CONSUMERS’ WILLINGNESS TO PAY USING AN EXPERIMENTAL AUCTION METHODOLOGY: APPLICATIONS TO BRAND EQUITY

By

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A thesis submitted in partial fulfillment of the requirements for the degree of

MASTER OF ARTS IN APPAREL, MERCHANDISING, AND TEXTILES

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MAY 2011
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ACKNOWLEDGEMENTS

I would like to thank Dr. Joan Ellis for her constant guidance and support throughout the two years of my graduate life. Without her mentoring, I would have never been able to finish my thesis on time. Her expertise on willingness to pay is what gave me the inspiration to write this thesis, without her, this thesis would not have been possible. I have gained so much from working with Dr. Ellis, from being a student in her class to being her Teaching Assistant. There are no words to explain the gratitude I have for her to help me become the person I am today.

I would also like to thank the two members of my committee, Dr. Yoo Jin Kwon and Dr. Vicki McCracken. Dr. Kwon I must thank for her great comments during my proposal defense, as well as, the knowledge I gained from her consumer behavior class. Dr. McCracken I thank for the opportunity to work on Nate’s research, which helped me so much when it came to data collection. I would also like to thank her for the time and knowledge she gave during my data analysis.

Without the support of my family to pursue a master’s degree, I would not have the courage to keep going. My parents have always believed in me no matter what I decide to do, and I thank them so much for that. I thank my sister, who have always cooked for me and made sure I ate when I am too busy with my thesis. Living with her for two years have brought us so much closer together, and I am so grateful to have this great relationship. I would like to thank all my friends in Pullman who have supported me, watched me complain, and be my stress reliever. I truly appreciate to have all of them in my life.
Last but not least, I have to thank my boyfriend, who has watched me grow from an undergraduate to a graduate student. He always knew how to make me smile no matter what the circumstance is. I would like to also thank him for financially supporting my thesis. I could have not been able to purchase all those t-shirts without his generous donation from Panda Express. I am so grateful to have such a caring and loving person in my life. With him, everything is possible.
CONSUMERS’ WILLINGNESS TO PAY USING AN EXPERIMENTAL AUCTION METHODOLOGY: APPLICATIONS TO BRAND EQUITY

Abstract

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May 2011

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Research has established a relationship between willingness to pay to price premium and brand equity, however, most studies used stated preference data, which are hypothetical situations. Studies using experimental auction methodology to elicit revealed preferences in branded apparel products have been minimal.

The purpose of the study was to determine the relationship between brand equity and consumers’ willingness to pay (WTP) a price premium for branded apparel products using revealed preference methodology. In order to determine the relationship, the Becker-Degroot-Marshack (BDM) experimental auction mechanism was used with the endow-and-upgrade approach followed with a survey. The survey includes ten multidimensional brand equity questions adopted from Yoo and Donthu (2001) brand equity scale, demographics, previous brand experiences, importance of apparel product attributes, and beliefs about brands. The experiment resulted in one hundred and three complete observations. Brand equity was analyzed using a composite score on the multidimensional brand equity measurement (Yoo and Donthu, 2001). WTP a price
premium was analyzed using descriptive statistics, and Tobit regression analysis was used to analyze the relationship between brand equity to WTP a price premium.

Findings indicated that the overall brand equity score, perceived quality, and a belief that there are more choices in branded merchandise positively significantly influenced WTP a price premium. The higher the brand equity, perceived quality, and belief that there are more choices in branded merchandise the higher WTP a price premium. Therefore, marketing efforts need to be placed on building brand equity, improving perceived quality of brands, emphasizing brand names, visual merchandising, and assortment planning to increase price premiums.

Further, the importance of apparel product attributes and the belief about brands influence on consumers’ WTP a price premium using revealed preference methodologies should be explored. In addition, investigate whether consumers make purchase decisions based on other variables, such as sustainability, labeling, culture, or the economy, that may be of greater effect to consumers’ WTP a price premium than brand equity using revealed preference methodologies.
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CHAPTER ONE

INTRODUCTION

Brands are important to both consumers and producers of products. Keller (1998) notes that brands offer consumers value through product attributes and consistent performance; brands also identify the manufacturer of a product, creating accountability and earning trust of customers. A brand helps signal to consumers the level of quality inherent in a product (Keller, 1998). Furthermore, consumers perceive branded products as being more reliable, and higher quality (Schroeder, 2003).

Brand equity is defined as the incremental value added to a product by its brand name (Aaker, 1991). Brand equity is also considered to be the difference in consumer choice between a branded product and an unbranded product given the same level of product features (Yoo, Donthu, and Lee, 2000). Existing literature has found that brand equity affects future profits and long-term cash flow (Srivastava and Shocker, 1991), merger and acquisition decision making (Mahajan, Rao, and Srivastava, 1994), stock price (Simon and Sullivan, 1993), sustainable competitive advantage (Bharadwaj, Varadarajan, and Fahy, 1993), and marketing success (Ambler, 1997). Almost every marketing activity works, successfully or unsuccessfully, to build, manage, and develop brand equity (Aaker, 1991; Keller, 1993; Yoo, Donthu, and Lee, 2000).

Therefore, brand equity can be used to describe both the value of the brand and the brand’s component values. The values may be a monetary value or an increase in a rate of return. Strong brands command price premiums over the competition and these can isolate brand equity as the extra revenue achievable in a market compared to competitors (Fueller and Hippel, 2008). Price premium reflects the brand’s ability to command a
higher price than its competitors and is considered important for all types of brands, despite actual price position within a category (Sethuramen, 2003; Agarwal and Rao, 1996). However, research that identifies and attempts to explain the relationship between brand equity and price premiums that consumers are willing to pay for apparel products focused primarily on stated preference data collection methods, which are known to exhibit poor validity (Auger, Burke, Devinney, and Louviere, 2003) with stated WTP estimates typically over-estimating true WTP values (Millock, 2002). Research using experimental auction methodology to elicit revealed preferences, has been minimal.

The purpose of this study is to determine the relationship between brand equity and consumers’ willingness to pay (WTP) a price premium for branded apparel products using revealed preference methodology. Brand equity will be measured using Yoo and Donthu’s (2001) brand equity scale in apparel products and WTP will be elicited using the Becker-DeGroot-Marschak (BDM) method (Becker, Degroot, and Marschak, 1964). Research has established a relationship between willingness to pay to price premium and brand equity, however, most studies use stated preference data, which are hypothetical situations. The methodology in this study provides revealed preference data using actual consumer decisions to indicate consumer preferences for goods in a field setting, rather than in a controlled lab setting. This creates higher reliability and validity to the data, as well as, eliminating biases (Lusk and Shogren, 2007).

The contribution of this study to the field of textile and apparel merchandising will be an increased understanding of the relationship between price premium and brand equity of apparel products, enabling merchandisers and marketers make more effective strategic marketing decisions that enhance profitability.
Objectives:

1. Determine consumers perceived brand equity of branded apparel products.
2. Identify consumers WTP for branded apparel products.
3. Determine the relationship between brand equity to price premiums.

Limitations:

Limitations for this study were the sample, the chosen brands, and the chosen product, which was due to time and money constraints. Participants in the sample were from the northwestern part of the United States. Therefore, findings from this study cannot be generalizable beyond this region. Another limitation were the brands chosen, Hanes and Fruit of the Loom. Other brands may have different WTP and brand equity scores. In addition, t-shirts was the chosen product used in the study. Other products may produce different results.

Definition of Terms:

Willingness to pay: the highest amount a consumer is willing to pay for a product at that point in time (Netemeyer, Krishman, Pullig, Wang, Yagci, Dean, Ricks, and Wirth, 2004).

Price premium: the difference between willingness to pay for brand and non-branded products give the same level of product features (Sethuramen, 2003).

Brand equity: the difference in consumer choice between the branded product and an unbranded product given the same level of product features (Yoo et al, 2000).

Multidimensional brand equity: subcategories brand equity concept consisting of perceived quality, brand loyalty, and brand awareness with strong brand associations (Yoo et al, 2000).
Brand associations/awareness: anything linked in memory to a brand, usually in some meaningful way (Aaker, 1991).

Brand loyalty: a deeply held commitment to repurchase a preferred product consistently in the future, despite other influences and marketing efforts that would cause switching behavior (Oliver, 1997).

