

**Young Female Adults' Two-Piece Swimsuit Style Choices in Relation to Their Body Shape,
Size, and Satisfaction**

by

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A thesis submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Master of Science

Auburn, Alabama
August 3, 2013

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Abstract

The purpose of this study was to investigate the influences of body shape, size, and satisfaction on two-piece swimsuit style purchase choices of young female adults. A questionnaire incorporated a purchase likelihood scale for six top and five bottom styles and participant self-identification of body variables. Data were analyzed for 191 Auburn University students. Results revealed that larger sized participants and those with lower levels of body satisfaction were more likely to purchase swimsuit styles that covered more of the body. The opposite was found for smaller sized participants and those with higher body satisfaction. Findings did not relate whole body shape and buttocks prominence to style purchase likelihood, but did relate bust prominence. Participants may not have correctly identified their body shapes.

The study supported literature on the effects of body size and satisfaction, and possible effects of body shape. Findings can help retailers with fit and style guides to aid customers in choosing swimsuit styles. Guides relying on customers choosing body shape may be ineffective. Future study of body shape self-identification is warranted. Guides that provide information for each style or rely on customers to choose body areas with which they are most or least satisfied might be more beneficial in aiding customers in choosing swim styles that are best for them.

Acknowledgments

I'd like to first thank my major professor, Dr. Pamela Ulrich, for her time, guidance, and patience with me while writing and completing this thesis. I appreciate all her hard work and help during this process that couldn't have been achieved without her. Thank you to my committee members Dr. Veena Chattaraman and Dr. Karla Simmons for their time, patience, contribution, and ideas. Their input was also greatly appreciated in helping me complete this thesis.

I further would like to thank my fellow graduate students especially MK, Clare, and Eloise. I don't think I would have enjoyed my time here in Auburn and in graduate school as much as I have without the three of them. I lastly would like to give a huge thank you to my family for their love and support, especially to my parents for their continued support and encouragement while pursuing my graduate education. They have always believed in me and encouraged me to follow my dreams.

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CHAPTER 1. INTRODUCTION

Swimwear is not just clothing that is worn for swimming; it is also what people wear to be seen in at the beach, pool, spas, and health clubs (Newberry, 2009). Swimwear can be divided into two categories: performance and fashion (Mittica, 2009). Performance swimwear is geared towards lifeguards and recreational swimmers (people who are more concerned with the functionality of their suit than how it looks). Fashion swimwear is created with an eye to the overall appearance and the fit of the swimsuit for the target customer (Mittica, 2009). The swimwear industry is a \$13.25 billion dollar business with women's swimwear accounting for 70% of sales and the average American woman owning four swimsuits (Swimwear Industry Statistics, 2012). A study conducted by the National Panel Data Group (NPD) reported that style was rated by 60% of responders as extremely important to very important when choosing swimwear (National Panel Data Group, 2000). Special features were ranked second to style as being extremely important to a consumer.

Female consumers of all ages are opting to buy separate tops and bottoms because doing so allows women to customize their suit to their own fashion sense, body size, and body type ("Fashion and Fit in Swimwear," 2005). To accommodate consumers' needs for better fitting swimwear for various body types and shapes, more swimwear manufacturers have incorporated cup sizing into tops because woman's bust sizes have been increasing since 2005 ("Fashion and Fit in Swimwear," 2005). NPD (2000) reported that 48% of female consumers would consider waist minimizers as a feature they would look for when purchasing their next swimsuit; hip minimizers were second (38%), and bust-enhancing swimwear (18%) was third.

To accommodate the swimwear needs of consumers, advice is available from retail websites and the popular press, including magazines, websites, and television (CBSNews, 2009; Venus Swimwear.com, 2012; Women's Health, n.d.). Some retailer websites offer a swimsuit guide for women as a tool and resource for assistance in choosing a swimsuit to purchase. An analysis of several retailer websites showed that these guides vary in what they present. The consumer may find assistance according to body shape (Dillard's.com, 2012; Macy's.com, 2012), style (Macy's.com, 2012; J.Crew.com, 2012; Victoria's Secret.com, 2012), or body component (Everything But Water.com, 2012; Nordstrom.com, 2012, Macy's.com, 2012). A swimsuit style finder guide shows visual images of a model wearing all top and bottom styles offered through the retail website and gives definitions for each style shown. A swimsuit guide by body shape provides a visual image of a swimsuit on different body shapes (e.g., straight or hourglass). A shape definition is provided to the consumer with recommendations of the types of suits to look for that will flatter the specific shape. Consumers are then allowed to choose their shape and in turn get recommendations for an assortment of swimsuits. A body component guide allows a user to search for swimsuits on the retailer website by a specific body component that they wish to emphasize or de-emphasize. Options could be, for example, small/large bust, tummy control, or full hips. A downside to body area guides is that the consumer is unable to choose more than one body component. For example, a user may choose to want to cover less in the bust area, but also have narrow shoulders; but she is unable to choose both options, just one or the other.

