118
Overweight	15 11.379 3.621	24 25.545 -1.545	10 12.076 -2.076	49
Obese	4 10.218 -6.218	21 22.938 -1.938	19 10.844 8.156	44
<b>Totals</b>	49	110	52	211

These post hoc evaluations yielded interesting results about the relationship between BMI category and fit preferences for casual tops and dresses. For casual tops, the most revealing pattern was apparent in the preferences expressed by respondents in the Underweight / Normal and Obese categories. As shown in Table 90, more respondents than expected in the Underweight / Normal BMI category chose the fitted casual top as their

preferred fit level, while fewer than expected chose the loose fit level. On the other hand, fewer respondents than expected in the Obese category chose the fitted casual top and more than expected chose the loosely fitted casual top.

A similar trend was clear in the post hoc evaluations performed for casual dresses. Underweight / Normal respondents were more likely than expected to prefer fitted and semi-fitted dresses, and less likely to prefer a loose fit level. Overweight respondents were also more likely than expected to prefer fitted casual dresses, and less likely to prefer semi-fitted and loose fit levels for their dresses. Obese respondents showed an opposite trend in their fit preference, with fewer respondents than expected choosing the fitted and semi-fitted casual dresses and more than expected choosing the loose dresses as their preference.

### *Clothing Size*

The effect of clothing size on apparel fit preferences was evaluated using self-reported information from respondents about the clothing sizes they usually wear in casual pants, tops, skirts, and dresses. As mentioned previously, very few respondents identified their clothing size as 0X, 1X, 2X, or 3X for any of the garment types and thus, these categories were combined with the XL category for all data analysis procedures.

Tables 92 through 95 show the distribution of the sample within each clothing size category and across fit levels for the four garment types studied (Table 92 focuses on casual pants, Table 93 on tops, Table 94 on skirts, and Table 95 on dresses). These tables include observed counts for each cell, as well as the percentage of respondents in each clothing size category who indicated their preference for each fit level. Totals for each row and column are shown, to illustrate the distribution of the sample within clothing size categories and

across the three fit levels. For each of these tables, the clothing size categories and garment categories are matched, resulting in tables that, for instance, illustrate the distribution of the sample within pant clothing size categories and across pant fit preference levels. The garment type is consistent among clothing size and fit preference for each of the tables.

**Table 92: Fit preference by clothing size contingency table – Casual pants**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
XS (0-2)	9 50.00%	8 44.44%	1 5.56%	18
S (4-6)	19 35.19%	26 48.15%	9 16.67%	54
M (8-10)	14 20.90%	40 59.70%	13 19.40%	67
L (12-14)	14 31.11%	24 53.33%	7 15.56%	45
XL and above (16-28W)	10 35.71%	10 35.71%	8 28.57%	28
<b>Totals</b>	<b>66</b>	<b>108</b>	<b>38</b>	<b>212</b>

**Table 93: Fit preference by clothing size contingency table – Casual tops**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
XS (0-2)	5 33.33%	8 53.33%	2 13.33%	15
S (4-6)	18 29.51%	40 65.57%	3 4.92%	61
M (8-10)	10 15.38%	36 55.38%	19 29.23%	65
L (12-14)	11 24.44%	26 57.78%	8 17.78%	45
XL and above (16-28W)	2 7.69%	13 50.00%	11 42.31%	26
<b>Totals</b>	<b>46</b>	<b>123</b>	<b>43</b>	<b>212</b>

**Table 94: Fit preference by clothing size contingency table – Casual skirts**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
XS (0-2)	8 47.06%	5 29.41%	4 23.53%	17
S (4-6)	18 31.58%	27 47.37%	12 21.05%	57
M (8-10)	20 32.79%	23 37.70%	18 29.51%	61
L (12-14)	16 32.65%	20 40.82%	13 26.53%	49
XL and above (16-28W)	5 17.86%	13 46.43%	10 35.71%	28
<b>Totals</b>	<b>67</b>	<b>88</b>	<b>57</b>	<b>212</b>

**Table 95: Fit preference by clothing size contingency table – Casual dresses**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
XS (0-2)	7 35.00	11 55.00	2 10.00	20
S (4-6)	20 34.48	31 53.45	7 12.07	58
M (8-10)	11 19.64	30 53.57	15 26.79	56
L (12-14)	9 18.75	24 50.00	15 31.25	48
XL and above (16-28W)	3 10.00	14 46.67	13 43.33	30
<b>Totals</b>	<b>50</b>	<b>110</b>	<b>52</b>	<b>212</b>

Table 96 shows the Chi-Square test statistics and p-values that describe the relationship between clothing size and fit preference across garment categories. As shown, this testing indicated a significant effect of clothing size on the fit preferences expressed for casual tops and dresses. The observed, expected, and deviation between observed and expected values

were used in post hoc evaluations to determine the nature of the significant relationship.

Table 97 shows the information needed for these evaluations for casual tops, while Table 98 shows the same information for casual dresses.

**Table 96: Chi-Square test results – Effect of clothing size on apparel fit preferences**

Pants		Tops		Skirts		Dresses	
ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq
10.931	0.2057	23.755	0.0025*	6.2181	0.6228	18.221	0.0196*

Note: \* Indicates significance at the 95% confidence level

**Table 97: Fit preference by clothing size post hoc evaluation – Casual tops**

Count Expected Deviation	Fitted	Semi-Fitted	Loose	Totals
XS (0-2)	5 3.255 1.745	8 8.703 -0.703	2 3.042 -1.042	15
S (4-6)	18 13.236 4.764	40 35.392 4.608	3 12.373 -9.373	61
M (8-10)	10 14.104 -4.104	36 37.712 -1.712	19 13.184 5.816	65
L (12-14)	11 9.764 1.236	26 26.109 -0.109	8 9.127 -1.127	45
XL and above (16-28W)	2 5.642 -3.642	13 15.085 -2.085	11 5.274 5.726	26
<b>Totals</b>	46	123	43	212

**Table 98: Fit preference by clothing size post hoc evaluation – Casual dresses**

Count Expected Deviation	Fitted	Semi-Fitted	Loose	Totals
XS (0-2)	7 4.717 2.283	11 10.377 0.623	2 4.906 -2.906	20
S (4-6)	20 13.679 6.321	31 30.094 0.906	7 14.226 -7.226	58
M (8-10)	11 13.208 -2.208	30 29.057 0.943	15 13.736 1.264	56
L (12-14)	9 11.321 -2.321	24 24.906 -0.906	15 11.774 3.226	48
XL and above (16-28W)	3 7.075 -4.075	14 15.566 -1.566	13 7.358 5.649	30
Totals	50	110	52	212

Several trends related to the respondents' fit preferences for casual tops are clear in Table 97, particularly in the S (4 – 6), M (8 – 10), and XL and above (16 – 28W) size categories. Respondents who indicated their top clothing size as S (4 – 6) were more likely than expected (under a theoretical distribution) to select fitted and semi-fitted casual tops as their fit preference. Respondents in this same group were less likely than expected to indicate their preference for the loose fit level. On the other hand, respondents who wore M (8 – 10) and XL and above (16 – 28W) tops were more likely than expected to select loose as their fit preference level, and less likely than expected to select fitted and semi-fitted levels. Very low deviations from the expected values were observed within the XS (0 – 2) and L (12 – 14) clothing size categories across the fit levels.

Notable trends also existed when considering fit preference by clothing size for casual dresses, specifically when comparing the deviations between observed versus expected values for fitted and loose preference levels. Respondents in the XS (0 – 2) and S (4 – 6) size categories indicated their fit preference for fitted dresses more often than expected, and for loose dresses less often than expected. On the other hand, respondents in the M (8 – 10), L (12 – 14), and XL and above (16 – 28W) categories selected loose dresses more often than expected and fitted dresses less often than expected. Relatively small deviations were observed in the semi-fitted level, meaning that observed and expected values were similar.

### *Research Question 3*

*Do ethnic factors, including acculturation level and generational status, impact the fit preferences of Mexican-American women?*

Screening questions utilized in the online survey ensured that all respondents were Mexican-American, thus holding the ethnic factor of subculture constant in this research. However, respondents provided information to enable the calculation of acculturation level and generational status. The effect of these two ethnic factors on apparel fit preferences was assessed using Chi-Square test methods described in the methodology chapter.

#### *Acculturation Level*

As discussed in the methodology, respondents were labeled as either high or low in acculturation based on their use of Spanish and English in a variety of situations. Contingency tables that show the distribution of respondents in these two acculturation levels, and their fit preferences for casual pants, tops, skirts, and dresses are shown in Tables 99 through 102. Table 99 shows respondents' fit preferences for casual pants (organized by

acculturation level), Table 100 focuses on casual tops, Table 101 on casual skirts, and Table 102 on casual dresses. These tables show the total number of respondents in each acculturation level (last column, shaded in grey) and each fit preference level (last row, shaded in grey), as well as the number of respondents in each acculturation/fit preference category combination (cells in white). The percentage of respondents in each acculturation level who selected each fit level as their fit preference is also shown in the cells in white.

**Table 99: Fit preference by acculturation level contingency table – Casual pants**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
High	43 28.10%	80 52.29%	30 19.61%	153
Low	23 38.98%	28 47.46%	8 13.56%	59
Totals	66	108	38	212

**Table 100: Fit preference by acculturation level contingency table – Casual tops**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
High	33 21.57%	89 58.17%	31 20.26%	153
Low	13 22.03%	34 57.63%	12 20.34%	59
Totals	46	123	43	212

**Table 101: Fit preference by acculturation level contingency table – Casual skirts**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
High	49 32.03%	66 43.14%	38 24.84%	153
Low	18 30.51%	22 37.29%	19 32.20%	59
Totals	67	88	57	212

**Table 102: Fit preference by acculturation level contingency table – Casual dresses**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
High	32 20.92%	84 54.90%	37 24.18%	153
Low	18 30.51%	26 44.07%	15 25.42%	59
<b>Totals</b>	50	110	52	212

As shown in Tables 99 through 102, most respondents, regardless of acculturation level, preferred semi-fitted casual pants, tops, skirts, and dresses. Substantial portions of the population in both acculturation levels also indicated their preference for fitted or loose apparel as well. However, Chi-Square testing revealed no significant effect of acculturation on the fit preference of any garment category studied. Chi-Square test statistics and associated p-values are shown in Table 103, and clearly demonstrate the absence of any significant effect of acculturation level on fit preference. Thus, no post hoc evaluations were needed.

**Table 103: Chi-Square test results – Effect of acculturation level on apparel fit preferences**

Pants		Tops		Skirts		Dresses	
ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq
2.6826	0.2615	0.0065	0.9967	1.2414	0.5376	2.6516	0.2656

### *Generational Status*

To determine the impact of generational status on apparel fit preferences, respondents were first classified as first, second, mixed-second, or third generation based on information they provided about their parents' and their own country of birth. The effect of generational status on apparel fit preferences was then evaluated through Chi-Square testing procedures described in the methodology.

Tables 104 through 107 are contingency tables showing the distribution of respondents within each generation, and their fit preferences (by generation). Table 104 focuses on fit preferences for casual pants, Table 105 for casual tops, Table 106 for casual skirts, and Table 107 for casual dresses. To provide a clear indication of the fit preference by generation, the table shows the number of respondents in each generation who indicated their preference for fitted, semi-fitted, and loose garments, as well as the corresponding percentage of respondents within each preference level. The tables also show the total number of respondents in each generation, and the distribution of total respondents across each fit level.

**Table 104:** Fit preference by generational status contingency table – Casual pants

Count % of row	Fitted	Semi-Fitted	Loose	Totals
First	14 36.84%	18 47.37%	6 15.79%	38
Second	30 35.71%	38 45.24%	16 19.05%	84
Mixed	12 34.29%	15 42.86%	8 22.86%	35
Third	10 18.18%	37 67.27%	8 14.55%	55
<b>Totals</b>	66	108	38	212

**Table 105: Fit preference by generational status contingency table – Casual tops**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
First	11 28.95%	18 47.37%	9 23.68%	38
Second	23 27.38%	47 55.95%	14 16.67%	84
Mixed	3 8.57%	23 65.71%	9 25.71%	35
Third	9 16.36%	35 63.64%	11 20.00%	55
<b>Totals</b>	<b>46</b>	<b>123</b>	<b>43</b>	<b>212</b>

**Table 106: Fit preference by generational status contingency table – Casual skirts**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
First	12 31.58%	17 44.74%	9 23.68%	38
Second	31 36.90%	28 33.33%	25 29.76%	84
Mixed	11 31.43%	15 42.86%	9 25.71%	35
Third	13 23.64%	28 50.91%	14 25.45%	55
<b>Totals</b>	<b>67</b>	<b>88</b>	<b>57</b>	<b>212</b>

**Table 107: Fit preference by generational status contingency table – Casual dresses**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
First	10 26.32%	22 57.89%	6 15.79%	38
Second	23 27.38%	47 55.95%	14 16.67%	84
Mixed	6 17.14%	15 42.86%	14 40.00%	35
Third	11 20.00%	26 47.27%	18 32.73%	55
<b>Totals</b>	<b>50</b>	<b>110</b>	<b>52</b>	<b>212</b>

As shown in Tables 104 through 107, most respondents, regardless of generation, preferred semi-fitted casual pants, tops, skirts, and dresses. Even so, many respondents of all generations also indicated their preference for fitted or loose apparel as well. However, Chi-Square testing revealed no significant effect of generation on the fit preference of any garment category studied. Chi-Square test statistics and associated p-values are shown in Table 108, and clearly demonstrate the absence of any significant effect of generational status on fit preference. Thus, no post hoc evaluations were needed.

**Table 108: Chi-Square test results – Effect of generational status on apparel fit preferences**

Pants		Tops		Skirts		Dresses	
ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq
8.9805	0.1747	8.402	0.2101	4.9492	0.5503	11.079	0.0860

*Research Question 4*

*Do selected demographic variables of educational level, income, or occupation impact the fit preferences of Mexican-American women?*

Screening questions used in the online survey restricted participation to Mexican-American women between the ages of 18 and 25 from the Southwestern US. This screening kept the demographic variables of gender, age, and geographic region of residence constant for the entire sample. Additional demographic information was gathered, however, such as educational level, income, and occupation. Chi-Square tests were performed using the methodology described in Chapter 3 to determine the effect, if any, of these demographic factors on the sample’s apparel fit preferences.

### *Educational Level*

As discussed previously, respondents indicated their educational attainment by selecting from a group of five descriptors, ranging from “Less than high school” to “Post graduate work.” However, none of the respondents had an educational level of “Less than high school,” so data analysis procedures, such as the Chi-Square tests used for this Research Question, involved the four educational levels of High school graduate, Some college, College graduate, and Post graduate work.

Contingency tables illustrating the apparel fit preferences expressed by respondents across the different educational levels were created for each of the four garment types studied. Table 109 shows the respondents’ fit preferences for casual pants, Table 110 shows their preferences for casual tops, Table 111 for casual skirts, and Table 112 for casual dresses. The tables show the number and percentage of respondents within each educational level who indicated their preference for each of the three fit levels. The last column and row, shaded in grey, show the total number of respondents in each educational level and fit preference level, respectively.

**Table 109: Fit preference by educational level contingency table – Casual pants**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
High school graduate	7 77.78%	1 11.11%	1 11.11%	9
Some college	46 32.86%	72 51.43%	22 15.71%	140
College graduate	12 24.49%	25 51.02%	12 24.49%	49
Post graduate work	1 7.14%	10 71.43%	3 21.43%	14
<b>Total</b>	66	108	38	212

**Table 110: Fit preference by educational level contingency table – Casual tops**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
High school graduate	3 33.33%	4 44.44%	2 22.22%	9
Some college	33 23.57%	81 57.86%	26 18.57%	140
College graduate	8 16.33%	31 63.27%	10 20.41%	49
Post graduate work	2 14.29%	7 50.00%	5 35.71%	14
<b>Total</b>	<b>46</b>	<b>123</b>	<b>43</b>	<b>212</b>

**Table 111: Fit preference by educational level contingency table – Casual skirts**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
High school graduate	5 55.56%	2 22.22%	2 22.22%	9
Some college	45 32.14%	56 40.00%	39 27.86%	140
College graduate	17 34.69%	23 46.94%	9 18.37%	49
Post graduate work	0 0.00%	7 50.00%	7 50.00%	14
<b>Total</b>	<b>67</b>	<b>88</b>	<b>57</b>	<b>212</b>

**Table 112: Fit preference by educational level contingency table – Casual dresses**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
High school graduate	3 33.33%	3 33.33%	3 33.33%	9
Some college	35 25.00%	71 50.71%	34 24.29%	140
College graduate	11 22.45%	29 59.18%	9 18.37%	49
Post graduate work	1 7.14%	7 50.00%	6 42.86%	14
<b>Total</b>	<b>50</b>	<b>110</b>	<b>52</b>	<b>212</b>

Overall, respondents predominantly preferred semi-fitted apparel regardless of educational level. However, distribution trends within educational levels and across fit levels suggest that preferences for fitted garments may be affected by educational level. Specifically for pants and skirts, high school graduates most preferred fitted garments, while respondents who had completed post graduate work were unlikely to prefer this closer fit level for any garment category. This trend was partially supported in the Chi-Square tests performed to determine the significance of any effect of educational level on fit preferences. As shown in Table 113, educational level significantly affected respondents' fit preferences for casual pants. It is important to note that JMP issued cautions about the validity of the Chi-Square results shown in Table 113 due to the uneven distribution of respondents across cells, which resulted in expected values of less than 5 for at least 20% of the cells.

**Table 113: Chi-Square test results – Effect of educational level on apparel fit preferences**

Pants		Tops		Skirts		Dresses	
ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq
15.558	0.0163*	4.331	0.6320	11.920	0.0638	6.2232	0.3987

Note: \* Indicates significance at the 95% confidence level

Post hoc evaluations of the expected versus observed values were performed to identify the type of effect that educational level has on pant fit preferences. Table 114 shows the number of respondents in each educational level who indicated their preference for each fit level (“Count”) as well as the number who would be expected to fall into each fit preference level under a theoretical distribution (“Expected”). The value termed “Deviation” is simply

the difference between the observed and expected values. Consideration of the deviations across the table suggest that high school graduates and those who had completed some college have different fit preferences than college graduates and those who have completed post graduate work. Specifically, respondents in the two lower educational levels were more likely than expected to prefer fitted casual pants, and less likely than expected to prefer loose fits for their pants. On the other hand, respondents in the higher educational levels were more likely than expected to prefer loose fits for their casual pants, and were less likely than expected to prefer fitted pants.

**Table 114: Fit preference by educational level post hoc evaluation – Casual pants**

Count Expected Deviation	Fitted	Semi-Fitted	Loose	Totals
High school graduate	7 2.80189 4.19811	1 4.58491 -3.5849	1 1.61321 -0.6132	9
Some college	46 43.5849 2.41509	72 71.3208 0.67925	22 25.0943 -3.0943	140
College graduate	12 15.2547 -3.2547	25 24.9623 0.03774	12 8.78302 3.21698	49
Post graduate work	1 4.35849 -3.3585	10 7.13208 2.86792	3 2.50943 0.49057	14
Total	66	108	38	212

*Income*

The effect of income on apparel fit preferences was assessed using information that respondents provided in the online survey about their income level. Very few respondents indicated that their income was over \$25,000, primarily due to sampling methods that

recruited respondents from colleges and universities. Thus, all data analysis, including the Chi-Square testing performed to satisfy this research objective, was performed using three income categories, Under \$25,000, \$25,000 and above, and would rather not say.

Tables 115 through 118 show the sample's fit preferences for all four garment types, organized by income level. Table 115 shows the fit preferences for casual pants, Table 116 for tops, Table 117 for skirts, and Table 118 for dresses. These contingency tables show the number and percentage of respondents in each income level who indicated their preference for fitted, semi-fitted, and loose garments, as well as the total number of respondents in each income level and total number in each fit preference level.

**Table 115: Fit preference by income level contingency table – Casual pants**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Under \$25,000	49 34.27%	73 51.05%	21 14.69%	143
\$25,000 and above	10 27.03%	20 54.05%	7 18.92%	37
Would rather not say	7 21.88%	15 46.88%	10 31.25%	32
Totals	66	108	38	212

**Table 116: Fit preference by income level contingency table – Casual tops**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Under \$25,000	28 19.58%	83 58.04%	32 22.38%	143
\$25,000 and above	8 21.62%	20 54.05%	9 24.32%	37
Would rather not say	10 31.25%	20 62.50%	2 6.25%	32
Totals	46	123	43	212

**Table 117: Fit preference by income level contingency table – Casual skirts**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Under \$25,000	49 34.27%	59 41.26%	35 24.48%	143
\$25,000 and above	10 27.03%	16 43.24%	11 29.73%	37
Would rather not say	8 25.00%	13 40.63%	11 34.38%	32
<b>Totals</b>	67	88	57	212

**Table 118: Fit preference by income level contingency table – Casual dresses**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Under \$25,000	31 21.68%	80 55.94%	32 22.38%	143
\$25,000 and above	10 27.03%	18 48.65%	9 24.32%	37
Would rather not say	9 28.13%	12 37.50%	11 34.38%	32
<b>Totals</b>	50	110	52	212

The concentration of the sample in the Under \$25,000 income level is immediately apparent in Tables 115 through 118. The tables also clearly demonstrate the overall preference of most of the sample for semi-fitted garments, regardless of income level. In fact, the distribution of respondents across fit preference levels within each income level largely mirrors the overall distribution of respondents across fit preference levels shown earlier in Table 78. Given these similarities, it is not surprising that Chi-Square testing revealed no significant effect from income on the respondents' fit preferences for casual pants, tops, skirts, and dresses. Table 119 shows the Chi-Square test statistics and associated

p-values summarizing the relationship of income level and fit preference across garment categories. The lack of any significant effects from income level negates the need for any post hoc evaluations.

**Table 119: Chi-Square test results – Effect of income level on apparel fit preferences**

Pants		Tops		Skirts		Dresses	
ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq
5.7343	0.2199	5.5663	0.2340	2.1302	0.7118	4.0261	0.4025

*Occupation*

As discussed, respondents self-reported their occupation as one of eight categories (see Appendix D). Because none of the respondents indicated crafts or military as their occupation, all data analysis related to occupation involved the six categories of student, office, professional / managerial, service / sales, homemaker, and unemployed.

Tables 120 through 123 show the distribution of respondents’ fit preferences sorted by occupation. Table 120 shows pant fit preferences, Table 121 top fit preferences, Table 122 skirt fit preferences, and Table 123 dress fit preferences. The cells in white show the number and percentage of respondents in each occupation category who selected fitted, semi-fitted, and loose fit levels to describe their fit preferences. The last column and row shaded in grey show the total number of respondents in each occupation category and fit preference level, respectively.

**Table 120: Fit preference by occupation contingency table – Casual pants**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Student	50 32.47%	82 53.25%	22 14.29%	154
Office	4 22.22%	8 44.44%	6 33.33%	18
Professional / Managerial	4 19.05%	12 57.14%	5 23.81%	21
Service / Sales	2 28.57%	5 71.43%	0 0.00%	7
Homemaker	1 33.33%	1 33.33%	1 33.33%	3
Not Employed	5 55.56%	0 0.00%	4 44.44%	9
<b>Totals</b>	66	108	38	212

**Table 121: Fit preference by occupation contingency table – Casual tops**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Student	39 25.32%	90 58.44%	25 16.23%	154
Office	4 22.22%	7 38.89%	7 38.89%	18
Professional / Managerial	1 4.76%	12 57.14%	8 38.10%	21
Service / Sales	1 14.29%	5 71.43%	1 14.29%	7
Homemaker	0 0.00%	2 66.67%	1 33.33%	3
Not Employed	1 11.11%	7 77.78%	1 11.11%	9
<b>Totals</b>	46	123	43	212

**Table 122: Fit preference by occupation contingency table – Casual skirts**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Student	49 31.82%	63 40.91%	42 27.27%	154
Office	5 27.78%	10 55.56%	3 16.67%	18
Professional / Managerial	5 23.81%	7 33.33%	9 42.86%	21
Service / Sales	3 42.86%	4 57.14%	0 0.00%	7
Homemaker	0 0.00%	3 100.00%	0 0.00%	3
Not Employed	5 55.56%	1 11.11%	3 33.33%	9
<b>Totals</b>	67	88	57	212

**Table 123: Fit preference by occupation contingency table – Casual dresses**

Count % of row	Fitted	Semi-Fitted	Loose	Totals
Student	40 25.97%	80 51.95%	34 22.08%	154
Office	2 11.11%	11 61.11%	5 27.78%	18
Professional / Managerial	4 19.05%	9 42.86%	8 38.10%	21
Service / Sales	1 14.29%	5 71.43%	1 14.29%	7
Homemaker	0 0.00%	3 100.00%	0 0.00%	3
Not Employed	3 33.33%	2 22.22%	4 44.44%	9
<b>Totals</b>	50	110	52	212

Tables 120 through 123 clearly demonstrate the concentration of respondents in the category of student. This was the due to the recruitment approaches primarily performed at

colleges and universities, which resulted in a large majority of respondents who were students, and very few in some of the other categories, particularly service / sales, homemaker, and Not employed. This high concentration of the sample in one category resulted in low expected values for many of the cells in the theoretical distribution, which compromised the validity of Chi-Square results used to assess the impact of occupation on fit preference. Despite this complication, Chi-Square testing showed no significant effect from occupation on the fit preferences respondents expressed for any of the garment types studied. Table 124 shows the results of the Chi-Square tests, including the test statistics and p-values summarizing the relationship between occupation and fit preference. Clearly, occupation did not significantly affect the fit preferences respondents expressed for casual pants, tops, skirts, or dresses. Thus, no post hoc evaluations were needed.

**Table 124: Chi-Square test results – Effect of occupation on apparel fit preferences**

Chi-Square Analysis - Fit Preference by Occupation							
Pants		Tops		Skirts		Dresses	
ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq	ChiSquare	Prob>ChiSq
18.199	0.0517	15.360	0.1195	14.975	0.1330	11.597	0.3130

*Summary and Discussion*

Research Objective 3 focused on obtaining a better understanding of the apparel fit preferences of Mexican-American women from the Southwestern US between the ages of 18 and 25. Using an original fit assessment scale created specifically for this research, respondents were asked to indicate their fit preferences (from the choices of fitted, semi-fitted, or loose) for casual pants, tops, skirts, and dresses in an online survey. This input was

analyzed according to four research questions (within RO3) that directed the approach and data analysis procedures and allowed a better understanding of the fit preferences of this market. This section will briefly summarize the findings associated with RO3 by first providing an overview of the sample's fit preferences for casual pants, tops, skirts, and dresses (RQ1). The section will then continue with a summary of RQ2 – RQ4 by discussing the effects of physical body-related characteristics, ethnic characteristics, or demographic factors on the respondents' fit preferences.

#### *Apparel Fit Preferences of Mexican-American Women*

As shown in Table 78, most respondents preferred semi-fitted casual pants, tops, skirts, and dresses, suggesting that this group preferred a mid-range fit that was neither fitted nor loose in their apparel purchases. For pants, tops, and dresses, over half of the respondents selected this middle fit level as their preference. For skirts, this fit level was also most preferred, with approximately 40% of the sample choosing this level.

Though semi-fitted was most preferred across all garment categories studied, a few minor differences were observed in the other two fit levels across garment categories. For pants and skirts, almost one-third of the respondents preferred the fitted garments, making this fit level the second most predominant for these two garment categories. For tops and dresses, however, no clear distinction between preferences for fitted or loose fit levels existed, with respondents almost evenly split between these two fit preferences.

#### *Effect of Physical Body-Related Characteristics on Apparel Fit Preferences*

To evaluate the impact of physical body-related characteristics on the sample's fit preferences for casual pants, tops, skirts, and dresses, the effect of body shape perception,

BMI category, and clothing size was analyzed. Overall, many of the respondents appeared to prefer semi-fitted apparel, regardless of physical body-related characteristics. This is not surprising, given the overall preference of the sample for this mid-range fit level that was previously discussed. However, Chi-Square tests and resulting post hoc evaluations identified several possible trends, specifically related to number and type of respondents who preferred fitted and loose casual tops and dresses.

Overall, results of the Chi-Square tests suggested that body shape significantly affected the respondents' fit preferences for casual tops. While JMP software program issued a caution about the high number of cells with expected counts below 5, post hoc evaluations of the observed versus expected values revealed several trends worth mentioning. For instance, trends suggested that respondents in the shape categories of Diamond, Oval, Rectangle, Triangle were more likely than expected to prefer loosely fitted casual tops and were less likely to prefer closely fitted casual tops. On the other hand, respondents in the Hourglass, Spoon, and Top Hourglass shape categories were more likely than expected to prefer closely fitted casual tops and less likely than expected to prefer the looser fit. These trends suggest that respondents who believed they had a more defined waist were more likely to prefer tops that are more closely fitted, while those respondents with a less defined waist (and likely larger in size) were more likely to prefer the loose fitting top.

Results also showed that most respondents, regardless of BMI category, preferred semi-fitted casual pants, tops, skirts, and dresses. However, Chi-Square tests indicated a significant effect of BMI category specifically on the fit preferences for casual tops and dresses. Post hoc evaluations within these two garment categories suggested that this effect

is particularly apparent in the Underweight / Normal and Obese categories and their preferences for fitted and loose garments. While Underweight / Normal respondents were more likely than expected to choose fitted casual tops and dresses, Obese respondents were less likely than expected to choose this fit level as their preference. At the same time, Obese respondents were more likely than expected to choose loose fitting casual tops and dresses, while Underweight / Normal respondents were less likely than expected to select this fit level as their preference.

Finally, results also indicated that most respondents, regardless of clothing size, tended to prefer semi-fitted pants, tops, skirts, and dresses. However, Chi-Square tests showed that clothing size significantly affected the sample's fit preferences for casual tops and dresses. In both garment categories, respondents in the smaller clothing size categories typically selected fitted garments more often than expected (under the theoretical distribution), and as clothing size increased, respondents were more likely than expected to indicate a preference for loose garments. This supports earlier findings in this research related to BMI category, which showed that larger-sized Mexican-American females were more likely than expected to choose loosely fitted tops and dresses, while the smaller-sized respondents were more likely than expected to choose closer fitted tops and dresses.