Perceived quality: the customer's judgment of the overall excellence, esteem, or superiority of a brand relative to alternative brands (Netemeyer et al, 2004).
CHAPTER TWO

REVIEW OF LITERATURE

This review of literature provides a foundation for the study of how brand equity relates to consumers’ WTP a price premium for apparel products based on an existing brand equity scale developed by Yoo and Donthu (2001). The review of literature includes the development of brand equity model; the dimensions of brand equity in relation to apparel products; the application of the brand equity model; existing research on WTP in general and in apparel products; and existing research on WTP a price premium for brands.

The Brand Equity Model

Aaker’s (1991) brand equity model proposes that brand equity creates value for both the customer and the firm; value for the customer enhances value for the firm; and brand equity consists of multiple dimensions. Aaker (1991, 1996) and Keller (1993, 1998) proposed that brand creates value for both the consumer and the firm and provides value to the firm by generating value for the consumers. Therefore, brand equity is found to be the incremental value added to a product by its brand name.

Aaker’s model of brand equity has four dimensions: brand loyalty, brand awareness, perceived quality, and brand association. How the brand performs on these dimensions is what leads consumers to develop an overall, intangible rating of brand equity. This equity then provides value to the customer and the firm. The model by Aaker (1991) was one of the first influential works in the field of brand equity.
Keller (1993) furthered Aaker’s research by looking at customer based brand equity from a consumer psychology perspective and defining it as the differential effect of brand knowledge on consumer response to the marketing of the brand. Keller emphasized two constructs: brand awareness and brand image and adopted two basic approaches: direct and indirect, to measuring customer based brand equity. The indirect approach attempted to identify potential sources of customer based brand equity (CBBE) distribution channels, the effectiveness of marketing communications, the success of brand by measuring brand awareness, and the characteristics and relationships among brand associations. The direct approach focused on consumer responses to different elements of the firm’s marketing program (Keller, 1993). The four elements of the marketing mix are product, place, promotion, and price. Product is the good or service sold to satisfy a customer’s needs. Place involves all of the decisions required to make the product or service available in the target market or to customers. Promotion is the process of informing the target market of the product. Lastly, price setting includes components such as analysis of price setting by the competition as well as analysis regarding acceptance or rejection of prices by the target market (Keller 1993). According to Keller, a brand can have a positive or negative CBBE when consumers react more or less favorably to an element of the marketing mix for the brand than they do to the same marketing mix elements for other brands.

Based primarily on Aaker’s (1991) conceptualizations of brand equity, Yoo and Donthu (2001) proposed a multidimensional consumer based brand equity model and tested the model using cross-cultural data. The authors adopted Aaker’s brand equity dimensions, which were composed of brand loyalty, perceived quality, and brand
awareness/associations. Yoo, Donthu, and Lee (2000) developed a scale utilizing 22 items for assessment: five on brand loyalty, four on brand awareness, seven on perceived quality, and six on brand associations. For brand loyalty, five specific items were developed by Yoo et al (2000) to capture the attitudinal effect of being loyal to a brand. For brand awareness, the authors defined this as brand recognition, and used four brand recognition measures (Keller 1993). The authors measured consumers’ subjective judgment of a brand’s overall excellence as perceived quality following Zeithaml (1988) and employed seven items from Dodds, Monroe, and Grewal (1991). For brand associations, the authors used six new items based on Keller’s (1993) work to measure both the quantity and quality of information processing.

Yoo et al (2000) found the relationships of perceived quality (β = .10, t-value = 2.72) and brand associations (β = .07, t-value = 2.06) to brand equity were much weaker than the relationship of brand loyalty to brand equity (β = .69, t-value = 15.46). However, the intercorrelations between brand loyalty and perceived quality and between brand loyalty and brand associations were significant. Therefore, Yoo et al (2000) suggested that perceived quality and brand associations might affect brand equity by influencing brand loyalty first.

Yoo et al (2000) extended Aaker’s model in two ways (see Figure 1). First, the authors placed brand equity as a separate construct between the dimensions of brand equity and the value for the customer and the firm. They determined that brand equity is the value of a brand name, which can be high or low. By placing a separate brand equity construct within the model researchers could better understand how the dimensions of quality, brand loyalty, and brand associations contribute to brand equity. Second, the
researchers added marketing elements as antecedents of brand equity, assuming that they had a significant effect on the dimensions of brand equity. Yoo’s et al (2000) structural model of brand equity consisted of three components: overall brand equity, brand equity dimensions, and marketing mix elements. Marketing elements, adopted from Keller (1993), are related to the dimensions of brand equity, that is, perceived quality, brand loyalty, and brand associations combined with brand awareness, and these dimensions are then related to brand equity.

**Figure 1**  
Brand Equity Model (Yoo, Donthu, and Lee, 2000)

![Diagram of Brand Equity Model](image)

**Dimensions of Brand Equity**

image. Yoo, et al (2000, 2001) developed a multidimensional brand equity scale drawn from Aaker's and Keller's conceptualizations of brand equity. Yoo, et al (2000) propose a conceptual framework in which the four marketing mix elements (product, place, promotion, price) are related to the dimensions of brand equity, which are perceived quality, brand loyalty, and brand associations combined with brand awareness.

**Brand Associations**

Brand associations are information linked to the brand in memory and contain the meaning of the brand for consumers (Yoo et al, 2000). The strength of an association depends on the consumer processing information. Therefore, a strong association is an important feature of the brand and implies a strong link in the consumer's mind. Brand associations are important when it comes to determining brand equity (Keller, 1993; Aaker, 1996; Netemeyer, et al., 2004). Agarwal and Rao (1996) and Yoo, et al., (2000) found that brand associations have a positive influence on consumer choice, their intention to purchase, their stated WTP a price premium for the brand, and recommending the brand to others.

Brand associations that result in high brand awareness are positively related to brand equity because they can be a signal of quality and commitment (Yoo et al, 2000). Brand awareness with strong associations forms a specific brand image in the mind of consumers. Brand awareness is reflected in the consumer’s ability to identify the brand under different circumstances and is considered to be of particular importance in low involvement product categories, such as food (Keller, 1993).
Brand Loyalty

Aaker (1991) defines brand loyalty as a situation which reflects how likely a customer will be to switch to another brand, especially when that brand makes a change, in either in price or product features. Jensen and Drozdenko (2008) examined the price premium brand loyal customers would be willing to pay in order to remain loyal. A sample of 385 consumers was asked price expectations and brand preferences for ten different product categories. Products included: cereal, deodorant, HDTV, MP3, shirt, shoes, tires, toothpaste, vitamins, and watch. Findings indicate that 57-86% of non-loyal brand customers would buy the least expensive brand whose name they recognized, whereas brand loyal customers would pay an average of 15-37% more. Findings, however, differed by product category with HDTV’s acquiring just a 9-19% price premium, while shirts and blouses showed the highest of 22-53% price premium. These findings suggest that recognizable brand names are able to attract more buyers than lower priced unknown brands, even among bargain shoppers.

Kalyanaram and Little (1994) found that brand loyal customers have a wider range of acceptable prices. The authors analyzed scanner data from a consumer goods corporation for sweetened and unsweetened drink categories with four brands each. They found that brand loyal customers may have an internal reference price, and they judge other brands from that reference price. Rauyruen, Miller, and Groth (2009) analyzed data obtained using online and paper and pencil survey for a sample of 294 Australian small to medium sized enterprises. Their results indicated that willingness to pay a price premium is mainly driven by loyalty and suggested that price premium can be a very effective measure of loyalty.
Perceived Quality

Perceived quality is considered a primary part of brand equity and has been associated with the WTP a price premium, with brand purchase intent, and with brand choice (Netemeyer, Krishman, Pullig, Wang, Yagci, Dean, Ricks, and Wirth, 2004). The authors found internal validity among six product categories (colas, pastes, jeans, shoes, coffee, fast food chain) over 16 different brands (Coke, Pepsi, RC, Crest, Colgate, Close-up, Levi’s, Lee, Wrangler, Nike, Reebok, Fila, Community coffee, McDonald, Wendy, Burger King). The findings also suggested perceived quality was a potential direct antecedent of the willingness to pay a price premium for a brand, and that willingness to pay a price premium is a potential direct antecedent of brand purchase behavior.