Swimsuits are a special purpose clothing classification within the broader category of sportswear. Clothing worn for other specific sport activities, like golf, running, and tennis, are examples of special purpose sportswear because each has its own clothing norms. Research has

been conducted on such clothing for several different sports. Mitchka, Black, Heitmeyer, and Cloud (2009) researched the practice wear needs of female collegiate dance students. They assessed expectations and the importance of selected attributes, and they compared the fit satisfaction, comfort and style of garment types relative to the dancer's level of commitment. Casselman-Dickson and Damhorst (1993) compared female cyclists' commitment to their interest in and use of bicycling apparel. Wheat and Dickson (1999) examined causes of dissatisfaction with uniforms for collegiate female golfers. They examined several uniform factors (comfort/attractiveness, brand quality, fit and size, and uniqueness), interest in golf clothing (brand loyalty, performance related to clothing, and fashionable), and overall satisfaction with team uniforms. Dickson and Pollack (2000) examined clothing worn by in-line skaters to identify their needs and preferences by measuring skater commitment, fashion, and the uniqueness and femininity of preferred clothing. Feather, Ford, and Herr (1996) studied female collegiate basketball players' garment fit and design preferences along with their body satisfaction unclothed and in uniform.

Other research has been conducted regarding apparel preferences for daily attire (Alexander, Connell, & Presley, 2005; Chattaraman & Rudd, 2006; de Klerk & Tselepis, 2007; LaBat & DeLong, 1990; Pisut & Connell, 2007) and dress shape silhouettes (Sidberry, 2011). Alexander et al. (2005) explored relationships between body type and fit preferences with body cathexis and clothing benefits sought by female young adult consumers who were aged 18-29. Pisut and Connell (2007) explored the fit preferences of U.S. female consumers for specific garments (jackets, blouses, dresses, pants, jeans, and skirts); identified body areas where there were fit problems; and explored the relationship between fit preferences, body shape, and body cathexis. LaBat and DeLong (1990) examined the relationships between women's body cathexis

and consumer satisfaction/dissatisfaction with the fit of ready-to-wear clothing at specific parts of the body. Chattaraman and Rudd (2006) explored whether females' preferences for aesthetic attributes in clothing were related to their body size, body cathexis and image. Sidberry (2011) examined the effects of body shape on body cathexis and dress shape preferences of female consumers. To reveal these relationships, Sidberry (2011) also assessed participants' level of comfort with purchase intent for dress shapes.

Statement of Problem

Of all apparel and special purpose clothing studies, only one was found that researched women's swimwear. Ross (2010) explored style preferences and benefits sought by a wide age span of women who actually purchased customized swimwear in relation to their body shape, age, and dress size. She was able to look at swimwear style variation in terms of three categories; bikini, one-piece, and tankini. No published research was found that addressed consumer style choices related to swimsuits or that linked swimsuit choices to body shape, size, or satisfaction.

Swimsuits are a fashion statement just like any other piece of clothing in a female consumer's wardrobe. A female consumer could have anywhere between four and eight swimsuits in her wardrobe, and it is recommended that no one swimsuit should be worn more than three times during a single beach vacation (Newberry, 2009). Thus, if a woman went on a two-week beach vacation, she might have anywhere between four and six swimsuits. Given the number of swimsuits a female consumer may have in her wardrobe and because according to Ross' (2010) findings, female young adults prefer a two-piece swimsuit, a deeper understanding is needed about influences on their style purchase choices.

Statement of Purpose

The goal of the planned study is to extend Ross's 2010 research by expanding stylistic variation to more detailed types of tops and bottoms of two-piece swimsuit styles and to explore the preferred choices of 19-26 year old female consumers based on their body shape, body size, and body satisfaction. This age group was chosen because it was not well represented in Ross's (2010) sample (14%). Two-piece swimsuit styles were the focus because Ross found that 95% of this age group preferred to wear a two-piece swimsuit (bikini or tankini). This study aimed to fill in gaps of understanding about specific two-piece swimsuit style choices of young adult females within the context of a multi-billion dollar industry that actively markets to this age group. Relating stylistic choice to body shape, size, and satisfaction could lead to better profiling of consumer groups.

Objectives

The objectives of this study were to examine the following: (a) swimsuit top and bottom style choices in relation to self-identified whole body shape, bust prominence and buttocks prominence; (b) the influence of self-reported body size on swimsuit top and bottom style choices; (c) the influence of body satisfaction on swimsuit top and bottom style choices; and (d) consumer swimsuit shopping behaviors for this age group.

Definition of Terms

Bandeau top: A simple band of fabric that fits across the chest that can be worn with or without a strap ("An advance discussion", 2011).

Bikini: A swimsuit that comes in two individual pieces: a top and a bottom (Newberry, 2009).

Body cathexis: Addresses the level of satisfaction one has with his or her body and can vary from body area to body area (Kaiser, 1997).

Body size: Body size was measured using Body Mass Index (BMI). It is calculated by dividing the participant's weight in pounds by height in inches squared and multiplying by a conversion factor of 0.703 (Centers for Disease Control and Prevention [CDC], 2011).

Boy short bottom: Like the skirt, it provides maximum buttocks coverage and sits low on the hips and waist (Nordstrom.com, 2012)

Bra top: Traditional bra style that may or may not have an underwire built in for additional Support (Nordstrom.com, 2012)

Brief bottom: Bottom style that has a higher rise, sits above the hips, and provides full coverage of the buttocks (Nordstrom.com, 2012).

Bust Prominence: Viewing figure of the bust area from the side in terms of degrees of flat to prominent extension (Connell, Ulrich, Brannon, & Presley, 2002).

Buttocks Prominence: Viewing figure of the buttocks from the side in terms of degrees of flat to prominent protrusion (Connell et al., 2002).

Halter top: Straps that tie or have a clasp behind the neck ("An advance discussion", 2011).

Hipster bottom: A traditional bikini style that sits low on the hips and has full coverage of the buttocks (Nordstrom.com, 2012).