#### *Effect of Ethnic Characteristics on Apparel Fit Preferences*

To evaluate the impact of ethnicity on the sample's fit preferences for casual pants, tops, skirts, and dresses, the effect of acculturation level and generational status was analyzed. Overall, many of the respondents appeared to prefer semi-fitted apparel, regardless of ethnic characteristics. This is not surprising, given the overall preference of the sample for

this mid-range fit level that was previously discussed. Though significant portions of the sample also preferred fitted and loose garments, Chi-Square testing revealed no significant effect of either acculturation level or generation on apparel fit preferences. Thus, the ethnic factors analyzed in this study did not appear to influence the respondents' fit preferences for casual pants, tops, skirts, or dresses.

#### *Effect of Demographic Characteristics on Apparel Fit Preferences*

As discussed, screening questions used in the survey held the demographic variables of gender, age, and geographic region constant for all respondents. However, additional demographic information was collected, including educational level, income, and occupation, and the effect of these factors on apparel fit preferences was evaluated in RQ4. Chi-Square test methods were used to identify possible effects from these variables, and any significant effects were further analyzed by comparing the observed distribution of respondents to the expected distribution (theoretical).

Sampling methods used to recruit subjects for the online study primarily focused on colleges and universities, contributing to a final sample composed predominantly of students with relatively low income levels. This concentration of respondents complicated Chi-Square testing to assess the impact of income and occupation on apparel fit preferences. In both cases, these factors did not appear to significantly affect respondent's fit preferences for casual pants, tops, skirts, or dresses. To verify this finding, further research, in which a greater variety of income levels and occupations are represented, is certainly warranted. However, it is still important to note that all results from this research indicate no effect from income and occupation on apparel fit preferences.

While income and occupation did not appear to significantly impact apparel fit preferences, educational level did appear to impact some of these preferences. Contingency tables showing the distribution of respondents within educational level categories and across fit preference levels clearly illustrate the sample's overall preference for semi-fitted casual garments. For most of the garments studied, this mid-range fit level was most often preferred, regardless of educational level. However, relatively large portions of the sample also indicated their preferences for fitted and loose garments, and closer inspection of these respondents suggest a possible effect of educational level on preferences for these upper and lower fit levels. In particular, Chi-Square tests showed a significant effect of education on respondents' fit preferences for casual pants. Subsequent post hoc comparison of the observed distribution of respondents to the expected distribution suggests that respondents with lower educational levels (i.e. high school graduates and those who have completed some college) were more likely than expected to indicate their preference for fitted casual pants. Respondents with higher educational levels were less likely than expected to prefer fitted pants and more likely to prefer loose fits instead. While Chi-Square testing only indicated a significant effect of education on pants fit preferences, similar trends were also apparent in the remaining garment categories. This suggests a possible effect from education in which respondents with lower educational levels were more likely to prefer fitted garments than respondents with higher educational levels, who seem more likely to prefer the loose fit level.

## **CHAPTER 5: DISCUSSION AND CONCLUSIONS**

This section will conclude the dissertation by briefly reviewing the research purpose and methods, summarizing major findings and implications, and proposing future research.

### **Overview of Study**

The US Hispanic market is experiencing substantial growth, in size as well as purchasing power, providing the apparel industry with a unique opportunity. This “new” market is largely untapped due to an overall lack of apparel-specific market and product information and sometimes prolific stereotypes that pervade the media and literature. While several studies have focused on the Hispanic consumers’ apparel needs and preferences, the review of literature performed for this dissertation highlighted significant inconsistencies and conflicting results across studies. This has hindered apparel companies’ efforts to develop products truly targeted to these consumers’ needs. Clearly, additional research is needed.

To more completely understand the apparel shopping behavior and preferences of consumers, a consideration of the attributes they consider important in apparel purchases can be helpful. An extensive range of intrinsic and extrinsic attributes have been defined and studied by many researchers for their important role in apparel product evaluation in the purchase decision process. The importance of these “evaluative criteria” can vary based on consumer characteristics including physical body size, shape, or related factors, as well as demographic and psychographic characteristics. In addition, external, or situational factors can influence the importance attributed to these criteria in apparel purchases. As a result, evaluative criteria preferences can yield interesting insight into apparel preferences of

individual consumer groups, and can be useful inputs for consumer-focused apparel product development.

The attribute of apparel fit / sizing is consistently considered a critical component of apparel purchases. This multidimensional attribute influences the aesthetic, functional, and expressive performance of an apparel item, and as such is an important consideration in apparel design and development. However, apparel firms often have difficulty incorporating fit preferences and sizing information into apparel product development processes because these preferences are highly personal and subjective, varying based on physical body characteristics and demographic and psychographic factors.

As discussed, the relative scarcity of information related to Hispanic apparel consumers' needs and preferences complicates apparel product development for this market. Knowledge of the markets' use and preferences for evaluative criteria in apparel purchases as well as their fit preferences can be applied to improve targeted apparel product development functions. This opportunity is the driving force behind this dissertation research.

#### *Purpose of Research*

The purpose of this research was to obtain information that can be used in apparel product development processes for US Hispanic women. Because of their value as inputs to the product development process (May-Plumlee & Little, 2006; Yoo, 2003), the study focused on understanding the market's preferences for and use of various intrinsic and extrinsic evaluative criteria in apparel purchase decisions. Due to the significance of the sizing/fit attribute in apparel selection and ultimate purchase satisfaction, the study also included a component aimed at understanding the fit preferences of Hispanic apparel

consumers. The sample was restricted to Mexican-American females between the ages of 18 and 25 from the Southwestern US states of Arizona, California, New Mexico, and Texas. These restrictions were implemented to confront the wide variability within the Hispanic market and to allow for the analysis of the effects of specific variables on consumer preferences without confounding variables of age, gender, subculture, and geography.

### *Research Objectives*

This research was framed by four primary research objectives (RO) and associated research questions (RQ):

**RO1:** To explore and model the range of factors that influence or determine consumer preferences and the use of apparel evaluative criteria in the purchase decision process.

**RQ1:** What factors, originating from consumer characteristics, determine consumer preferences for apparel evaluative criteria?

**RQ2:** What factors, originating from external or situational characteristics, determine consumer preferences for apparel evaluative criteria?

**RO2:** To determine the most important and determinant criteria used by Mexican-American women, ages 18-25 from the Southwestern US, when shopping for apparel.

**RQ1:** What criteria are important in the apparel purchase decisions of Mexican-American women when shopping for casual pants, tops, skirts, and dresses?

**RQ2:** What criteria are determinant in the apparel purchase decisions of Mexican-American women when shopping for casual pants, tops, skirts, and dresses?

**RQ3:** Do physical body characteristics, including body shape perception, BMI, or clothing size impact the importance of criteria used by Mexican-American women in apparel purchases?

**RQ4:** Do ethnic factors, including acculturation level and generational status, impact the importance of criteria used by Mexican-American women in apparel purchases?

**RQ5:** Do the demographic variables of educational level, income, or occupation impact the importance of criteria used by Mexican-American women in

apparel purchases?

**RO3:** To examine the fit preferences of Mexican-American women, ages 18-25 from the Southwestern US, across a range of apparel product categories.

**RQ1:** Do Mexican-American women prefer “fitted,” “semi-fitted,” or “loose” casual pants, tops, skirts, and dresses?

**RQ2:** Do physical body characteristics, including body shape perception, BMI, or clothing size impact the fit preferences of Mexican-American women?

**RQ3:** Do ethnic factors, including acculturation level and generational status, impact the fit preferences of Mexican-American women?

**RQ4:** Do the demographic variables of educational level, income, or occupation impact the fit preferences of Mexican-American women?

**RO4:** To explore the practical applications of gathered market information and product preferences for apparel product development processes.

### *Methodology*

To satisfy RO1 through RO4, a combination of exploratory and descriptive research and analysis was used. Exploratory analysis of past studies related to apparel evaluative criteria importance was used to satisfy RO1 and to develop a model of the factors that influence evaluative criteria preferences. Descriptive research, in the form of a sample survey, provided data to better understand the apparel evaluative criteria and fit preferences of Mexican-American women, thus satisfying RO2 and RO3. Possible relationships identified in the model developed as part of RO1 were statistically analyzed in subquestions related to RO2 and RO3 – specifically testing whether physical body characteristics, ethnic factors, or selected demographic variables significantly affected these preferences. RO4 represents the culmination of this dissertation research, focusing on the application of the

findings from RO1 through RO3 to targeted apparel product development processes for Mexican-American women, between the ages of 18 and 25 from the Southwestern US.

The restrictions implemented in sampling limit the generalizability of all results to the submarket of Mexican-American women, between 18 and 25 years old from the US states of Arizona, California, New Mexico, and Texas. In addition, the study is also limited by the sampling strategies used to recruit study participants, as well as the design of the survey instrument used to collect data. For instance, primary recruitment of respondents was performed at colleges and universities in the four US states previously mentioned. This resulted in a sample primarily composed of college students, with relatively low income levels, whose preferences may certainly be different than individuals with other characteristics. In addition, the online administration of the survey through SurveyGizmo excluded potential respondents who did not have internet access, and required that respondents decide for themselves whether to take the survey or not. These restrictions were implemented in order to conveniently access respondents meeting the basic study criteria of age, gender, subculture, and geography.

The survey instrument was designed specifically for this research to provide the data needed to satisfy research objectives, but was also associated with several limitations. For instance, physical body information was self-reported by respondents, which may differ from actual characteristics. In addition, the acculturation measurement scale used to evaluate this ethnic dimension was based on language use in a variety of situations and ignored other measures that can be used to estimate acculturation. Finally, the evaluative criteria measure

developed for the survey involved the rating of pre-selected criteria, which introduces a certain amount of bias in the ratings given to these criteria.

## **Summary and Discussion of Results**

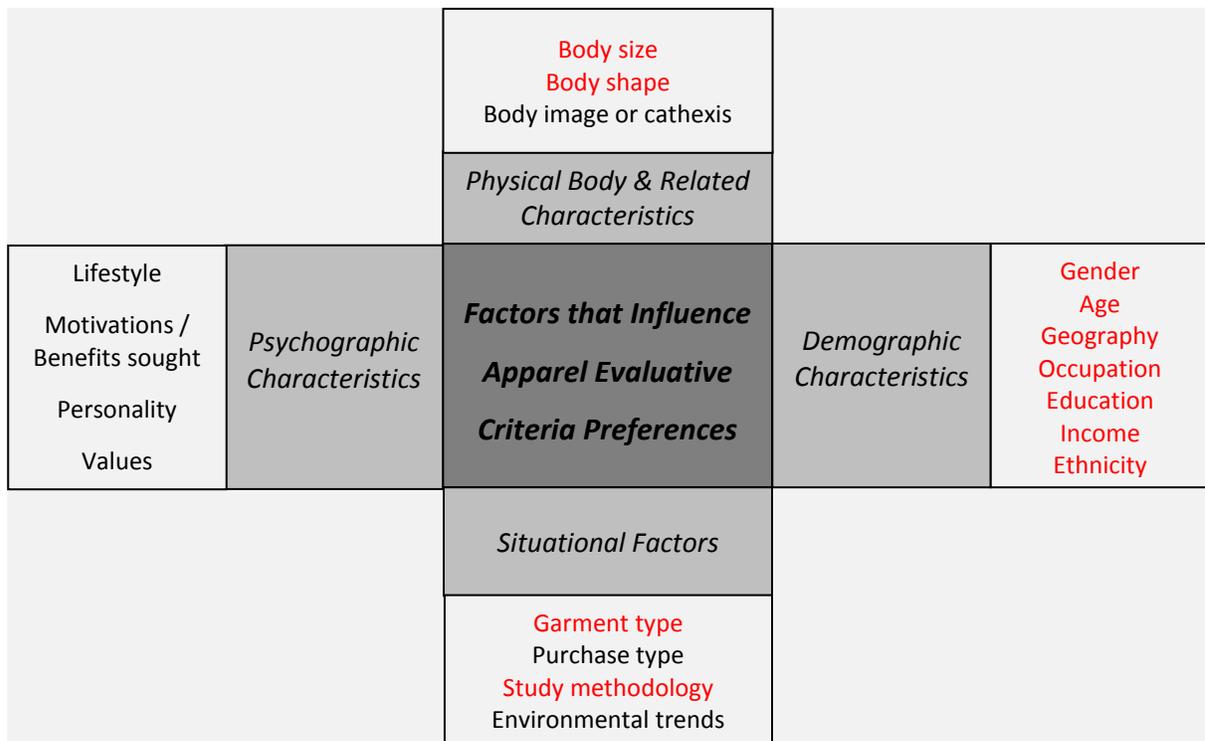
### *Research Objective 1*

*To explore and model the range of factors that influence or determine consumer preferences and the use of apparel evaluative criteria in the purchase decision process.*

The extensive review of literature into apparel evaluative criteria studies revealed a range of intrinsic (aesthetic and functional) and extrinsic (brand image / situational and expressive / symbolic) attributes that consumers use to evaluate and purchase apparel products. Different consumers frequently consider different attributes more or less important depending on their own personal characteristics or the external environment or situation. These differences are important considerations when developing and targeting apparel products towards specific consumer markets. Figure 27 shows the model that was created to illustrate the factors that influence apparel evaluative preferences, including the consumer factors of physical body and related characteristics, demographic, and psychographic factors. In addition, the model illustrates the influence of external, or situational-oriented factors, on these preferences.

The model shown in Figure 27 is unique due to its inclusion of apparel-specific consideration related to evaluative criteria preferences. While the impact of demographic and psychographic characteristics are commonly incorporated into traditional consumer decision process models, physical body and related characteristics are not typically included. Given the extent of past research that demonstrates the influence of characteristics such as

body shape and size, as well as image and cathexis, physical body and related characteristics warrant specific inclusion in a model of apparel evaluative criteria preferences. Past research related to the apparel shopping behavior and evaluative criteria preferences of target market groups has also shown the dramatic influence of external, or situational factors on consumer preferences. Some of these situational factors include environmental trends external to the consumer, the details of the purchase decision itself, as well as the methodology used to ask consumers about their preferences. While the effect of situational factors may often be modeled in “generic” consumer behavior models, the model created as part of this research explicitly includes apparel-specific situational factors.



**Figure 27: Model of factors that influence apparel evaluative criteria preferences**

Note: created by the author, 2009

The model developed to satisfy RO1 offers a succinct approach to understanding the full range of characteristics that influence apparel evaluative criteria preferences. While traditional consumer behavior models include some of the information modeled in Figure 27, the benefit of the model developed in this research is its apparel-specific information. Apparel companies and researchers who want or need to understand consumer preferences for and use of evaluative criteria in apparel purchases can use this model to identify possible factors that may influence preferences, as well as to guide the methodology they use to acquire, interpret, and implement information. The model can be used for a variety of target consumer groups, providing an indication of some of the factors that *may* influence preferences, and enabling further research to determine the extent and the nature of the effect.

The model shown in Figure 27 was an important component of this dissertation research, guiding the development of subsequent research objectives and the design of the survey instrument used to collect data. As presented previously, RO2 and RO3 focused on obtaining a better understanding of the evaluative criteria and fit preferences of Mexican-American women between the ages of 18 and 25 from the Southwestern US. As part of these objectives, the impact of some of the factors modeled in Figure 27 on these apparel preferences was also quantitatively studied. The factors held constant through sampling and those analyzed in this research are highlighted in red in Figure 27. The external factors of garment type and study methodology are also highlighted in red because they were significant considerations in the design of the survey instrument. Specifically, the effect of garment type on preferences directed the decision to question respondents about their

preferences in the categories of casual pants, tops, skirts, and dresses. The effect of study methodology was also considered in the decision to use a list of pre-selected criteria for the evaluative criteria rating measure.

### *Research Objective 2*

*To determine the most important and determinant criteria used by Mexican-American women, ages 18-25 from the Southwestern US, when shopping for apparel.*

Research Objective 2 focused on obtaining an understanding of the importance and determinance of 20 intrinsic and extrinsic criteria in the purchase of casual pants, tops, skirts, and dresses. This section summarizes the findings from this objective by first reviewing the importance and determinance of each of the 20 attributes (RQ1 and RQ2). The results of inferential statistics performed for RQ3 – RQ5 will then be presented to discuss the effect of physical body characteristics, ethnic factors, or demographic variables on the importance expressed for the individual attributes in the purchase of pants, tops, skirts, and dresses.

The most apparent finding for this objective was the fact that (based on median ratings) the majority of the sample considered most of evaluative criteria studied at least somewhat important in the purchase of apparel. This concentration of results towards the high end of the scale could partially be due to the design of the instrument, which instructed respondents to rate the importance of a list of pre-selected evaluative criteria. With this type of rating scale, respondents sometimes indicate increased importance for attributes than may actually be involved in the apparel purchase decision. This trend was clear in the median ratings of the attributes across garment categories, which were largely skewed toward the

higher end of the 5-point rating scale. To differentiate true importance of these attributes in an actual purchase decision, alternate methods or measures may need to be explored.

### *Intrinsic Aesthetic Attributes*

This research showed that overall, intrinsic attributes were very important (and often more important than extrinsic attributes) in the apparel purchases of Mexican-American women. This supports previous findings by Eckman et al. (1990), Fiore & Damhorst (1992), and Szybillo & Jacoby (1974), which noted the increased importance of intrinsic over extrinsic attributes in apparel purchases.

Aesthetic attributes, in particular, received very high ratings and were considered very important, and often critical, in the purchase of casual pants, tops, skirts, and dresses. While median ratings used to denote importance were consistently high across garment categories, comparative and statistical analysis performed in this research suggest that the category of aesthetic attributes may be relatively less important in the purchase of pants and more critical in the purchase of dresses.

*Color / pattern.* Results showed that Mexican-American women considered Color / pattern critically important in the purchase of casual tops, skirts, and dresses, and slightly less important, though still important, for casual pants. This attribute may be considered less important for pants due to the reduced color offerings typically found in the market for pants.

Traditional Hispanic stereotypes and past research (D'Innocenzio, 1997; Korzenny & Korzenny, 2005; Perdomo, 2003; Pliagas, 2004) suggests that Hispanics prefer bright colors and bold prints. While this research did not obtain information regarding specific color or print preferences, it did confirm the importance of the Color / pattern attribute across garment

categories. Additional research should be conducted to identify the color tones and print design preferences of this market.

*Styling.* This aesthetic attribute was also considered critically important in the purchase of casual tops, skirts, and dresses, and slightly less important (though still important) in the purchase of pants. Statistical analysis using Wilcoxon signed rank tests revealed that the sample considered Styling most important, comparatively, for dresses and less and important for pants. This opinion may be a reflection of the market offerings in these garment categories, in which a larger variety in styles exists for dresses than for pants.

*Appearance.* Respondents rated and ranked this attribute very high in importance, relative importance, and determinance in their purchases of all garments types studied. A study conducted by Cotton Incorporated in 2005 determined that Hispanics considered Appearance more important than Comfort in apparel purchases. In this study, relative importance rankings seemed to support the 2005 findings, since Appearance was consistently ranked second most important (behind Fit / sizing) across garment categories. However, when respondents were asked to specify the most important, or determinant, attributes in their apparel purchases, Comfort received more citations than Appearance. This lower rating in determinance suggests that respondents in this study considered Comfort to be more determinant at point of purchase than Appearance.

*Beauty / attractiveness.* Though not particularly determinant , this attribute was considered critically important in the purchase of casual tops and dresses based on median ratings. Beauty / attractiveness was also considered important, but slightly less important in pants and skirts purchases.

### *Intrinsic Functional Attributes*

Whereas the aesthetic attributes studied were consistently considered important, and often critical, in apparel purchases, more disparity was apparent in the category of functional attributes. Past research has shown that intrinsic aesthetic attributes were considered more predominantly than many functional attributes in apparel purchases (DeKlerk & Lubbe, 2008; Eckman, 1997; Eckman et al., 1990; Morganosky, 1984; Morganosky & Postlewait, 1989). While overall trends shown in the current research might support these past findings, several of the functional attributes considered as part of this study were considered critical and determinant in apparel purchases.

*Fit / sizing.* Of all of the attributes studied in this research, Fit / sizing was clearly considered the most important and determinant attribute in apparel purchases. For every garment category studied, this attribute received the highest ratings in importance, as well as the highest rankings in relative importance and determinance. The high importance attributed to Fit / sizing supports an earlier study by Pasarell (2005) and Cotton Incorporated (2006b). In these studies, researchers determined that fit was a critical factor for Hispanics when apparel shopping. Results of the current research also indicate that the Mexican-American subgroup studied also considers Fit / sizing a critical attribute in apparel purchases.

*Quality (construction, durability, workmanship).* This attribute was important, though not critical or especially determinant, in the purchase of casual pants, tops, skirts, and dresses. Wilcoxon signed rank tests and a comparison of the relative importance of this attribute across the garment categories studied showed that Quality (construction, durability, workmanship) was comparatively more important in the purchase of pants and tops than

skirts and dresses. This finding may reflect the function of pants and tops as staple apparel items that may experience more wear, and thus demand higher quality, than the less-frequently worn skirts and dresses.

The importance attributed to Quality (construction, durability, workmanship) in this study supports previous research by Bellenger & Valencia, 1982, Cotton Incorporated, 2005b, and Herbig & Yelkur, 1997. These past studies have shown that Hispanics desire high quality and durability in their apparel products, and this study also indicated the importance of this attribute.

*Ease of care.* Respondents considered this attribute important, though not critical, in apparel purchases. However, investigation of the relative importance and the determinance of this attribute revealed that it was one of the lowest ranked in relative importance and not determinant in the apparel purchases of most respondents. This suggests that, while the median ratings used to assess overall importance indicated that respondents consider this attribute important, Ease of care is likely not an attribute that is heavily influencing apparel purchases for Mexican-American women.

Findings in this study partially support earlier findings by a 2002 study by Cotton Incorporated, which showed that care instructions were considered less important for Hispanics than other ethnic groups studied. When considering median ratings of Ease of care, this attribute was shown to be important in apparel purchases for the Mexican-American subgroup studied in this research. However, a consideration of the relative importance and determinance clearly shows that this attribute is less influential in apparel purchase decisions than many of the other criteria considered in this study.

*Comfort.* This attribute was deemed critically important in the purchase of casual pants, skirts, and dresses, and at least moderately important in the purchase of casual tops. Wilcoxon signed rank tests and comparison of relative importance of this attribute across garment categories suggest a decreased importance for Comfort in the purchase of casual tops, specifically compared to pants and skirts. It appears that respondents are somewhat more concerned with comfort when shopping for apparel bottoms. Even with these slight differences, this attribute was consistently considered a determinant attribute across garment categories, and was clearly an attribute that heavily influenced apparel purchase decisions.

A 2005 study conducted by Cotton Incorporated showed that Hispanics considered comfort less important than appearance in the purchase of apparel. In research conducted as part of the current study, these findings were partially supported when considering the relative importance of the attributes. Appearance was consistently ranked higher than Comfort in relative importance across garment categories. However, while the Appearance attribute was rated and ranked very high in importance, Comfort was consistently ranked higher than Appearance in determinance. This somewhat contradicts the earlier Cotton Incorporated findings, although this research did show that both of these attributes are among the most important and determinant attributes considered in purchases.

*Fiber content / fabrication.* This attribute was consistently the lowest rated of all of the intrinsic criteria studied, with respondents considering it neither important nor unimportant in their casual pants, tops, and skirts purchases. Respondents rated this attribute slightly higher in importance in dresses purchases. Overall, however, this attribute was neither a particularly important nor determinant attribute in the purchase of casual pants, tops, skirts, nor dresses.

Past research studies have suggested that Hispanics prefer natural fibers, such as cottons over man-made materials (Pasarell, 1995; Wexler, 2004). A 2002 study conducted by Cotton Incorporated, however, indicated that fabric content seems to be less important for Hispanics than other ethnic/racial groups that they studied. The research conducted as part of this study seems to support Cotton Incorporated's findings, which showed that the Hispanic market subsection sampled in this research considered Fiber content / fabrication neither important nor determinant for any of the garments studied.

#### *Extrinsic Brand / Situational Attributes*

As summarized above, almost all of the intrinsic attributes were considered quite important, and often determinant, in the purchase of each of the four garment types studied. While median ratings ascribed to the entire range of intrinsic and extrinsic attributes tended to skew to indicate almost widespread importance, more variability in the ratings and lower degrees of importance and determinance were observed overall for many extrinsic attributes.

*Versatility with existing wardrobe.* This attribute was considered important, though not critical in the purchase of casual pants, tops, and skirts. However, its rating in the purchase of dresses fell in the middle of the 5-point scale, suggesting that the sample considered this attribute neither unimportant nor important when purchasing dresses. Assessment of the Wilcoxon signed rank tests and the relative importance rankings further support the decreased importance placed on this attribute in the purchase of dresses. Given that dresses are garments that cover the upper and lower body, a consideration of the item's versatility with other items in the wardrobe may not be as important for dresses as it is in the purchase of pants, tops, and skirts.

*Price.* The criteria of Price was the highest rated of all extrinsic attributes studied and among the highest rated of all of the 20 attributes. This attribute was consistently rated towards the higher end of the rating scale, and was considered critically important in the purchase of pants and tops. Wilcoxon signed rank tests and comparison of relative importance rankings showed that Price was significantly less important (though not unimportant) in the purchase of dresses than for pants and tops. Despite the fact that this study particularly focused on casual apparel items, the decreased importance of Price for the purchase of dresses could possibly be due to the more common use of this type of garment for “special occasion” wear, for which price may be less of an issue. Similarly, Price may be most important for staple wardrobe items that are worn more frequently, such as pants and tops. Though these differences in importance and relative importance were apparent, Price was clearly determinant in apparel purchases, ranking second in determinance, regardless of the garment type studied. The determinance of this attribute is not surprising, particularly when considering the economic environment at the time of this study.

The results of this research support earlier findings by Minger (1994) and Cotton Incorporated (2002), which determined that price was a very important attribute for Hispanic apparel consumers. However, a 1997 study by Herbig & Yelkur indicated that price was less important than quality and durability in apparel purchases. Results of this current research do not support these findings, with Price rated and ranked higher overall than Quality (construction, durability, workmanship) in relative importance and determinance.

*Brand name / store name.* Overall, this attribute was not important for most respondents’ apparel purchases, with consistently low ratings of 2 and 3. This attribute was

rated relatively higher in importance in purchases of pants and tops than for skirts and dresses. This attribute may be more important in the purchase of pants and tops because of the multiple fit concerns that often plague pant shopping, and because these two types of garments are some of the most frequently worn garment items. Both of these tendencies may increase brand or store reliance by consumers.

Herbig & Yelkur, 1997, Kim & Kang-Park, 1995, and Kim et al., 2007 reported that overall, the Hispanic market is very brand loyal, tending to purchase well-known brand name items and hesitating to switch from these brands. For the subsection of the Hispanic market studied in this research (Mexican-American females, 18-25, from the Southwestern US), this behavior was not supported, with Brand name / store name considered largely unimportant in apparel purchases, particularly when compared to some of the other attributes. The results of this study seem to more closely align with a study performed by Levitan (n.d.) and Cotton Incorporated (2002), which found that Hispanic youth were known to switch brands more often than older Hispanics, and that brand was secondary to price, fabric, and care instructions, respectively.

*Country of origin.* This attribute consistently received the lowest median ratings, lowest relative importance rankings, and next to the lowest determinance rankings across garment categories. Clearly, the sample in this research did not consider Country of origin important for all apparel purchases.

#### *Extrinsic Expressive / Symbolic Attributes*

Analysis of the seven expressive / symbolic attributes showed that when considered as a group, these criteria were comparatively less important in the purchase of apparel than the

other categories of criteria. While at least one of the attributes in each of the other categories was considered critical in the purchase of certain apparel items, none of the seven expressive / symbolic attributes posted a median rating of 5 for any of the garment types studied.

Trends in importance for many of the attributes in this category showed that expressive / symbolic criteria were considered least important in pants purchases and most important in the purchase of dresses.

*Appropriateness for end use.* This attribute was important in the purchase of casual dresses, but considered neither important nor unimportant in purchases of casual pants, tops, and skirts. Overall, Appropriateness for end use was also not ranked especially high in relative importance or determinance and did not appear to be among the most important attributes considered in apparel purchases.

*Suitability for the individual.* The sample indicated that this attribute was important in the purchase of casual pants, tops, skirts, and dresses, but not particularly high in relative importance and determinance (when compared to the remaining attributes). Despite identical median ratings, Wilcoxon signed rank tests (as well as relative importance rankings) indicated that Suitability for the individual was significantly more important in the purchase of pants compared to tops and skirts. Because of the variety of factors that respondents might consider in determining “suitability,” it is difficult to know the true cause behind this increased importance for pants. Suitability for the individual could possibly be related to the fit of the garment, how it suits the body, or the wearer’s personality. Given the fit issues that many people report in shopping for pants, respondents could possibly attribute greater importance to Suitability for the individual when shopping for this type of garment.

*Sexy.* The attribute Sexy was considered important in all garment categories except pants, and was significantly more important for purchases of tops, skirts, and dresses. One pattern revealed through Wilcoxon signed rank tests and relative importance rankings showed that this attribute was least important in pants purchases and increased in importance for tops, skirts, and then dresses. These findings are not too surprising, given that casual pants are staple items in many wardrobes, and would be less frequently used to demonstrate sexiness. Dresses would probably be more commonly used to express this quality.

*Fashionability.* This attribute was considered important for each of the garment types studied, though trends highlighted by Wilcoxon signed rank tests and relative importance comparisons showed that Fashionability was significantly less important in the purchase of pants and increased in importance when moving from the categories of tops to skirts, and then dresses. Because pants designs and offerings in the marketplace are not as varied as those in categories of tops, skirts, and dresses, and because pants are commonly viewed as a staple item in many wardrobes, they may not be as commonly used (as dresses and skirts, for instance) to make a fashion statement. Nevertheless, Fashionability was rated and ranked very high in importance, relative importance, and determinance and was clearly considered important in respondents' in apparel purchases.

*Individuality / uniqueness.* The sample indicated that this expressive / symbolic attribute was important, though not critical or determinant, in apparel purchases. Similar trends were apparent for this attribute as others in this category, in which Individuality / uniqueness was relatively less important in the purchase of pants, and increased in importance for tops, skirts, and then dresses (for which it was ranked highest). As discussed

for the previous attributes in this category, the lower importance observed for pants, particularly compared to dresses, may be due to the more common function of dresses as statement pieces and pants as a basic or staple apparel item. It may also be a reflection of the lower variety in designs and styles in the pants market, which would decrease the likelihood of their use to express individuality or uniqueness.

The importance attributed to Individuality / uniqueness supports earlier findings by Chattals & Harper, 2007. In their study, they determined that Hispanic youth desire fashion that is unique, and consider this uniqueness a method of self-expression. The Mexican-American sample used for this research was also quite young (18-25 years old), and also considered Individuality / uniqueness important in apparel purchases.