Rao and Monroe (1989) analyzed previous research, which experimentally investigated the influence of price, brand name, and store name on buyer’s evaluations of product quality. A set of 36 studies that collectively reported 85 effects of price, brand name, and store name on perceptions of quality was used in the analysis. Results indicated that for consumer products, the relationships between price and perceived quality and between brand name and perceived quality are positive and statistically significant. Consumers who feel higher quality brands are in general higher priced will be more likely to pay higher price premiums.

Sethuramen and Cole (1999) sent out questionnaires to a sample of 350 randomly selected households from a medium sized Midwest metropolitan area, and twenty categories were selected from a list of top 100 dollar volume grocery products. The authors found that perceived quality accounts for about 12% of the variation in price
premiums across consumers and product categories and is also the most important variable influencing pricing premiums.

Reliability and Validity of the BE Model

Yoo and Donthu’s (2001) four-item measurement of brand equity is a measure of overall brand equity based on Aaker’s (1991) definition of brand equity, which is the incremental value added to a product given the brand name. The authors compared national brand names from three product categories (shoes, film, color television sets) to non branded merchandise but with identical product characteristics such as physical attributes, quality, and price. Yoo and Donthu (2001) pointed out that the difference in consumer response between the brand names from the three product categories and the no name brands could be interpreted as the brand equity of the brand name.

Yoo and Donthu (2001) developed two distinct brand equity scales: overall brand equity and multidimensional brand equity. The authors selected three product categories (shoes, film, color television sets) and surveyed 12 brands (Adidas, Asics, LA Gear, Nike, Puma, Reebok, Agfa, Fuji, Kodak, Konica, Samsung, Sony). The brands represent very different combinations of market factors such as price, quality, market share, brand and corporate reputation, marketing strategies, and country of origin. Three methods (Cronbach’s reliability, exploratory factor analysis, and confirmatory factor analysis) were used to select and assess the final items that would be used for the scale.

Yoo and Donthu (2001) administered questionnaires to a sample of 650 Korean participants in South Korea and 350 Korean American and 650 American participants. The authors used a set of 10 items to measure the multidimensional brand equity scale. The dimensions were significant at p < 0.0001. The Cronbach’s alpha reliability
coefficient of brand equity for brand loyalty was 0.60 for Americans, 0.56 for Korean Americans, and 0.69 for Koreans; 0.84, 0.95, and 0.53 for perceived quality; and 0.59, 0.43, and 0.46 for brand awareness/associations.

The overall brand equity scale was reduced using factor analysis to a final set of four items from an initial pool of 18 overall brand equity indicators. The reliability of the overall brand equity scale was 0.90, 0.89, and 0.90 for Americans, Korean Americans, and Koreans, respectively. This scale was developed primarily to evaluate the convergent validity of the multidimensional brand equity scale. According to Yoo and Donthu (2001), the correlation between the overall brand equity and the multidimensional brand equity index was 0.60, 0.63, and 0.59 (p < 0.0001) for Americans, Korean Americans, and Koreans, respectively. This high correlation supports the convergent validity of the multidimensional brand equity.

Washburn and Plank (2002) conducted an independent assessment of the Yoo and Donthu scale. The authors found the correlations between the overall brand equity model and the multidimensional brand equity model to be .661, .675, and .684. These correlations are very consistent to what Yoo and Donthu (2001) found. Washburn and Plank (2002) view Yoo and Donthu’s (2001) scale as a valued initial step in developing a recognized tool for measuring consumer-based brand equity.

Atilgan, Aksoy, and Akinci (2005) explored the generalizability of the brand equity measurement devised by Yoo et al (2000), by retesting the brand equity dimensions. The authors investigated the causal relationships between the dimensions of brand equity and brand equity itself, and specifically measured the way in which consumers’ perceptions of the dimensions of brand equity affected the overall brand equity evaluations. The study
found that brand loyalty is the most influential dimension of brand equity. Weak support is found for the brand awareness and perceived quality dimensions.

Yu, Zhao, and Wang (2008) stated that Yoo and Donthu’s (2001) brand equity scale suggests a good direction to develop a measure model of customer based brand equity. In addition, Yoo and Donthu’s (2001) study was conducted using samples from developed markets such as United States and Korea, and that studies using samples from other cultures are needed to develop a more broad scale of brand equity. However, the authors pointed out the flaw of Yoo and Donthu brand equity scale is that the theoretical foundation was limited mainly to Aaker’s conceptualizations of brand equity, which includes brand loyalty, brand awareness, perceived quality, and brand associations. The authors indicated the brand equity model Yoo and Donthu proposed is not a strong measurement of what causes brand equity to occur, which focuses more on consumer behavior studies (Yu et al, 2008). The flaw does not affect the usage of the brand equity scale in this study.

Therefore, Yoo and Donthu (2001) brand equity scale will be used to determine consumers’ brand equity in this study.

Research Question 1: What are consumers perceived brand equity of branded apparel products?

**Willingness to Pay**

A person’s willingness to pay (WTP) for a product is an indication of the dollar value they attach to the product at that point in time (Werternbroch and Skiera, 2002). The WTP for one more unit is therefore a dollar measure of the benefits the extra unit gives them. Recent research on WTP has focused primarily on organic food products.
Wang (2007) found that consumers with stronger positive attitudes towards organic food perceive higher values in organic food and believe organic food should be more expensive. They also tend to be less price sensitive and willing to pay an extra 5%-30% for different organic products. Yue, Alfnes, and Jensen (2009) investigated how cosmetic damage affects consumers’ WTP for apples. They found that 75% of the participants are willing to pay more for organic than for conventional apples given identical appearance. However, Bernard and Bernard (2009) found that the WTP for price premiums on rBST-free and no antibiotics versions of milk were not statistically different than the organic premium.

Little research has been conducted on apparel products and consumer’s willingness to pay. Studies that have been done on apparel products are in relation to organic fibers or environmentally friendly products. Casadesus-Masanell, Crooke, Reinhardt, and Vasishth (2009) found that consumers are willing to pay more, $6.58 more, for flannel shirts made of organic cotton than for flannel shirts made of conventional cotton. Hustvedt and Bernard (2008) also found that consumers are willing to pay a price premium for socks that are labeled organic. However, minimal research has been done on brand versus non-brand apparel products.

Research Question 2: Are consumers willing to pay a price premium for branded apparel products and if so, what is that price premium?

**Price Premiums and Brands**

There is an abundance of theoretical literature suggesting that WTP a price premium is related to brand equity and its dimensions. Price premium is considered to be the most useful measure of brand equity (Sethuramen and Cole, 1999). Each dimension of the
brand equity has an impact on the price consumers are willing to pay for the brand (Aaker, 1996; Sethuramen and Cole, 1999). Price premium reflects the brands ability to command a higher price than its competitors and is considered important for all types of brands, despite actual price position within a category (Sethuramen, 2003; Agarwal and Rao, 1996). Sethuramen (2003) found that brand equity is a main component of consumers’ willingness to pay a premium for national brands relative to store brands. The study show that nearly 80% of the premium that consumers would pay for national brands over store brands can be attributed to brand equity.

Other research has shown that for categories where consumers believe there is a high correlation between price and quality, consumers stated they would be willing to pay a higher premium for national brands. Sethuraman and Cole (1999) and Sethuramen (2003) found that since consumers generally believe that national brands, products sold in department stores or products of non-local origin are of better quality, they would be more willing to pay higher prices for national rather than store branded products. The authors surveyed consumers for their perceptions of price and quality of national and store brands across 20 product categories. They show that a perceived quality differential increased the ability of national brands to receive price premiums over store brands.

**Willingness to Pay a Price Premium in Brands**

Brand equity comes from the trust that consumers place in a brand than they do in its competitors. This trust translates into consumers’ loyalty and their WTP a price premium for the brand (Blackston, 1995). Netemeyer et al (2004) created a model indicating that perceived quality or perceived value for the cost are direct antecedents of the WTP a
price premium for a brand. In addition, the authors added that WTP a price premium directly affects brand purchase behavior.

Ding, Ross, and Rao (2010) proposed a model that builds on classic utility theory, improved with two well documented behavioral regularities, which are: consumers infer quality information from a product’s price and consumers have a reference price for a given product. How customers perceive brands and what motivates them to pay price premium is an important theme in research on brand equity.