Skirt bottom: An attached hipster bikini is underneath; provides maximum hip and buttocks coverage (J.Crew.com, 2012)

String bottom: A minimal to moderate buttocks coverage with adjustable side ties (J.Crew.com, 2012).

Tankini top: The tank top of swimwear that skims over the midsection to hide the belly ("An advance discussion", 2011).

Triangle top: A top that can be adjusted at the bust to have the desired coverage by a consumer.

It ties behind the neck like the halter but with much thinner spaghetti style (“An advance discussion”, 2011).

Two-piece swimsuit: Often referred to as a bikini; a swimsuit consisting of two parts: a top and a bottom (Newberry, 2009).

Whole body shape: The overall view of a body shape as viewed from the front (Connell et al., 2002).

CHAPTER 2. LITERATURE REVIEW

Two-Piece Swimsuit Styles

Women have many swimsuit options from which to choose when shopping for a new suit. It is not as simple as a choice between one-piece or two-piece styles. Online swimwear retailers allow consumers to shop by swimwear category (bikini, tankini, one-piece, and monokini), top style, bottom style, and color. Most companies offer “mix and match” two-piece options so that consumers are able to choose the style they want for their tops and bottoms based, if they want, on their body shape and size. Traditionally, a two-piece style has been referred to as a bikini, but with the tankini top availability, a two-piece swimsuit is now a suit consisting simply of two parts, top and bottom.






Swimsuit Top Styles

Styles for tops include: bandeau, halter, traditional bra, triangle/string, and tankini. A bandeau top is a simple band of fabric that fits around the chest and back and can be worn with or without a strap. A triangle/string top ties behind the neck and back with thin spaghetti style straps. Triangle top pieces can be adjusted at the bust to have coverage desired by the consumer; it typically enhances smaller bust sizes (Nordstrom.com, 2012). A halter-top has straps that are wider than the string bikini top that tie or clasp behind the neck and provide support and lift to enhance larger busts along with providing coverage (Nordstrom.com, 2012). A traditional bra style may or may not have underwire built in for additional support but can also enhance a smaller bust (Nordstrom.com, 2012). The tankini top, also known as the tank top of swimwear, skims over the midsection to hide the belly (“An advance discussion,” 2011). It provides the

most coverage for the consumer, particularly in the tummy area, and gives the look of a one-piece with the versatility of a two-piece. Table 1 provides a visual representation of each top style and its definition.

Table 1

Photographic Representation of Each Swimsuit Top Style with Definition






Top Style	Definition
<p>Bandeau w/ Straps</p> 	<p>Bandeau top: A simple band of fabric that fits across the chest that can be worn with or without a strap (“An advance discussion”, 2011).</p>
<p>Bandeau w/o Straps</p> 	<p>Bandeau top: A simple band of fabric that fits across the chest that can be worn with or without a strap (“An advance discussion”, 2011).</p>
<p>Halter</p> 	<p>Halter top: Straps that tie or have a clasp behind the neck (“An advance discussion”, 2011).</p>
<p>Triangle</p> 	<p>Triangle top: A top that can be adjusted at the bust to have the desired coverage by a consumer. It ties behind the neck like the halter but with much thinner spaghetti style (“An advance discussion”, 2011).</p>
<p>Bra</p> 	<p>Bra top: Traditional bra style that may or may not have an underwire built in for additional support (Nordstrom.com, 2012)</p>
<p>Tankini</p> 	<p>Tankini top: The tank top of swimwear that skims over the midsection to hide the belly (“An advance discussion”, 2011).</p>

Swimsuit Bottom Styles

Bottoms come in almost as many styles as tops and differ by their cut and coverage. Styles include string, skirt, boy short, hipster, and brief. A string style bottom provides minimal to moderate buttocks coverage and has adjustable side ties (J.Crew.com, 2012). The skirt has an attached hipster bikini underneath and provides maximum hip and buttocks coverage (J.Crew.com, 2012). A boy short style is like the skirt in that it provides maximum buttocks coverage, but it sits low on the hips and below the waist (Nordstrom.com, 2012). The hipster is a traditional bikini style that sits low on the hips and has full coverage of the buttocks (Nordstrom.com, 2012). The brief style has a higher rise than other styles, sitting above the hips, and also provides full coverage of the buttocks (Nordstrom.com, 2012). Table 2 provides a visual representation of each bottom style with its definition.

Table 2

Photographic Representation of Each Swimsuit Bottom Style with Definition

Bottom Style	Definition
<p data-bbox="180 380 269 415">String</p> 	<p>String bottom: A minimal to moderate buttocks coverage with adjustable side ties (J.Crew, 2012).</p>
<p data-bbox="180 625 256 661">Skirt</p> 	<p>Skirt bottom: An attached hipster bikini is underneath; provides maximum hip and buttocks coverage (J.Crew.com, 2012)</p>
<p data-bbox="180 873 310 909">Boyshort</p> 	<p>Boy short bottom: Like the skirt, it provides maximum buttocks coverage and sits low on the hips and waist (Nordstrom.com, 2012)</p>
<p data-bbox="180 1157 261 1192">Brief</p> 	<p>Brief bottom: Bottom style that has a higher rise, sits above the hips, and provides full coverage of the buttocks (Nordstrom.com, 2012).</p>
<p data-bbox="180 1493 285 1528">Hipster</p> 	<p>Hipster bottom: A traditional bikini style that sits low on the hips and has full coverage of the buttocks (Nordstrom.com, 2012).</p>

Body Shape and Style Choice

Body Shape Classification

Shape is defined as the figure or outline of the body of a person (Shape, n.d.). Bodies come in many different shapes and sizes (Tumbarello, 2010). Synthesizing numerous body shapes into a few categories is difficult because of the wide variability among female body shapes (Connell, Ulrich, Brannon, Alexander & Presley, 2006). Classification systems categorize shapes through shape clustering and shape recognition (Costa & Cesar, 2001). An example of shape recognition is that if a shape resembles a hourglass, it is classified as a hourglass. Some body shapes may not resemble a preexisting figure, but by distinguishing commonalities among them, they can be divided into groups based on similarities (Costa & Cesar, 2001). This exercise is called shape clustering.