*Promotes high self-esteem.* Respondents considered this attribute important, though not critical or determinant in the purchase of casual pants, tops, skirts, and dresses. Again, this expressive / symbolic attribute was relatively more important in purchases of skirts and dresses and less important for pants and tops. Considering the more common function of skirts and dresses as items worn for special occasion wear, this finding is somewhat understandable.

*Pleasing to others.* This attribute was neither considered important nor unimportant for most respondents in garment purchases. It was also ranked low in relative importance and determinance, suggesting that Mexican-American women in this sample did not consider others' opinions very important in the purchase of apparel, particularly compared to other attributes used in the apparel purchase decision. Previous patterns noted among many of the expressive / symbolic attributes were also observed for this attribute, in which Pleasing to

others was considered significantly more important for dresses than tops and pants, and significantly less important for pants than skirts and dresses. This makes sense, given that dresses might be more often used in situations in which people want to express something about themselves or make a statement through their garment. In these situations, others' opinions may be more important than in situations in which casual pants and tops are most commonly worn (such as everyday wear).

#### *Effect of Physical Body-Related Characteristics on Evaluative Criteria Ratings*

As modeled in Figure 27, physical body and related characteristics may influence apparel evaluative criteria preferences. This study evaluated the impact of physical body-related characteristics of body shape perception, BMI category, and clothing size on the importance attributed to intrinsic and extrinsic criteria when purchasing casual pants, tops, skirts, and dresses. Overall, very little evidence was uncovered to indicate a significant effect of any of these characteristics on evaluative criteria ratings. This is most likely due to the skewed median ratings for most of the evaluative criteria, which seemed to suggest that respondents, regardless of physical body perception and characteristics, agreed that most of the attributes studied were at least somewhat important in the purchase of apparel.

For instance, results showed that only the two attributes of Price and Promotes high self esteem seemed to be affected by body shape, and only in the purchase of casual tops and dresses, respectively. Given the very large number of Kruskal-Wallis tests performed, and the large number of subsequent pairwise comparisons performed to determine the source of the significance, these significant results should be interpreted with some hesitation. The lack of any strong pattern in significance for any attribute or garment category certainly

suggests that body shape perception had little effect on the evaluative criteria ratings provided by the sample in this study.

In addition, only six significant relationships were noted to demonstrate an effect of BMI on evaluative criteria ratings, and only in the garment categories of tops and skirts. Given the multiple Kruskal-Wallis and pairwise comparisons conducted as part of this research question, it is quite likely that some of the significant relationships uncovered are actually the result of random error, rather than actual effects of BMI. The only possible pattern revealed through this testing related to the importance of the attribute Pleasing to others in the purchase of tops and skirts. Obese respondents considered this attribute less important than their Underweight / Normal and Overweight counterparts.

Finally, out of the 80 Kruskal-Wallis tests performed to assess the effect of clothing size on ratings, only four significant relationships were identified. All of the relationships involved attribute importance in the purchase of tops and skirts, though no overwhelming pattern emerged in these relationships. Findings suggest that respondents in the smaller size ranges consider Fiber content / fabrication and Price less important in tops purchase than respondents in the larger size ranges. The opposite pattern was suggested for the Pleasing to others attribute, which seemed more important for respondents in the smaller size ranges and less important for those in the larger size ranges. However, these findings should be analyzed with caution, considering the large number of Kruskal-Wallis ANOVA's and subsequent pairwise comparisons performed for this research question and the small number of significant relationships found overall.

Considering the findings related to physical body-related characteristics on the whole, a few interesting patterns are worth mentioning. For example, none of the three body characteristics significantly affected attribute ratings in the purchase of pants. Several significant relationships were noted in the purchase of the remaining garment types, with the large majority of significant findings noted for casual tops and skirts purchases. This trend suggests that the respondents' perception of their physical bodies in terms of shape and size more often affected their preferences when shopping for tops and skirts. Another interesting trend involved the importance attributed to the two criteria, Promotes high self esteem and Pleasing to others. While not true for every shape and size category across all garment types, a very large majority of findings suggest that overall, respondents considered Promotes high self esteem more important than Pleasing to others in their apparel purchases, no matter their shape or size. However, this difference in importance appeared to be more substantial for respondents who perceived themselves to be larger in body shape or size. In these cases, larger respondents ascribed less importance to the impact a garment might have on others than smaller respondents. The significant effects of BMI category and clothing size on these two attributes, considered along with the pattern observed for these two attributes across body shape categories, lends some support to this belief.

While these patterns are interesting, the overall insignificance of physical body-related characteristics on attribute ratings should be reiterated, and further analysis is warranted to confirm any real effects.

### *Effect of Ethnic Characteristics on Evaluative Criteria Ratings*

As modeled in Figure 27, demographic factors, including ethnicity, may influence apparel evaluative criteria preferences. This study, with its focus on the US Hispanic market, further studied the effect of ethnic dimensions of acculturation level and generational status on evaluative criteria ratings for casual pants, tops, skirts, and dresses. Overall, very little evidence was uncovered to indicate a significant effect of any of these characteristics on evaluative criteria ratings. This is partially due to the skewed ratings for most of the criteria, which suggested that respondents, regardless of acculturation or generation, felt that most of the attributes studied were at least somewhat important in the apparel purchases.

When considering the impact of acculturation level, Wilcoxon rank sum tests identified only three significant relationships across all attributes and garment categories studied. This very small number provides little evidence for an effect of acculturation level on attribute importance, though the relationships found suggested the possibility of an acculturation effect on the importance of Appropriateness for end use and Pleasing to others in some garment purchases. Highly acculturated respondents considered Appropriateness for end use significantly less important in their purchases of pants and tops than lowly acculturated respondents. In addition, highly acculturated respondents considered Pleasing to others significantly less important in the purchase of dresses than lowly acculturated respondents. While these significant findings were not repeated across all garment categories, they do suggest that highly acculturated respondents considered these two attributes less important than lowly acculturated respondents. Further research should be conducted to fully understand any possible effect on the two expressive / symbolic attributes discussed above.

Past research investigating the effect of acculturation level on evaluative criteria importance suggests that lowly acculturated Hispanics consider brand name more important than highly acculturated Hispanics (Deshpande et al., 1986; Solomon & Rabolt, 2004). However, no similar effect of acculturation was identified in this research, with Brand name / store name considered neither important nor unimportant (with median ratings of 3) in pants and tops purchases, no matter the acculturation level. In addition, median ratings were the same across acculturation levels for this attribute in the purchase of skirts and dresses. Respondents, regardless of acculturation level, considered Brand name / store name fairly unimportant (with median ratings of 2) when shopping for these apparel items. In addition, research by Minger in 1994 suggested that Hispanics who strongly identify with the Hispanic rather than US culture seem to consider price more heavily than Hispanics who strongly identify with US culture. However, the current research showed that all respondents, regardless of acculturation level, consider Price very important, and often critical in their apparel purchases.

The Kruskal-Wallis and subsequent post hoc comparisons performed for this research question yielded seemingly scattered results regarding the impact of generational status on evaluative criteria importance. Results showed that the majority of the significant effects of generational status on attribute ratings involved pants purchases suggesting that generational status most commonly affected evaluative criteria preferences in the purchase of casual pants. However, the relatively low number of significant relationships (considering the many statistical tests performed) diminishes the practical importance of the impact found.

If generational status substantially affected evaluative criteria ratings, one might anticipate trends in which preferences were most different between first and third generation respondents, with slight differences following the trend among second and mixed-second generation respondents. However, no overwhelming pattern emerged either within or across garment categories or attributes, reducing the likelihood of a significant effect of generational status on evaluative criteria preferences.

In summary, the ethnic factors of acculturation level and generational status did not overwhelmingly impact the importance attributed to the 20 intrinsic and extrinsic evaluative criteria in apparel purchases. When the findings from the two characteristics are considered together, the only “trend” that emerges involves the importance of Appropriateness for end use in pants purchases. Respondents in the low acculturation category considered this attribute significantly more important than respondents in the high acculturation category. Similarly, first generation respondents (who were also likely in the low acculturation category) considered this attribute more important than second and third generation respondents. This suggests that respondents less connected to US culture (either through acculturation or generation) consider Appropriateness for end use more important in pants purchases than respondents who are more strongly connected to US culture. However, further research would be advantageous to strengthen the validity of these findings.

#### *Effect of Demographic Characteristics on Evaluative Criteria Ratings*

As modeled in Figure 27 and widely reported in the consumer behavior discipline (see Appendix A), demographic factors can influence apparel evaluative criteria preferences. The demographic variables of age, gender, ethnic subculture, and geography were held constant

in this study through the use of screening questions in the survey instrument. However, this component of the study focused on the effect of the demographic characteristics of educational level, income level and occupational category on evaluative criteria preferences. Several significant relationships were discovered through statistical analysis, though some of these should be interpreted with caution. Methods utilized to recruit respondents enlisted the help of representatives at colleges and universities across the Southwestern US, resulting in a sample made up of predominantly college students, with relatively low income levels. Thus, sample sizes for some of the other categories used to define educational level, income, and occupation were quite low, and occasionally contributed to significant findings that were of little practical importance.

No significant effect from income was found in any of the 80 Kruskal-Wallis tests performed across garment categories and attributes, clearly indicating that income did not impact the importance of evaluative criteria for this sample of Mexican-American women.

In assessing the impact of educational level, only one of the thirteen significant relationships involved extrinsic attributes. Of the relationships that noted a significant effect of educational level on extrinsic attributes, 11 involved expressive / symbolic attributes. This suggests that educational level more commonly impacts the importance of expressive / symbolic attributes in apparel purchases.

Some of the significant relationships uncovered through statistical analysis may not be of practical importance given the large number of Kruskal-Wallis tests and multiple post hoc comparisons performed, and the fact that many of the findings lacked any real pattern across garment categories, attributes, or educational levels. However, several possible trends

related to the impact of educational level on evaluative criteria importance were suggested by this research. For instance, in the purchase of several garment categories the expressive / symbolic attributes of Fashionability, Individuality / uniqueness, and Promotes high self esteem were more important for Mexican-American women with lower educational levels, and less important as educational level increased. However, given the low number of respondents in some of the educational levels, particularly “High school graduate” and “Post graduate work,” and the multiple statistical procedures performed, these trends should be further investigated in future research to provide more convincing evidence.

Statistical analysis of the effect of occupation on evaluative criteria importance was also compromised by the small sample sizes in a number of occupational categories, including service / sales, homemaker, and not employed. However, several trends were apparent which suggest that occupation may indeed influence the importance attributed to the two criteria of Individuality / uniqueness and Promotes high self esteem. Results showed that students consistently considered these two attributes significantly more important than office and professional / managerial workers when shopping for certain apparel items. These findings imply that Mexican-American students more commonly focus on expressing their individuality and improving their self esteem when shopping for apparel than office and professional / managerial workers. These findings mirror earlier effects shown by educational level on these same two attributes. This is not surprising, however, because many of the respondents in the relatively lower educational levels are also students, meaning that it is likely that many of the same respondents are contained in both categories.

In summary, the concentration of evaluative criteria ratings toward the high end of the 5-point rating scale and the concentration of respondents in certain independent variable categories compromised the results of statistical analyses performed to analyze the effect of physical body characteristics, ethnic factors, and demographic variables on evaluative criteria preferences. Multiple analysis procedures were performed to determine the influence of each independent variable on the ratings attributed to the criteria across garment categories. This very large number of tests increased the chance of a Type I error, and resulted in some findings that should be interpreted with caution. To more fully understand the possible impact of these variables on evaluative criteria preferences, additional research using alternative measures or approaches and a broader range of respondents should be performed.

While additional research would strengthen the validity of findings related to the effect of the dependent variables on evaluative criteria preferences, apparel firms can certainly use the results showing the importance and determinance of the individual criteria in their apparel product development processes.

### *Research Objective 3*

*To examine the fit preferences of Mexican-American women, ages 18-25 from the Southwestern US, across a range of apparel product categories*

Research Objective 3 focused on obtaining a better understanding of the apparel fit preferences of Mexican-American women from the Southwestern US between the ages of 18 and 25. Using an original fit assessment scale created specifically for this research, respondents were asked to indicate their fit preferences (from the choices of fitted, semi-fitted, or loose) for casual pants, tops, skirts, and dresses in an online survey. This section

summarizes the findings associated with RO3 by first providing an overview of the total sample's fit preferences for casual pants, tops, skirts, and dresses (RQ1). The section will then continue with a summary of RQ2 – RQ4 by discussing the effects of physical body characteristics, ethnic characteristics, or demographic factors on respondents' fit preferences.

#### *Apparel Fit Preferences of Mexican-American Women*

Most respondents preferred semi-fitted casual pants, tops, skirts, and dresses, suggesting that this group preferred a mid-range fit that was neither fitted nor loose in their apparel purchases. For pants, tops, and dresses, over half of the respondents selected this middle fit level as their preference. For skirts, this fit level was also most preferred, with approximately 40% of the sample choosing this level.

Given some of the stereotypes that traditionally suggest that young women and Mexican-American women often prefer fitted garments, this preference for a mid-range fit is an important finding. However, substantial portions of the group also preferred fitted and loose fit levels in many of these garments, showing variability within the market that may be due to some of the factors that were tested in RQ2 – RQ4 of this Research Objective.

#### *Effect of Physical Body-Related Characteristics on Apparel Fit Preferences*

Because fit preferences can vary so much, the effect of body shape perception, BMI category, and clothing size was evaluated in this research. Overall, many of the respondents preferred semi-fitted apparel, regardless of physical body-related characteristics. However, Chi-Square tests and resulting post hoc evaluations identified several possible trends, specifically related to number and type of respondents who preferred fitted and loose casual tops and dresses.

Overall, results of the Chi-Square tests suggested that body shape significantly affected the respondents' fit preferences for casual tops. Post-hoc evaluations of the expected versus observed values suggested that respondents who believed they had a more defined waist (i.e. Hourglass, Spoon, and Top Hourglass) were more likely to prefer closely fitted tops than respondents with a less defined waist (i.e. Diamond, Oval, Rectangle, and Triangle), who preferred the loose fitting top.

These findings support previous research conducted by Anderson et al. in 2001 that also considered the effect of body shape perception on the fit preferences of college undergraduate students. Their research showed that respondents who indicated that they were Hourglass in shape preferred more fitted clothing, while those who considered themselves Inverted Triangle shapes preferred looser fitted clothing. Their findings are similar to the results shown in this research: respondents who considered their waist to be more defined chose fitted clothing, possibly to enhance their bodies, while respondents who considered themselves to be larger or with a less defined waist chose loose clothing, possibly to conceal perceived figure flaws.

Most respondents, regardless of BMI category, also preferred semi-fitted casual pants, tops, skirts, and dresses. However, Chi-Square tests indicated a significant effect of BMI category specifically on the fit preferences for casual tops and dresses. Post hoc evaluations within these two garment categories suggested that Underweight / Normal respondents were more likely than expected to choose fitted casual tops and dresses, while Obese respondents were more likely than expected to choose loose fitting casual tops and dresses. This trend clearly suggests that larger-sized respondents were more likely to select

loosely fitted tops and dresses, possibly to conceal perceived figure flaws. Underweight / Normal respondents, on the other hand, were more likely to select closer fitting tops and dresses, possibly to enhance their figures rather than conceal them.

The trends highlighted in this research related to BMI category and fit preference support previous research by Chattaraman and Rudd in 2006. In the 2006 study, researchers reported that respondents of a larger size tended to prefer garments with greater body coverage and looser silhouettes. The current research supports these findings by showing that (at least for casual tops and dresses) Obese respondents were more likely than expected to prefer loosely fitted clothing.

Results also showed that most respondents, regardless of clothing size, tended to prefer semi-fitted pants, tops, skirts, and dresses. However, Chi-Square tests showed that clothing size significantly affected the sample's fit preferences for casual tops and dresses. In both garment categories, respondents in the smaller clothing size categories typically selected fitted garments more often than expected, and as clothing size increased, respondents were more likely than expected to prefer loose garments.

When the effects of these three physical body-related characteristics are considered together, a definite pattern emerges. While semi-fitted garments were the clear preference for most Mexican-American females studied, regardless of physical body characteristics, Chi-Square testing indicated a significant effect of body shape on fit preferences for casual tops, and significant effects of BMI and clothing size on fit preferences for casual tops and dresses. Post hoc evaluations suggested that respondents form their fit preferences for these garments based on their perceived body shape and size. Loosely fitted garments seem to be

more favored by those who are larger in shape or size, possibly to conceal perceived figure issues. On the other hand, closely fitted garments seem to be more favored by those who have narrow waists and smaller body sizes. These respondents may be more likely to choose fitted garments in order to conform to their shapes and sizes and flatter their smaller bodies.

#### *Effect of Ethnic Characteristics on Apparel Fit Preferences*

Though the ethnic factor of subculture was held constant through the use of screening questions, the effect of acculturation level and generational status on apparel fit preferences was analyzed. Overall, many of the respondents appeared to prefer semi-fitted apparel, regardless of ethnic characteristics. Though significant portions of the sample also preferred fitted and loose garments, Chi-Square testing revealed no significant effect of either acculturation level or generation on apparel fit preferences. Thus, the ethnic factors analyzed in this study did not appear to influence the respondents' fit preferences for casual pants, tops, skirts, or dresses.

#### *Effect of Demographic Characteristics on Apparel Fit Preferences*

As discussed, screening questions used in the survey held the demographic variables of gender, age, and geographic region constant for all respondents. However, the effect of additional demographic factors, including educational level, income, and occupation on apparel fit preferences was evaluated in this research objective.

As discussed in the methodology, recruitment for the online study primarily focused on colleges and universities, contributing to a final sample composed predominantly of students with relatively low income levels. This concentration of respondents complicated Chi-Square testing to assess the impact of income and occupation on apparel fit preferences. In

both cases, these factors did not appear to significantly affect respondent's fit preferences for casual pants, tops, skirts, or dresses. To verify this finding, further research, in which a greater variety of income levels and occupations are represented, is certainly warranted.

While income and occupation did not appear to significantly impact apparel fit preferences, Chi-Square tests showed a significant effect of education on respondents' fit preferences for casual pants. Specifically, respondents with lower educational levels (i.e. high school graduates and those who have completed some college) were more likely than expected to indicate their preference for fitted casual pants. Respondents with higher educational levels were less likely than expected to prefer fitted pants and more likely to prefer loose fits instead. While this significant effect was only noted for pants fit preferences, similar trends were also apparent in the remaining garment categories. This suggests a possible effect in which respondents with lower educational levels were more likely to prefer fitted garments than respondents with higher educational levels, who seem more likely to prefer the loose fit level.

#### *Research Objective 4*

*To explore the practical applications of gathered market information and product preferences for apparel product development processes.*

To achieve RO4, results from the previous research objectives were reviewed and synthesized in order to determine how they may best be used in apparel product development processes. Most apparel companies do not have the time or resources to implement radically new or different product development processes for each market they attempt to target. Instead, it is more practical to figure out the best way to apply customer input and market

information to well-known product development processes. This was the approach utilized to respond to this final research objective.

As shown in the conceptual framework in Figure 3, customer involvement and input in the product development process ensures that the end product is well matched to customer needs and preferences. This framework shows direct and indirect methods in which customers may be involved in the product development process. One of the ways that customers can be involved in the process is by providing direct input in the form of apparel evaluative criteria preferences, such as those obtained and analyzed in this research. This section will discuss how these evaluative criteria and fit preferences may be incorporated into the apparel product development process (see Figures 1 and 3), and how the functions performed in these steps may be affected by this input. In this way, the information gathered in this research could potentially be used to improve targeted product development for Mexican-American women between the ages of 18 and 25 from the Southwestern US.

Figure 28 shows the six steps defined by May-Plumlee and Little in their 2006 apparel product development process model, and the application of apparel evaluative criteria preferences and fit preferences to the steps in this process. The red arrows connecting the evaluative criteria and fit preferences are used to indicate the product development steps to which this information may best be applied. The solid red arrows are used to represent instances of greater applicability, while the dashed arrows are used to represent a lower degree of applicability. The box showing evaluative criteria preferences lists the attributes that were considered important in the purchase of casual pants, tops, skirts and dresses. To be included on the list, the attribute must have received a median rating of at least 4, in the 5-

point scale used to assess importance. The attributes are listed in order from highest to lowest, using median ratings first, and then mean ratings to rank the attributes in cases in which the medians were tied. The attributes shown in red were the top three most determinant attributes specified by respondents in the online survey. The box showing the fit preferences indicates the preference level cited most often in the sample across all four garment categories.

As shown in Figure 28, the evaluative criteria and fit preference information gathered in this research is primarily applicable in the front-end of apparel product development, including line planning and research, design and concept development, and design development and style selection. However, certain findings are also useful in the latter stages of product development, and even if the information is not directly applicable (as in the line optimization step), the entire process is impacted in different ways by this information. This section will discuss the major implications of this research for apparel product development, including a discussion of any specific considerations that may be needed to target individual submarkets segmented according to the physical body characteristics, ethnic factors, or demographic variables studied in this research. Most of the suggestions regarding submarket considerations focus on the fit preference results, due to the concentration of evaluative criteria ratings toward the high-end of the rating scale used to assess importance and the resulting low number of significant relationships uncovered due to physical body perception, ethnicity, or demographics.

## Information Input by Customer

Evaluative Criteria Preferences			
<p><b><u>Pants</u></b>  <b>Fit / sizing</b>                      Appearance  <b>Comfort</b>                      Price                      Styling                      Color / pattern                      Beauty / attractiveness                      Quality                      Suitability for the individual                      Versatility with existing wardrobe                      Fashionability                      Promotes high self esteem                      Ease of care                      Individuality / uniqueness</p>	<p><b><u>Tops</u></b>  <b>Fit / sizing</b>                      Appearance                      Styling                      Color / pattern                      Beauty / attractiveness  <b>Price</b>  <b>Comfort</b>                      Quality                      Fashionability                      Versatility with existing wardrobe                      Individuality / uniqueness                      Promotes high self esteem                      Suitability for the individual                      Ease of care                      Sexy</p>	<p><b><u>Skirts</u></b>  <b>Fit / sizing</b>                      Appearance                      Styling  <b>Comfort</b>                      Color / pattern                      Beauty / attractiveness                      Fashionability  <b>Price</b>                      Promotes high self esteem                      Individuality / uniqueness                      Quality                      Versatility with existing wardrobe                      Suitability for the individual                      Sexy                      Ease of care</p>	<p><b><u>Dresses</u></b>  <b>Fit / sizing</b>                      Appearance                      Styling                      Color / pattern                      Beauty / attractiveness  <b>Comfort</b>                      Fashionability                      Individuality / uniqueness                      Promotes high self esteem                      Quality  <b>Price</b>                      Suitability for the individual                      Sexy                      Ease of care                      Fiber content / fabrication                      Appropriateness for end use</p>

Fit Preferences			
<p><b><u>Pants</u></b>                      Semi-fitted</p>	<p><b><u>Tops</u></b>                      Semi-fitted</p>	<p><b><u>Skirts</u></b>                      Semi-fitted</p>	<p><b><u>Dresses</u></b>                      Semi-fitted</p>

## Apparel Product Development Process



**Figure 28: Apparel Product Development for Mexican-American women (ages 18 to 25 from the Southwestern US)**

Note: Figure created by the author (2009) but process adapted from “No-interval coherently phase product development model for apparel,” by T. May-Plumlee and T. Little, 1998, *International Journal of Clothing Science and Technology*, 10(5), pp. 342-364.

\*\*\**Evaluative criteria preferences* show the most important attributes in the purchase of each garment type (all attributes in the list received at least a median rating of 4). The lists are ordered from highest to lowest in terms of median and mean ratings (mean ratings were used to differentiate between identical median ratings). The three most determinant criteria are shown in red. *Fit preferences* show the most reported fit preference level for the entire sample.

The results of this research partially satisfy some of the common functions performed in *Line Planning and Research* by reporting customer preference information (see Figure 28). Specifically, this research indicates that the Mexican-American women in the subgroup studied conduct complex apparel purchase decision processes, considering a mix of intrinsic and extrinsic attributes important, if not critical, in their purchases of casual pants, tops, skirts, and dresses. Overall trends suggest that intrinsic attributes were considered relatively more important than most extrinsic attributes (with the notable exception of Price). This trend was apparent across garment categories, though the relative importance rankings suggest that respondents consider the attributes in a different order of importance depending on garment category (refer to Versatility with existing wardrobe as an example). This has particular implications for apparel product development for different garment types.

In *Line Planning and Research*, firms typically perform a variety of customer and market research to identify market opportunities and provide basic direction. This step is important in any development process, but is particularly critical when very little is known about a certain consumer group or when stereotypes persist regarding this group's preferences. The current research revealed useful information that provided a suitable introduction to the Mexican-American female's (18-25 years old, from the Southwestern US) evaluative criteria preferences. For instance, results showed that a high portion of this market does not wear casual skirts or dresses, but do heavily wear casual tops and pants. This is useful insight into the casual clothing preferences of the market and helps in line planning decisions. In addition, analysis of evaluative criteria importance yields useful information for future product development steps, but also shows where additional research

may be needed to clarify preferences. Many attributes were clearly considered important, but a simple knowledge of this importance is likely insufficient for specific product development decisions. Apparel firms need to know additional information such as specific color and styling preferences, body shape and size information, and price constraints in order to satisfy the needs expressed by the market. Further research is also necessary to allow respondents to explain the importance attributed to certain extrinsic attributes, which may be highly personal and difficult for apparel firms to understand. This would allow them to create products with features that satisfy internal motivations for individuality, suitability, and high self esteem.

This dissertation research provides a clear indication of the importance of a variety of attributes in apparel purchases, and illustrates areas where further explanation is needed. This customer research can be used to direct *Design / Concept Development* functions, in which line concepts are generated (see Figure 28). Applying current research results, apparel firms targeting Mexican-American females (18-25 years old, from the Southwestern US) should focus on developing apparel products that provide, first and foremost, good fit, given the importance and determinance of this attribute. In addition, these individuals desire garments at a good price that provide a combination of comfort, quality, and coordination with their existing wardrobe. The garments should also enhance appearance and self-esteem, and be attractive and unique. Clearly, apparel product design is a multi-faceted process for this market, with firms needing to balance multiple preferences and provide products that satisfy varying aesthetic, functional, brand, and expressive needs.

Once line concepts have been generated according to customer preferences, product development can continue with *Design Development and Style Selection*, which involves the

development of preliminary patterns and prototypes. Both the evaluative criteria and fit preferences uncovered in this research are applicable in this step (see Figure 28), especially considering the importance and determinance of the Fit / sizing attribute for this market's apparel purchases. In addition, body shape and sizing information (both perception and actual) is needed in this step. While stereotypes often suggest that Hispanic women tend to prefer closely fitted garments, this seems to be a broad assumption not supported by this research. Based on the findings from this study, apparel firms should focus on a moderate fit that is neither fitted nor loose in order to reach the largest majority of Mexican-American women. However, specialized strategies may be needed for women with different body sizes/shapes or occupations. For instance, if targeting larger-sized women in this group, firms may also need to consider developing garments with a looser fit. On the other hand, if targeting smaller-sized women or students, firms may also need to provide garments with a closer fit. An understanding of these unique needs (and the contradiction of well-honed stereotypes) supports truly targeted apparel product development and enables the development of product lines well-matched to the Mexican-American woman's needs and preferences.

Apparel firms that commit to developing product lines based on actual customer information improve their chances of success when *Marketing the Line* to buyers and retailers. Product concepts are more closely aligned with customer needs and characteristics, which can certainly provide a competitive advantage in market knowledge that would be favored by retailers. A specific result from this research that is relevant in this step was the finding that respondents did not consider Brand name / store name important in their apparel

purchases. This finding not only contradicts previous research and market stereotypes, but is also particularly powerful considering the high importance attributed to the large majority of attributes tested in this research. It also implies that apparel product developers may have some flexibility in marketing the lines they develop for this market to brands and retailers, since brand and store name does not appear to be important.

After retailers are identified, product development moves into *Pre-production*, which involves the development of production patterns and process standards. Several evaluative criteria preferences and apparel fit preferences are also applicable in this development step (see Figure 28). Most directly, the overall preference for semi-fitted garments is important for the development of final production patterns. However, the trends suggested by this research in which larger-sized women were more likely than expected to prefer loose fits, while smaller-sized women preferred fitted garments also has important implications for pattern grading. Since fit preferences seem to vary some depending on body size (perception), firms should accommodate these variances when grading base patterns for the entire size range offered in a product line. Evaluative criteria ratings suggest that Mexican-American women (18-25 years old, from the Southwestern US) consider Price and Quality (construction, durability, workmanship) important in apparel purchases, but do not consider Country of origin important. These findings have important implications for sourcing and production considerations, encouraging some flexibility in sourcing locations but also a consideration of production quality and costs.

The final product development step, *Line Optimization*, is an opportunity to complete the product line by reconciling orders with forecasts and ensuring that product is made

available to end consumers. While the preferences uncovered in this research may not be directly applicable in this final step, the success of this final step is no less dependent on this type of customer information. As discussed, evaluative criteria and fit preference information can be used to streamline product development and focus efforts toward actual customer preferences. It can also be used to direct further research to enable richer, more complex customer understanding and optimize the ultimate product line developed. Thus, the market and product information revealed in this study has many practical applications to improve targeted apparel product development processes for Mexican-American women.

### **Suggestions for Future Research**

As discussed in the previous section, this research really represents a starting point for understanding the evaluative criteria and fit preferences of one subgroup of the massive US Hispanic market (Mexican-American women between the ages of 18 and 25, from the Southwestern US). This study has identified many opportunities for future research, which should keep researchers in this field busy for many years to come:

- The concentration of evaluative criteria ratings toward the high-end of the rating scale suggested that this group considered almost all of the intrinsic and extrinsic attributes studied at least somewhat important in apparel purchases. Because this trend may have been partially due to the study methodology used (in which respondents rated pre-selected criteria), future research could be performed using alternative methodologies. Some ideas could include asking respondents about their preferences during the actual purchase decision, or using a survey approach that simulates the actual purchase decision.
- As discussed in the presentation of RO4 results, some of the findings of this research encourage further research for clarification or explanation. For instance, future research could be performed to identify specific color and style preferences, or to describe expressive / symbolic needs. Qualitative research methods such as focus groups could be used to promote ample respondent participation and allow the researcher to delve further into true consumer motivations.