Hustvedt and Bernard (2010) examined changes in consumer willingness to pay for apparel products as labor related information and brand were added. They found that by adding brand information, WTP is significantly increased for two better-known brands. Participants were asked to rank the brands based on familiarity, while brand 1 and brand 2 were better known national brands, brand 3 was significantly less familiar, only 22% of consumer had heard of the brand, compared with brand 1, 67% familiarity, and brand 2, 98% familiarity. The brand name significantly impacted WTP with brand 1 and brand 2 both receiving significantly higher bids. The significantly lower WTP for brand 3 was likely related to its lower familiarity ranking. This suggested a much wider WTP range for the brand with some participants offering only relatively small premiums and others with relatively large premiums.

Brand premiums are very significant sources of revenue increase. In a detailed study of one community, research found that community brands can gain very powerful positive associations within community memberships, and that many members are willing to pay considerable premiums for products bearing the community brand (Fueller, 2008). For grocery products across 20 product categories, national brands on average
achieve a price premium of 35% compared to private label brands (Sethuraman and Cole 1999). In the luxury segment, top brands achieve price premiums between 20-200% over normal brands in the segment (Coyler 2005). Existing literature indicates that brands in general are related to consumers’ willingness to pay a price premium, regardless of its brand status.

Hypothesis 1: Consumers with higher levels of brand equity, for a particular brand, will be willing to pay a higher price premium.

**Assessing WTP Methods**

Past literature measuring WTP used stated preference data. In stated preference methods, participants either do not take real possession of the goods or do not use their own money, which creates a bias (Lusk and Shogren, 2007). This study used an experimental auction methodology in a field setting, which avoids the stated WTP bias by producing revealed preference data that uses actual consumer decisions in a real market setting.

A well-known incentive compatible auction method is the BDM procedure introduced by the authors Becker, Degroot, and Marshak (Becker et al, 1964), which was used in this study. The BDM procedure was tested by a number of researchers for its ability to measure WTP (Breidert, 2006; Lusk, Fox, Shroeder, Mintert, and Koohmaraine, 2001; Didier and Lucie, 2008). Lusk et al (2001) elicited individuals WTP using the BDM mechanism for steak tenderness in a grocery store setting. They indicated that the BDM method provides incentives for participants to accurately represent their preferences. In another study, Didier and Lucie (2008) used the BDM mechanism to measure consumers’ WTP for organic and Fair Trade products in a lab setting. The
authors indicated that by using an experimental method, it creates a context close to a real buying situation and ensures subjects would act in the laboratory as they would act in reality, reducing social desirability bias (Didier and Lucie, 2008).

Wertenbroch and Skiera (2002) tested it together with a Vickrey auction in a field experiment with a purchase obligation for the participants. The participants easily understood the BDM method and few of the individuals approached refused to participate. Validity was determined by linking the estimated WTP to data from an additional questionnaire asking the participants to rate their desire towards the tested products. After the experiment the participants rated how satisfied they were with their purchase. The buyers as well as the non-buyers were extremely satisfied with the outcome of the BDM experiment. This result indicated that BDM does not experience the overbidding bias, which is found in some Vickery auctions (Wertenbroch and Skiera 2002), and the BDM procedure motivates subjects to reveal their preference honestly for a given product through their WTP (Didier and Lucie, 2008; Lusk et al, 2001) Research using experimental auctions for estimating products’ WTP is rather limited in branded apparel products. However, experimental auction methodology can deliver useful information for understanding consumers’ behavior response to different prices (Breidert, 2006).
CHAPTER THREE

METHODOLOGY

The relationship between brand equity and consumers’ willingness to pay a price premium for branded apparel products using revealed preference methodology is evaluated in this study. This chapter describes the conceptual framework, the data collection method, and the data analysis.

Conceptual Framework

Economic Value Theory

Economic value is one of many possible ways to define and measure value. Measures of economic value are based on what people want, which reflect their preferences. Therefore, the theory of economic value is based on individual preferences and choices. People express their preferences through the choices and tradeoffs that they make, given certain constraints, such as income or available time (Lusk and Shogren, 2007).

Economic value is measured by the maximum amount someone is willing to give up in other goods and services in order to obtain another good or service (Lusk and Shogren, 2007). In a market economy, dollars are a universally accepted measure of economic value, and the number of dollars that a person is willing to pay for something tells how much of all other goods and services they are willing to give up to get that item. This is referred to as “willingness to pay” (Lusk and Shogren, 2007).

Revealed vs. Stated WTP

Researchers have developed many value elicitation methods to tease out how people value various goods and services (Loureiro, McCluskey, and Mittelhammer, 2003). These
methods can be broadly categorized as revealed or stated preference methods. Revealed preference research uses actual consumer decisions to indicate consumer preferences for goods in both market and non-market contexts. Stated preference methods ask people questions that are intended to elicit their preferences for a good without requiring that the consumer act accordingly (Loureiro et al, 2003). Stated preference is commonly criticized because of the hypothetical nature of the questions, and the fact that actual behavior is not observed (Loureiro et al, 2003). Researchers do not use hypothetical situations often because in some cases they result in the measurement of perceived or potential behavior, rather than real behavior (Loureiro et al, 2003).

Cummings, Harrison, and Rutstrom (1995) conducted three economic experiments comparing real purchasing behavior for private goods with dichotomous choice questions. They found that the proportion of choice “yes” responses exceeds the proportion of actual purchases. Huang, Haab, and Whitehead (1997) concluded that one limitation of stated preference data is that behavioral intentions are not actual behavior, while observable behavior is needed to reveal and measure actual economic value.

Neill, Cummings, Ganderton, Harrison, and McGuckin (1994) and Loomis, Brown, Lucero, and Peterson (1996) reject the equality hypothesis of revealed and stated WTP. Both studies found that hypothetical statements of WTP are greater than real payments (revealed) of WTP for market goods. Therefore, stated WTP is not considered a reliable or valid indication of true WTP of a good for a consumer.

Experimental Auctions

Experimental auctions provide researchers an opportunity to elicit revealed WTP for consumer products. An experimental auction is a tool that can be used to elicit a
participant’s private willingness to pay values in a truthful manner (Lusk and Shogren, 2007). Willingness to pay is determined by having participants bid for a product or certain attributes, using real money at the time of the auction as opposed to a hypothetical situation that is simply presented in a survey (Lusk and Shogren, 2007). Experimental auctions use real money and real goods to create a market situation where people’s attention is focused on the determined value. Each person submits a bid that, in theory, is equal to his or her value for the good. This provides an effective way to determine a consumer’s true willingness to pay (WTP). Experimental auctions avoid the problem of stated WTP estimation because they involve individuals exchanging real money for real goods in an active market (Lusk and Shogren, 2007). Therefore, an experimental auction will be used to determine a consumer’s WTP a price premium for branded apparel products.

BDM Experimental Auction Method and Survey

The Becker-Degroot-Marshack (BDM) Experimental Auction mechanism (Becker et al, 1964) was used in this study with the endow-and-upgrade approach to determine the participants WTP. The BDM auction is not a typical auction where participants bid against one another, rather, subjects participate in the auction individually. In the BDM auction procedures for this study, participants were endowed with a generic non-branded t-shirt and asked whether they wished to upgrade to a branded t-shirt, Hanes or Fruit of the Loom. If participants wished to upgrade, they were asked to indicate or bid the maximum additional amount they were willing to pay to obtain that branded t-shirt. This was repeated twice, once for each brand. Participants were informed that only one of the two products would be randomly determined as the binding product in the auction. A
random price premium generator was used to create values for the participants to bid against. Values created were between $1 to $5 in dollar increments. If the participant’s bid was higher than the randomly generated price premium, they ‘won’ the auction and paid that premium to upgrade to that branded product. The participant did not pay the most they were willing to pay, instead they paid the lower randomly drawn price premium. This procedure ensured that the auction was incentive compatible. In other words, the participant had the incentive to reveal their true WTP. If the participant bid more than their true WTP they may have had to purchase the good at a price higher than they were actually willing to pay. If the participant bid less than their true WTP, they may have miss out on purchasing the product that was of value to them.