A variety of body shape scales can be found in the literature. August's (1981) Body I.D Scale is broken into three groups based on how the body is viewed; front view width, side view width, and front view length. This scale contains 11 proportional relationships, each represented by alphabetic letters; these visually link selected landmarks to characterize body forms. The alphabetic representations are A, X, H, V, and O (front view widths and lengths) and b, d, i, and r (side view widths).

In developing the Body Shape Assessment Scale[©] (BSAS[©]) and assessing previous scales such as August's Body I.D Scale, Connell et al. (2006) discovered that not all shapes were observed regularly. These researchers used previously established scales to study body scans of women, which ultimately led to the development of the BSAS[©]. Their scale uses digitally illustrated female body silhouettes to represent body shapes. For whole body shape, the following landmarks differentiate the four classifications of hourglass, pear, rectangle, and

inverted triangle: shoulder point to shoulder point, the frontal waistline width, and the widest point between the waist and crotch line, as seen from the front (Connell et al., 2006). The BSAS[©] also has sub-scales for body component shapes; these include hip shape, shoulder slope, front torso shape, bust prominence, buttocks prominence, and back curvature (Connell, Ulrich, Brannon & Presley, 2002).

Simmons (2002) developed the Female Figure Identification Technique (FFIT) to create a methodology for characterization of body type or form that would appropriately replicate the various shapes of the U.S population. Common body shapes were acquired from the literature and categorized into five shapes: triangle, inverted triangle, rectangle, hourglass, and oval. Body scans of 222 women were assessed. Simmons (2002) developed four additional shape classifications because when assessing scans, not all could be categorized into one of the five predetermined body shapes. The four additional shapes were named using shape recognition. These were spoon, diamond, bottom hourglass, and top hourglass.

Body Shape Influence on Style Choice

The influence of body shape on style choices has been explored in studies researching women's clothing. Pisut and Connell (2007) evaluated fit preferences of women for individual garment categories (jackets, pants, skirts, blouses, and jeans) in relation to their body shape. They found that pear and rectangular shape women were less likely to purchase fitted garments, preferring loosely fitted garments; hourglass and inverted triangle shape women were likely to purchase fitted garments. Looking at jacket fit on female body types, Yoo (2003) found that diamond shaped females preferred a loosely fitted jacket over semi-fitted and fitted jackets and suggested that individuals might have shown a preference for these styles to camouflage figure flaws. Alexander et al. (2005) focused on the fit preferences of women between the ages of 19

and 29. Fit problems and preferences were found to be associated with different body types. Young women who wanted to emphasize their body type preferred fitted clothing styles, including dresses, jackets, and skirt styles. In examining dress shape purchase intentions among body shapes based on visual balancing techniques, Sidberry (2011) found that certain body shapes had higher purchase intentions for specific dress shapes. For instance, A and H body shapes had a higher purchase intention for rectangular and wedge dress shapes than respondents who had X and V body shapes, and X and V body shape participants had a higher purchase intention for A-line, bell and hourglass dress shapes.

In Ross's (2010) study, whole body shape and swimsuit style choice were significantly related. Bikini swimsuits were most preferred by rectangle and inverted triangle shape consumers. Tankini swimsuits were most preferred by hourglass and triangle shape women. Consumers who were classified as having a circle shape body most preferred a one-piece swimsuit. When choosing a swimsuit, Mittica (2009) recommended that the consumer decide what parts of her body shape to emphasize or de-emphasize. Rudd and Lennon (2000) and Yoo (2003) concluded that clothing generally had the ability to accentuate specific areas of the body and camouflage figure flaws. Ross (2010) found that the areas that consumers wanted to emphasize or de-emphasize varied somewhat with body shape. Across the five shapes used in her research (rectangle, hourglass, inverted triangle, circle and triangle), the top three choice areas for emphasis were arms/legs, bust, and waist. For rectangle, hourglass and triangle shapes, the top three areas to de-emphasize were hips, thighs, and tummy, but inverted triangle shape women wanted to de-emphasize the tummy, thighs, and bust, and circle shape women wanted to de-emphasize the tummy, waist and bust. Retailers' website advice suggests that businesses think different top and bottom styles allow the consumer to vary what is emphasized or de-

emphasized. Thus, female consumers' top and bottom swimsuit style choices may be related to whole body shape and component body parts, and the following was hypothesized:

Hypothesis 1: Self-identified whole body shape will affect swimsuit top style purchase likelihood (bandeau with and without straps, halter, triangle/string, bra, and tankini).

Hypothesis 2: Self-identified whole body shape will affect swimsuit bottom style purchase likelihood (string, skirt, boy short, brief, and hipster).

Hypothesis 3: Self-identified bust prominence will affect swimsuit top style purchase likelihood (bandeau with and without straps, halter, triangle/string, bra, and tankini).

Hypothesis 4: Self-identified buttocks prominence will affect swimsuit bottom style purchase likelihood (string, skirt, boy short, brief, and hipster).