- Since respondents in this study self-reported their physical body shape, height and weight, and clothing size, the physical body characteristics studied in this research reflect consumer perception rather than actuality. A future study could gather physical body measurement data to define actual body shape and calculate BMI in order to determine if evaluative criteria and fit preferences are affected by actual physical body characteristics.
- The evaluative criteria measure incorporated into the survey was not randomized, and respondents rated their preferences for the attributes in the purchase of pants, tops, skirts, and dresses (in this order) every time. To validate the wear patterns observed in this study (and to eliminate the possible effect of respondent fatigue), future studies could randomize this portion of the survey.
- The original fit assessment scale utilized one body to demonstrate the three fit levels (fitted, semi-fitted, and loose) across garment categories. Because fit is often demonstrated differently depending on body shape or size, future research could employ a range of body shapes or sizes to assess fit preference. In addition, the developing technology of 3D virtual avatar development and fit assessment could be used to demonstrate varying fit levels and evaluate fit preference.
- This study focused on the sample's evaluative criteria and fit preferences for casual clothing items. Future research could be performed to assess these preferences for business or formal attire, and determine if there are any differences (or similarities) in attribute importance or fit preference for different types of clothing.
- Because this study focused on one particular subgroup within the Hispanic market (and suffered from some limitations due to sampling strategies), future research could focus on employing the methodology developed for this study to analyze additional markets:
  - Within the same submarket (of Mexican-American women between the ages of 18 and 25 from the Southwestern US), a wider range of respondents could be recruited to more completely analyze for the effects of the demographic factors of ethnicity, educational level, income, and occupation.
  - Within the overall US Hispanic market, other subcultural groups, genders, ages, and geographies could be studied to assess the effect of these variables (held constant in this study) on evaluative criteria and fit preferences.
  - Future research could also study the evaluative criteria and apparel fit preferences of other ethnic groups, to determine how (or if) Hispanics may differ from other markets.

Opportunities for future research abound in this area. While this research did not solve all methodological and sampling concerns that make the study of the US Hispanic

market so complex, it did demonstrate the impact that customer input in the form of apparel evaluative criteria and fit preferences can have in apparel product development processes. This research also recognized and confronted some of the leading deficiencies of some of the information (possibly stereotypes) that previously existed for this market, and provided a clear case for the need for better market understanding in targeted apparel product development for US Hispanics.

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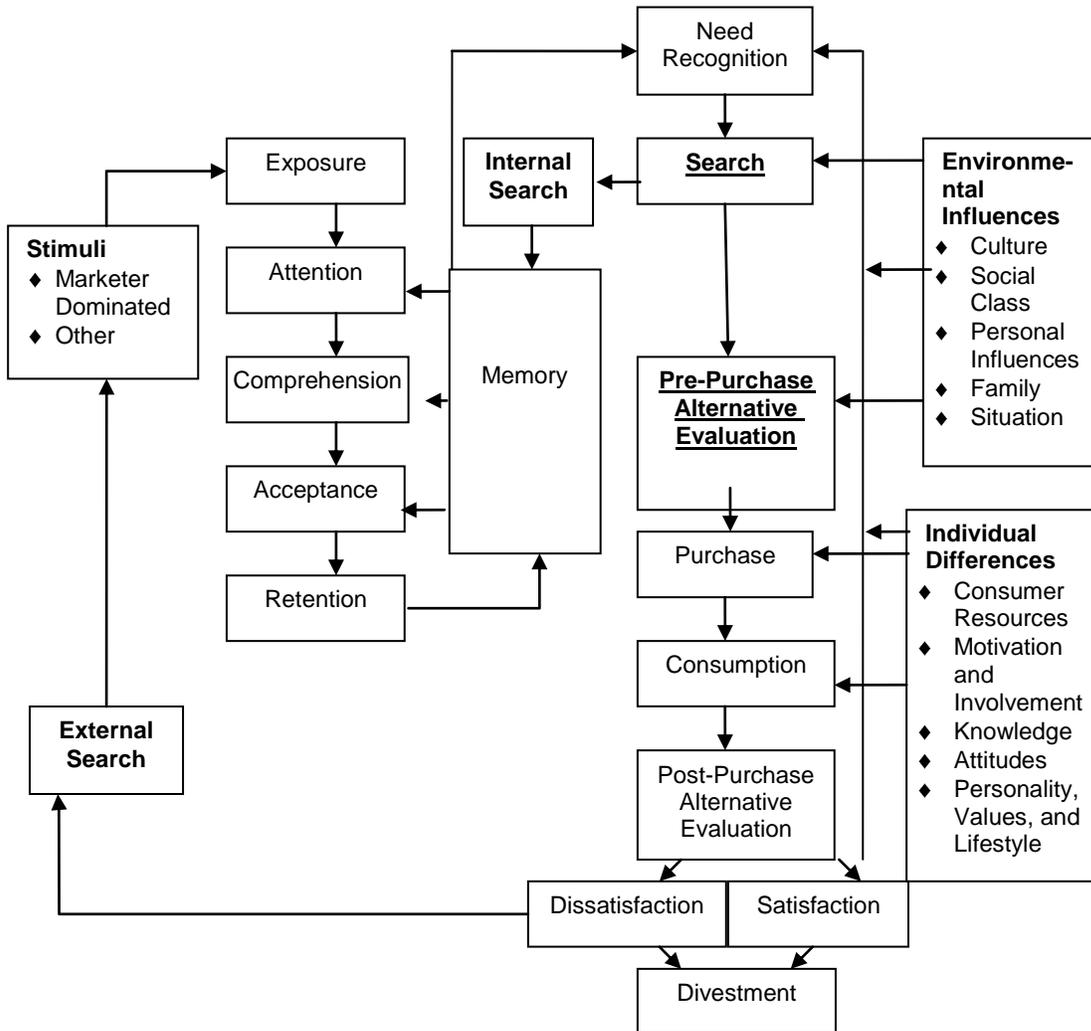
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## APPENDICES

**APPENDIX A – Engel, Blackwell, & Miniard Consumer Decision Process**



**Engel, Blackwell, & Miniard Consumer Decision Process (1995)**

Note: From *Consumer Behavior*, 8<sup>th</sup> edition by J.F. Engel, R.D. Blackwell, and P.W. Miniard, 1995, Fort Worth: The Dryden Press.

**APPENDIX B – Sampling Method Information: Colleges/Universities/National Organizations**

**Institution / Organization Contact Information**



Institution or Organization Name	Hispanic Serving Institution?	Title	Date 1st Contacted	Date of 2nd Contact	Reply
Arizona State University	No	Fashion Journalism Club	4/29/2009	5/6/2009	
	No	President, Adelante	4/29/2009	5/6/2009	
	No	President, Association of Latino Professionals in Finance and Accounting	4/29/2009	5/6/2009	
	No	President, Chicano/Latino Law Student Association	4/29/2009	5/6/2009	failed
	No	El Concilio	4/29/2009	5/6/2009	
	No	Gamma Alpha Omega Sorority	5/1/2009	5/6/2009	failed
	No	Gamma Alpha Omega Sorority	4/29/2009	5/6/2009	
	No	Hispanic Business Students Association	4/29/2009	5/6/2009	
	No	Las Hermanas de HMDP	4/29/2009	5/6/2009	
	No	Latin American Initiative Student Organization	4/29/2009	5/6/2009	
	No	M.E.Ch.A.	4/29/2009	5/6/2009	
	No	Society of Hispanic Professional Engineers	4/29/2009	5/6/2009	
	No	President, Society of Mexican American Engineers and Scientists	4/29/2009	5/6/2009	
	No	President, Spanish Language and Culture Club	4/29/2009	5/6/2009	

	No	President, Students Identifying Multiracial & Biracial	4/29/2009	5/6/2009	
	No	Kappa Delta Chi Sorority, Inc.	4/29/2009	5/6/2009	
	No	Multicultural Greek Council	4/29/2009	5/6/2009	
	No	Theta Nu Xi Multicultural Sorority Inc.	4/29/2009	5/6/2009	
	No	President, Associated Students of ASU West	4/29/2009	5/6/2009	
	No	President, USG	4/29/2009	5/6/2009	
Arizona Western College	Yes	Multicultural Programs Coordinator	2/26/2009	3/20/2009	
	Yes	Student Services Administrative Assistant	3/20/2009	5/6/2009	
	Yes	Interim Associate Dean of Campus Life	3/20/2009	5/6/2009	
	Yes	President, Student Government Association	3/20/2009	5/6/2009	
	Yes	President, International Team	3/20/2009	5/6/2009	
	Yes	Adviser, International Team	3/20/2009	5/6/2009	
Central Arizona College	Yes	Contact person for MEChA	3/20/2009	5/6/2009	
	Yes	Contact person for MEChA	3/20/2009	5/6/2009	
	Yes	Student Leadership Coordinator	3/20/2009	5/6/2009	
Cochise College	Yes	Cultural Events Director	2/26/2009		Rejected due to IRB application - cannot forward emails
	Yes	Cultural Events Director	2/28/2009		Rejected due to IRB application - cannot forward emails
	Yes	Dept. Chair, Interpretation & Translation	2/26/2009		Rejected due to IRB application - cannot forward emails
Estrella Mountain Community College	Yes	Adviser of M.E.C.H.A.	2/26/2009	3/20/2009	part of Maricopa Comm. College District - IRB not approved
	Yes	Director, Student Life and Leadership Office	3/20/2009		part of Maricopa Comm. College District - IRB not approved
	Yes	Adviser, EMCC Fashion Club	3/20/2009		failed
Northern Arizona University	No	Director, Multicultural Student Center	4/29/2009	5/6/2009	
	No	Gamma Alpha Omega Sorority	5/1/2009	5/6/2009	
	No	Contact, Gamma Alpha Omega	4/29/2009	5/6/2009	

	No	President, Gamma Alpha Omega	4/29/2009	5/6/2009	
	No	President, Gamma Alpha Omega	4/29/2009	5/6/2009	
	No	Adviser, Gamma Alpha Omega	4/29/2009	5/6/2009	
	No	President, Hispanic Honor Society	4/29/2009	5/6/2009	
	No	Adviser, Hispanic Honor Society	4/29/2009	5/6/2009	
	No	President, Kappa Delta Chi	4/29/2009	5/6/2009	
	No	President, Kappa Delta Chi	4/29/2009	5/6/2009	
	No	Adviser, Kappa Delta Chi	4/29/2009	5/6/2009	
	No	Adviser, Kappa Delta Chi	4/29/2009	5/6/2009	
	No	Co-Chair, M.E.Ch.A.	4/29/2009	5/6/2009	
	No	President, M.E.Ch.A.	4/29/2009	5/6/2009	
	No	Adviser, M.E.Ch.A.	4/29/2009	5/6/2009	failed
	No	Adviser, M.E.Ch.A.	4/29/2009	5/6/2009	
	No	President, International Club	4/29/2009	5/6/2009	
	No	Adviser, International Club	4/29/2009	5/6/2009	
	No	Coordinator, Office of Student Life	4/29/2009	5/6/2009	
Northern Arizona University, Yuma Branch	Yes	Spanish Faculty Member	2/26/2009	3/20/2009	
		General University Contact	3/20/2009	5/6/2009	
Phoenix College	Yes	Southwest/Chicano Studies Founder & Adviser; Adviser of M.E.Ch.A.	2/26/2009		retired; gave new contact, below
	Yes	referred by Pete Dimas	3/2/2009		part of Maricopa Comm. College District - IRB not approved
	Yes	Co-Adviser of M.E.Ch.A.	3/20/2009		failed
	Yes	M.E.Ch.A.	3/20/2009		part of Maricopa Comm. College District - IRB not approved
	Yes	M.E.Ch.A.	3/20/2009		part of Maricopa Comm. College District - IRB not approved
	Yes	Adviser of A.L.E.	3/20/2009		forwarded
	Yes	Adviser of A.L.E.	3/23/2009		part of Maricopa Comm. College District - IRB not

					approved
	Yes	Adviser, Latin Dance Club	3/23/2009		part of Maricopa Comm. College District - IRB not approved
	Yes	Adviser, Latin Dance Club	3/23/2009		part of Maricopa Comm. College District - IRB not approved
	Yes	Director, Office of Student Life and Leadership	3/23/2009		part of Maricopa Comm. College District - IRB not approved
South Mountain Community College	Yes	Student Services Specialist	2/26/2009	3/23/2009	part of Maricopa Comm. College District - IRB not approved
	Yes	Director of Student Life and Leadership	3/23/2009		part of Maricopa Comm. College District - IRB not approved
The University of Arizona	No	Director, Chicano/Hispano Student Affairs	4/29/2009	5/6/2009	
	No	Association of Latino Professionals in Finance and Accounting	4/29/2009	5/6/2009	failed
	No	Contact, Chi Upsilon Sigma National Latin Sorority	4/29/2009	5/6/2009	
	No	Chi Upsilon Sigma National Latin Sorority	5/1/2009	5/6/2009	
	No	Contact, Destino Latino Fellowship	4/29/2009	5/6/2009	
	No	Contact, Diversity in Action Club	4/29/2009	5/6/2009	
	No	Contact, Family and Consumer Sciences Education Ambassadors	4/29/2009	5/6/2009	
	No	Gamma Alpha Omega Sorority	5/1/2009	5/6/2009	
	No	Contact, Gamma Alpha Omega	4/29/2009	5/6/2009	
	No	Contact, Grupo Folklorico Miztontili	4/29/2009	5/6/2009	forwarded
	No	Contact, Hispanic Business Student Association	4/29/2009	5/6/2009	
	No	Contact, Hispanic Scholarship Fund	4/29/2009	5/6/2009	
	No	Contact, Kappa Delta Chi Sorority	4/29/2009	5/6/2009	
	No	Contact, Latino Association of Graduate Students in Engineering and Sciences	4/29/2009	5/6/2009	
	No	Contact, Latino Law Student Association	4/29/2009	5/6/2009	

	No	Contact, Latino Medical Student Association	4/29/2009	5/6/2009	
	No	Contact, Mexican American Student Association	4/29/2009	5/6/2009	forwarded
	No	Contact, M.E.Ch.A.	4/29/2009	5/6/2009	
	No	Contact, Multicultural Business Student Association	4/29/2009	5/6/2009	
	No	Contact, Ritmos Latinos	4/29/2009	5/6/2009	suggested I contact Mexican-American and Latin American studies
	No	Contact, Second Language Acquisition & Teaching Student Association	4/29/2009	5/6/2009	
	No	Professor, Mexican American Studies and Research Center	5/4/2009	5/6/2009	
	No	Director, Mexican American Studies and Research Center	5/4/2009	5/6/2009	
	No	Contact, Sigma Lambda Gamma	4/29/2009	5/6/2009	
	No	Contact, Society of Hispanic Professional Engineers	4/29/2009	5/6/2009	
	No	Contact, Theta Nu Xi Multicultural Sorority	4/29/2009	5/6/2009	
The University of Arizona South	Yes	President, Associated Students	3/23/2009	5/6/2009	
Allan Hancock College	Yes	Spanish Instructor, Spanish Club Adviser	2/26/2009	3/23/2009	
	Yes	Student Activities Program Assistant	2/26/2009	3/23/2009	email policy at university doesn't allow listserve use
	Yes	Adviser, Club Candela	3/23/2009	5/6/2009	
	Yes	Vice President, Student Services	3/23/2009	5/6/2009	
Bakersfield College	Yes	Adviser of MECHA	2/26/2009	3/23/2009	
	Yes	President, Student Government Association	2/26/2009	3/23/2009	
	Yes	Adviser, Maize	3/23/2009	5/6/2009	
	Yes	Adviser, Maize	3/23/2009		
	Yes	Adviser, Maize	3/23/2009	5/6/2009	
	Yes	Adviser, Hispanic Organization Promoting Engineering & Science	3/23/2009		forwarded
Cal Poly Pomona	Yes	Professor and ITAA member	4/10/2009	5/6/2009	
	Yes	Director, Diversity & Compliance	2/26/2009	3/23/2009	

	Yes	President, ASI Student Government	3/23/2009	5/6/2009	
	Yes	Director, Office of Student Life and Cultural Centers	3/23/2009	5/6/2009	
	Yes	Office of Student Life	3/23/2009	5/6/2009	
	Yes	Division of Student Affairs, Office of the Vice President	3/23/2009	5/6/2009	
	Yes	Coordinator, Cesar E. Chavez Center for Higher Education	3/23/2009		forwarded
	Yes	President, Diversified Greek Council	3/23/2009	5/6/2009	
	Yes	Alpha Pi Sigma	3/23/2009		failed
	Yes	Chi Omega	3/23/2009	5/6/2009	
	Yes	Sigma Kappa	3/23/2009	5/6/2009	
	Yes	Assistant Professor, Apparel Merchandising and Management	5/4/2009		requested IRB application
	Yes	Department Chair and Professor, Apparel Merchandising and Management	5/4/2009		
	Yes	President, Zeta Tau Alpha	3/23/2009	5/6/2009	
	Yes	Historian, Zeta Tau Alpha	3/23/2009	5/6/2009	
	Yes	President, Panhellenic Council	3/23/2009	5/6/2009	
	Yes	Adviser of M.E.Ch.A. & more clubs	2/26/2009	3/23/2009	
	Yes	Adviser, Associated Students, Inc. and Director of Student Activities & Greek Life	3/23/2009	5/6/2009	
	Yes	Co-Adviser, Associated Students, Inc. and Activities Coordinator	3/23/2009	5/6/2009	
	Yes	Vice President, Student Affairs	3/23/2009	5/6/2009	
	Yes	Theta Sigma Chi	3/23/2009	5/6/2009	failed
	Yes	Theta Sigma Chi	3/23/2009	5/6/2009	
	Yes	President, Phi Sigma Sigma	3/23/2009	5/6/2009	
	Yes	Phi Sigma Sigma	3/23/2009	5/6/2009	
California State University - Bakersfield	Yes	Kappa Delta Nu	3/23/2009	5/6/2009	
California State University -	Yes	President, Kappa Delta Nu	3/23/2009	5/6/2009	
California State University -	Yes	Coordinator of Multicultural Affairs	3/2/2009	3/24/2009	

Channel Islands	Yes	Student Government	3/24/2009	5/6/2009	
	Yes	President, Student Government	3/24/2009	5/6/2009	
	Yes	President, M.E.Ch.A.	3/24/2009	5/6/2009	failed
	Yes	Adviser, M.E.Ch.A.	3/24/2009	5/6/2009	
	Yes	President, El Club de Español	3/24/2009		failed
	Yes	Adviser, El Club de Español	3/24/2009		forwarded
	Yes	Adviser, El Club de Español	3/24/2009	5/6/2009	
	Yes	Assistant to the VP for Student Affairs	3/24/2009	5/6/2009	
California State University - Dominguez Hills	Yes	Coordinator, Multicultural Center	3/2/2009	3/24/2009	
	Yes	Associate Vice President for Student Life	3/24/2009	5/6/2009	
	Yes	Circle K International	3/24/2009	5/6/2009	
	Yes	Hermanidad de Sigma Iota Alpha, Inc.	3/24/2009	5/6/2009	
	Yes	Phi Sigma Sigma	3/24/2009	5/6/2009	
	Yes	President, Associated Students, Incorporated	3/24/2009	5/6/2009	
	Yes	Cultural Programs Coordinator, Associated Students Incorporated	3/24/2009		failed
California State University - Fresno	Yes	Associated Students, Incorporated	3/24/2009	5/6/2009	
	Yes	Coordinator, Women's Resource Center	3/2/2009	3/25/2009	
	Yes	Adviser, Trabajadores de la Raza	3/25/2009		told me to contact the president of the organization:
	Yes	President, Trabajadores de la Raza	3/29/2009	5/6/2009	
	Yes	Adviser, Trabajadores de la Raza	3/25/2009	5/6/2009	
	Yes	President, United Sorority & Fraternity Council	3/25/2009	5/6/2009	
	Yes	President, Panhellenic Council	3/25/2009		unable to assist
	Yes	President, Panhellenic Council	3/26/2009	5/6/2009	
Cal State Fullerton	Yes	President, Associated Students, Inc.	3/25/2009		forwarded
	Yes	Chicana & Chicano Resource Center	3/2/2009	5/6/2009	
	Yes	Director of Diversity and Equity	3/2/2009	5/6/2009	
	Yes	Program Director, Student Diversity Program	3/25/2009		forwarded
	Yes	MEChA	3/25/2009	5/6/2009	

	Yes	Coordinator, Women's Cultural Resource Center	3/25/2009	5/6/2009	
	Yes	ASI Executive Vice President	3/25/2009	5/6/2009	failed
	Yes	Latino Business Student Association	3/25/2009	5/6/2009	
California State University Long Beach	Yes	Director of the Multicultural Center	3/2/2009	3/25/2009	
	Yes	Chair, Chicano/Latino Studies Student Association	3/25/2009	5/6/2009	
	Yes	President, Ethnic Teacher Association	3/25/2009		forwarded
	Yes	President, Grupo Folklorico Mexica	3/25/2009	5/6/2009	
	Yes	Chair, Hermanas Unidas	3/25/2009	5/6/2009	
	Yes	Secretary, La Raza Student Association	3/25/2009	5/6/2009	
	Yes	Lambda Theta Alpha Latin Sorority, Inc.	3/25/2009	5/6/2009	
	Yes	Latino Student Union	3/25/2009	5/6/2009	
	Yes	Movimiento Estudiantil de Teatro y Artes	3/25/2009	5/6/2009	
	Yes	Mexican American Engineers and Scientists	3/25/2009	5/6/2009	
	Yes	Sigma Lambda Gamma	3/25/2009		failed
	Yes	President, Society of Hispanic Professional Engineers	3/25/2009	5/6/2009	
	Yes	Professor, Fashion Merchandising & Design	3/25/2009	5/6/2009	
	Yes	Professor, Fashion Merchandising & Design	3/25/2009	5/6/2009	
	Yes	Professor, Fashion Merchandising & Design	3/25/2009	5/6/2009	
	Yes	Secretary, United Migrant Student Association	3/25/2009	5/6/2009	
	Cal State Los Angeles	Yes	Department Chair, Chicano Studies	3/2/2009	5/6/2009
Yes		Lambda Theta Nu	3/26/2009	5/6/2009	
Yes		Lambda Theta Alpha	3/26/2009	5/6/2009	
Yes		Assistant Professor, Department of Chicano Studies; Adviser, MALCS	3/26/2009	5/6/2009	
California State University Monterey Bay	Yes	Director, Chicano Studies Division	3/2/2009	3/26/2009	
	Yes	Student Activities Office	3/26/2009	5/6/2009	
	Yes	Co-Chair, Multicultural Greek Council	3/26/2009	5/6/2009	
	Yes	Co-Chair, Multicultural Greek Council; Contact for Lambda Theta Nu	3/27/2009	5/6/2009	

	Yes	Contact for Lambda Sigma Gamma	3/27/2009	5/6/2009	
	Yes	Contact for Lambda Sigma Gamma	3/27/2009	5/6/2009	
	Yes	Contact for Lambda Theta Nu	3/27/2009	5/6/2009	failed
	Yes	Contact for Sigma Omega Nu	3/27/2009	5/6/2009	
	Yes	Contact for Sigma Omega Nu	3/27/2009	5/6/2009	
	Yes	Contact for Sigma Theta Psi	3/27/2009		forwarded
	Yes	Contact for Sigma Theta Psi	3/27/2009	5/6/2009	
	Yes	Contact for The Gathering	3/27/2009	5/6/2009	
	Yes	Contact for Chicano-Latino Graduation Association	3/27/2009	5/6/2009	
	Yes	Contact for Chicano-Latino Graduation Association	3/27/2009	5/6/2009	
	Yes	Contact for Danza Azteca	3/27/2009	5/6/2009	
	Yes	Contact for M.E.Ch.A.	3/27/2009		failed
	Yes	Contact for M.E.Ch.A.	3/27/2009	5/6/2009	
	Yes	Contact for Mujeres De Maiz	3/27/2009	5/6/2009	
	Yes	President, Associated Students	3/27/2009	5/6/2009	
California State University Northridge	Yes	Professor and ITAA member	4/10/2009	5/6/2009	
	Yes	Professor and ITAA member	4/10/2009	5/6/2009	
	Yes	Director, Equity and Diversity	3/2/2009		directed me to Student Affairs:
	Yes	Associate Vice President for Student Affairs & Dean of Students	3/3/2009	3/30/2009	requested IRB application
	Yes	President, Associated Students	3/30/2009	5/6/2009	
	Yes	Alpha Pi Sigma Sorority	3/30/2009	5/6/2009	
	Yes	Aztlan Graduation and Scholarship Committee	3/30/2009	5/6/2009	
	Yes	Ballet Folklórico Aztlan de CSUN	3/30/2009	5/6/2009	
	Yes	Chicano/a Studies Graduate Student Association	3/30/2009	5/6/2009	
	Yes	Chicanos for Community Medicine	3/30/2009	5/6/2009	
	Yes	Hermanas Unidas de CSUN	3/30/2009	5/6/2009	
	Yes	Kappa Omicron Nu	3/30/2009	5/6/2009	
Yes	Lambda Theta Alpha	3/30/2009	5/6/2009		

	Yes	Lambda Theta Nu Sorority	3/30/2009	5/6/2009	
	Yes	Language, Unity, Ideology, and Friendship	3/30/2009		forwarded
	Yes	Latino Business Association (LBA)	3/30/2009	5/6/2009	
	Yes	MEChA	3/30/2009	5/6/2009	
	Yes	Multicultural Psychology Association	3/30/2009	5/6/2009	
	Yes	Phi Lambda Rho Sorority, Inc.	3/30/2009	5/6/2009	
	Yes	Sigma Lambda Gamma, Lambda Beta	3/30/2009	5/6/2009	
	Yes	Sigma Omega Nu	3/30/2009	5/6/2009	
	Yes	Society of Consumer Affairs Professionals	3/30/2009	5/6/2009	
	Yes	Society of Hispanic Professional Engineers	3/30/2009	5/6/2009	
	Yes	TRENDS	3/30/2009	5/6/2009	
California State University, San Marcos	No	Interim Director, NLRC	5/4/2009	5/6/2009	
	Yes	Adviser, LULAC (League of United American Citizens)	3/3/2009	3/30/2009	forwarded
	Yes	Chair, Department of Ethnic and Gender Studies	3/3/2009	3/30/2009	
	Yes	ASI President	3/30/2009	5/6/2009	
	Yes	President, College Panhellenic Association	3/30/2009	5/6/2009	
	Yes	President, LULAC	3/30/2009	5/6/2009	
	Yes	President, MEChA	3/30/2009	5/6/2009	
	Yes	President, Phi Lambda Rho Sorority	3/30/2009		forwarded
	Yes	President, Sigma Omega Phi, Multicultural Inc.	3/30/2009	5/6/2009	
California State University Stanislaus	Yes	President, Teatro Los Hijos Del Campo	3/30/2009	5/6/2009	
	Yes	President, Upsilon Kappa Delta	3/30/2009	5/6/2009	
California State University, San Bernardino Palm Desert Campus	Yes	Vice President, Associated Students, Inc.	3/30/2009	5/6/2009	
	Yes	Vice President of Student Services	3/30/2009		failed
	Yes	ASCC President	3/30/2009		failed
Cerritos College	Yes	Director of Student Activities	3/30/2009	5/6/2009	

	Yes	Adviser, Salsa Club and Foreign Language Instructor	3/30/2009	5/6/2009	
Clear Lake Community College, Yuba	Yes	Adviser of the Associated Student Body	3/3/2009	3/30/2009	
Chaffey College	Yes	Adviser, Spanish Club	3/3/2009	3/30/2009	
	Yes	President, Associated Students	3/30/2009	5/6/2009	
	Yes	Director, Student Activities	3/30/2009	5/6/2009	
	Yes	Dean of Institutional Services	3/30/2009		failed
Citrus College	Yes	Student Activities Supervisor	3/30/2009	5/6/2009	forwarded
	Yes	ASCC President	3/30/2009		failed
	Yes	ASCC Secretary	3/30/2009		failed
	Yes	Vice President of Student Services	3/30/2009	5/6/2009	
College of the Desert	Yes	Adviser, M.E.Ch.A.	3/3/2009		forwarded
	Yes	Adviser, Latina Leadership Network	3/3/2009	3/30/2009	
	Yes	Director, Student Life	3/30/2009	5/6/2009	
	Yes	Adviser, International Club	3/30/2009		unable to assist - no students fitting the criteria are in the club
College of the Sequoias	Yes	Adviser, MECHA	3/3/2009	3/30/2009	
	Yes	Adviser, MECHA	3/3/2009	3/30/2009	
	Yes	Adviser, Fashion Club	3/30/2009	5/6/2009	
	Yes	Student Life and Leadership Coordinator	3/30/2009		forwarded
	Yes	ASB President	3/30/2009	5/6/2009	
	Yes	Adviser, Alpha Gamma Sigma	3/30/2009	5/6/2009	
	Yes	Adviser, Alpha Gamma Sigma	3/30/2009	5/6/2009	
Crafton Hills College	Yes	Adviser, MECHA	3/3/2009	3/30/2009	
	Yes	President, MECHA	3/30/2009	5/6/2009	
	Yes	President, MECHA	3/30/2009	5/6/2009	
	Yes	President, FBLA	3/30/2009	5/6/2009	
East Los Angeles College	Yes	Chairperson, Spanish Language Department	3/3/2009	3/30/2009	
	Yes	Adelante Director	3/30/2009		not interested in participating

El Camino College	Yes	Director, Office of Staff and Student Diversity	3/3/2009	3/30/2009	
	Yes	Adviser, Student Development Office	3/30/2009		unable to assist
Evergreen Valley College	Yes	HSI Project Director	3/3/2009	3/30/2009	
Fresno Pacific University	Yes	Contact person for CAKE (Cultural Awareness and Knowledge Enrichment)	3/30/2009	5/6/2009	
	Yes	Contact person for Student Activities	3/30/2009	5/6/2009	
	Yes	Club Commissioner	3/30/2009	5/6/2009	
	Yes	Office of Student Life	3/30/2009	5/6/2009	
	Yes	President of Student Government	3/30/2009	5/6/2009	
Glendale Community College	Yes	Student Affairs Coordinator	3/3/2009	4/1/2009	
	Yes	President of the Associated Students	4/1/2009	5/6/2009	
	Yes	Vice President, Campus Organizations	4/1/2009	5/6/2009	
	Yes	Student Affairs Administrative Assistant	4/1/2009	4/30/2009	requested IRB application
	Yes	President, Alpha Gamma Sigma	4/1/2009	5/6/2009	
Hartnell College	Yes	Adviser, Latina Leadership Club	3/3/2009	4/1/2009	
	Yes	Adviser, Latina Leadership Club	3/3/2009	4/1/2009	
	Yes	President, Circo	4/1/2009	5/6/2009	
	Yes	President, Latina Leadership Club	4/1/2009	5/6/2009	
	Yes	Adviser, Associated Students	4/1/2009	5/6/2009	
Imperial Valley College	Yes	Spanish Instructor	3/3/2009	4/1/2009	blocked by university
	Yes	Associate Dean, Student Affairs & Adviser, Associated Student Government	4/1/2009		blocked by university
	Yes	Associated Student Government President	4/1/2009		blocked by university
	Yes	Vice President, Student Services	4/1/2009		blocked by university
	Yes	Adviser, Business Club	4/1/2009		blocked by university
	Yes	Adviser, National Student Nurses Association Club	4/1/2009		blocked by university
	Yes	Adviser, Student Support Services Club	4/1/2009		blocked by university
La Sierra University	Yes	Student Body	3/3/2009	4/1/2009	
	Yes	President, Student Association	4/1/2009	5/6/2009	