The BDM mechanism has been proven useful for eliciting values in field settings, where the experiment took place. Location of the experiment was conducted at the Student Recreational Center and the Compton Union Building at Washington State University. According to Lusk and Shogren (2007), there are three reasons why conducting the auction in a field setting rather than in a laboratory setting is better. First, subjects self-select into the market, therefore, sample selection biases are of less concern as the population of interest is directly intercepted. Second, in a field setting, subjects are able to bring all their acquired knowledge to perform the task at hand. And third, many times, field experiments provide interesting tests of the effect of market experience on behavior. Consequently, experimental auctions conducted in the field could have results that have higher external validity. Results from the auction would be more applicable to the real world because participants actually act like real consumers. Since BDM auctions may be conducted in the field, it is possible to target the population of interest.
The goal of this research is to determine the relationship between brand equity and consumers’ WTP a price premium for branded t-shirts. A brand equity scale developed by Yoo, Donthu, and Lee (2001) was used to measure brand equity. Brand equity was measured with a multidimensional brand equity scale, which includes perceived quality, brand loyalty, and brand awareness with strong brand associations (see Table 1). In addition, questions about demographics, previous branded athletic t-shirt experience, the importance of apparel attributes, and their beliefs about brands were included as well.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Multidimensional Brand Equity Scale (Yoo, Donthu, and Lee, 2001)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBE Questions</td>
<td></td>
</tr>
<tr>
<td>1)</td>
<td>The likely quality of ________ is extremely high.</td>
</tr>
<tr>
<td>2)</td>
<td>The likelihood that ________ would be functional is very high.</td>
</tr>
<tr>
<td>3)</td>
<td>I consider myself to be loyal to _________.</td>
</tr>
<tr>
<td>4)</td>
<td>________ would be my first choice.</td>
</tr>
<tr>
<td>5)</td>
<td>I will not buy other brands if ________ is available at the store.</td>
</tr>
<tr>
<td>6)</td>
<td>I can recognize ________ among other competing brands.</td>
</tr>
<tr>
<td>7)</td>
<td>I am aware of _________.</td>
</tr>
<tr>
<td>8)</td>
<td>Some characteristics of ________ come to my mind quickly.</td>
</tr>
<tr>
<td>9)</td>
<td>I can quickly recall the symbol or logo of _________.</td>
</tr>
<tr>
<td>10)</td>
<td>I have difficulty in imagining ________ in my mind.</td>
</tr>
</tbody>
</table>

Note: Likert scale to express agreement with BE dimensions. 0= No opinion 1= Strongly disagree 2= Somewhat disagree 3= Not sure 4= Somewhat agree 5= Strongly agree

**Data Collection Method**

Data collection consisted of an experimental auction with a follow up survey. A consumer intercept model was used to recruit participants in the Student Recreational Center and the Compton Union Building at Washington State University. Participants were endowed with a non-branded t-shirt and then asked if they wish to upgrade to two
different branded alternatives, Hanes and Fruit of the Loom (FOL). T-shirts were the chosen product because they are inexpensive, unisex, and familiar (Hustvedt and Bernard, 2008). The two brands were chosen because of their high status and familiarity among consumers. According to Retailing Today (2010), both Hanes and Fruit of the Loom ranked within the top 5 brands in women’s, men’s, and children’s apparel.

Experimental Auction (BDM) Bidding Procedure

Step 1: Participants were recruited near the entrance of the Student Recreational Center and the Compton Union Building. Participants were informed that we are researchers from Washington State University conducting an in field consumer study, and that participants were compensated with a $5.00 gift card for 10-15 minutes of their time.

Step 2: Participants were provided with oral and written instructions on the BDM mechanism. Researchers explained to the participants that they have the opportunity to bid on two distinct brands of t-shirts, if they wish to.

Step 3: Participants were endowed with a generic t-shirt, in which they are free to keep and take. Participants were then shown two different branded t-shirts, identical in every visible way except brand to the generic t-shirt they have in their possession, and ask if they would be willing to upgrade to the branded t-shirts.

Step 4: Participants were informed that only one of the two product bids was to be binding and that product was randomly determined.

Step 5: If participants wished to upgrade, they were asked to submit a bid for how much more they are WTP for each of the branded t-shirts.
Step 6: If the participant’s bid for the binding branded t-shirt exceeded the value of the randomly drawn price premium for that branded t-shirt, they exchanged their generic t-shirt for this binding branded t-shirt and paid the randomly drawn price premium.

Step 7: Participants were then asked to complete a survey.

Following is a flow chart that explains the bidding process (see Figure 2)

Figure 2
Bidding Process

Endowment

Upgrade  Don’t Upgrade

Random Determination of Binding Product  No Obligation

Bid

Bid ≥ Random Drawn Price  Bid < Random Drawn Price

Buying Obligation  No Buying Obligation
Data Analysis

The first research question, “What are consumers perceived brand equity of branded apparel products?” was analyzed using a composite score on the multidimensional brand equity measure (Yoo et al, 2000), which was the sum of all the brand equity scores gathered in the survey.

The second research question, “Are consumers willing to pay a price premium for branded apparel products and if so, what is that price premium?” was analyzed using descriptive statistics. With descriptive statistics, the data provided a summary of the price premiums participants were willing to pay for branded apparel products.

For hypothesis 1, “Consumers with higher levels of brand equity, for a particular brand, will be willing to pay a higher price premium,” a Tobit regression analysis was used to analyze the data and quantify the relationship between brand equity to willingness to pay a price premium.
CHAPTER FOUR

RESULTS

The purpose of this study was to determine the relationship between brand equity and consumers’ willingness to pay a price premium for branded apparel products using revealed preference methodology. A consumer intercept model was used to recruit participants for an experimental auction followed with a survey. Data was collected at Washington State University. Chapter four will review the findings, answer the research questions, and relate the findings to existing research. Sample demographic characteristics, brand equity scores and WTP frequencies, and WTP predictive models will be included.

Sample

Experimental results and surveys were collected from 100 participants. Data were collected in two days at the Student Recreational Center and the Compton Union Building on campus. Demographic information collected included gender, age, education, race, and income. Participants also indicated their previous experience with branded t-shirts by answering if they had bought branded athletic t-shirts, bought Hanes or Fruit of the Loom (FOL), and own branded athletic t-shirts (see Table 2). The samples are ranged between 18 and 46 and above years of age, with 86 percent aged 18-24. Gender was evenly distributed between female (51%) and male (49%). Majority of participants are currently enrolled in college (77%) with 63 percent White/Caucasian. Household income of participants ranged from 30 percent making less than $20,000 to 24 percent making between $60,000-$80,000. When participants were asked whether they had bought
branded athletic t-shirts, Hanes or FOL, or own branded athletic t-shirts, statistics show a majority responded yes to all three questions.

<table>
<thead>
<tr>
<th>Characteristics</th>
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<tr>
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<td>No opinion</td>
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</table>

Bought branded athletic t-shirts

<table>
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<tr>
<th></th>
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Bought any Hanes

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<tr>
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<td>76</td>
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</table>

Bought any Fruit of the Loon

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</thead>
<tbody>
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<td>25</td>
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<tr>
<td>Yes</td>
<td>75</td>
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</table>

Own any branded athletic t-shirts

<table>
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<td>13</td>
</tr>
<tr>
<td>Yes</td>
<td>87</td>
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</tr>
</tbody>
</table>
Brand Equity Score

Participants completed a 5-point Likert scale (1=Strongly disagree, 5=Strongly agree) for assessing brand equity. A no opinion option was scored as 0. The numerical values of responses were averaged to create a composite score indicating the brand equity (BE) score for Hanes and FOL (see Table 3). Yoo and Donthu (2001) indicated that a composite score based on the average is an acceptable proxy for multidimensional brand equity. The average was adjusted for participants who indicated a no opinion option, which was considered as incomplete. For example, there are 10 multidimensional brand equity questions, so if a participant answered one of those questions as no opinion, the average would be out of 9. Frequency distribution of the BE scores are shown on Table 4 and 5. Participants (56%) indicated their BE score for Hanes was between 3.1 and 4 with a mean score of 3.4. Similar to Hanes, 58 percent of participants FOL BE scores ranged from 3.1 to 4 with a mean score of 3.5.