Body Satisfaction and Style Choice

The terms body satisfaction and body cathexis are closely related, with the former being used in the definition of the latter. According to Kaiser (1997), body cathexis specifically addresses the level of satisfaction an individual has with his or her body, which can vary across body areas. Body cathexis was defined by Secord and Jourard (1953) as the “degree of satisfaction or dissatisfaction with the various parts or processes of the body” (p. 343). Kozar and Damhorst (2009) assessed the body satisfaction of 281 women aged 30-80 to compare ideal and real body perceptions. They used Cash's (2000) Body Areas Satisfaction scale (BASS[©]), a subset to the Multidimensional Body-Self Relations Questionnaire (MBSRQ) scale to measure satisfaction; it has the following attributes: face, hair, lower torso, mid-torso, upper torso, muscle tone, weight, and height. Kozar and Damhorst (2009) modified the upper torso attribute to

include only shoulders and arms, and they listed breasts as a separate characteristic. Results revealed that participants were the most dissatisfied with their mid-torso, weight, and lower torso. Height and face were the attributes with which participants had the most satisfaction. However, in assessing overall mean body satisfaction scores, results did not clearly indicate whether participants were generally satisfied or dissatisfied.

Labat and Delong (1990) found clear distinctions in women's satisfaction with the upper and lower body. They studied body cathexis and perceptions of apparel fit satisfaction by assessing overall fit and specific body site satisfaction. Labat and Delong (1990) asserted that a person can experience varied satisfaction with different body areas in relation to fit satisfaction, so the body was broken into 19 body sites, including neck, shoulder, upper arm, lower arm, bust, shoulder blades, midriff, waist, abdomen, hip, buttocks, crotch, thigh, calf, and length of waist to knee. Results showed that the lowest fit satisfaction levels occurred for the lower body, including pant length, crotch, thigh, buttocks, and hip. The upper body (neck, elbow, arm, midriff, and shoulder) had the highest scores, meaning that participants were the most satisfied with their upper bodies. Kozar and Damhorst (2009) had similar results, showing the lowest satisfaction being associated with the lower torso, as did Chattaraman and Rudd (2006), who studied aesthetic attributes of clothing related to body size, cathexis, and image. A few studies were found to relate clothing fit preferences to body satisfaction. Chattaraman and Rudd (2006) concluded participants who had lower body satisfaction levels preferred less fitted garment styles to cover dissatisfied areas. Pisut and Connell (2007) also concluded that the more satisfied females were with parts of the body, the more they would enjoy fitted clothing. The literature suggests that female participants are not completely satisfied with their whole body but have higher satisfaction levels for certain parts over others. These clothing fit preferences in relation

to body satisfaction could be applied to swimsuit style purchases. Female consumers who prefer fitted clothing like to accentuate and show more of their body, and those who prefer looser clothing want to cover parts of the body more. Thus, the following hypotheses were developed.

Hypothesis 5a: Upper torso body satisfaction will have a negative influence on purchase likelihood of high coverage swimsuit top styles.

Hypothesis 5b: Upper torso body satisfaction will have a positive influence on purchase likelihood of low coverage swimsuit top styles.

Hypothesis 6a: Lower torso body satisfaction will have a negative influence on purchase likelihood of high coverage swimsuit bottom styles.

Hypothesis 6b: Lower torso body satisfaction will have a positive influence on purchase likelihood of low coverage swimsuit bottom styles.

Hypothesis 7a: Weight satisfaction will have a negative influence on purchase likelihood of high coverage swimsuit top and bottom styles.

Hypothesis 7b: Weight satisfaction will have a positive influence on purchase likelihood of low coverage swimsuit top and bottom styles.

Body Size and Style Choice

Body size has been measured in research using garment size (Chattaraman & Rudd, 2006; Ross, 2010; Sidberry, 2011), self-reported weight and height (to calculate BMI) (Aghekyan, 2005; Bulik et al., 2001; Stunkard & Albaum, 1981), measured weight and height converted to BMI (Fu, 2004), and self-perception of size scale, e.g., I feel fat or I feel slender (Kwon & Parham, 1994). Aghekyan (2005) found that participants perceived themselves as larger in size than they actually were. Kwon and Parham (1994) found that when a woman felt fat, she relied on clothing characteristics to provide comfort and camouflage figure problems.

Pisut (2001) and Fu (2004) used BMI scores to categorize respondents' body size. Both of their studies found that women with larger BMI scores were likely to camouflage their perceived figure flaws with clothing. In researching female collegiate basketball player's garment fit and uniform design preferences, Feather et al. (1996) found that the preferred style short differed significantly between body sizes. Players with larger bodies preferred a baggy short, and players with smaller bodies preferred a regular fit. Chattaraman and Rudd (2006) similarly found that body size correlated with styling preference; larger size women preferred more body coverage and less revealing clothing. Ross (2010) reported bikini style swimsuits were significantly favored over tankini and one-piece swimsuits by the customers who reported wearing 0-4 dress sizes. Half of those who reported wearing sizes 6-12 preferred a tankini swimsuit over a bikini and one-piece suit. Consumers who wore sizes 14-16 preferred one-piece swimsuits. Overall, research results suggest that the smaller a woman is in size, the more likely she is to prefer less body coverage, and that as a women increase in size, they will probably prefer more body coverage. Thus, the following two hypotheses were developed:

Hypothesis 8: BMI body size classification will affect swimsuit top style purchase likelihood.

Hypothesis 9: BMI body size classification will affect swimsuit bottom style purchase likelihood.