Long Beach City College	Yes	ASB Cabinet / Student Senate / Cultural Affairs Adviser	3/3/2009	4/1/2009	
	Yes	Student Life Clerk, Liberal Arts Campus	4/1/2009	5/6/2009	
	Yes	Student Activities Adviser	4/1/2009	5/6/2009	
	Yes	Student Life Clerk, Pacific Coast Campus	4/1/2009		unable to assist
Los Angeles City College	Yes	Adviser, Latino Student Union	3/3/2009	4/1/2009	
	Yes	Adviser, Latino Student Union	3/3/2009	4/1/2009	
	Yes	President, Latino Student Union	4/1/2009	5/6/2009	
	Yes	President, AHEAD	4/1/2009	5/6/2009	
Los Angeles Harbor College	Yes	Adviser, AHEAD	4/1/2009	5/6/2009	
Los Angeles Harbor College	Yes	A.S.O. President	4/1/2009	5/6/2009	
Los Angeles Mission College	Yes	ASO President	4/1/2009	5/6/2009	
	Yes	Counselor, Student Support Services	4/1/2009	5/6/2009	
	Yes	Program Coordinator, Student Support Services	4/1/2009	5/6/2009	
	Yes	Adviser, ASO	4/1/2009	5/6/2009	
Los Angeles Trade Tech College	Yes	Vice President, Student Services	3/3/2009	4/1/2009	
	Yes	President, Associated Students Organization	4/1/2009		failed
	Yes	Department Chair, The Fashion Center	4/1/2009	5/6/2009	
Los Angeles Valley College	Yes	Dean of Enrollment Management	3/3/2009	4/1/2009	
	Yes	Adviser, Associated Student Organization	4/1/2009	5/6/2009	
	Yes	Commissioner of Student and Social Affairs	4/1/2009	5/6/2009	
	Yes	Vice President of Student Services	4/1/2009	5/6/2009	
	Yes	Associate Dean of Student Services and Adviser, Associated Student Union	4/1/2009	5/6/2009	
Los Medanos College	Yes	Coordinator, Student Life Office	3/3/2009	4/1/2009	forwarded
	Yes	Puente Coordinator	4/1/2009	5/6/2009	
	Yes	Contact for Puente	4/1/2009	5/6/2009	
	Yes	Contact for La Raza	4/1/2009		
	Yes	LMCAS President	4/1/2009	5/6/2009	
	Yes	Director, Student Life Office	4/1/2009	5/6/2009	

Loyola Marymount University	No	Lambda Theta Alpha	5/4/2009	5/6/2009	
Mount St. Mary's College	Yes	Women's Leadership Staff	3/3/2009	4/1/2009	
	Yes	Contact for Latinas Unidas	4/1/2009		failed
	Yes	Contact for Kappa Delta Chi	4/1/2009	5/6/2009	
	Yes	Contact for Alpha Tau Delta	4/1/2009	5/6/2009	
	Yes	Assistant Director of Women's Leadership	4/1/2009		failed
Mt. San Antonio College	Yes	M.E.Ch.A.	3/3/2009	4/1/2009	
	Yes	M.E.Ch.A.	4/1/2009	5/6/2009	
	Yes	President, Associated Students	4/1/2009	5/6/2009	
Mt. San Jacinto College	Yes	Chair, Team Leader of the Diversity Program	3/4/2009	4/6/2009	
	Yes	Enrollment Services	4/6/2009	5/6/2009	
	Yes	Associated Student Body President	4/6/2009	5/6/2009	unable to assist
Napa Valley College	Yes	Vice President, Student Services	3/12/2009	4/6/2009	
	Yes	Coordinator of Student Life	4/6/2009	5/6/2009	
	Yes	Adviser, Ballet Folklorico and Club Hispano Americano (CHA)	4/6/2009	5/6/2009	
	Yes	Adviser, Club Hispano Americano (CHA)	4/6/2009	5/6/2009	
	Yes	Adviser, Puente	4/6/2009	5/6/2009	
	Yes	Adviser, Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)	4/6/2009	5/6/2009	
	Yes	Adviser, Society of Hispanic Physics and Engineers (S.H.P.E.)	4/6/2009	5/6/2009	
	Yes	Public Relations Officer, Associated Student Body	4/6/2009	5/6/2009	
The National Hispanic University	Yes	Assistant Registrar	4/6/2009	5/6/2009	
	Yes	Contact for the Translation and Interpretation Program	4/6/2009	5/6/2009	
	Yes	Contact for the General Education Program	4/6/2009	5/6/2009	
	Yes	Contact for the Business Administration Program	4/6/2009	5/6/2009	
	Yes	Contact for the Computer Science Program	4/6/2009	5/6/2009	
	Yes	Contact for the Early Childhood Education Program	4/6/2009	5/6/2009	
	Yes	Contact for the Liberal Studies Program	4/6/2009	5/6/2009	

	Yes	Contact for the Department of Mathematics and Science Program	4/6/2009	5/6/2009	
	Yes	Advisement Coordinator, Teacher Education	4/6/2009	5/6/2009	
Occidental College	Yes	Intercultural Community Center	4/13/2009	5/6/2009	
	Yes	Contact, MEChA and ALAS	4/13/2009	5/6/2009	
	Yes	Alpha Lambda Phi Alpha Sorority	4/13/2009		failed
	Yes	Contact, Circulo de Mujeres	4/13/2009	5/6/2009	
	Yes	Contact, Community and Culture Club	4/13/2009		failed
	Yes	Contact, Compadres	4/13/2009	5/6/2009	
	Yes	Contact, the Fashion Club	4/13/2009	5/6/2009	
	Yes	Contact, Greek Council	4/13/2009	5/6/2009	
	Yes	Contact, Latino Graduation Association	4/13/2009	5/6/2009	
	Yes	Contact, Sigma Lambda Gamma	4/13/2009	5/6/2009	
	Yes	Contact, Student Activities Center	4/13/2009	5/6/2009	
	Yes	Co-Chairs, ASOC General Assembly	4/13/2009	5/6/2009	
Oxnard College	Yes	ASG President	4/13/2009	5/6/2009	
	Yes	Contact, Ballet Folklorico Mestizo and ESL Club	4/13/2009	5/6/2009	
	Yes	MEChA	4/13/2009	5/6/2009	
	Yes	IOC Chair	4/13/2009	5/6/2009	
Palo Verde College	Yes	Student Services, Adviser of the Associated Student Body	4/13/2009	5/6/2009	
Palomar College	Yes	Office of Student Affairs; Adviser, Associated Student Government	4/13/2009	5/6/2009	
	Yes	President, Associated Student Government	4/13/2009	5/6/2009	
	Yes	Vice President, Associated Student Government	4/13/2009		forwarded
	Yes	Fashion Club	4/13/2009	5/6/2009	
	Yes	Contact, MECHA	4/13/2009	5/6/2009	
Pasadena City College	Yes	Student Affairs Adviser	4/13/2009	5/6/2009	
Pasadena City College	Yes	President, Associated Students	4/13/2009	5/6/2009	
Pierce College	Yes	Chair, Diversity Committee	4/13/2009	5/6/2009	

	Yes	ASO President	4/13/2009	5/6/2009	
	Yes	Contact, United Latin-Americans (ULA)	4/13/2009	5/6/2009	
Porterville College	Yes	Associated Student Body President	4/13/2009	5/6/2009	
	Yes	Contact, BroCHA and Chicanos/Latinos for Community Medicine	4/13/2009	5/6/2009	
	Yes	Contact, M.E.C.H.A.	4/13/2009		no longer affiliated with MECHA
Rio Hondo College	Yes	President of Academic Senate	4/15/2009	5/6/2009	
	Yes	Student Senate Representative for Rio Hondo College at SSCCC	4/15/2009	5/6/2009	
Riverside Community College District	Yes	Dean of Student Services, Norco	4/15/2009		requested IRB application
	Yes	Dean of Student Services, Moreno Valley	4/15/2009	5/6/2009	
	Yes	Dean of Student Services, Riverside City	4/15/2009	5/6/2009	
San Bernardino Valley College	Yes	Director of Student Life, Adviser of the Associated Student Body	4/15/2009	5/6/2009	unable to assist
	Yes	Adviser, M.E.Ch.A.	4/15/2009	5/6/2009	
	Yes	Adviser, Puente Club	4/15/2009		forwarded
	Yes	Adviser, Spanish Club	4/15/2009	5/6/2009	
	Yes	Student Senate Representative for San Bernardino Valley College at SSCCC	4/15/2009	5/6/2009	
	Yes	President, Associated Students	4/15/2009	5/6/2009	
San Francisco State University	Yes	Student Organizations Director	4/15/2009	5/6/2009	
	Yes	Professor and ITAA member	4/30/2009		forwarded
	No	La Raza Student Organization	5/4/2009	5/6/2009	
San Joaquin Delta Community College	No	Adviser, La Raza Student Organization	5/4/2009	5/6/2009	
	Yes	President, Associated Student Body Government	4/15/2009	5/6/2009	failed
	Yes	Secretary, Student Activities Program Services	4/15/2009	5/6/2009	
San Jose City College	Yes	Interim Supervisor of Student Activities	4/15/2009	5/6/2009	
San Jose State University	Yes	Interim Dean, Language Arts Department	4/16/2009	5/6/2009	
San Jose State University	No	Lambda Theta Alpha	5/4/2009	5/6/2009	
Santa Clara University	No	Contact, Ballet Folklorico Los Potrillos	4/29/2009	5/6/2009	

	No	Contact, Chicanos & Latinos in Engineering & Sciences	4/29/2009	5/6/2009	failed
	No	Contact, CHE	4/29/2009	5/6/2009	
	No	Contact, Hermanas Unidas Inc.	4/29/2009	5/6/2009	failed
	No	Contact, Latino Business Student Association	4/29/2009	5/6/2009	
	No	Contact, M.E.Ch.A.	4/29/2009	5/6/2009	
	No	Contact, Retail Studies Association	4/29/2009	5/6/2009	
	Yes	Associated Students Counselor, ICC Adviser	4/16/2009	5/6/2009	
	Yes	Associated Students President	4/16/2009	5/6/2009	
	Yes	Director of Student Services	4/16/2009	5/6/2009	
	Yes	ICC Chair	4/16/2009		told me to contact the Latino Student Union and ALAS
	Yes	Association of Latin American Students (ALAS) (from Vicky)	4/22/2009	5/6/2009	
	Yes	Association of Latin American Students (ALAS) (from Vicky)	4/22/2009	5/6/2009	
	Yes	Association of Latin American Students (ALAS) (from Vicky)	4/22/2009	5/6/2009	
	Yes	Adviser, Association of Latin American Students (ALAS)	4/16/2009		requested IRB application
	Yes	Latino Student Union (From Vicky)	4/22/2009	5/6/2009	
	Yes	Latino Student Union (From Vicky)	4/22/2009		forwarded
	Yes	Adviser, Latino Student Union	4/16/2009	5/6/2009	
Santa Monica College	Yes	Adviser, MECHA	4/16/2009	5/6/2009	
Sonoma State University	No	President, MEChA	4/29/2009	5/6/2009	
Sonoma State University	No	President, Lambda Theta Nu Sorority, Inc.	4/29/2009	5/6/2009	
Taft Community College	Yes	Adviser, Associated Student Body	4/16/2009	5/6/2009	
	Yes	Professor and ITAA member	4/30/2009	5/6/2009	
	Yes	Professor and ITAA member	4/30/2009	5/6/2009	
	No	Contact, M.E.Ch.A.	4/29/2009	5/6/2009	
UC Davis	No	Contact, CHE	4/29/2009	5/6/2009	

	No	Contact, CHE	4/29/2009	5/6/2009	
	No	Program Coordinator, Danzantes del Alma	4/29/2009	5/6/2009	forwarded
	No	Contact, Sigma Lambda Gamma	4/29/2009	5/6/2009	failed
	No	Contact, La Raza Pre-Law Student Association	4/29/2009	5/6/2009	
	No	President, MALCS	4/29/2009	5/6/2009	
	No	Contact, Yi'kal Kuyum	4/29/2009	5/6/2009	
	No	Contact, La Familia	4/29/2009	5/6/2009	
UCLA	No	Adviser, Latino Greek Council	4/29/2009	5/6/2009	forwarded
	No	President, Latino Greek Council	4/29/2009	5/6/2009	
	No	President, Sigma Lambda Gamma	4/29/2009	5/6/2009	
	No	Sigma Lambda Gamma	4/29/2009	5/6/2009	
	No	Adviser, Interfraternity Council	4/29/2009	5/6/2009	
	No	Office of Fraternity and Sorority Relations	4/29/2009	5/6/2009	
University of California, Merced	Yes	Coordinator of Intercultural Programs	4/16/2009	5/6/2009	
	Yes	Contact, Ballet Folklorico de UC Merced	4/16/2009	5/6/2009	
	Yes	Contact, Kappa Delta Chi / Pink Ladies	4/16/2009	5/6/2009	
	Yes	Contact, Latino Students de UC Merced	4/16/2009	5/6/2009	
	Yes	Contact, M.E.Ch.A. de UC Merced	4/16/2009	5/6/2009	
	Yes	Contact, Quiero Bailar	4/16/2009	5/6/2009	
	Yes	President, Associated Students	4/16/2009	5/6/2009	
	Yes	Director of Student Activities	4/16/2009		failed
University of California, Riverside	Yes	Coordinator for Volunteer Services and Clubs and Organizations	4/16/2009	5/6/2009	
	Yes	Director, Chicano Student Programs	4/16/2009	5/6/2009	
	Yes	Associated Students	4/16/2009	5/6/2009	
	Yes	Executive Director, Associated Students	4/16/2009	5/6/2009	
	Yes	Alpha Pi Sigma Sorority, Inc.	4/16/2009		failed
	Yes	Association of Latino Professionals in Finance and Accounting (ALPFA)	4/16/2009	5/6/2009	
Yes	Chicano/Latino for Community Medicine (CCM)	4/16/2009	5/6/2009		

Yes	I AM	4/16/2009	5/6/2009	
Yes	Contact, Alpha Pi Sigma Sorority, Inc.	4/16/2009	5/6/2009	
Yes	Contact, Chicano/Latino for Community Medicine	4/16/2009	5/6/2009	
Yes	Contact, I AM	4/16/2009	5/6/2009	
Yes	Contact, Lambda Sigma Gamma	4/16/2009	5/6/2009	
Yes	Lambda Sigma Gamma Sorority	4/16/2009	5/6/2009	
Yes	Lambda Theta Alpha Latin Sorority, Inc.	4/16/2009		failed
Yes	Contact, Lambda Theta Alpha Latin Sorority, Inc.	4/16/2009	5/6/2009	
Yes	Contact, Lambda Theta Nu Sorority, Inc.	4/16/2009	5/6/2009	
Yes	Lambda Theta Nu Sorority, Inc.	4/16/2009		failed
Yes	President, Latin American Student Association	4/22/2009		forwarded
Yes	Chicano Student Programs	4/22/2009	5/6/2009	
Yes	Contact, Latin American Student Association	4/16/2009		unable to assist
Yes	Latinic Societas Unitas (LSU)	4/16/2009		failed
Yes	Contact, Latinic Societas Unitas (LSU)	4/16/2009	5/6/2009	
Yes	Contact, Latinic Societas Unitas (LSU)	4/16/2009	5/6/2009	
Yes	Contact, Latino Business Student Association	4/16/2009	5/6/2009	
Yes	Latino Business Student Association	4/16/2009	5/6/2009	
Yes	Latino Union	4/16/2009		failed
Yes	Contact, Latino Union	4/16/2009	5/6/2009	
Yes	Contact, Latinos in Science	4/16/2009	5/6/2009	
Yes	Latinos in Science	4/16/2009		failed
Yes	MEChA	4/16/2009	5/6/2009	
Yes	Contact, MEChA	4/16/2009	5/6/2009	
Yes	Contact, Mujeres Unidas	4/16/2009	5/6/2009	
Yes	Mujeres Unidas	4/16/2009	5/6/2009	
Yes	Contact, the Multi-Cultural Greek Council	4/16/2009	5/6/2009	
Yes	Contact, Organizacion Estudiantil Universitaria de Espanol	4/16/2009	5/6/2009	
Yes	Organizacion Estudiantil Universitaria de Espanol	4/16/2009	5/6/2009	

	Yes	Raza Assembly	4/16/2009	5/6/2009	
	Yes	Sigma Pi Alpha Sorority	4/16/2009	5/6/2009	
	Yes	Contact, Sigma Pi Alpha Sorority	4/16/2009	5/6/2009	
	Yes	Contact, Sigma Pi Alpha Sorority	4/16/2009	5/6/2009	
	Yes	Society of Hispanic Professional Engineers	4/16/2009	5/6/2009	
	Yes	Contact, Society of Hispanic Professional Engineers	4/16/2009	5/6/2009	
	Yes	Contact, Thread and Design	4/16/2009	5/6/2009	
	Yes	Coordinator for Student Organizations	4/16/2009		requested IRB application
	Yes	Student Organization Adviser for Fraternities and Sororities	4/16/2009	5/6/2009	
	Yes	Student Organization Adviser	4/16/2009	5/6/2009	
	Yes	Director, Multicultural Student Affairs	4/16/2009	5/6/2009	
	Yes	President, International Student Organization (ISO)	4/16/2009		failed
	Yes	Adviser, International Student Organization	4/16/2009	5/6/2009	
	Yes	President, Latino Student Forum	4/16/2009		forwarded
	Yes	Associated Students	4/16/2009		unable to assist
	Yes	President, ASULV	4/16/2009		forwarded
	Yes	Campus Activities Board	4/16/2009	5/6/2009	
	Yes	Office of Greek Life	4/16/2009	5/6/2009	
University of La Verne	Yes	Interim Director of Student Life	4/16/2009	5/6/2009	
	Yes	Department Chair, American Ethnic Studies and Chicano Studies	4/16/2009	5/6/2009	
Ventura College	Yes	Associated Students	4/16/2009		failed
Victor Valley College	Yes	Associated Student Body President	4/17/2009	5/6/2009	
	Yes	Administrative Assistant to the President	4/17/2009	5/6/2009	
West Hills College Coalinga	Yes	M.E.Ch.A.	4/17/2009	5/6/2009	
	Yes	Administrative Assistant to the President	4/17/2009	5/6/2009	
	Yes	EOPS Counselor & MEChA Adviser	4/17/2009		failed
	Yes	Contact, International Heritage Club	4/17/2009		failed
West Hills College Lemoore	Yes	President, Student Government Association	4/17/2009	5/6/2009	

West Los Angeles College	Yes	Associate Dean and Associated Students Organization Adviser	4/17/2009	5/6/2009	
Whittier College	Yes	President, Hispanic Student Association	4/17/2009	5/6/2009	
	Yes	Co-president, Hispanic Student Association	4/17/2009	5/6/2009	failed
	Yes	Director of the Cultural Center	4/17/2009		requested IRB application
	Yes	Director of the Ortiz Programs	4/17/2009		forwarded
	Yes	M.E.Ch.A.	4/17/2009	5/6/2009	
	Yes	Office of Student Activities	4/17/2009	5/6/2009	unable to assist
	Yes	Inter-Society Council	4/17/2009	5/6/2009	
Woodbury University	Yes	Coordinator of Student Involvement and Leadership	4/17/2009	5/6/2009	
	Yes	Adviser, Common Threads	4/17/2009	5/6/2009	
	Yes	Adviser, Sigma Omega Nu	4/17/2009	5/6/2009	
	Yes	Adviser, Omega Psi Delta	4/17/2009	5/6/2009	
Woodland Community College	Yes	Contact for the Associated Student Body	4/17/2009	5/6/2009	
Yuba College	Yes	Contact for M.E.Ch.A.	4/17/2009	5/6/2009	
	Yes	Contact for the Society of Hispanic Professional Engineers	4/17/2009	5/6/2009	
	Yes	Contact for the Associated Student Body	4/17/2009	5/6/2009	
Central New Mexico Community College	Yes	Student Activities Office	4/18/2009	5/6/2009	
	Yes	Director of Student Life	4/18/2009		failed
Clovis Community College	Yes	Contact for the Hispanic Student Association	4/18/2009	5/6/2009	
	Yes	Adviser, Campus Activities Board	4/18/2009	5/6/2009	
	Yes	Cultural Arts Director	4/18/2009	5/6/2009	
Eastern New Mexico University	Yes	Hispanic Affairs	4/18/2009	5/6/2009	
	Yes	Multicultural Affairs Director & Adviser, International Students Club	4/18/2009	5/6/2009	
	Yes	Adviser, AHORA and BESO	4/18/2009	5/6/2009	
	Yes	Associated Students	4/18/2009	5/6/2009	
New Mexico Highlands University	Yes	Adviser, MECHA	4/18/2009	5/6/2009	

New Mexico Junior College	Yes	Coordinator, Intramurals/Student Activities	4/18/2009	5/6/2009	
	Yes	Administrative Secretary, Associate Dean of Students	4/18/2009	5/6/2009	
New Mexico State University, Alamogordo Branch	Yes	Faculty adviser for the Student Government	4/18/2009	5/6/2009	
	Yes	Faculty adviser for the Student Government	4/18/2009	5/6/2009	
	Yes	Faculty adviser, Foreign Languages Club	4/18/2009	5/6/2009	
	Yes	Faculty adviser, Foreign Languages Club	4/18/2009	5/6/2009	
	Yes	Student Services Administrative Office	4/18/2009	5/6/2009	
New Mexico State University, Carlsbad	Yes	Coordinator, New Mexico Alliance for Minority Participation (AMP)	4/18/2009	5/6/2009	
New Mexico State University, Grants	Yes	President, Associated Student Government	4/18/2009		forwarded
New Mexico State University	Yes	Chicano Programs	4/18/2009		forwarded
	Yes	President, Hispanic Council	4/18/2009	5/6/2009	
	Yes	President, Association of Latino Professionals in Finance and Accounting	4/18/2009	5/6/2009	
	Yes	President, CAMP	4/18/2009	5/6/2009	
	Yes	President, DESTINO	4/18/2009	5/6/2009	
	Yes	President, Hispanic Business Students Association	4/18/2009		failed
	Yes	President, Kappa Delta Chi	4/18/2009	5/6/2009	
	Yes	Chi Upsilon Sigma National Latin Sorority, Inc.	5/1/2009	5/6/2009	
	Yes	President, LATINOS FOR EXITO	4/18/2009	5/6/2009	
	Yes	Co-Chair, L.U.C.H.A. de M.E.C.H.A.	4/18/2009	5/6/2009	
	Yes	Adviser, Mexican American Engineers and Scientists	4/18/2009		forwarded
	Yes	President, PACE	4/18/2009	5/6/2009	
	Yes	President, Society of Hispanic Professional Engineers (SHPE)	4/18/2009	5/6/2009	
	Yes	Department of Family and Consumer Sciences	4/18/2009	5/6/2009	
	New Mexico State University	Yes	Department of Family and Consumer Sciences	4/18/2009	5/6/2009
Northern New Mexico College	Yes	President, Student Senate	4/18/2009	5/6/2009	
Santa Fe Community College	Yes	Fashion Designers Club	4/18/2009	5/6/2009	

	Yes	El Club Nuestra Herencia	4/18/2009	5/6/2009	
	Yes	Spanish Bilingual Club	4/18/2009	5/6/2009	
	Yes	Academic and Student Affairs Coordinator	4/18/2009	5/6/2009	
	Yes	Coordinator, Student Activities/Student Leadership	4/18/2009	5/6/2009	
	Yes	HESO, Hispanic Engineering and Science Organization	4/18/2009	5/6/2009	
	Yes	Director, Latin American & Iberian Insitute	4/18/2009	5/6/2009	
	Yes	President, SOLAS	4/18/2009	5/6/2009	
	Yes	President, SOLAS	4/18/2009	5/6/2009	forwarded
	Yes	President, Student Government	4/18/2009	5/6/2009	
	Yes	Fraternity and Sorority Life	4/18/2009	5/6/2009	
	Yes	President, Hispanic Business Student Association	4/18/2009	5/6/2009	
	Yes	President, Hispanic Engineering and Science Organization	4/18/2009	5/6/2009	
	Yes	President, Kappa Delta Chi Sorority, Inc.	4/18/2009	5/6/2009	
	Yes	President, Lambda Theta Alpha Latin Sorority, Inc.	4/18/2009	5/6/2009	
	Yes	President, Mexican American Law Student Association	4/18/2009	5/6/2009	
	Yes	President, Mexican Student Association	4/18/2009	5/6/2009	
	Yes	Co-Chair, MEChA	4/18/2009	5/6/2009	
	Yes	Co-Chair, MEChA	4/18/2009	5/6/2009	
	Yes	President, Multicultural Greek Council	4/18/2009	5/6/2009	
	Yes	Co-Chair, Raza Graduate Student Association	4/18/2009	5/6/2009	
	Yes	Co-Chair, Raza Graduate Student Association	4/18/2009	5/6/2009	
University of New Mexico	Yes	Student Activities Center	4/18/2009	5/6/2009	
University of New Mexico Taos	Yes	Student Government	4/18/2009	5/6/2009	
University of New Mexico Valencia	Yes	President, Student Government	4/18/2009	5/6/2009	
	Yes	Director of Multicultural Affairs/Student Activities	4/18/2009	5/6/2009	
Western New Mexico University	Yes	Sponsor, MEChA	4/18/2009		forwarded
Austin Community College	Yes	Campus Activities	4/22/2009		failed

	Yes	President, Student Government Association	4/22/2009	5/7/2009	
	Yes	Minority Student Senator, Student Government Association	4/22/2009	5/7/2009	
	Yes	Clubs and Organizations	4/22/2009	5/7/2009	
	Yes	Diversity Outreach	4/22/2009	5/7/2009	
	Yes	Latin Club	4/22/2009	5/7/2009	
	Yes	Director, El Centro	4/22/2009		failed
Baylor University	No	Professor and ITAA member	4/10/2009	5/6/2009	
	No	Professor and ITAA member	4/10/2009		forwarded
	No	Professor and ITAA member	4/10/2009		forwarded
Brookhaven College	Yes	Multicultural Center	4/22/2009	5/7/2009	
	Yes	Contact, Hispanic Heritage Club	4/22/2009	5/7/2009	
	Yes	Contact, Hispanic Heritage Club	4/22/2009	5/7/2009	forwarded
	Yes	Contact, Hispanic Heritage Club	4/22/2009	5/7/2009	
	Yes	Contact, Hispanic Heritage Club	4/22/2009	5/7/2009	
Cedar Valley College	Yes	Adviser, Latin American Student Organization	4/22/2009		forwarded
Coastal Bend College	Yes	Student Governemnt Association Adviser, Beeville Campus	4/22/2009	5/7/2009	
	Yes	Contact, SGA at Kingsville	4/22/2009	5/7/2009	
	Yes	Contact, SGA at Alice Campus	4/22/2009	5/7/2009	
	Yes	Adviser, Spanish Club, Beeville Campus	4/22/2009	5/7/2009	
Del Mar College	Yes	Student Activities Office	4/22/2009	5/7/2009	
	Yes	Student Activities Office	4/22/2009	5/7/2009	
Eastfield College	Yes	Program Specialist, Student Life Office	4/22/2009	5/7/2009	
	Yes	Program Specialist, Student Life Office	4/22/2009	5/7/2009	
	Yes	Adviser, Council of Latin American Students (CLAS)	4/22/2009		forwarded
El Centro College	Yes	Director of SPAR and Sponsor, Student Government Association	4/22/2009	5/7/2009	
	Yes	Sponsor, Fashion Society of ECC	4/22/2009	5/7/2009	

	Yes	Sponsor, Fashion Society of ECC	4/22/2009	5/7/2009	
	Yes	Sponsor, Fashion Society of ECC	4/22/2009	5/7/2009	
	Yes	Sponsor, Latino Organization of Mentors and Scholars	4/22/2009	5/7/2009	
	Yes	Sponsor, Latino Organization of Mentors and Scholars	4/22/2009	5/7/2009	
	Yes	Sponsor, Organization of Latin American Students	4/22/2009	5/7/2009	
	Yes	Sponsor, Student Government Association	4/22/2009	5/7/2009	
	Yes	Sponsor, Student Government Association	4/22/2009		forwarded
	Yes	International Student Center Student Specialist	4/22/2009	5/7/2009	
El Paso Community College	Yes	Director, Campus Life	4/22/2009		requested IRB application
	Yes	Contact, Ballet Folklorico	4/22/2009		failed
	Yes	Contact, Fashion Conglomerate	4/22/2009		forwarded
Galveston College	Yes	Coordinator for Student Activities/Athletic Adviser, and SGA Adviser	4/22/2009	5/7/2009	
	Yes	Student Activities Specialist	4/22/2009	5/7/2009	
	Yes	Adviser, Hispanic Student Organization	4/22/2009	5/7/2009	
	Yes	Adviser, Hispanic Student Organization	4/22/2009	5/7/2009	
	Yes	President, Student Government Association	4/22/2009	5/7/2009	
	Yes	Student Life Coordinator, Southwest College	4/22/2009	5/7/2009	
	Yes	Adviser, Northwest College Student Association	4/22/2009	5/7/2009	
	Yes	Adviser, International Student Organization, Northwest College	4/22/2009	5/7/2009	
	Yes	Adviser, M.A.Y.O.	4/22/2009	5/7/2009	
	Yes	President, Northeast Student Government Association	4/22/2009	5/7/2009	
	Yes	Student Government, Northeast	4/22/2009	5/7/2009	
	Yes	Adviser, Northeast SGA	4/22/2009	5/7/2009	
	No	Secretary, Fine Arts Department	5/4/2009		
Houston Community College	Yes	Adviser, Northeast SGA	4/22/2009	7138640549	
Midland College	Yes	Contact, International Student Club	4/22/2009	5/7/2009	