The results answer the first research question, “What are consumers perceived brand equity of branded apparel products?” Consumers’ perceived brand equity of branded apparel products on a scale of 1-5, Hanes and FOL BE scores were 3.4 and 3.5 indicating a moderate BE score for both brands. This indicates that participants in the sample have a moderate positive value added to the Hanes and FOL brands.

| Table 3 |
|---|---|---|---|---|
| **BE and WTP Price Premium Summary Statistics for Hanes and Fruit of the Loom** | Hanes BE | FOL BE | WTP_H | WTP_FOL |
| Mean | 3.375 | 3.485 | $2.44 | $2.69 |
| Std. Deviation | 0.612 | 0.637 | $2.503 | $2.919 |
| Minimum | 1.0 | 1.9 | $0 | $0 |
| Maximum | 4.8 | 5.0 | $15 | $15 |
| Note: N = 100 | | | | |
Willingness to Pay a Price Premium Distribution

The BDM method with an endow and upgrade approach was used to elicit the participant’s WTP. Participants were asked to bid how much more they are willing to pay to upgrade to a Hanes or FOL t-shirt from a generic non-branded t-shirt. Table 3 shows the mean price premium participants indicated they were WTP for a Hanes t-shirt at $2.44 and for a FOL t-shirt was $2.69. The minimum amount for both brands was $0, and the maximum amount was $15. Frequency distribution describing participants’ price premiums is shown in Table 6 and Table 7. For Hanes, 29 percent of the sample was not willing to pay more to upgrade from a generic non-branded t-shirt. As for FOL, 28
percent was not willing to pay more to upgrade. A majority of the participants were willing to upgrade to either a Hanes or FOL t-shirt. For Hanes, bids ranged between $1-$1.99 (13%), $2-$2.99 (13%), $3-$3.99 (16%), and $5-$5.99 (12%). As for FOL, bids also ranged between $1-$1.99 (7%), $2-$2.99 (23%), $3-$3.99 (15%), and $5-$5.99 (12%).

The result answers the second research question, “Are consumers willing to pay a price premium for branded apparel products and if so, what is that price premium?” Consumers are willing to pay a price premium for branded apparel products, and their average price premium was $2.44 for Hanes and $2.69 for FOL.

Table 6
WTP Price Premium Frequencies

<table>
<thead>
<tr>
<th>WTPp for Hanes</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 - $0.99</td>
<td>29</td>
<td>29.0</td>
</tr>
<tr>
<td>$1 - $1.99</td>
<td>13</td>
<td>13.0</td>
</tr>
<tr>
<td>$2 - $2.99</td>
<td>13</td>
<td>13.0</td>
</tr>
<tr>
<td>$3 - $3.99</td>
<td>16</td>
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<td>$5 - $5.99</td>
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<td>$8 - $8.99</td>
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<tr>
<td>$10 - $10.99</td>
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</tr>
<tr>
<td>$15 - $15.99</td>
<td>1</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Note. N = 100
Relationship between brand equity and willingness to pay a price premium

A Tobit regression analysis was used to analyze the relationship between WTP and the BE score and BE dimensions separately (refer to Table 1 for BE dimensions). Bids of zero were observed in 30 percent of the observations for WTP a price premium for branded t-shirts. The Tobit technique accounted for this low bid (i.e. zero) censoring. In the survey that followed the experiment, participants were asked to indicate their previous branded athletic t-shirt experience, the importance of apparel attributes, and their beliefs about brand. The importance of apparel attributes include importance of price, appearance of quality, touch/feel of textile, fit, variety/choice, fiber content, country of origin, and brand. Their beliefs about brands include “branded is better quality than non-branded”, “more fashionable than non-branded”, “fits better than non-branded”, and “more choices than non-branded”.

### Table 7
**WTP Price Premium Frequencies**

<table>
<thead>
<tr>
<th>WTPp for FOL</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 - $0.99</td>
<td>28</td>
<td>28.0</td>
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<tr>
<td>$1 - $1.99</td>
<td>7</td>
<td>7.0</td>
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<td>$5 - $5.99</td>
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<tr>
<td>$15 - $15.99</td>
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</table>

Note: N = 100
Total of four models were created to assess the relationship between brand equity and willingness to pay a price premium. Two models regressed the price premium of Hanes and FOL to BE scores, demographics, previous brand experience, product attributes, and beliefs about brands. Another two models regressed the price premium of Hanes and FOL to BE dimensions, demographics, previous brand experience, product attributes, and beliefs about brand. Independent variables with a high level of insignificance to WTP a price premium were eliminated systematically, resulting in models with significant predictors of WTP. In addition, as race was coded as a categorical variable with 8 levels, dummy variables were created for each race category that took the value 0 or 1 to indicate the presence of a categorical effect.

Model 1

WTP a price premium for Hanes was regressed on the overall Hanes BE score, demographics, previous brand experience, importance of product attributes, and beliefs about brands. The BE Hanes score was a significant predictor of WTP a price premium (p = 0.011) (see Table 8). This indicates that consumers who place a higher equity on Hanes brand t-shirts are willing to pay for the t-shirt. In addition, other variables were significant predictors of a participant’s WTP a price premium for a Hanes t-shirt. Importance of the brand (p = 0.037) and a belief that there are more choices in brands (p = 0.008) were positively related to WTP a price premium. Consumers who place more importance on a brand and believe that there are more choices in branded apparel are willing to pay more. Importance of the feel of textile (p = 0.044) was found to be negatively related to WTP a price premium. Consumers who were willing to pay more for a Hanes t-shirt placed a lower level of importance on the feel of textile. Pseudo R-
square was .062 indicating that the model was able to account for 6% of the variability in a participant’s WTP.

Table 8
Model 1 - WTP price premium of Hanes to BE composite score and other variables

| WTPp for Hanes | Coef. | Std.Err. | P > |t| |
|---------------|-------|----------|-----|---|
| Location      | -0.845| 0.653    | 0.198|
| Hanes BE score| 1.294 | 0.501    | 0.011|
| Importance feel of textile | -0.778| 0.381 | 0.044 |
| Importance of brand | 0.728 | 0.345 | 0.037 |
| More choices in brand | 0.850 | 0.315 | 0.008 |

Note: N = 100. R^2 = .062. Significant at the .05 level.

Model 2

WTP a price premium for FOL was regressed on the overall FOL BE score, demographics, previous brand experience, importance of product attributes, and beliefs about brands. The BE FOL score was a significant predictor of WTP a price premium (p = 0.032) (see Table 9). This indicates that consumers who place a higher equity on FOL brand t-shirts are willing to pay more for the t-shirt. In addition, other variables were significant predictors of a participant’s WTP a price premium for a FOL t-shirt. Owning a branded athletic t-shirts (p = 0.051) and the belief that there are more choices in brands (p = 0.000) were positively related to WTP a price premium. Consumers who own a branded athletic t-shirts and believe that there are more choices in branded apparel are willing to pay more. Participant’s previous purchase of branded athletic t-shirts (p = 0.042) was found to be negatively related to WTP a price premium. Consumers who were willing to pay a price premium for FOL had not necessarily had previous experience purchasing branded t-shirts. Pseudo R-square was .064 indicating that the model was able to account for 6% of the variability in a participant’s WTP.
Model 3

WTP a price premium for Hanes was regressed on the ten BE dimensions questions (refer to Table 1 for BE dimensions), demographics, previous brand experience, importance of product attributes, and beliefs about brands. The model indicated that perceived quality (p = 0.014) and level of brand recognition (p = 0.007) were positively related to WTP a price premium (see Table 10). Participants who felt that Hanes brand t-shirts were high quality and felt they could easily recognize the brand among competing brands were willing to pay a higher price premium. In addition, other variables were significant predictors of a participant’s WTP a price premium for a Hanes t-shirt. Importance of the brand (p = 0.018) and a belief that there are more choices in brands (p = 0.011) were positively related to WTP a price premium. Consumers who place more importance on a brand and believe that there are more choices in branded apparel are willing to pay more. Pseudo R-square was 0.090 indicating that the model was able to account for 9% of the variability in a participant’s WTP.
Model 4

WTP a price premium for FOL was regressed on the ten BE dimensions questions (refer to Table 1 for BE dimensions), demographics, previous brand experience, importance of product attributes, and beliefs about brands. The model indicated that perceived quality ($p = 0.016$) and preference for FOL over other available brands ($p = 0.032$) were positively related to WTP a price premium (Table 11). Participants who felt that FOL brand t-shirts were high quality and preferred FOL over other available brands had a higher WTP a price premium. Level of loyalty ($p = 0.029$) was found to be negatively related to WTP a price premium. Participants who are more loyal to the brand were less willing to pay a price premium. In addition, other variables were significant predictors of a participant’s WTP a price premium for a FOL t-shirt. Importance of country of origin ($p = 0.009$) and a belief that there are more choices in brands ($p = 0.001$) were positively related to WTP a price premium. Consumers who place more importance on the country of origin and believe that there are more choices in branded apparel are willing to pay more. Participants’ previous purchase of branded athletic t-shirts
(p = 0.027) was found to be negatively related to WTP a price premium. Consumers who are willing to pay a price premium for FOL had not necessarily had previous experience purchasing branded t-shirts. Pseudo R-square was 0.099 indicating that the model was able to account for 10% of the variability in a participant’s WTP.