CHAPTER 3. METHODOLOGY

Research Design

The variables utilized in this study were whole body shape, bust prominence, buttocks prominence, body satisfaction, body size, swimsuit top style, and swimsuit bottom style. Whole body shape, bust prominence, buttocks prominence, and body size were independent variables. The dependent variables were the purchase likelihood for swimsuit top and bottom styles. Data collection occurred through an online survey, and data were analyzed statistically. This chapter outlines how data were specified and obtained, including the scales used to represent the variables.

Instrument Development

A questionnaire (see Appendix A) composed of (a) existing scales that were used in previous research studies and (b) stimuli and questions that were adopted or adapted by the researcher. Some scales were modified for the purposes of this study.

Swimsuit Style Purchase Likelihood

Swimsuit style purchase likelihood was measured using stimuli developed by the author and purchase intention scale items adapted from Kim and Lennon (2000). The items were rated by participants using a 5-point Likert scale with 1 being *very unlikely* and 5 being *very likely*. Kim and Lennon's (2000) scale had internal consistency reliability of .90 in Cronbach's alpha testing and has been used in other studies (Kim, Kim, & Lennon, 2006; Park & Stoel, 2005).

Questions 1-6 assessed swimsuit top style purchase likelihood with the scale being applied to photographic representations of each of the six top styles. Questions 7-11 applied the

same scale and process to assess the purchase likelihood for each of the five swimsuit bottom styles. Participants were instructed to focus only on the style of the swimsuit. Body size, shape, and swimsuit color (black on skin tone) were all kept the same. Photographic representation for each top and bottom style was adapted from retailer swim style guides like Nordstrom.com (2012) and J.Crew.com (2012).

Whole and Component Body Shapes

The BSAS[©] developed by Connell et al. (2002) was used in this study to address whole body shape, bust prominence, and buttocks prominence. The BSAS[©] scale was selected because it incorporates component shapes that directly relate to retailers' advice and also focus on a specific body area like Cash's (2000) body satisfaction scale. The BSAS[©] body component scales of bust and buttocks prominence are viewed from the side, and the whole body shape scale is from a frontal perspective (Connell et al., 2002).

Whole body shape. Question 12 asked participants to self-identify their whole body shape. The images of the whole body shape scale from the BSAS[©] developed by Connell et al. (2002) were the identification options. Along with visual representation, a written description of each shape was provided. Participants were asked to view each shape, read its description, and then choose the one shape that best represented their current body shape when viewed from the front. The four body shapes are:

- Rectangular (R) – “Shoulder and hip width are balanced (equal or nearly equal) with little to no waist definition.”
- Hourglass (H) – “Shoulder and hip width are balanced (equal or nearly equal) with clearly defined to very small waist in relation to shoulder and hip width.”
- Pear (P) – “Hip and/or thigh width is visually greater than shoulder width.”

- Inverted Triangle (I) – “Shoulder width is visually greater than fullest width at hip or thighs.”

Bust prominence. The bust prominence subscale from the BSAS[®] (Connell et al., 2002) was used by each participant in question 13 to self-identify bust prominence. Like the whole body shape scale, a written description of each bust shape was provided. The three levels of bust prominences are:

- Flat (1) – “Flat to slightly curved bust line.”
- Average (2) – “Moderately curved bust line.”
- Prominent (3) – “Full, prominent bust line.”

Buttocks prominence. To measure self-identified buttocks prominence of each participant for question 14, the buttocks prominence scale from the BSAS[®] (Connell et al., 2002) was used as the visual stimulus. Like the body shape and bust prominence scales, a written description of each buttocks shape was provided. Participants were asked to review each buttocks prominence shape and its description and choose which best represented their current buttocks shape. The three levels of buttocks prominences are:

- Flat (1) – “Flattened appearance below waist and minimal curving under to top of leg.”
- Average (2) – “Moderate, curve between waist and top of leg.”
- Extreme (3) – “Prominent, curve between waist and top of leg.”

Body Satisfaction

Questions 15-22 addressed the level of satisfaction a participant has for a list of body areas or other descriptors and characteristics. The BASS[®] developed by Cash (2000) was the foundation for a slightly modified scale. Cash’s (2000) BASS consists of nine areas or aspects of the body:

- Face (facial features, complexion)
- Hair (color, thickness, texture)
- Lower torso (buttocks, hips, thighs, legs)
- Mid Torso (waist, stomach)
- Upper torso (chest or breasts, shoulders, arms)
- Muscle tone
- Weight
- Overall appearance.

Face, hair, muscle tone, and overall appearance were not included because these components were not relevant to this study. Four more narrowly delineated body areas of the female body were added. These are bust, hip, waist, and buttocks. They were added because they relate directly to the component body area scales being used. Participants were directed to indicate their degree of satisfaction with the particular body area or body component using a 5-point Likert-type scale from 1 being *very dissatisfied* to 5 being *very satisfied*. The scale's reliability was established using Cronbach's alpha that resulted in values of .73 and .74 (Cash, 2000). The scale has been used in related studies (Kozar & Damhorst, 2009; Sidberry, 2011), establishing validity of the scale instrument.

Body Size

Body size was determined by participants' BMI classification. BMI was calculated for each participant based on self-reported height (in inches; question 23) and weight (in pounds; question 24). The CDC defines BMI as a number that is a reliable indicator of body fatness (CDC, 2011). BMI was calculated by dividing the participant's weight in pounds by height in inches squared and multiplying by a conversion factor of 703 (CDC, 2011). Calculated BMI

scores were then used to classify each participant into one of four body size categories according to the CDC guidelines: underweight (under 18.5), normal (18.5- 24.9), overweight (25-29.9), or obese (30 and above) (CDC, 2011).