	Yes	Student Activities Coordinator	4/22/2009	5/7/2009	
Mountain View College	Yes	SPAR	4/22/2009	5/7/2009	
	Yes	Contact, League of United Latin-American Citizens (LULAC)	4/22/2009	5/7/2009	
	Yes	Contact, XI DE TEXAS, SIGMA DELTA NU	4/22/2009		failed
	Yes	Contact, Student Government Association and Director of Student Programs and Resources	4/22/2009	5/7/2009	
	Yes	Adviser, English as a Second Language	4/22/2009	5/7/2009	
North Lake College	Yes	Contact, L.U.L.A.C. Council	4/22/2009		no longer an active club
	Yes	International Student Specialist	4/22/2009	5/7/2009	
Our Lady of the Lake University	Yes	Director of Campus Activities	4/22/2009	5/7/2009	
	Yes	College Assistance Migrant Program (CAMP)	4/22/2009	5/7/2009	
	Yes	Director, Biliterate Certificate Program	4/22/2009	5/7/2009	
	Yes	Director, Center for Mexican-American Studies and Research	4/22/2009		forwarded
Palo Alto College	Yes	Student Government Association	4/22/2009	5/7/2009	
Richland College	Yes	Contact, African American/Latino Students Alliance	4/22/2009	5/7/2009	
	Yes	SGA Adviser and Director of Student Programs and Resources	4/22/2009	5/7/2009	
	Yes	International Advising Staff	4/22/2009	5/7/2009	
	Yes	International Advising Staff	4/22/2009	5/7/2009	
	Yes	International Advising Staff	4/22/2009	5/7/2009	
	Yes	International Advising Staff	4/22/2009	5/7/2009	
	Yes	International Advising Staff	4/22/2009	5/7/2009	
Sam Houston State University	No	Professor and ITAA member	4/10/2009	5/6/2009	
San Antonio College	Yes	Contact, International Students Association	4/22/2009	5/7/2009	
	Yes	Contact, Mexican American Engineers and Scientists	4/22/2009	5/7/2009	
	Yes	Contact, Student Government Association	4/22/2009	5/7/2009	
San Jacinto College	Yes	Coordinator, Student Life Central	4/22/2009		requested IRB application

	Yes	Coordinator, Student Life North	4/22/2009		requested IRB application
	Yes	Coordinator, Student Life South	4/22/2009	5/7/2009	
South Plains College	Yes	Contact, Student Activities Center and Adviser, Student Government Association	4/22/2009	5/7/2009	
	Yes	Contact, Student Activities/Center	4/22/2009	5/7/2009	
	Yes	Adviser, Hispanic Student Organization	4/22/2009	5/7/2009	
	Yes	Adviser, Hispanic Student Organization	4/22/2009	5/7/2009	
	Yes	Adviser, Hispanic Student Organization	4/22/2009	5/7/2009	
	Yes	Adviser, Hispanic Student Organization and International Club; also Multicultural Services Coordinator	4/22/2009	5/7/2009	unable to assist
	Yes	Assistant Director, Diversity and Multicultural Affairs	4/22/2009		forwarded
St. Edward's University	Yes	Assistant Director, Organizational Development and Student Government Association	4/22/2009	5/7/2009	
	Yes	Executive Director, Student Leadership Team	4/22/2009	5/7/2009	
	Yes	Executive Coordinator, Student Service Council	4/22/2009	5/7/2009	
	Yes	President, Academic Society for the Advancement of Minorities in Medicine (ASAMM)	4/22/2009	5/7/2009	
	Yes	President, Bilingual Education Student Association	4/22/2009	5/7/2009	
	Yes	Adviser, Bilingual Education Student Association	4/22/2009	5/7/2009	
	Yes	President, Hispanic Business Students Association	4/22/2009	5/7/2009	
	Yes	Adviser, Hispanic Business Students Association	4/22/2009		failed
	Yes	President, Student Government Association	4/22/2009	5/7/2009	
	Yes	President, El Circulo de Español	4/22/2009	5/7/2009	
	Yes	Adviser, El Circulo de Español	4/22/2009	5/7/2009	
	Yes	President, Hispanic Student Association	4/22/2009	5/7/2009	
	Yes	Adviser, Hispanic Student Association	4/22/2009	5/7/2009	
	Yes	President, International Student Organization	4/22/2009		forwarded
	Yes	Adviser, International Student Organization	4/22/2009		failed
St. Mary's University	Yes	Chapter President, Beta Sigma Phi	4/22/2009	5/7/2009	

	Yes	President, Beta Sigma Phi	4/22/2009	5/7/2009	
	Yes	Chapter President, Kappa Delta Chi	4/22/2009	5/7/2009	
	Yes	CPC President and Student Organization Specialist	4/22/2009	5/7/2009	
	Yes	Greek Life Adviser	4/22/2009	5/7/2009	
	Yes	President, Student Government Association	4/22/2009	5/7/2009	
	Yes	President, Alpha Sigma Tau	4/22/2009	5/7/2009	
	Yes	Adviser, Alpha Sigma Tau	4/22/2009	5/7/2009	
	Yes	President, League of United Latin American Citizens (L.U.L.A.C.)	4/22/2009	5/7/2009	
	Yes	Adviser, League of United Latin American Citizens (L.U.L.A.C.)	4/22/2009	5/7/2009	
	Yes	President, Mexican Student Association	4/22/2009	5/7/2009	
	Yes	Adviser, Mexican Student Association	4/22/2009		forwarded
	Yes	President, Society of Hispanic Professional Engineers	4/22/2009	5/7/2009	
St. Philip's College	Yes	Interim Director of Student Life	4/22/2009	5/7/2009	
Stephen F. Austin State University	No	Professor and ITAA member	4/10/2009	5/6/2009	
Sul Ross State University	Yes	President, Student Government Association	4/23/2009	5/7/2009	forwarded
	Yes	Adviser, Student Government Association	4/23/2009	5/7/2009	
Tarleton State University	No	Professor and ITAA member	4/10/2009	5/6/2009	
	No	Center for Diversity Initiatives	5/4/2009	5/6/2009	failed
Texas A&M University	No	Contact, Mexican Student Association	4/30/2009	5/6/2009	
	No	Student Activities	5/4/2009	5/6/2009	failed
	No	Chapter Orientation Adviser, Lambda Theta Alpha Latin Sorority, Inc.	5/4/2009	5/6/2009	
	No	Chi Upsilon Sigma National Latin Sorority, Inc.	5/1/2009	5/6/2009	
Texas A&M International University	Yes	President, Student Government	4/23/2009	5/7/2009	
	Yes	President, Campus Activities Board	4/23/2009	5/7/2009	
	Yes	President, Club de Espanol Siglo XXI	4/23/2009		forwarded
	Yes	President, Club Alma Gitanna	4/23/2009		failed

	Yes	President, Ballet Folklorico Club	4/23/2009	5/7/2009	
	Yes	President, Association of International Students	4/23/2009	5/7/2009	
	Yes	President, Alpha Psi Lambda National, Inc.	4/23/2009	5/7/2009	
	Yes	President, Delta Psi Alpha Multicultural Co-ed Fraternity	4/23/2009	5/7/2009	
	Yes	President, Kappa Delta Chi Sorority, Inc.	4/23/2009	5/7/2009	
	Yes	President, Sigma Nu Delta Multi-Cultural Co-ed Society	4/23/2009	5/7/2009	
Texas A&M University, Corpus Christi	Yes	Lambda Theta Alpha Latin Sorority, Incorporated	4/23/2009	5/7/2009	
	Yes	President, Campus Activities Board	4/23/2009	5/7/2009	
	Yes	Contact, Sigma Lambda Gamma	4/23/2009		failed
	Yes	President, Islander Cultural Alliance	4/23/2009	5/7/2009	
	Yes	Islander Cultural Alliance	4/23/2009	5/7/2009	
	Yes	Instructor	5/4/2009	5/6/2009	
	Yes	Professor and ITAA member	4/10/2009		forwarded
Texas A&M Kingsville	Yes	Student Body President	4/23/2009		failed
	Yes	Campus Activities Board	4/23/2009	5/7/2009	
	Yes	Greek Life	4/23/2009		failed
	Yes	Ballet Folklorico	4/23/2009	5/7/2009	
	Yes	Kappa Delta Chi Sorority, Inc.	4/23/2009	5/7/2009	
	Yes	Minorities in Agriculture, Natural Resources, and Related Sciences	4/23/2009	5/7/2009	
	Yes	Society of Hispanic Professional Engineers (SHPE)	4/23/2009	5/7/2009	
	Yes	Women of Diversity	4/23/2009	5/7/2009	
Texas Christian University	No	Professor and ITAA member	4/10/2009	5/6/2009	
	No	Professor and ITAA member	4/10/2009	5/6/2009	
Texas State San Marcos	No	Professor and ITAA member	4/10/2009		forwarded
Texas State Technical College	Yes	Student Government Association	4/23/2009	5/7/2009	
	Yes	Student Life	4/23/2009	5/7/2009	
Texas Tech University	No	Professor and ITAA member	4/10/2009		forwarded

	No	Board member at TTU	4/22/2009	5/6/2009	
	No	Professor and ITAA member	4/10/2009		unable to assist
Texas Woman's University	No	Professor and ITAA member	4/10/2009		forwarded
	No	Professor and ITAA member	4/10/2009	5/6/2009	
	No	Chi Upsilon Sigma National Latin Sorority, Inc.	5/1/2009	5/6/2009	
University of Houston-Downtown	Yes	President, Campus Activities Board	4/23/2009		failed
	Yes	President, Student Government Association	4/23/2009	5/7/2009	
	Yes	President, Bilingual Education Student Organization	4/23/2009	5/7/2009	
	Yes	President, Hispanic Scholarship Fund Scholar	4/23/2009		no longer president, will forward to current president
	Yes	President, League of United Latin American Citizens (L.U.L.A.C.)	4/23/2009		forwarded
	Yes	President, Gamma Alpha Omega Sorority, Inc.	4/23/2009	5/7/2009	
	Yes	President, Kappa Delta Chi Sorority, Inc.	4/23/2009	5/7/2009	
	Yes	President, Sigma Lambda Gamma Colony	4/23/2009		failed
University of Houston Victoria	Yes	Director, Student Activities & Events	4/23/2009	5/7/2009	
	No	Contact, Mexican American Student Organization	5/4/2009	5/6/2009	
University of Houston, TX	No	Professor and ITAA member	4/10/2009		requested IRB application
	No	President, Lambda Theta Alpha	5/4/2009	5/6/2009	
	No	Lambda Theta Alpha	5/4/2009	5/6/2009	
University of the Incarnate Word	Yes	Professor and ITAA member	4/10/2009		failed
	Yes	Professor and ITAA member	4/10/2009		unable to assist
University of North Texas	No	Professor and ITAA member	4/10/2009		unable to assist
	No	Professor and ITAA member	4/10/2009		forwarded
	No	Professor and ITAA member	4/10/2009	5/6/2009	
	No	Lambda Theta Alpha Latin Sorority Inc.	5/4/2009	5/6/2009	failed
	No	Sigma Lambda Gamma National Sorority, Inc.	5/4/2009	5/6/2009	failed
University of St. Thomas	Yes	Student Activities	4/23/2009	5/7/2009	
	Yes	Council of Clubs	4/23/2009	5/7/2009	
	Yes	Student Activities Board	4/23/2009	5/7/2009	

	Yes	Student Government Vice President	4/23/2009	5/7/2009	
University of Texas, Arlington	No	Contact, Lambda Theta Alpha Latin Sorority, Inc.	5/4/2009	5/6/2009	
University of Texas, Austin	No	President, Mexican Student Association and Internationals	5/4/2009	5/6/2009	
	No	Mexican Student Association and Internationals	5/4/2009	5/6/2009	
	No	Chapter Orientation Adviser, Lambda Theta Alpha Latin Sorority, Inc.	5/4/2009	5/6/2009	
The University of Texas at Brownsville and Texas Southmost College	Yes	Adviser, Student Government Association	4/24/2009	5/7/2009	
	Yes	SGA President	4/24/2009	5/7/2009	
	Yes	President, Bilingual Student Leadership Association	4/24/2009	5/7/2009	
	Yes	Adviser, Bilingual Student Leadership Association	4/24/2009	5/7/2009	
	Yes	President, Campus Activities Board	4/24/2009	5/7/2009	
	Yes	Adviser, Campus Activities Board	4/24/2009	5/7/2009	
	Yes	President, Estudiantina Azul y Fuego	4/24/2009	5/7/2009	
	Yes	President, Folklorico	4/24/2009	5/7/2009	
	Yes	Adviser, Folklorico	4/24/2009	5/7/2009	
	Yes	President, Nacional Hispanic Business Association	4/24/2009	5/7/2009	
	Yes	Adviser, Nacional Hispanic Business Association	4/24/2009	5/7/2009	
	Yes	President, Teatro Universitario	4/24/2009	5/7/2009	
	Yes	Adviser, Teatro Universitario	4/24/2009		failed
	Yes	President, Voces y Letras	4/24/2009		forwarded
	Yes	Adviser, Voces y Letras	4/24/2009	5/7/2009	
The University of Texas at El Paso	Yes	President, Chicano Pre Law Society	4/24/2009	5/7/2009	
	Yes	Adviser, Chicano Pre Law Society	4/24/2009		forwarded
	Yes	President, The Emeralds	4/24/2009	5/7/2009	
	Yes	Adviser, The Emeralds and Sigma Lambda Gamma National Sorority Inc.	4/24/2009	5/7/2009	
	Yes	President, Sigma Lambda Gamma National Sorority Inc.	4/24/2009	5/7/2009	
	Yes	President, Jovenes Fronterizos por el Mismo Sueno	4/24/2009	5/7/2009	

	Yes	President, Jovenes Fronterizos por el Mismo Sueno	4/24/2009	5/7/2009	
	Yes	President, Society of Mexican American Engineers and Scientists & the Society of Hispanic Professional Engineers	4/24/2009	5/7/2009	
	Yes	Adviser, Society of Mexican American Engineers and Scientists & the Society of Hispanic Professional Engineers	4/24/2009	5/7/2009	
	Yes	President, Multicultural Greek Council	4/24/2009	5/7/2009	
	Yes	Adviser, Multicultural Greek Council	4/24/2009	5/7/2009	
	Yes	President, Languages and Linguistics Club	4/24/2009		failed
	Yes	Adviser, Languages and Linguistics Club	4/24/2009		forwarded
	Yes	President, Hispanic Business Student Association	4/24/2009	5/7/2009	
	Yes	Adviser, Hispanic Business Student Association	4/24/2009		failed
	Yes	President, Paso del Norte SACNAS Chapter	4/24/2009		
	Yes	Adviser, Paso del Norte SACNAS Chapter	4/24/2009		forwarded
	Yes	President, League of United Latin American Citizens	4/24/2009	5/7/2009	
	Yes	President, National Association of Hispanic Journalists	4/24/2009		forwarded
	Yes	Adviser, National Association of Hispanic Journalists	4/24/2009		forwarded
Yes	President, Student Government Association	4/24/2009	5/7/2009	forwarded	
University of Texas at San Antonio	Yes	Associate Director of Student Activities	4/24/2009	5/7/2009	forwarded
	Yes	Assistant Director of Student Activities for Greek Life	4/24/2009	5/7/2009	
	Yes	Student Organization Council	4/24/2009		failed
	Yes	Interested Ladies of Lambda Theta Alpha	4/24/2009	5/7/2009	
	Yes	Kappa Delta Chi Sorority, Inc.	4/24/2009	5/7/2009	
	Yes	Multicultural Greek Council	4/24/2009	5/7/2009	
	Yes	Student Government Association President	4/24/2009	5/7/2009	unable to assist
Yes	Campus Activities Board	4/24/2009	5/7/2009		

University of Texas Health Science Center at San Antonio	Yes	Director, Office of Student Life	4/24/2009		unable to assist
	Yes	Student Life Program Coordinator	4/24/2009		unable to assist
University of the Incarnate Word	Yes	President, Student Government Association	4/24/2009	5/7/2009	
	Yes	Director, Student Center and Leadership Activities	4/24/2009	5/7/2009	
	Yes	Student Organizations Coordinator	4/24/2009	5/7/2009	
	Yes	President, Hispanic Latino Association	4/24/2009	5/7/2009	
The Victoria College	Yes	Adviser, Student Government Association and Director of Student Services & Student Activities	4/24/2009	5/7/2009	
	Yes	Adviser, Student Government Association	4/24/2009	5/7/2009	
Western Texas College	Yes	Student Support Services	4/24/2009	5/7/2009	

Alpha Pi Sigma Sorority, Inc.	No	National President	5/1/2009		
Delta Tau Lambda	No	National President	5/1/2009		forwarded
Gamma Alpha Omega	No	National President	5/1/2009		
Lambda Theta Alpha Latin Sorority, Inc.	No	National President	5/1/2009		
	No	California North Area 1 Supervisor	5/1/2009		
	No	California South Area 2 Supervisor	5/1/2009		forwarded
	No	California South Area 3 Supervisor	5/1/2009		
	No	Texas Area 1 Supervisor	5/1/2009		
	No	Texas South Area 2 Supervisor	5/1/2009		
League of United Latin American Citizens (LULAC)	No	Texas Youth State Director	5/1/2009		
	No	California Youth State Director	5/1/2009		
	No	New Mexico Youth State Director	5/1/2009		
	No	National Youth President	5/1/2009		
	No	National Youth VP for the Southwest	5/1/2009		
MEChA	No	Alta Califas Norte	5/1/2009		
	No	Alta Califas Sur	5/1/2009		
	No	Centro Aztlán	5/1/2009		
	No	Centro Califaztlán	5/1/2009		
	No	Southeast Tejaztlán	5/1/2009		

Sigma Lambda Gamma	No	National President	5/4/2009		
Society of Hispanic Professional Engineers	No	Contact, Region 1	5/4/2009		failed
	No	Contact, Region 1	5/4/2009		failed
	No	Contact, Region 2	5/4/2009		failed
	No	Contact, Region 5	5/4/2009		failed

-

## Recruitment Email

Hello "*Title,Name*",

My name is Beth Newcomb and I am a doctoral student at North Carolina State University's College of Textiles. My dissertation research involves the study and analysis of apparel preferences and needs of Mexican-American women between the ages of 18 and 25. The apparel industry recognizes the large opportunity that exists in this consumer market, but they have relatively little consumer understanding that is needed for apparel design and development. My research will hopefully fulfill some of these needs and enable the industry to create products specifically designed for the Mexican-American woman's needs and preferences.

I am contacting you, as the "Title" of "name of organization/office" at "name of institution/organization", in the hopes that you will assist in my research by forwarding my survey to the students at your university who may be willing to provide us with much-needed input into their apparel preferences. For your assurance, my study has been reviewed and approved by NC State University's Institutional Review Board, guaranteeing the anonymity and privacy of each respondent's answers to the survey. If you are willing to help, I ask that you forward the following two paragraphs (one in English, and the other in Spanish), so that the students will know a little more about the purpose of the study and have the option to take the survey in their preferred language. If you do indeed send this information out, could you also reply to me and let me know an approximate count of the number of people to which you sent the information? Thank you very much in advance for any assistance you can provide for this valuable study!

### SURVEY RECRUITMENT PARAGRAPHS ARE BELOW:

English Version:

Hello, my name is Beth Newcomb and I am a doctoral student in the College of Textiles at North Carolina State University. I am sending this email to request your participation in an online survey about apparel preferences. If you are a Mexican-American female between the ages of 18 and 25, I would greatly appreciate your input that could improve apparel product design and development for you!

This survey will take 15 minutes or less to complete. If you are willing to participate, please click the following link, and the online survey will be launched.

<http://www.surveygizmo.com/s/101736/hispanic-apparel-preferences-english-version>

Thank you very much for participating!

Sincerely,

Beth Newcomb  
PhD Candidate  
North Carolina State University, College of Textiles

Spanish Version:

Hola, me llamo Beth Newcomb y soy estudiante doctoral en el departamento de Textiles en North Carolina State University. Le envío este correo electrónico para solicitar su participación en una encuesta acerca de las preferencias de ropa. Si Ud. es una mujer mexicana-americana entre las edades de 18 y 25 años, le agradecería mucho su opinión, ¡la cual podría mejorar el diseño y el desarrollo de productos de ropa para Ud.!

Usted tardará un máximo de 15 minutos en rellenar la encuesta. Si Ud. está dispuesta a participar, por favor, siga el vínculo (link) siguiente, y la encuesta que está en internet, se abrirá para Ud.

<http://www.surveymoz.com/s/102348/hispanic-apparel-preferences-spanish-version>

¡Muchísimas gracias por participar!

Atentamente,

Beth Newcomb  
Candidata doctoral  
North Carolina State University, College of Textiles

## APPENDIX C – Sampling Method Information: Online Advertising

### Advertisements

#### *MySpace Advertisements*

##### 1. Horizontal Banner Advertisement



##### 2. Medium Rectangle Advertisement

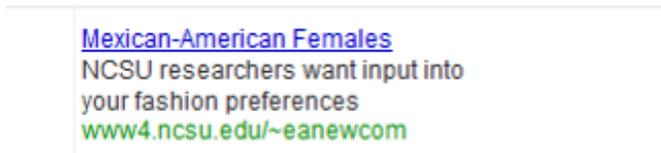


*Facebook Advertisement*

**1. Rectangle Advertisement**



*Google Advertisement*



## Website Developed for Online Advertising – Landing Page

NCSU Hispanic Research - Mozilla Firefox

http://www4.ncsu.edu/~eanericon/

WRAL.com - Breaking ... NC State University C... ING DIRECT First Citizens Bank - W... Food Network : Cook... Welcome to Gmail (H) NCSU Libraries 48° eBay - New & Used el...

Researchers at **NC State University** are conducting a study of the apparel preferences of 18-25 year old Mexican-American females

Please visit the following link to give us your input:

[English Survey](#)

Para una encuesta española:

[Spanish Survey](#)

Calling all Hispanic Fashionistas!

Done

start | Gmail - Inbox (3) - be... | NCSU Hispanic Resea... | Sample Recruitment... | Recruitment Approo... | B&B Modification 4-9-... | Microsoft Excel - Final... | iTunes

2:08 PM

## **APPENDIX D – Survey Instrument**

### **English Version**

## Hispanic Apparel Preferences: English Version

### North Carolina State University INFORMED CONSENT FORM for RESEARCH

Title of Study: Apparel product development considerations for Mexican-American women in the US: A study of evaluative criteria and fit preferences of 18-25 year-old females.

Principal Investigator: Beth Newcomb

Faculty Sponsor: Dr. Cynthia Istook

#### **What are some general things you should know about research studies?**

You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty. The purpose of research studies is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above.

#### **What is the purpose of this study?**

The purpose of this research is to investigate apparel preferences of Mexican-American Hispanic women, ages 18-25. Specifically, the study aims to provide apparel designers with a clear understanding of the use and importance of specific apparel attributes in apparel purchase decisions, as well as the fit preferences of Mexican-American female consumers across a variety of product categories.

#### **What will happen if you take part in the study?**

If you agree to participate in this study, you will be asked to complete an online survey regarding your apparel fit preferences and the criteria you consider important in apparel purchases. Only people satisfying study criteria (female, between the ages of 18 and 25, and Mexican-American) will be able to complete the entire survey. The entire survey will take approximately 15 minutes or less to complete, and you may complete the survey on any computer with internet access.

#### **Risks**

Since this is an online survey, there are no foreseeable risks or discomforts that you should experience in participating in this study. If you encounter any survey question that you feel is too personal or sensitive and you do not wish to answer, you may exit the survey at any time.

#### **Benefits**

You will not directly benefit by participating in this study. However, this research will indirectly benefit you as a participant in the form of providing information that can be used to improve apparel product development for Mexican-American women ages 18-25. The knowledge gained as part of this study will hopefully enable fashion designers and apparel manufacturers to better understand the Mexican-American consumer market and create products more suited to your apparel preferences.

#### **Confidentiality**

The information in the study records will be kept strictly confidential. Data will be stored securely in a password-protected URL provided by SurveyGizmo. Only the principal investigator of the research will have access to the data. Once the data are exported for analysis, data will be stored on a password-protected storage device only accessible to the primary researcher. No reference will be made in oral or written reports which could link you to the study. You will NOT be asked to write your name on any study materials so that no one can match your identity to the answers that you provide.

#### **Compensation**

You will not receive anything for participating in this study.

#### **What if you have questions about this study?**

If you have questions at any time about the study or the procedures, you may contact the researcher, Beth Newcomb, at

2401 Research Drive, Box 8301 Raleigh, NC, 27695, or [919] 567-2064.

**What if you have questions about your rights as a research participant?**

If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514), or Joe Rabiega, IRB Coordinator, Box 7514, NCSU Campus (919/515-7515).

**Consent To Participate**

"I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty or loss of benefits to which I am otherwise entitled."

1. Do you agree to participate in this survey?

\*

- I Agree
- I Do Not Agree

Click to Next Page

5%

Take a look under the hood

Online Surveys powered by SurveyGizmo

## Hispanic Apparel Preferences: English Version

2. What is your gender? \*

- Male
- Female

Click to Go Back

Click to Next Page

10%

Take a look under the hood

Online Surveys powered by SurveyGizmo

## Hispanic Apparel Preferences: English Version

### 3. What is your age group?\*

- Under 18 years of age
- 18 - 25 years
- 26 - 35
- 36 - 45
- 46 - 55
- 56 - 65
- Over 65

Click to Go Back

Click to Next Page

15%

 Take a look under the hood

Online Surveys powered by SurveyGizmo

## Hispanic Apparel Preferences: English Version

### 4. Are you of Hispanic, Latino, or Spanish origin?\*

- No, not of Hispanic, Latino or Spanish origin
- Yes, Mexican, Mexican-American, Chicano
- Yes, Puerto Rican
- Yes, Cuban
- Yes, another Hispanic, Latino or Spanish origin

Click to Go Back

Click to Next Page

20%

 Take a look under the hood

Online Surveys powered by SurveyGizmo

## Hispanic Apparel Preferences: English Version

5. Do you wear *casual pants*?



- Yes
- No, I never wear casual pants

Click to Go Back

Click to Next Page

25%

 Take a look under the hood  
Online Surveys powered by SurveyGizmo

## Hispanic Apparel Preferences: English Version

6. When shopping for *casual pants*, indicate how important the following factors are in your product evaluation. The further to the right, the more important the factor is and the further to the left, the factor is of lesser importance.

	Not at all important 1	2	3	4	Critical 5
Color / pattern	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Styling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fit / sizing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beauty / attractiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality (construction, durability, workmanship)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comfort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fiber content / fabrication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Versatility with existing wardrobe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brand name / store name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Country of origin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appropriateness for end use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suitability for the individual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fashionability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individuality / uniqueness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promotes high self esteem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasing to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. Of the garment characteristics / attributes above, please rank the three most important attributes in your decision to purchase *casual pants*?

1st most important

2nd most important

3rd most important

Click to Go Back

Click to Next Page

30%

## Hispanic Apparel Preferences: English Version

8. Do you wear *casual tops*?



- Yes
- No, I never wear casual tops

Click to Go Back

Click to Next Page

35%

 Take a look under the hood

Online Surveys powered by SurveyGizmo

## Hispanic Apparel Preferences: English Version

9. When shopping for *casual tops*, indicate how important the following factors are in your product evaluation. The further to the right, the more important the factor is and the further to the left, the factor is of lesser importance.

	Not at all important 1	2	3	4	Critical 5
Color / pattern	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Styling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fit / sizing	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beauty / attractiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality (construction, durability, workmanship)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comfort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fiber content / fabrication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Versatility with existing wardrobe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brand name / store name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Country of origin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appropriateness for end use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suitability for the individual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fashionability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individuality / uniqueness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promotes high self esteem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasing to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. Of the garment characteristics / attributes above, please rank the three most important attributes in your decision to purchase casual tops?

1st most important

2nd most important

3rd most important

Click to Go Back

Click to Next Page

40%

## Hispanic Apparel Preferences: English Version

11. Do you wear casual skirts?

\*

- Yes
- No, I never wear casual skirts

Click to Go Back

Click to Next Page

45%

 Take a look under the hood

Online Surveys powered by SurveyGizmo

## Hispanic Apparel Preferences: English Version

12. When shopping for *casual skirts*, indicate how important the following factors are in your product evaluation. The further to the right, the more important the factor is and the further to the left, the factor is of lesser importance.