**Table 11**

| Independent variables | Coef. | Std.Err. | P > |t| |
|-----------------------|-------|----------|-----|-----|
| Location              | -0.628| 0.703    | 0.374| |
| Race                  | 3.346 | 1.770    | 0.062| |
| **Bought brand t-shirts** | -3.269| 1.451    | **0.027**| |
| Own brand t-shirts    | 2.120 | 1.308    | 0.109| |
| Quality               | 1.012 | 0.410    | **0.016**| |
| Loyal                 | -0.861| 0.387    | **0.029**| |
| Availability          | 0.943 | 0.433    | **0.032**| |
| Importance of origin  | 0.895 | 0.332    | **0.009**| |
| More choices in brand | 1.225 | 0.339    | **0.001**| |

Note: N = 100. R^2 = 0.099. Significant at the .05 level.

**Discussion**

The purpose of this study was to determine the relationship between brand equity and consumers’ willingness to pay a price premium for branded apparel products using revealed preference methodology. The findings show that BE is significantly related to WTP a price premium for Hanes and FOL in a revealed preference experiment. Hypothesis 1 was supported.

Demographics were not significant predictors of WTP. Therefore, gender, age, education, race, and income did not influence a consumer’s WTP a price premium. Data were collected at two different locations on the Washington State University campus. It
was determined that location was not a significant predictor of WTP, indicating the ability to pool the data.

Even though there is a relationship between the composite BE score and consumers’ WTP a price premium, the dimensions of BE were not all positively related to WTP. Perceived quality was found positively related to WTP a price premium for Hanes and FOL, holding all other independent variables constant, which indicates that consumers who perceive those brands to be of a higher quality were willing to pay more for that brand. Recognition, which is brand association/awareness, was found positively related to the Hanes brand only, holding all other independent variables constant, which indicates that consumers who have a higher association/awareness of the Hanes brand may be willing to pay more. Brand loyalty, however, was found negatively related to WTP a price premium for FOL, holding all other independent variables constant, which indicates consumers who are more loyal to FOL, may not have a higher WTP.

Consistent with the literature, Rao and Monroe (1989) indicated that for consumer products, the relationships between price and perceived quality and between brand name and perceived quality are positive and statistically significant. Netemeyer et al (2004) created a model indicating that perceived quality was a direct antecedent of the WTP a price premium for a brand and that WTP a price premium directly affects brand purchase behavior. The findings in this research support Rao and Monroe (1989) and Netermeyer et al (2004) that in both brands, Hanes and FOL, perceived quality was an indicator of WTP a price premium and was positive and statistically significant.

From the literature, Sethuraman and Cole (1999) and Sethuramen (2003) found that consumers would be more willing to pay higher prices for national rather than store
branded products. These researchers used stated WTP through surveys across grocery product categories. However, their conclusions are similar. Results from the current study show that participants are willing to pay an average of $2 to $3 more to upgrade from a generic non-branded t-shirt to a branded t-shirt. Stated WTP preference indicated a higher WTP for branded products and revealed WTP preference in this study supported the findings.

In addition, results from this study showed that the ability to easily recognize the Hanes brand among competing brands was positively related to WTP a price premium, holding all other independent variables constant. Hustevedt and Bernard (2010) found that by adding brand, WTP was significantly increased. The brand names with high familiarity significantly impacted WTP and received higher bids. Findings from this study support Hustedvt and Bernard’s (2010) findings, which also used revealed preference methodology. Also consistent with this study’s findings, Fueller (2008) indicated that brands had positive associations within communities, and brands bearing the community brand had higher WTP price premiums. Even among luxury brands, highly recognized brands achieve higher WTP price premiums over generic brands (Coyler, 2005).

Results from this study show brand loyalty was negatively related to WTP a price premium for FOL, holding all other independent variables constant. Meaning that holding the value of other variables constant in the model, loyalty had a negative correlation. Past literature indicates that brand loyal customers would be willing to pay a price premium in order to remain loyal (Jensen and Drozdenko, 2008), and brand loyal customers have a wider range of acceptable prices (Kalyanaram and Little, 1994). In another study,
Rauyruen, Miller, and Groth (2009) indicated that willingness to pay a price premium was significantly driven by loyalty and suggested that price premium could be a very effective measure of loyalty. Simple regression analysis indicated that brand loyalty was positively correlated to WTP a price premium for FOL, however, this relationship was not statistically significant at the .05 level. Simple regression assumes that all other 9 variables are uncorrelated with loyalty and that is not true.
CHAPTER FIVE

CONCLUSIONS

The purpose of this study was to determine the relationship between brand equity and consumers’ willingness to pay a price premium for branded apparel products using revealed preference methodology. The objectives identified to better understand this relationship were as follows: 1) Determine consumers perceived brand equity of branded apparel products; 2) Identify consumers WTP for branded apparel products; and 3) Determine the relationship between brand equity to price premiums.

This chapter summarizes the findings through implications to the field of apparel merchandising and business retailers, and recommendations for future research are included.

This study showed that brand equity is an indicator of consumers’ WTP a price premium for branded apparel. Past research linking brand equity to price premiums has shown that consumers are willing to pay a price premium for branded apparel products. These studies utilized stated preference data collection methods that exhibit social desirability bias and are known to display poor validity. The purpose this research was to determine if the use of revealed preference methodology would yield similar results. It is the case with this sample that consumers are willing to pay a price premium for branded t-shirts over non-branded t-shirts. Consumers value brands and are willing to pay more for them. Therefore, marketers and merchandisers should develop and manage brand equity for apparel products to make effective marketing decisions and enhance profitability.
Consumers placed higher brand equity on Hanes and FOL brands, although equity scores were moderate. The previously discussed higher brand equity scores yield higher price premiums. Different brands may yield higher price premiums among this age group, such as luxury brands. Marketing efforts need to be placed on building brand equity. Brand equity is an important aspect for all businesses who wish to develop a premium brand. Consumers are willing to pay more for a brand when they value the brand more.

Consistent with the literature, consumers in this study indicated they were willing to pay more for brands that they perceive to have higher quality. In addition, consumers who placed more importance on brand when making clothing purchases had a higher willingness to pay. Apparel retailers should focus their marketing efforts on emphasizing brand names and improving the perceived quality of brands to increase price premiums. In recessionary times, perceived quality is very important in consumers’ purchasing decisions (Bohlen, Carlotti, and Mihas, 2010).

Consumers in this study who believed there are more choices in branded apparel were willing to pay more. This has implications to visual merchandising and assortment planning. Efforts should be made by retailers to maximize choices, such as color and style, when carrying branded merchandise.

Consumers in this study also indicated they were willing to pay more when they recognize a certain brand, such as Hanes, among other competing brands. In addition, consumers who prefer FOL over other available brands were willing to pay more. This shows that familiarity among brands is important. When consumers are aware of a brand, they are more likely to purchase that brand when it is made available to them. Efforts should be made to optimize positioning of branded products to maximize visibility. This
also signifies the importance of visibility in the media to promote familiarity and recognition.

Consumers in this study placed a higher level of importance on country of origin in branded apparel products when it came to WTP a price premium. Research indicates that branded apparel products made in a developing country are perceived as lower quality and consumers may not be willing to pay a price premium (Bilkey and Nes, 1982). Apparel retailers should be aware of this and educate consumers that country of origin may not be a direct indicator of product quality. It is important to build a well recognizable brand image and a perception of high quality, regardless of country of origin.