Numerous studies have focused on the accuracy and reliability of self-reported weights and heights in adults (Bulik et al., 2001; Kuskowska-Woik, Karlsson, Stoll, & Rossner, 1989; Lin, Decker, Brimmer, & Reeves, 2010; Palta, Prineas, Berman, & Hannan, 1982; Strauss, 1999; Stunkard & Albaum, 1981). Part of Lin et al.'s (2010) study assessed the validity of BMI derived from self-reported height and weight when compared to actual measurements. Data consisted of 774 people aged 18-59 from metropolitan, urban, and rural areas of Georgia. Self-reported weight and height were significantly correlated with the participants' actual measurements (weight: $r = 0.95$; height: $r = 0.96$; $p < 0.0001$). BMI calculations between self-reported and actual measurements were significantly correlated as well ($r = 0.92$; $p < 0.0001$). Despite high correlations, under-reporting of weight and over-reporting of height was observed. Sex was an influencing factor, with more women underestimating their weight than men and men overestimating their height compared to women. Similar under-reporting of weight by females was observed by Strauss (1999) in comparing measured and self-reported weight and height in young adolescents aged 12-16. Strauss's (1999) results showed high correlations, ranging from .87 to .94 between self-reported and actual weight. Height correlations between self-reported and actual ranged between .82 and .91. The correlations for calculated BMI were comparable (.79 and .89).

Bulik et al. (2001) used self-reported BMI data in relating BMI to figural stimuli. A reliability check was conducted by using heights and weights of two subsets of women. For the first subset of 181 women, correlations between self-reported and measured heights and weights

were .94 and .98 (respectively). For the second subset of 3000 women, the correlations between self-reported and measured data were .96 (height) and .93 (weight). High correlation values in each of these studies increase confidence in the use of self-reported data. These findings further support Stunkard and Albaum's (1981) research examining the accuracy of self-reported weights; they found that self-reported weights were accurate across their sample's ages and sexes.

Demographic and Swimsuit Shopping Questions

Ten questions asked were about store types frequented, mode of purchase (online, in-store, both), how many swimsuits were owned, and aesthetic preferences for top and bottom swimsuits. These were used to develop more psychographic information about the young female adult swimsuit consumer. Demographics of participants were age and ethnicity. Questions 25-28 assessed what types of stores were swimsuits purchase sites (Never, Almost Never, Sometimes, or Often). Question 29 assessed the number of swimsuits participants currently owned; question 30 assessed how they purchased swimsuits (online, in-store, or both), and questions 31-34 assessed aesthetic attributes most preferred in top and bottom swimsuits (see Appendix A).

Pilot Study

A pilot study was conducted to check the face validity of the body shape stimuli, the swimsuit visual stimuli with purchase likelihood questions, and the body satisfaction scale. Three Interior Design courses from the Consumer and Design Sciences Department within the College of Human Sciences were used to recruit female participants who were at least 19 years of age. Professors for each of the classes were contacted asking if they would (1) allow students in the class to participate and (2) offer an extra credit incentive to encourage participation. Upon approval, the researcher visited each class to give a verbal introduction to the study and its

intentions. Following the classroom visit, an information email and link to the questionnaire provided by the researcher was sent to students in the class by the professor. Because this study targeted women only, male students were given an alternative extra credit opportunity at the professor's discretion. After each section of the pilot study survey, a question clarity section (with yes or no answer options and one open ended question) was presented to participants asking if (a) the directions in the previous section were clear; (b) the format of the questions was clear; (c) they clearly understood what they were asked to do; and (d) open ended question that allowed them to make suggestions and comments about each section to help improve that section of the questionnaire. At the end of the survey, students were asked to provide their name and course to ensure extra credit was received. Data were collected anonymously, meaning that student names were not connected to questionnaire responses.

Main Study

Instrumentation

Based on results of the section clarity questions for each section of the survey, the only modification to the survey was providing larger images of the whole body shape, bust prominence, and buttocks prominence scales. The section clarity questions were removed for the main study.

Sample and Data Collection

A random sample of 19-year-old female undergraduate students enrolled in classes within the Consumer and Design Sciences Department in the College of Human Sciences at Auburn University were recruited for this study. Data were collected anonymously using Qualtrics, a web-based survey software. Like the pilot study, approval from each professor was obtained before proceeding with the survey, and an extra credit incentive was given to students to

encourage participation. A verbal introduction to the study and its intentions was given, and following the classroom visit, an information email and link to the questionnaire provided by the researcher was sent to students in the class by the professor. Because this study targeted women only, male students were given an alternative extra credit opportunity at the professor's discretion. Like the pilot study, data were collected anonymously. Student names were inputted at the end of the survey to ensure extra credit was received for a course; they were not linked to any individual response in the questionnaire.

Data Analysis

Data were analyzed statistically using Statistical Package for the Social Sciences (SPSS) software. The following discussion describes analysis for each hypothesis.

Hypothesis 1: Self-identified whole body shape will affect swimsuit top style purchase likelihood.

A one-way MANOVA followed by univariate ANOVA comparisons was used to determine whether self-identified whole body shape affects swimsuit top style purchase likelihood. The independent variable was whole body (hourglass, rectangular, pear, or inverted triangle) shape. The dependent variable was swimsuit top style (bandeau with straps, bandeau without straps, halter, triangle/string, bra, and tankini) purchase likelihood.