	Not at all important 1	2	3	4	Critical 5
Color / pattern	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Styling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fit / sizing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beauty / attractiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality (construction, durability, workmanship)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comfort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fiber content / fabrication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Versatility with existing wardrobe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brand name / store name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Country of origin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appropriateness for end use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suitability for the individual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fashionability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individuality / uniqueness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promotes high self esteem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasing to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Of the garment characteristics / attributes above, please rank the three most important attributes in your decision to purchase *casual skirts*.\*

1st most important

2nd most important

3rd most important

Click to Go Back

Click to Next Page

50%

## Hispanic Apparel Preferences: English Version

14. Do you wear casual dresses?

\*

- Yes
- No, I never wear casual dresses

Click to Go Back

Click to Next Page

55%

 Take a look under the hood

Online Surveys powered by SurveyGizmo

Hispanic Apparel Preferences: English Version

15. When shopping for *casual dresses*, indicate how important the following factors are in your product evaluation. The further to the right, the more important the factor is and the further to the left, the factor is of lesser importance.  
\*

	Not at all important 1	2	3	4	Critical 5
Color / pattern	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Styling	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fit / sizing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appearance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beauty / attractiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality (construction, durability, workmanship)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ease of care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comfort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fiber content / fabrication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Versatility with existing wardrobe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Price	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Brand name / store name	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Country of origin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appropriateness for end use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Suitability for the individual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fashionability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individuality / uniqueness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promotes high self esteem	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasing to others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Of the garment characteristics / attributes above, please rank the three most important attributes in your decision to purchase *casual dresses*?\*

1st most important

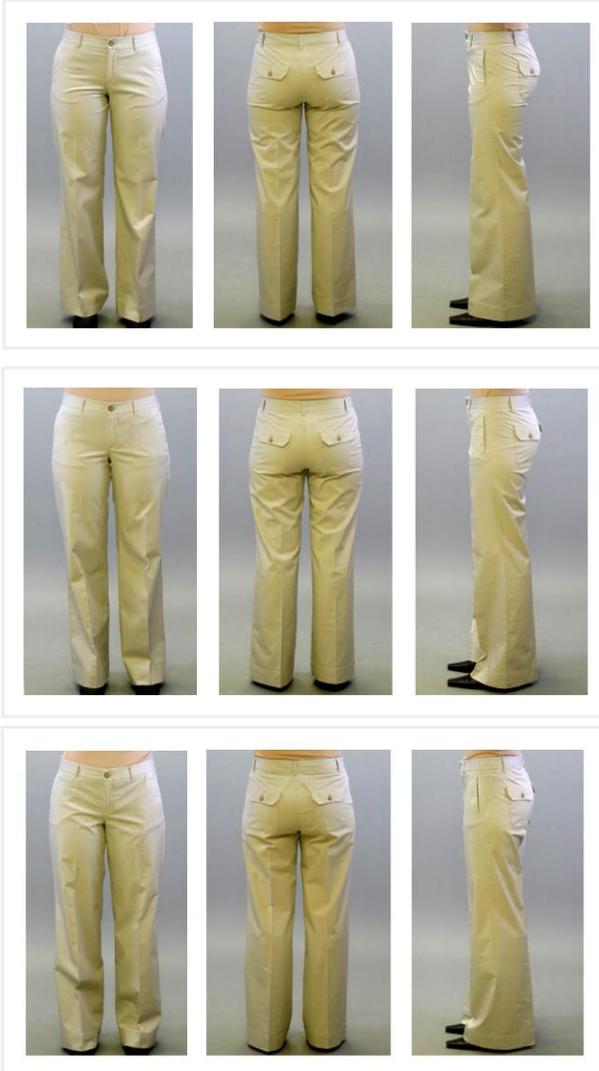
2nd most important

3rd most important

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17. If shopping for the following pair of casual pants, select the fit you would be most likely to purchase and wear.\*



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[Click to Next Page](#)

65%

18. If shopping for the following casual top, select the fit you would be most likely to purchase and wear.\*



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70%

19. If shopping for the following casual skirt, select the fit you would be most likely to purchase and wear.\*

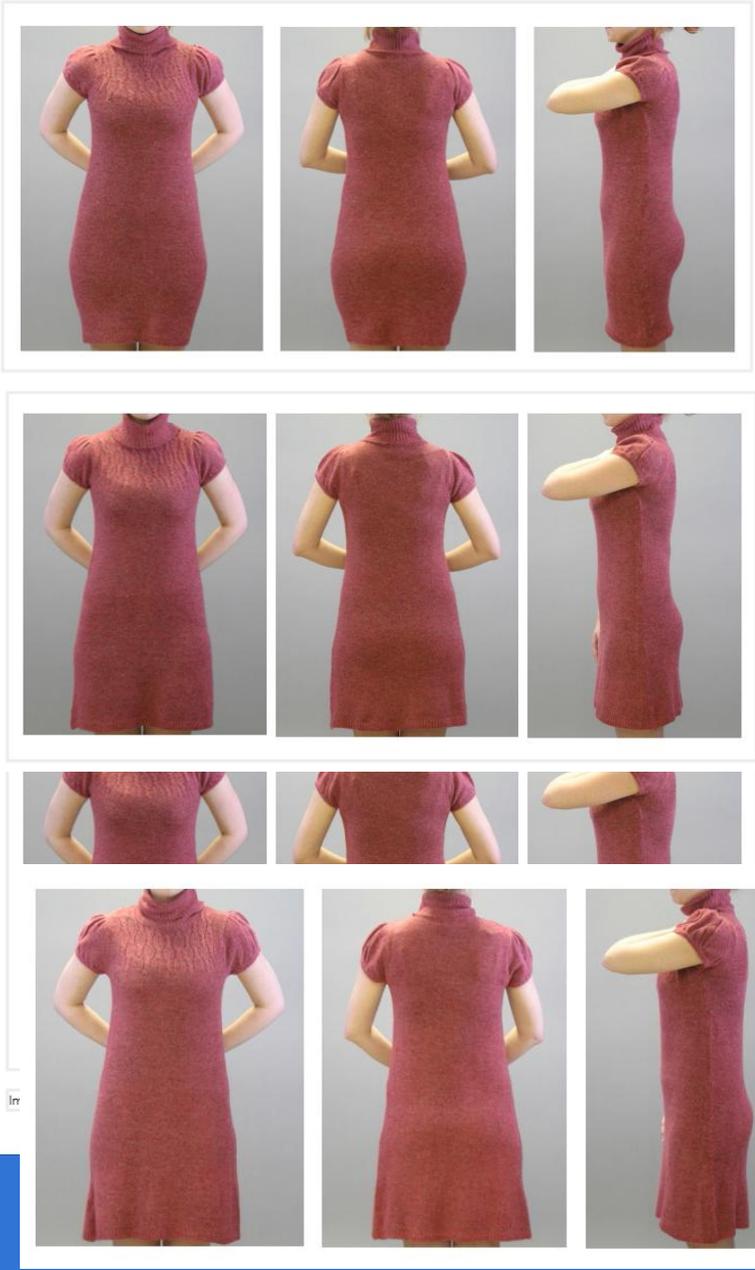


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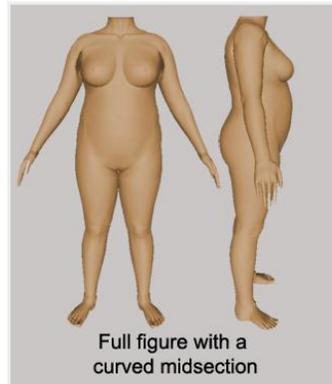
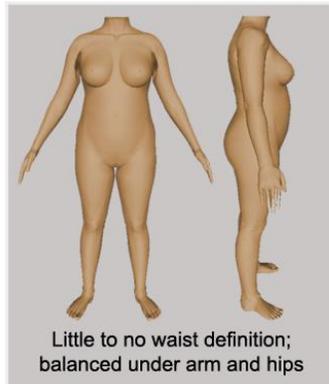
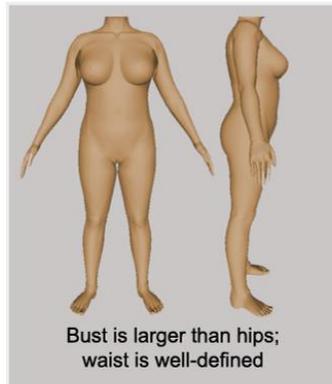
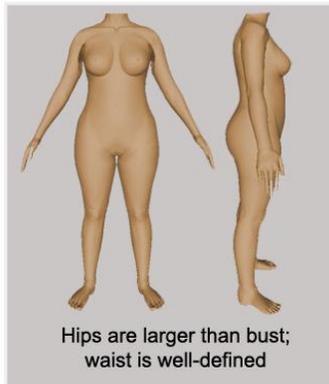
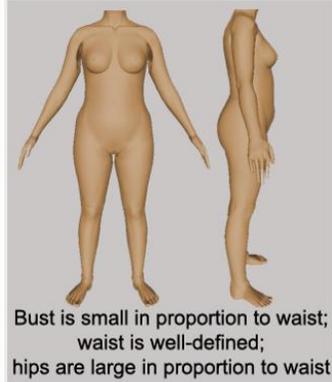
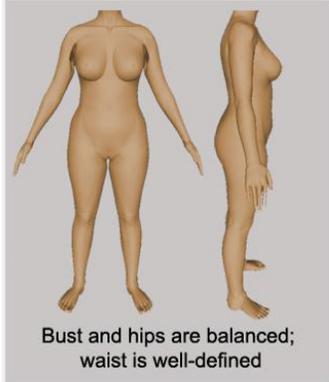
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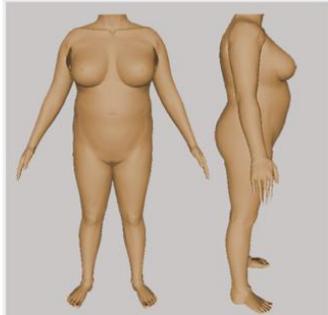
75%

20. If shopping for the following casual dress, select the fit you would be most likely to purchase and wear.\*

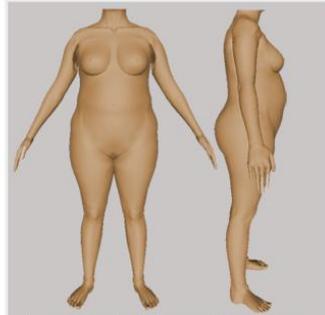


21. From the following choices, choose the body shape that you feel most closely matches your actual body shape. \*

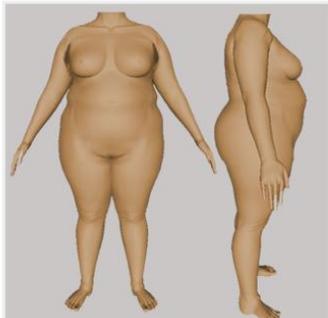




Upper body is larger than lower body, with little to no waist indentation



Lower body is larger than upper body, with little to no waist indentation



Full figure with waistline dominating shape of high full stomach

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88%

22. What is your height? \*

ft  
 in

23. What is your weight? \*

lbs

24. What clothing size would you generally wear in casual pants? \*

- XS (0 - 2)
- S (4 - 6)
- M (8 - 10)
- L (12 - 14)
- XL (16 - 18)
- OX (16W)
- 1X (18W - 20W)
- 2X (22W - 24W)
- 3X (26W - 28W)

25. What clothing size would you generally wear in casual tops? \*

- XS (0 - 2)
- S (4 - 6)
- M (8 - 10)
- L (12 - 14)
- XL (16 - 18)
- OX (16W)
- 1X (18W - 20W)
- 2X (22W - 24W)
- 3X (26W - 28W)

26. What clothing size would you generally wear in casual skirts? \*

- XS (0 - 2)
- S (4 - 6)
- M (8 - 10)
- L (12 - 14)
- XL (16 - 18)
- OX (16W)
- 1X (18W - 20W)
- 2X (22W - 24W)
- 3X (26W - 28W)

27. What clothing size would you generally wear in casual dresses? \*

- XS (0 - 2)
- S (4 - 6)
- M (8 - 10)
- L (12 - 14)
- XL (16 - 18)
- OX (16W)
- 1X (18W - 20W)
- 2X (22W - 24W)
- 3X (26W - 28W)

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90%

28. In general, what language do you read and speak?\*

- Only Spanish
- Spanish more than English
- Both equally
- English more than Spanish
- Only English

29. What language do you usually speak at home?\*

- Only Spanish
- Spanish more than English
- Both equally
- English more than Spanish
- Only English

30. In what language do you usually think?\*

- Only Spanish
- Spanish more than English
- Both equally
- English more than Spanish
- Only English

31. What language do you usually speak with your friends?\*

- Only Spanish
- Spanish more than English
- Both equally
- English more than Spanish
- Only English

32. In which country were you born?\*

- United States
- Other

33. In which country was your father born?\*

- United States
- Other

34. In which country was your mother born?\*

- United States
- Other

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95%

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## Hispanic Apparel Preferences: English Version

35. What was your total income last year?\*

- Under \$25,000
- \$25,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- over \$100,000
- would rather not say

36. Which of the following best describes your educational attainment?\*

- Less than high school
- High school graduate
- Some college
- College graduate
- Post graduate work

37. Which of the following best describes your occupation?\*

- Professional / managerial
- Office
- Crafts
- Service / sales
- Student
- Military
- Homemaker
- Not employed

38. In which state do you currently reside?\*

-- Please Select --

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Finished? Submit your Survey

97%

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# Spanish Version

## Hispanic Apparel Preferences: Spanish Version

North Carolina State University  
FORMULARIO DE CONSENTIMIENTO INFORMADO de INVESTIGACIÓN

Título del estudio: Consideraciones del desarrollo de productos de ropa para mujeres mexicanas-americanas en los EEUU: Un estudio del criterio evaluativo y de las preferencias de cómo se queda la ropa de hembras entre 18 y 25 años.

Investigadora principal: Beth Newcomb Patrocinadora de la facultad: Dr. Cynthia Istook

**¿Cuáles son unas cosas generales que Ud. debe saber sobre los estudios de investigación?**

A Ud. se le pide participar en un estudio de investigación. Su participación en este estudio es voluntaria. Ud. tiene el derecho de ser una parte de este estudio, de escoger no participar o dejar de participar en cualquier momento sin pena. El propósito de estudios de investigación es adquirir un entendimiento mejor de cierto tema o asunto. A Ud. no se garantiza ningún beneficio personal por participar en el estudio. Los estudios de investigación se pueden poner en riesgo los quiere participar, también. En este formulario de consentimiento Ud. encontrará detalles específicos sobre la investigación en la cual se pide su participación. Si Ud. no entiende cualquier aspecto de este formulario es su derecho pedir a la investigadora aclaración o más información. Una copia de este formulario de consentimiento se proveerá a Ud. Si en algún momento tiene cuestiones sobre su participación, no dude en contactar a la(s) investigadora(s) nombrada(s) arriba.

**¿Cuál es el propósito de este estudio?**

El propósito de esta investigación es investigar las preferencias de ropa de mujeres mexicanas-americanas hispanas, entre las edades de 18 y 25 años. Específicamente, el estudio intenta proveer a los diseñadores de ropa un entendimiento claro del uso y de la importancia de atributos específicos de ropa en las decisiones de comprar ropa, y las preferencias de cómo se queda la ropa de las consumidoras mexicanas-americanas en una variedad de categorías de productos.

**¿Qué pasará si Ud. participa en este estudio?**

Si Ud. está de acuerdo con participar en este estudio, se le pedirá completar una encuesta en línea sobre sus preferencias de cómo se queda la ropa y el criterio que Ud. considera importante en compras de ropa. Solamente las personas que llenan el criterio del estudio (hembra, entre las edades de 18 y 25 años, y mexicana-americana) se podrán cumplir la encuesta completa. La encuesta completa durará aproximadamente 15 minutos o menos para cumplir, y Ud. pueda cumplir la encuesta en cualquier computadora con acceso al Internet.

**Riesgos**

Como esta encuesta está en línea, no hay ningunos riesgos ni incomodidades previsibles que Ud. experimentaría con participar en este estudio. Si Ud. se encuentra con cualquier pregunta que siente es demasiada personal o sensitiva y no quiere contestarla, Ud. puede salir de la encuesta en cualquier momento.

**Beneficios**

No habrá beneficios directos para Ud. por participar en este estudio. Sin embargo, esta investigación le beneficiará indirectamente como participante en cuanto provee información que se podrá usar para mejorar el desarrollo de productos de ropa para mujeres mexicanas-americanas entre 18 y 25 años. El conocimiento adquirido como parte de este estudio, permitirá a los diseñadores de moda y los fabricantes de ropa mejor entender el mercado de consumidoras mexicanas-americanas y crear productos más apropiados para sus preferencias de ropa.

**Confidencialidad**

La información en los archivos de este estudio se mantendrá estrictamente confidencial. Los datos se guardarán seguramente en un URL protegido por clave de acceso, proveído por SurveyGizmo. La investigadora principal de la investigación tendrá acceso exclusiva a los datos. Una vez que los datos se exportan para el análisis, se los guardarán en un aparato de almacenamiento protegido por clave de acceso, accesible únicamente por la investigadora principal. Ninguna referencia se hará en reportes orales ni escritos los cuales la podrían vincular a Ud. al estudio. NO se pedirá que Ud. escriba su nombre en ningunos materiales del estudio para que nadie pueda hacer corresponder su identidad a las respuestas que Ud. provee.

**Compensación**

Ud. no recibirá nada por participar en este estudio.

**¿Qué se hace si tiene preguntas sobre este estudio?**

Si Ud. tiene preguntas en cualquier momento sobre el estudio o los procedimientos, puede contactar a la investigadora, Beth Newcomb, en 2401 Research Drive, Box 8301 Raleigh, NC, 27695, o al [919] 567-2064.

**¿Qué se hace si tiene preguntas sobre sus derechos como un participante de la investigación?**

Si Ud. siente que no ha sido tratado según las descripciones en este formulario, o que sus derechos como participante en la investigación se han violado durante el transcurso de este proyecto, puede contactar a Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514), o a Joe Rabiega, IRB Coordinator, Box 7514, NCSU Campus (919/515-7515).

**Consentimiento de participar**

"He leído y entiendo la información arriba. He recibido una copia de este formulario. Estoy de acuerdo con participar en este estudio con el entendimiento que puedo escoger no participar o dejar participar en cualquier momento sin pena ni perder los beneficios a los cuales tendría derecho aparte de eso."

**1. ¿Está de acuerdo en participar en esta encuesta? \***

- Estoy de acuerdo
- No estoy de acuerdo

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5%

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## Hispanic Apparel Preferences: Spanish Version

**2. ¿Cual es su sexo? \***

- Varón
- Hembra

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10%

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## Hispanic Apparel Preferences: Spanish Version

3. ¿En qué grupo de edades se encuentra Ud.? \*

- Menos de 18 años
- 18 - 25 años
- 26 - 35
- 36 - 45
- 46 - 55
- 56 - 65
- Más de 65

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15%

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## Hispanic Apparel Preferences: Spanish Version

4. ¿Es de origen hispano, latino, o español? \*

- No, no soy de origen hispano, latino, ni español
- Sí, soy de origen mexicano, mexicano-americano, o chicano
- Sí, puertorriqueño
- Sí, cubano
- Sí, otro origen hispano, latino, o español

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20%

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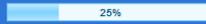
## Hispanic Apparel Preferences: Spanish Version

5. ¿Lleva pantalones casuales o informales?\*

- Si
- No, nunca llevo pantalones casuales o informales

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6. Cuando va a comprar *pantalones casuales*, indique la importancia que los factores siguientes tienen en su evaluación del producto. Cuanto más a la derecha, más importante el factor es y cuanto más a la izquierda, el factor es de menos importancia. \*

	No tiene ninguna importancia 1	2	3	4	Mucha importancia decisivo 5
Color / diseño	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Estilo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cómo le quedan / talla	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apariencia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Belleza / calidad atractiva	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calidad (construcción, durabilidad, factura)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilidad de cuidado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comodidad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contenido de fibra / fabricación	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Versatilidad con su vestuario actual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Precio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marca / nombre de la tienda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
País de origen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apropiado para el propósito	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apropiado para el individual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Si está de moda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individualidad / Singularidad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promueve la autoestima	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agradable a otros	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. De las características / atributos mencionados anteriormente, por favor clasifique los tres más importantes en su decisión a la hora de comprar *pantalones casuales*. \*

El más importante

El segundo más importante

El tercero más importante

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Click to Next Page

30%

## Hispanic Apparel Preferences: Spanish Version

8. ¿Lleva camisas casuales o informales?\*

- Si
- No, nunca llevo camisas casuales o informales

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## Hispanic Apparel Preferences: Spanish Version

9. Cuando va a comprar *camisas casuales*, indique la importancia que los factores siguientes tienen en su evaluación del producto. Cuanto más a la derecha, más importante el factor es y cuanto más a la izquierda, el factor es de menos importancia. \*

	No tiene ninguna importancia 1	2	3	4	Mucha importancia decisivo 5
Color / diseño	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Estilo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cómo le queda / talla	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apariencia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Belleza / calidad atractiva	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calidad (construcción, durabilidad, factura)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilidad de cuidado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comodidad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contenido de fibra / fabricación	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Versatilidad con su vestuario actual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Precio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marca / nombre de la tienda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
País de origen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apropiado para el propósito	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apropiado para el individual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Si está de moda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individualidad / Singularidad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promueve la autoestima	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agradable a otros	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

10. De las características / atributos mencionados anteriormente, por favor clasifique los tres más importantes en su decisión a la hora de comprar *camisas casuales*. \*

El más importante

El segundo más importante

El tercero más importante

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40%

## Hispanic Apparel Preferences: Spanish Version

11. ¿Lleva faldas casuales o informales?\*

- Sí
- No, nunca llevo faldas casuales o informales

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45%

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12. Cuando va a comprar *faldas casuales*, indique la importancia que los factores siguientes tienen en su evaluación del producto. Cuanto más a la derecha, más importante el factor es y cuanto más a la izquierda, el factor es de menos importancia. \*

	No tiene ninguna importancia 1	2	3	4	Mucha importancia decisivo 5
Color / diseño	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Estilo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cómo le queda / talla	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apariencia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Belleza / calidad atractiva	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calidad (construcción, durabilidad, factura)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilidad de cuidado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comodidad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contenido de fibra / fabricación	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Versatilidad con su vestuario actual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Precio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marca / nombre de la tienda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
País de origen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apropiado para el propósito	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apropiado para el individual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Si está de moda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individualidad / Singularidad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promueve la autoestima	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agradable a otros	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. De las características / atributos mencionados anteriormente, por favor clasifique los tres más importantes en su decisión a la hora de comprar *faldas casuales*. \*

El más importante

El segundo más importante

El tercero más importante

Click to Go Back

Click to Next Page

50%

## Hispanic Apparel Preferences: Spanish Version

14. ¿Llevo vestidos casuales o informales?\*

- Si
- No, nunca llevo vestidos casuales o informales

Click to Go Back

Click to Next Page

55%

 Take a look under the hood

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## Hispanic Apparel Preferences: Spanish Version

15. Cuando va a comprar *vestidos casuales*, indique la importancia que los factores siguientes tienen en su evaluación del producto. Cuanto más a la derecha, más importante el factor es y cuanto más a la izquierda, el factor es de menos importancia. \*

	No tiene ninguna importancia 1	2	3	4	Mucha importancia decisivo 5
Color / diseño	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Estilo	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cómo le queda / talla	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apariencia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Belleza / calidad atractiva	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calidad (construcción, durabilidad, factura)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facilidad de cuidado	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comodidad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contenido de fibra / fabricación	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Versatilidad con su vestuario actual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Precio	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Marca / nombre de la tienda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
País de origen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apropiado para el propósito	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Apropiado para el individual	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sexy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Si está de moda	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Individualidad / Singularidad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Promueve la autoestima	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agradable a otros	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. De las características / atributos mencionados anteriormente, por favor clasifique los tres más importantes en su decisión a la hora de comprar *vestidos casuales*. \*

El más importante

El segundo más importante

El tercero más importante

Click to Go Back

Click to Next Page

60%

17. Si va a comprar los *pantalones casuales* siguientes, escoja la manera de ajuste que sería lo más probable que Ud. compre y lleve. \*



Click to Go Back

Click to Next Page

65%

18. Si va a comprar la *camisa casual* siguiente, escoja la manera de ajuste que sería lo más probable que Ud. compre y lleve.  
\*



Click to Go Back      Click to Next Page



19. Si va a comprar la *falda casual* siguiente, escoja la manera de ajuste que sería lo más probable que Ud. compre y lleve. \*



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75%

20. Si va a comprar el vestido *casual* siguiente, escoja la manera de ajuste que sería lo más probable que Ud. compre y lleve.  
\*



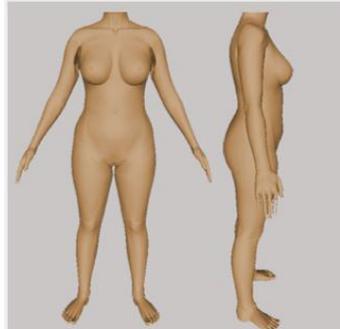
Im

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80%

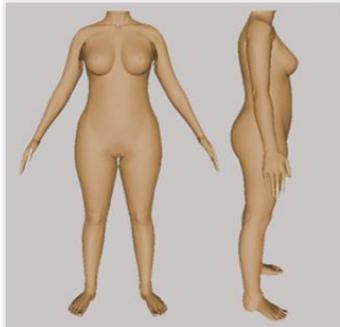
21. De las opciones siguientes, escoja la forma de cuerpo que Ud. piensa que más corresponde a su forma de cuerpo verdadera. \*



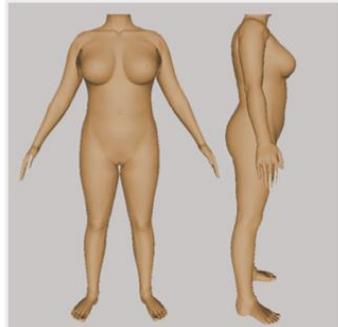
Los pechos y caderas son balanceados; la cintura se delinea bien



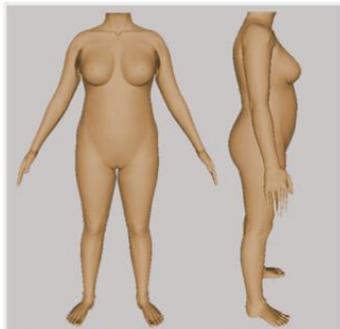
El pecho es pequeño en proporción a la cintura; la cintura se delinea bien; las caderas son grandes en proporción a la cintura



Las caderas son más grandes que el pecho; la cintura se delinea bien



El pecho es más grande que las caderas; la cintura se delinea bien



No o poca delimitación en la cintura; balanceada bajo los brazos y las caderas

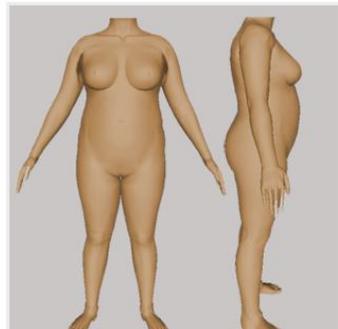
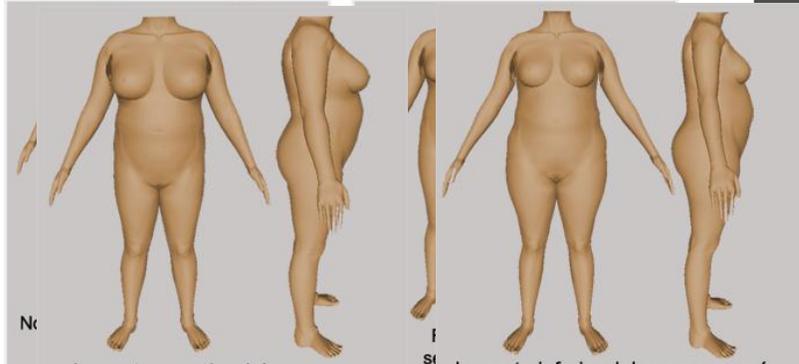


Figura llena con una sección media curvada



No

La parte superior del cuerpo es más grande que la parte inferior, con poca o no hendidura en la cintura

Si

La parte inferior del cuerpo es más grande que la parte superior, con poca o no hendidura en la cintura

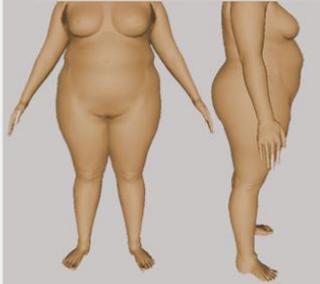


Figura llena con la cintura dominando la forma del estómago alto

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[Click to Next Page](#)

85%

22. ¿Cuánto mide? \*

pies  
 pulgadas

23. ¿Cuánto pesa? \*

libras

24. ¿Qué talla de ropa usaría si llevara pantalones casuales? \*

- XS (0 - 2)
- S (4 - 6)
- M (8 - 10)
- L (12 - 14)
- XL (16 - 18)
- 0X (16W)
- 1X (18W - 20W)
- 2X (22W - 24W)
- 3X (26W - 28W)

25. ¿Qué talla de ropa usaría si llevara camisas casuales? \*

- XS (0 - 2)
- S (4 - 6)
- M (8 - 10)
- L (12 - 14)
- XL (16 - 18)
- 0X (16W)
- 1X (18W - 20W)
- 2X (22W - 24W)
- 3X (26W - 28W)

26. ¿Qué talla de ropa usaría si llevara faldas casuales? \*

- XS (0 - 2)
- S (4 - 6)
- M (8 - 10)
- L (12 - 14)
- XL (16 - 18)
- 0X (16W)
- 1X (18W - 20W)
- 2X (22W - 24W)
- 3X (26W - 28W)

27. ¿Qué talla de ropa usaría si llevara vestidos casuales? \*

- XS (0 - 2)
- S (4 - 6)
- M (8 - 10)
- L (12 - 14)
- XL (16 - 18)
- 0X (16W)
- 1X (18W - 20W)
- 2X (22W - 24W)
- 3X (26W - 28W)

Click to Go Back

Click to Next Page

90%

28. En general, ¿qué lenguaje lee y habla?\*

- Solamente español
- Español más que inglés
- Los dos igualmente
- Inglés más que español
- Solamente inglés

29. ¿Qué lenguaje habla usualmente en su casa?\*

- Solamente español
- Español más que inglés
- Los dos igualmente
- Inglés más que español
- Solamente inglés

30. ¿En que lenguaje piensa Ud. usualmente?\*

- Solamente español
- Español más que inglés
- Los dos igualmente
- Inglés más que español
- Solamente inglés

31. ¿Qué lenguaje habla usualmente con sus amigos?\*

- Solamente español
- Español más que inglés
- Los dos igualmente
- Inglés más que español
- Solamente inglés

32. ¿En qué país nació?\*

- Estados Unidos
- Otro

33. ¿En qué país nació su padre?\*

- Estados Unidos
- Otro

34. ¿En qué país nació su madre?\*

- Estados Unidos
- Otro

Click to Go Back

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95%

35. ¿Cuales fueron sus ingresos el año pasado?\*

- Menos de \$25,000
- \$25,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- Más de \$100,000
- Prefiero no comentar

36. ¿Cuál de los siguientes describe mejor la educación que Ud. tiene?\*

- Menos de la escuela secundaria
- Graduado de la escuela secundaria
- Algunos estudios en la universidad
- Graduado de la universidad
- Estudios de postgrado

37. ¿Cuál de los siguientes describe mejor su profesión?\*

- Profesional / gerencial
- Oficina
- Artesanías
- Servicio / ventas
- Estudiante
- Ejército
- Ama de casa
- Sin empleo

38. ¿En qué estado reside actualmente?\*

-- Please Select --

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Finished? Submit your Survey

97%

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## APPENDIX E – NCSU IRB Approval

North Carolina State University is a land-grant university and a constituent institution of The University of North Carolina

**Office of Research  
and Graduate Studies**

**NC STATE UNIVERSITY**

Sponsored Programs and  
Regulatory Compliance  
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2701 Sullivan Drive  
Raleigh, NC 27695-7514

919.515.2444  
919.515.7721 (fax)

From: Joseph Rabiega, IRB Coordinator  
North Carolina State University  
Institutional Review Board

Date: January 19, 2009

Project Title: Apparel product development considerations for Mexican-American women in the US: A study of evaluative criteria and fit preferences of 18-25 year old females

IRB#: 26-09-01

Dear Beth:

The research proposal named above has received administrative review and has been approved as exempt from the policy as outlined in the Code of Federal Regulations (Exemption: 46.101.b.2). Provided that the only participation of the subjects is as described in the proposal narrative, this project is exempt from further review.