These models accounted for a limited amount of the variability in WTP. Other factors that influenced WTP using revealed preference methodologies should be explored. Factors that may affect consumers’ WTP could be the influence of peers on consumers’ purchase decisions. Fueller (2008) found that community brands can gain very powerful positive associations within community memberships, and that many members are willing to pay considerable premiums for products bearing the community brand.

Other considerations would be the culture of the consumers, the labeling of the brand, the environmental friendliness of the brand, and whether the brand is luxury. Studies show that in the luxury segment, top brands achieve price premiums between 20-200% over normal brands in the segment (Coyler 2005). It would be interesting to see if the results from these factors would hold using revealed preference methodology.
Recommendations for Future Research

Based on the findings of the study, suggestions for future research may be to:

1) Further explore the importance of apparel attributes and the beliefs about brands to consumers’ WTP a price premium using more valid methods of data collection, such as revealed preference experimental methodologies.

2) Investigate whether consumers make purchase decisions based on other variables, such as sustainability, labeling, culture, or the economy, that may be of greater effect to consumers’ WTP a price premium than brand equity using a revealed preference methodology.

3) Determine how other brands or apparel products may produce different results on WTP a price premium and brand equity using a revealed preference methodology.
REFERENCES


APPENDIX A

IRB APPROVAL
MEMORANDUM

TO: Joan Ellis and Yan-Ming Li,

FROM: Patrick Conner, Office of Research Assurances (3005)

DATE: 1/11/2011

SUBJECT: Certification of Exemption, IRB Number 11726

Based on the Exemption Determination Application submitted for the study titled "Consumers' Brand Equity and Willingness to Pay a Price Premium," and assigned IRB # 11726, the WSU Office of Research Assurances has determined that the study satisfies the criteria for Exempt Research at 45 CFR 46.101(b)(2).

This study may be conducted according to the protocol described in the Application without further review by the IRB.

It is important to note that certification of exemption is NOT approval by the IRB. You may not include the statement that the WSU IRB has reviewed and approved the study for human subject participation. Remove all statements of IRB Approval and IRB contact information from study materials that will be disseminated to participants.

This certification is valid only for the study protocol as it was submitted to the ORA. Studies certified as Exempt are not subject to continuing review (this Certification does not expire). If any changes are made to the study protocol, you must submit the changes to the ORA for determination that the study remains Exempt before implementing the changes (The Request for Amendment form is available online at http://www.irb.wsu.edu/documents/forms/rtf/Amendment_Request.rtf).

Exempt certification does NOT relieve the investigator from the responsibility of providing continuing attention to protection of human subjects participating in the study and adherence to ethical standards for research involving human participants.

In accordance with WSU Business Policies and Procedures Manual (BPPM), this Certification of Exemption, a copy of the Exemption Determination Application identified by this certification and all materials related to data collection, analysis or reporting must be retained by the Principal Investigator for THREE (3) years following completion of the project (BPPM 90.01).

Washington State University is covered under Human Subjects Assurance Number FWA00002946 which is on file with the Office for Human Research Protections (OHRP).
Review Type: New
Review Category: Exempt
Date Received: 12/6/2010

Exemption Category: 45 CFR 46.101 (b)(2)
OGRD No.: N/A
Funding Agency: N/A

You have received this notification as you are referenced on a document within the MyResearch.wsu.edu system. You can change how you receive notifications by visiting https://MyResearch.wsu.edu/MyPreferences.aspx

Please Note: This notification will not show other recipients as their notification preferences require separate delivery.
APPENDIX B

SURVEY
1. Please indicate your gender.
   a. Female
   b. Male

2. Please indicate your age.
   a. 18-24
   b. 25-30
   c. 31-45
   d. 46 and above

3. What is the highest level of education you have completed?
   a. Some high school
   b. High school graduate
   c. Some college (not currently a student)
   d. Associate degree
   e. Some college (currently enrolled)
   f. Bachelor degree
   g. Graduate or professional degree

4. Which of the following best describes your race/ethnic background?
   a. American Indian or Alaska Native
   b. Asian
   c. Black or African American
   d. Hispanic or Latino
   e. Native Hawaiian or Other Pacific Islander
   f. White
   g. Other: Please specify ________________

5. In what range is your household income (before taxes)?
   a. Less than $20,000
   b. $20,001-$40,000
   c. $40,001-$60,000
   d. $60,001-$80,000
   e. $80,001-$100,000
   f. Greater than $100,000
The questions that follow require that you focus on one brand. Do not be concerned about whether this brand is typical or unusual, important or unimportant, pleasant or unpleasant.

6. Have you ever bought any brand of athletic t-shirts? (Circle one)
   a. Yes
   b. No

7. Have you ever bought HANES? (Circle one)
   a. Yes
   b. No

8. Have you ever bought FRUIT OF THE LOOMS? (Circle one)
   a. Yes
   b. No

9. Do you currently own any brand of athletic t-shirts? (Circle one)
   a. Yes
   b. No
The following statements describe HANES. Please respond to each of the following question below:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Not Sure</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
<th>No Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. The likely quality of HANES is extremely high</td>
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<td>11. The likelihood that HANES would be functional is very high</td>
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<td>12. I consider myself to be loyal to HANES</td>
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<td>13. HANES would be my first choice</td>
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<td>14. I will not buy other brands if HANES is available at the store</td>
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<td>15. I can recognize HANES among other competing brands</td>
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<td>16. I am aware of HANES</td>
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<tr>
<td>17. Some characteristics of HANES come to my mind quickly</td>
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<td>18. I can quickly recall the symbol or logo of HANES</td>
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<td>19. I have difficulty in imagining HANES in my mind</td>
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</table>
The following statements describe **FRUIT OF THE LOOMS**. Please respond to each of the following question below:

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<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Not Sure</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
<th>No Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>20. The likely quality of <strong>FRUIT OF THE LOOMS</strong> is extremely high</td>
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<td>21. The likelihood that <strong>FRUIT OF THE LOOMS</strong> would be functional is very high</td>
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<td>22. I consider myself to be loyal to <strong>FRUIT OF THE LOOMS</strong></td>
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<td>23. <strong>FRUIT OF THE LOOMS</strong> would be my first choice</td>
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<tr>
<td>24. I will not buy other brands if <strong>FRUIT OF THE LOOMS</strong> is available at the store</td>
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<td>25. I can recognize <strong>FRUIT OF THE LOOMS</strong> among other competing brands</td>
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<td>26. I am aware of <strong>FRUIT OF THE LOOMS</strong></td>
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<td>27. Some characteristics of <strong>FRUIT OF THE LOOMS</strong> come to my mind quickly</td>
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<td>28. I can quickly recall the symbol or logo of <strong>FRUIT OF THE LOOMS</strong></td>
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<tr>
<td>29. I have difficulty in imagining <strong>FRUIT OF THE LOOMS</strong> in my mind</td>
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</tr>
</tbody>
</table>
Please indicate the importance of the following on your clothing purchase decisions:

<table>
<thead>
<tr>
<th></th>
<th>Very Important</th>
<th>Important</th>
<th>Somewhat Important</th>
<th>Not Important</th>
<th>No Opinion</th>
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<tbody>
<tr>
<td>30. Price</td>
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<td>31. Appearance of quality</td>
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<td>32. Touch/feel of textile</td>
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<td>33. Fit</td>
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<td>34. Variety/choice</td>
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<td>35. Fiber content</td>
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<td>36. Country of origin</td>
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<tr>
<td>37. Brand</td>
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</table>

Please respond to the following:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Not Sure</th>
<th>Disagree</th>
<th>Strongly Agree</th>
<th>No Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>38. Branded clothing is better quality than non-branded clothing</td>
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<td>39. Branded clothing is more fashionable than non-branded clothing</td>
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<td>40. Branded clothing feels better, has a better touch than non-branded clothing.</td>
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<td>41. Branded clothing fits better than non-branded clothing.</td>
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<tr>
<td>42. There are more choices in branded clothing than non-branded clothing.</td>
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</tbody>
</table>
Please enter your bids in space below:

$___________________ for **Hanes** t-shirt

$___________________ for **Fruit of the Looms** t-shirt