NOTE:

1. This committee complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU projects, the Assurance Number is: FWA00003429.
2. Any changes to the research must be submitted and approved by the IRB prior to implementation.
3. If any unanticipated problems occur, they must be reported to the IRB office within 5 business days.

Please provide a copy of this letter to your faculty sponsor.

Sincerely,

Joseph Rabiega  
NCSU IRB

## **APPENDIX F – Pilot Test Details**

To create the most effective, clear, and complete survey instrument, a pilot test of the first iteration was completed from February 18, 2009 to February 24, 2009. Pilot test participants were recruited from North Carolina State University and a high school in eastern North Carolina, to ensure that respondents were between the target age range of 18 to 25. In addition, screening questions were used to restrict participation to Hispanic females. Thus, the pilot test sample was similar to the targeted population in terms of age and gender. However, the pilot test participants were from North Carolina (rather than the Southwestern US states of Arizona, California, New Mexico, and Texas), and were from any Hispanic subculture (rather than only Mexican-American). These allowances were made for convenience and because the pilot test was mainly performed to assess the clarity and flow of the questions rather than to exactly replicate the population of interest.

The pilot test was created using the same survey platform as the final survey in SurveyGizmo. All components of the final survey were tested in the pilot test, including the screening questions, the evaluative criteria measure, the fit preference measure, and questions to describe respondents' physical body perception, ethnic characteristics, and demographic characteristics. Participants were recruited for the pilot test through email solicitation, and were able to take the survey in either English or Spanish, based on their preferences. After each question, participants were asked to reflect and comment on the question clarity and whether they had any concerns or issues with the question wording or content. Their comments were reviewed after pilot testing to refine the survey before launching it full-scale.

In the six days of pilot testing, 16 surveys were collected, 15 in English and 1 in Spanish. The respondents provided very useful feedback, which was used to improve the survey. The following table shows the concerns that respondents noted, and the modification made to the survey to address these concerns. As noted in the methodology, the instrument components presented in the section “Instrument Development” reflect these changes made from the pilot test and are thus the components used in the final version of the survey.

<b>Pilot Test Modifications</b>	
<b>Participant Concern</b>	<b>Modification</b>
<i>Subculture Screening Question:</i> One respondent indicated that she was a mix between Puerto Rican and Mexican and had difficulty identifying her subcultural group membership	Because respondents were asked to self-identify their ethnicity, this question was not changed and the respondents themselves had to decide whether to self-identify as belonging to one of the subcultures, none, or “Other.” The “Other” category allowed respondents of a mixed ethnicity to select this category if they could not solely identify with one Hispanic subcultural group.
<i>Evaluative Criteria Measure:</i> Respondents were unable to differentiate between the aesthetic fit and functional fit criteria, typically rating them identically. When asked about the most important attribute in their apparel purchases, several simply indicated “Fit,” clearly not recognizing a distinction between the aesthetic and functional fit criteria originally included in the pilot survey.	Though apparel fit can be considered a function of aesthetic and functional qualities, respondents were not able (or did not feel the need) to differentiate between these two aspects of apparel fit. Thus, aesthetic fit and functional fit were combined to create one criterion of “Fit / sizing.” Based on past research (May-Plumlee, 1999; May-Plumlee & Little, 2006), this attribute was then classified as a functional criterion for the purposes of data analysis and discussion of results.
<i>Evaluative Criteria Measure:</i> Several respondents indicated difficulty with rating the importance of attributes in the purchase of skirts and dresses, since they do not wear these garment types.	A screening question, asking whether or not respondents wore casual pants, tops, skirts, and dresses, prefaced each evaluative criteria section. This ensured that respondents who never wore casual pants, tops, skirts, or dresses would not have to rate the importance or determinance of evaluative criteria in the purchase of these items.
<i>Evaluative Criteria Measure:</i> Several respondents noted that they experienced difficulty in selecting only one most important attribute in their apparel purchases.	To obtain a more complete understanding of the determinance of the attributes, respondents were asked to provide the top three most important attributes in the purchase of casual pants, tops, skirts, and dresses, rather than only the single most important attribute.

## APPENDIX G – 3D Avatar Development

### Measurement Data for 3D Body Models

	<b>Hourglass</b>	<b>Spoon</b>	<b>Diamond</b>	<b>Bottom Hourglass</b>	<b>Top Hourglass</b>	<b>Oval</b>	<b>Inverted Triangle</b>	<b>Triangle</b>	<b>Rectangle</b>
<b>Height (ft/in)</b>	5ft 4in	5ft 4in	5ft 4in	5ft 4in	5ft 4in	5ft 4in	5ft 4in	5ft 4in	5ft 4in
<b>Weight (lbs)</b>	140	145	250	145	155	185	185	160	155
<b>Bust_Full (in)</b>	39	37.5	50	38.5	43.5	44	48	42	41
<b>Waist_Full (in)</b>	30	31	49	32	33.5	39	41	41	36
<b>Hips_Full (in)</b>	41	42	58	44	41	45.5	43.5	48	42.5
<b>Inseam (in)</b>	30	30	30	30	30	30	30	30	30
<b>Seat Prominence (in)</b>	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75
<b>Underbust_Full (in)</b>	31	33	46.5	32	34.5	38	40	38	34.5
<b>Thigh_Right (in)</b>	24	24	35	25	24	27	25.5	27	24
<b>Abdomen_Full (in)</b>	35.5	40.5	57	38.5	38.3	45	42	43.5	39.5
<b>Stomach_Full (in)</b>	31.5	33	51	33	35.5	41	42.4	42	36.5
<b>HighHip_Full (in)</b>	34.5	40.5	55	36	37.5	37	42.5	44.5	39

## APPENDIX H - Post Hoc Comparisons for RO2: RQ3

### *The effect of Body Shape Perception on Evaluative Criteria Ratings*

<b>Results from Pairwise Comparisons of Body Shape Categories – Top Price Rating</b>		
Comparison	z	Prob> z
Bottom Hourglass vs. Diamond	1.0457	0.2957
Bottom Hourglass vs. Hourglass	-1.6944	0.0902
Bottom Hourglass vs. Inverted Triangle	0.2420	0.8088
Bottom Hourglass vs. Oval	0.4630	0.6434
Bottom Hourglass vs. Rectangle	1.3118	0.1896
Bottom Hourglass vs. Spoon	-1.5398	0.1236
Bottom Hourglass vs. Top Hourglass	-0.6929	0.4884
Bottom Hourglass vs. Triangle	1.2249	0.2206
Diamond vs. Hourglass	1.8593	0.0630
Diamond vs. Inverted Triangle	-0.5103	0.6098
Diamond vs. Oval	0.7392	0.4598
Diamond vs. Rectangle	0.1927	0.8472
Diamond vs. Spoon	1.8065	0.0708
Diamond vs. Top Hourglass	1.4548	0.1457
Diamond vs. Triangle	0.0000	1.0000
Hourglass vs. Inverted Triangle	1.0122	0.3114
Hourglass vs. Oval	1.8115	0.0701
Hourglass vs. Rectangle	2.5740	0.0101*
Hourglass vs. Spoon	-0.0727	0.9420
Hourglass vs. Top Hourglass	0.7327	0.4638
Hourglass vs. Triangle	2.2152	0.0267*
Inverted Triangle vs. Oval	0.0000	1.0000
Inverted Triangle vs. Rectangle	-0.5182	0.6043
Inverted Triangle vs. Spoon	0.9568	0.3387
Inverted Triangle vs. Top Hourglass	0.6889	0.4909
Inverted Triangle vs. Triangle	-0.5949	0.5519
Oval vs. Rectangle	-0.7936	0.4274
Oval vs. Spoon	1.6911	0.0908
Oval vs. Top Hourglass	-1.0851	0.2779
Oval vs. Triangle	0.8618	0.3888
Rectangle vs. Spoon	2.3812	0.0173*
Rectangle vs. Top Hourglass	-1.8267	0.0677
Rectangle vs. Triangle	0.1418	0.8873
Spoon vs. Top Hourglass	0.7137	0.4754
Spoon vs. Triangle	2.0967	0.0360*
Top Hourglass vs. Triangle	1.7656	0.0775

Note: \* Indicates significance at a 95% confidence level

Results from Pairwise Comparisons of Body Shape Groups – Dress Promotes High Self Esteem Rating		
Comparison	z	Prob> z
Bottom Hourglass vs. Diamond	1.8372	0.0662
Bottom Hourglass vs. Hourglass	0.3679	0.7130
Bottom Hourglass vs. Inverted Triangle	0.0000	0.0000**
Bottom Hourglass vs. Oval	0.7382	0.4604
Bottom Hourglass vs. Rectangle	2.6799	0.0074*
Bottom Hourglass vs. Spoon	-0.0115	0.9908
Bottom Hourglass vs. Top Hourglass	0.0000	1.0000
Bottom Hourglass vs. Triangle	1.2702	0.2040
Diamond vs. Hourglass	1.8858	0.0593
Diamond vs. Inverted Triangle	0.0000	0.0000**
Diamond vs. Oval	1.3703	0.1706
Diamond vs. Rectangle	-0.3291	0.7420
Diamond vs. Spoon	2.0742	0.0381*
Diamond vs. Top Hourglass	1.6842	0.0921
Diamond vs. Triangle	0.4661	0.6411
Hourglass vs. Inverted Triangle	0.0000	0.0000**
Hourglass vs. Oval	0.5418	0.5879
Hourglass vs. Rectangle	2.7827	0.0054*
Hourglass vs. Spoon	-0.3777	0.7057
Hourglass vs. Top Hourglass	-0.2540	0.7995
Hourglass vs. Triangle	1.2196	0.2226
Inverted Triangle vs. Oval	0.0000	0.0000**
Inverted Triangle vs. Rectangle	0.0000	0.0000**
Inverted Triangle vs. Spoon	0.0000	0.0000**
Inverted Triangle vs. Top Hourglass	0.0000	0.0000**
Inverted Triangle vs. Triangle	0.0000	0.0000**
Oval vs. Rectangle	-2.0882	0.0368*
Oval vs. Spoon	0.7957	0.4262
Oval vs. Top Hourglass	0.7117	0.4767
Oval vs. Triangle	0.6236	0.5329
Rectangle vs. Spoon	2.9268	0.0034*
Rectangle vs. Top Hourglass	-2.3976	0.0165*
Rectangle vs. Triangle	-1.0127	0.3112
Spoon vs. Top Hourglass	0.0000	1.0000
Spoon vs. Triangle	1.3921	0.1639
Top Hourglass vs. Triangle	1.0750	0.2824

Note: \* Indicates significance at a 95% confidence level  
 \*\*N=0 for inverted triangle, thus, not valid comparison

### The effect of BMI on Evaluative Criteria Ratings

<b>Results from Pairwise Comparisons of BMI Category Groups – Top Price Rating</b>		
Comparison	z	Prob> z
Underweight/Normal vs. Overweight	2.7806	0.0054*
Underweight/Normal vs. Obese	1.8904	0.0587
Overweight vs. Obese	-0.8300	0.4065

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of BMI Category Groups – Top Pleasing to Others Rating</b>		
Comparison	z	Prob> z
Underweight/Normal vs. Overweight	0.7184	0.4725
Underweight/Normal vs. Obese	-2.1775	0.0294*
Overweight vs. Obese	-2.4394	0.0147*

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of BMI Category Groups – Skirt Ease of Care Rating</b>		
Comparison	z	Prob> z
Underweight/Normal vs. Overweight	-2.6738	0.0075*
Underweight/Normal vs. Obese	-0.2965	0.7669
Overweight vs. Obese	-2.1057	0.0352*

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of BMI Category Groups – Skirt Comfort Rating</b>		
Comparison	z	Prob> z
Underweight/Normal vs. Overweight	-1.3166	0.1880
Underweight/Normal vs. Obese	1.7881	0.0738
Overweight vs. Obese	-2.4477	0.0144*

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of BMI Category Groups – Skirt Promotes High Self Esteem Rating</b>		
Comparison	z	Prob> z
Underweight/Normal vs. Overweight	-2.1567	0.0310*
Underweight/Normal vs. Obese	1.5803	0.1140
Overweight vs. Obese	-2.8934	0.0038*

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of BMI Category Groups – Skirt Pleasing to Others Rating</b>		
Comparison	z	Prob> z
Underweight/Normal vs. Overweight	-0.9866	0.3238
Underweight/Normal vs. Obese	-2.7351	0.0062*
Overweight vs. Obese	1.3305	0.1834

### The effect of Clothing Size on Evaluative Criteria Ratings

<b>Results from Pairwise Comparisons of Top Clothing Size Category Groups – Top Fiber Content/Fabrication Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
XS (0 - 2) vs. S (4 - 6)	-0.0959	0.9236
XS (0 - 2) vs. M (8 - 10)	-1.1763	0.2395
XS (0 - 2) vs. L (12 - 14)	-2.3457	0.0190*
XS (0 - 2) vs. XL and above (16 - 28W)	-0.1330	0.8942
S (4 - 6) vs. M (8 - 10)	-1.6754	0.0939
S (4 - 6) vs. L (12 - 14)	3.3034	0.0010*
S (4 - 6) vs. XL and above (16 - 28W)	0.0959	0.9236
M (8 - 10) vs. L (12 - 14)	1.5612	0.1185
M (8 - 10) vs. XL and above (16 - 28W)	-0.8091	0.4185
L (12 - 14) vs. XL and above (16 - 28W)	-1.8495	0.0644

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Top Clothing Size Category Groups – Top Price Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
XS (0 - 2) vs. S (4 - 6)	1.0768	0.2816
XS (0 - 2) vs. M (8 - 10)	-0.2299	0.8182
XS (0 - 2) vs. L (12 - 14)	-0.4649	0.6420
XS (0 - 2) vs. XL and above (16 - 28W)	-0.8174	0.4137
S (4 - 6) vs. M (8 - 10)	-2.0938	0.0363*
S (4 - 6) vs. L (12 - 14)	2.4901	0.0128*
S (4 - 6) vs. XL and above (16 - 28W)	2.5288	0.0114*
M (8 - 10) vs. L (12 - 14)	0.3069	0.7589
M (8 - 10) vs. XL and above (16 - 28W)	0.7796	0.4356
L (12 - 14) vs. XL and above (16 - 28W)	0.5278	0.5976

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Top Clothing Size Category Groups – Top Pleasing to Others Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
XS (0 - 2) vs. S (4 - 6)	-1.5244	0.1274
XS (0 - 2) vs. M (8 - 10)	0.2237	0.8230
XS (0 - 2) vs. L (12 - 14)	0.3341	0.7383
XS (0 - 2) vs. XL and above (16 - 28W)	1.6974	0.0896
S (4 - 6) vs. M (8 - 10)	2.4721	0.0134*
S (4 - 6) vs. L (12 - 14)	-2.4732	0.0134*
S (4 - 6) vs. XL and above (16 - 28W)	-3.8939	<.0001*
M (8 - 10) vs. L (12 - 14)	-0.1357	0.8921
M (8 - 10) vs. XL and above (16 - 28W)	-1.7257	0.0844
L (12 - 14) vs. XL and above (16 - 28W)	-1.5867	0.1126

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Skirt Clothing Size Category Groups – Skirt Quality (construction, durability, workmanship) Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
XS (0 - 2) vs. S (4 - 6)	-1.1506	0.2499
XS (0 - 2) vs. M (8 - 10)	-1.2961	0.1950
XS (0 - 2) vs. L (12 - 14)	1.0359	0.3003
XS (0 - 2) vs. XL and above (16 - 28W)	-1.2579	0.2084
S (4 - 6) vs. M (8 - 10)	0.2944	0.7685
S (4 - 6) vs. L (12 - 14)	-2.6081	0.0091*
S (4 - 6) vs. XL and above (16 - 28W)	0.3753	0.7074
M (8 - 10) vs. L (12 - 14)	-2.6542	0.0079*
M (8 - 10) vs. XL and above (16 - 28W)	0.1191	0.9052
L (12 - 14) vs. XL and above (16 - 28W)	2.4351	0.0149*

Note: \* Indicates significance at a 95% confidence level

## APPENDIX I - Post Hoc Comparisons for RO2: RQ4

### The effect of Generational Status on Evaluative Criteria Ratings

<b>Results from Pairwise Comparisons of Generational Status Category Groups – Pants Color/Pattern Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
First vs. Second	2.1140	0.0345*
First vs. Mixed	0.4462	0.6555
First vs. Third	2.0923	0.0364*
Second vs. Mixed	2.7629	0.0057*
Second vs. Third	-0.3209	0.7483
Mixed vs. Third	2.6999	0.0069*

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Generational Status Category Groups – Pants Fiber Content/Fabrication Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
First vs. Second	-0.7726	0.4398
First vs. Mixed	2.7654	0.0057*
First vs. Third	0.5740	0.5660
Second vs. Mixed	2.1861	0.0288*
Second vs. Third	-1.4579	0.1449
Mixed vs. Third	3.2405	0.0012*

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Generational Status Category Groups – Pants Appropriateness for End Use Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
First vs. Second	2.8355	0.0046*
First vs. Mixed	-1.3623	0.1731
First vs. Third	2.1615	0.0307*
Second vs. Mixed	2.0305	0.0423*
Second vs. Third	1.2326	0.2177
Mixed vs. Third	1.0733	0.2832

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Generational Status Category Groups – Pants Suitability for the Individual Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
First vs. Second	2.0113	0.0443*
First vs. Mixed	0.1339	0.8935
First vs. Third	0.4038	0.6863
Second vs. Mixed	2.2209	0.0264*
Second vs. Third	1.9816	0.0475*
Mixed vs. Third	0.6314	0.5278

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Generational Status Category Groups – Top Quality (construction, durability, workmanship) Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
First vs. Second	1.5852	0.1129
First vs. Mixed	1.0836	0.2786
First vs. Third	0.6247	0.5322
Second vs. Mixed	2.9335	0.0034*
Second vs. Third	0.9933	0.3206
Mixed vs. Third	1.8540	0.0637

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Generational Status Category Groups – Skirt Styling Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
First vs. Second	-0.2999	0.7642
First vs. Mixed	1.5431	0.1228
First vs. Third	1.4576	0.1450
Second vs. Mixed	1.4903	0.1361
Second vs. Third	-2.1874	0.0287*
Mixed vs. Third	2.9234	0.0035*

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Generational Status Category Groups – Dresses Suitability for the Individual Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
First vs. Second	0.7705	0.4410
First vs. Mixed	0.3844	0.7007
First vs. Third	-1.6915	0.0907
Second vs. Mixed	1.2436	0.2136
Second vs. Third	3.0806	0.0021*
Mixed vs. Third	-1.2684	0.2047

Note: \* Indicates significance at a 95% confidence level

## APPENDIX J - Post Hoc Comparisons for RO2: RQ5

### The effect of Educational Level on Evaluative Criteria Ratings

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Pant Fashionability Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	-1.8609	0.0628
High school graduate vs. College graduate	-1.5899	0.1119
High school graduate vs. Post graduate work	-0.4378	0.6615
Some college vs. College graduate	-0.7896	0.4298
Some college vs. Post graduate work	-2.1392	0.0324*
College graduate vs. Post graduate work	-1.6954	0.0900

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Top Appropriateness for End Use Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	-1.2729	0.2030
High school graduate vs. College graduate	-0.0924	0.9264
High school graduate vs. Post graduate work	-1.2298	0.2188
Some college vs. College graduate	-2.5907	0.0096*
Some college vs. Post graduate work	0.6245	0.5323
College graduate vs. Post graduate work	1.7926	0.0730

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Top Suitability for the Individual Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	-0.7795	0.4357
High school graduate vs. College graduate	0.2095	0.8341
High school graduate vs. Post graduate work	0.0971	0.9226
Some college vs. College graduate	-2.6730	0.0075*
Some college vs. Post graduate work	-1.2302	0.2186
College graduate vs. Post graduate work	0.1797	0.8574

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Tops Individuality/Uniqueness Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	0.3729	0.7092
High school graduate vs. College graduate	0.6282	0.5299
High school graduate vs. Post graduate work	1.9727	0.0485*
Some college vs. College graduate	-0.8782	0.3798
Some college vs. Post graduate work	-3.0097	0.0026*
College graduate vs. Post graduate work	-2.2586	0.0239*

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Tops Promotes High Self Esteem Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	-1.2779	0.2013
High school graduate vs. College graduate	-0.0691	0.9449
High school graduate vs. Post graduate work	0.2589	0.7957
Some college vs. College graduate	-3.0668	0.0022*
Some college vs. Post graduate work	-2.4897	0.0128*
College graduate vs. Post graduate work	-0.4438	0.6572

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Skirts Beauty/Attractiveness Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	2.4667	0.0136*
High school graduate vs. College graduate	2.6277	0.0086*
High school graduate vs. Post graduate work	-2.2021	0.0277*
Some college vs. College graduate	-0.6142	0.5391
Some college vs. Post graduate work	-0.7737	0.4391
College graduate vs. Post graduate work	-0.4351	0.6635

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Skirts Versatility with Existing Wardrobe Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	1.1830	0.2368
High school graduate vs. College graduate	2.3370	0.0194*
High school graduate vs. Post graduate work	-0.9516	0.3413
Some college vs. College graduate	-2.3451	0.0190*
Some college vs. Post graduate work	-0.4354	0.6633
College graduate vs. Post graduate work	0.7537	0.4511

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Skirts Fashionability Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	2.2333	0.0255*
High school graduate vs. College graduate	2.7654	0.0057*
High school graduate vs. Post graduate work	-2.2021	0.0277*
Some college vs. College graduate	-1.2066	0.2276
Some college vs. Post graduate work	-0.7444	0.4567
College graduate vs. Post graduate work	-0.0863	0.9312

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Skirts Individuality/Uniqueness Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	0.6754	0.4994
High school graduate vs. College graduate	0.7427	0.4577
High school graduate vs. Post graduate work	-1.8299	0.0673
Some college vs. College graduate	0.0239	0.9810
Some college vs. Post graduate work	-2.6380	0.0083*
College graduate vs. Post graduate work	-2.6857	0.0072*

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Skirts Promotes High Self Esteem Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	1.2091	0.2266
High school graduate vs. College graduate	2.1565	0.0310*
High school graduate vs. Post graduate work	-1.4646	0.1430
Some college vs. College graduate	-2.2358	0.0254*
Some college vs. Post graduate work	-1.2582	0.2083
College graduate vs. Post graduate work	-0.2219	0.8244

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Dresses Appropriateness for End Use Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	-0.4178	0.6761
High school graduate vs. College graduate	0.2821	0.7779
High school graduate vs. Post graduate work	2.4944	0.0126*
Some college vs. College graduate	-1.5191	0.1287
Some college vs. Post graduate work	2.8659	0.0042*
College graduate vs. Post graduate work	3.2993	0.0010*

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Dresses Individuality/Uniqueness Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	1.3912	0.1642
High school graduate vs. College graduate	1.6247	0.1042
High school graduate vs. Post graduate work	-2.2177	0.0266*
Some college vs. College graduate	-1.2209	0.2221
Some college vs. Post graduate work	-2.5005	0.0124*
College graduate vs. Post graduate work	-1.4533	0.1461

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Educational Level Category Groups – Dresses Promotes High Self Esteem Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
High school graduate vs. Some college	0.1880	0.8509
High school graduate vs. College graduate	2.0975	0.0360*
High school graduate vs. Post graduate work	-0.4672	0.6404
Some college vs. College graduate	-3.9811	<.0001*
Some college vs. Post graduate work	-0.4748	0.6349
College graduate vs. Post graduate work	1.7949	0.0727

Note: \* Indicates significance at a 95% confidence level

### **The effect of Occupation on Evaluative Criteria Ratings**

<b>Results from Pairwise Comparisons of Occupation Category Groups – Pants Promotes High Self Esteem Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
Student vs. Office	-2.4441	0.0145*
Student vs. Professional/Managerial	-1.5151	0.1297
Student vs. Service/Sales	-1.3597	0.1739
Student vs. Homemaker	-0.4141	0.6788
Student vs. Not employed	-0.5631	0.5734
Office vs. Professional/Managerial	-0.7651	0.4442
Office vs. Service/Sales	0.5358	0.5921
Office vs. Homemaker	0.3108	0.7559
Office vs. Not employed	0.7427	0.4576
Professional/Managerial vs. Service/Sales	-0.0275	0.9781
Professional/Managerial vs. Homemaker	-0.0000	1.0000
Professional/Managerial vs. Not employed	0.2194	0.8263
Service/Sales vs. Homemaker	0.2466	0.8053
Service/Sales vs. Not employed	-0.0676	0.9461
Homemaker vs. Not employed	-0.0000	1.0000

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Occupation Category Groups – Tops Individuality/Uniqueness Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
Student vs. Office	-3.0852	0.0020*
Student vs. Professional/Managerial	-2.8115	0.0049*
Student vs. Service/Sales	0.1707	0.8645
Student vs. Homemaker	-0.4512	0.6519
Student vs. Not employed	0.5590	0.5762
Office vs. Professional/Managerial	0.0453	0.9639
Office vs. Service/Sales	2.0832	0.0372*
Office vs. Homemaker	0.4718	0.6371
Office vs. Not employed	2.3093	0.0209*
Professional/Managerial vs. Service/Sales	1.7367	0.0824
Professional/Managerial vs. Homemaker	0.2801	0.7794
Professional/Managerial vs. Not employed	2.0147	0.0439*
Service/Sales vs. Homemaker	-0.2466	0.8053
Service/Sales vs. Not employed	-0.2283	0.8195
Homemaker vs. Not employed	-0.4895	0.6245

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Occupation Category Groups – Tops Promotes High Self Esteem Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
Student vs. Office	-1.8876	0.0591
Student vs. Professional/Managerial	-3.3826	0.0007*
Student vs. Service/Sales	-0.7209	0.4710
Student vs. Homemaker	-0.5583	0.5767
Student vs. Not employed	-0.1344	0.8931
Office vs. Professional/Managerial	0.9311	0.3518
Office vs. Service/Sales	0.4705	0.6380
Office vs. Homemaker	0.0523	0.9583
Office vs. Not employed	0.9061	0.3649
Professional/Managerial vs. Service/Sales	1.5172	0.1292
Professional/Managerial vs. Homemaker	0.4267	0.6696
Professional/Managerial vs. Not employed	1.6909	0.0909
Service/Sales vs. Homemaker	-0.0000	1.0000
Service/Sales vs. Not employed	-0.3339	0.7384
Homemaker vs. Not employed	-0.2909	0.7711

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Occupation Category Groups – Skirts Individuality/Uniqueness Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
Student vs. Office	-2.5436	0.0110*
Student vs. Professional/Managerial	-1.9644	0.0495*
Student vs. Service/Sales	-1.7283	0.0839
Student vs. Homemaker	0.9966	0.3189
Student vs. Not employed	-1.1118	0.2662
Office vs. Professional/Managerial	-0.5696	0.5690
Office vs. Service/Sales	-0.4482	0.6540
Office vs. Homemaker	1.4423	0.1492
Office vs. Not employed	-0.1081	0.9139
Professional/Managerial vs. Service/Sales	-0.7963	0.4258
Professional/Managerial vs. Homemaker	1.3367	0.1813
Professional/Managerial vs. Not employed	-0.1762	0.8601
Service/Sales vs. Homemaker	0.7071	0.4795
Service/Sales vs. Not employed	0.0000	1.0000
Homemaker vs. Not employed	0.4714	0.6374

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Occupation Category Groups – Skirts Promotes High Self Esteem Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
Student vs. Office	-1.7326	0.0832
Student vs. Professional/Managerial	-2.1050	0.0353*
Student vs. Service/Sales	-1.7867	0.0740
Student vs. Homemaker	-1.2623	0.2069
Student vs. Not employed	0.7885	0.4304
Office vs. Professional/Managerial	0.4160	0.6774
Office vs. Service/Sales	-0.9749	0.3296
Office vs. Homemaker	-0.6181	0.5365
Office vs. Not employed	1.6261	0.1039
Professional/Managerial vs. Service/Sales	-0.3317	0.7401
Professional/Managerial vs. Homemaker	-0.1618	0.8714
Professional/Managerial vs. Not employed	1.5694	0.1165
Service/Sales vs. Homemaker	0.0000	1.0000
Service/Sales vs. Not employed	-1.5215	0.1281
Homemaker vs. Not employed	-0.9428	0.3458

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Occupation Category Groups – Dresses Fit/Sizing Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
Student vs. Office	-0.2676	0.7890
Student vs. Professional/Managerial	-0.9106	0.3625
Student vs. Service/Sales	-3.0621	0.0022*
Student vs. Homemaker	-3.0621	0.0022*
Student vs. Not employed	0.7148	0.4747
Office vs. Professional/Managerial	0.2928	0.7697
Office vs. Service/Sales	-1.7500	0.0801
Office vs. Homemaker	-1.7500	0.0801
Office vs. Not employed	0.6804	0.4962
Professional/Managerial vs. Service/Sales	-1.6432	0.1003
Professional/Managerial vs. Homemaker	-1.6432	0.1003
Professional/Managerial vs. Not employed	0.9449	0.3447
Service/Sales vs. Homemaker	0.0000	1.0000
Service/Sales vs. Not employed	-2.0412	0.0412*
Homemaker vs. Not employed	-2.0412	0.0412*

Note: \* Indicates significance at a 95% confidence level

<b>Results from Pairwise Comparisons of Occupation Category Groups – Dresses Individuality/Uniqueness Rating</b>		
<b>Comparison</b>	<b>z</b>	<b>Prob&gt; z </b>
Student vs. Office	-1.6457	0.0998
Student vs. Professional/Managerial	-2.6123	0.0090*
Student vs. Service/Sales	-1.4914	0.1359
Student vs. Homemaker	-1.7804	0.0750
Student vs. Not employed	1.0061	0.3143
Office vs. Professional/Managerial	0.6510	0.5151
Office vs. Service/Sales	-0.9317	0.3515
Office vs. Homemaker	-1.4606	0.1441
Office vs. Not employed	1.8343	0.0666
Professional/Managerial vs. Service/Sales	-0.7397	0.4595
Professional/Managerial vs. Homemaker	-1.5727	0.1158
Professional/Managerial vs. Not employed	2.3309	0.0198*
Service/Sales vs. Homemaker	0.0000	1.0000
Service/Sales vs. Not employed	-1.3944	0.1632
Homemaker vs. Not employed	-1.3944	0.1632

Note: \* Indicates significance at a 95% confidence level