Hypothesis 2: Self-identified whole body shape will affect swimsuit bottom style purchase likelihood.

A one-way MANOVA followed by univariate ANOVA comparisons was used to determine whether self-identified whole body shape affects swimsuit bottom style purchase likelihood. The independent variable was whole body shape, and the dependent variable was the swimsuit bottom style (string, skirt, boy short, brief, hipster) purchase likelihood.

Hypothesis 3: Self-identified bust prominence will affect swimsuit top style purchase likelihood.

A one-way MANOVA followed by univariate ANOVA comparisons was used to determine whether self-identified bust prominence affects swimsuit top style purchase likelihood (bandeau with and without straps, halter, triangle/string, bra, and tankini). The independent variable was bust prominence, and the dependent variable was the swimsuit top style (bandeau with and without straps, halter, triangle/string, bra, and tankini) purchase likelihood.

Hypothesis 4: Self-identified buttocks prominence will affect swimsuit bottom style purchase likelihood.

A one-way MANOVA followed by univariate ANOVA comparisons was used to determine whether self-identified buttocks prominence affects swimsuit bottom style purchase likelihood (string, skirt, boy short, brief, hipster). The independent variable was buttocks prominence and the dependent variable was the swimsuit bottom style (string, skirt, boy short, brief, hipster) purchase likelihood.

Hypothesis 5a: Upper torso body satisfaction will have a negative influence on purchase likelihood of high coverage swimsuit top styles.

Hypothesis 5b: Upper torso body satisfaction will have a positive influence on purchase likelihood of low coverage swimsuit top styles.

Multiple simple regressions were used to analyze hypotheses 5a and 5b. The independent variable was upper torso satisfaction and the dependent variables were the purchase likelihood of each swimsuit top style (bandeau with and without straps, halter, triangle/string, bra, and tankini). Low coverage top styles were: bandeau with and without straps, halter, triangle, and bra. The high coverage top style was tankini.

Hypothesis 6a: Lower torso body satisfaction will have a negative influence on purchase likelihood of higher coverage swimsuit bottom styles.

Hypothesis 6b: Lower torso body satisfaction will have a positive influence on purchase likelihood of low coverage swimsuit bottom styles.

Multiple simple regressions were used to analyze hypotheses 6a and 6b. The independent variable was lower torso satisfaction, and the dependent variables were the purchase likelihood of each swimsuit bottom style (string, skirt, boy short, brief, hipster). High coverage bottom styles were: boy short, brief, and skirt. Low coverage styles were string and hipster.

Hypothesis 7a: Weight satisfaction will have a negative influence on purchase likelihood of high coverage swimsuit top and bottom styles.

Hypothesis 7b: Weight satisfaction will have a positive influence on purchase likelihood of low coverage swimsuit top and bottom styles.

Multiple simple regressions were used to analyze hypotheses 7a and 7b. The independent variable was weight satisfaction, and the dependent variables were the purchase likelihood of each swimsuit bottom style (string, skirt, boy short, brief, hipster) and top style (bandeau with and without straps, halter, triangle/string, bra, and tankini).

Hypothesis 8: BMI body size classification will affect swimsuit top style purchase likelihood.

A one-way MANOVA followed by univariate ANOVA comparisons was used to determine whether self-reported body size affects swimsuit top style purchase likelihood. The independent variable was body size (underweight, normal, overweight, obese). The dependent variable was swimsuit top style (bandeau with straps, bandeau without straps, halter, triangle/string, bra, and tankini) purchase likelihood.

Hypothesis 9: BMI body size classification will affect swimsuit bottom style purchase likelihood.

A one-way MANOVA followed by univariate ANOVA comparisons was used to determine whether self-reported body size affects swimsuit bottom style purchase likelihood. The independent variable was body size (underweight, normal, overweight, obese), and the dependent variable was the swimsuit bottom style (string, skirt, boy short, brief, hipster) purchase likelihood.

CHAPTER 4: ANALYSES AND RESULTS

This study had four topical objectives; these were to investigate: (a) swimsuit top and bottom style choices in relation to self-identified whole body shape, bust prominence and buttocks prominence; (b) the influence of BMI classification on swimsuit top and bottom style choices; (c) the influence of body satisfaction on swimsuit top and bottom style choices; and (d) consumer swimsuit shopping behaviors for this age group. Data collection consisted of a pilot and main study. The purpose of the pilot study was to establish the face validity of the stimuli used in the survey. Because face validity was established and no alterations to the survey were needed following the pilot study, these results were combined with the main study sample. From the combined sample data, descriptive information was analyzed to determine frequencies, and one –way MANOVA tests and multiple simple regressions to analyze hypotheses followed this.

Sample Demographics

For the pilot study, students were recruited from three Interior Design courses in the Consumer and Design Sciences Department. The researcher introduced the study in each of the courses, and a link to the survey online was provided to them via e-mail. Students were given one week to complete the pilot study. Thirty-eight of sixty possible students completed the pilot study survey. For the main study, female students were recruited through seven classes within Apparel Merchandising and Design courses within the Consumer and Design Sciences Department. The researcher introduced the survey to each of the classes, and a link to the survey online was provided to them via email. A total of 163 surveys were received for the main study; combining the two stages made a total of 201 surveys. Of these, 191 were valid; the remaining

10 were deleted because 50% or more of each questionnaire was incomplete. Data were entered into SPSS to be analyzed. First, frequencies and means were determined for demographic information and swimsuit shopping behaviors. Diversity in ethnicity was not very high with most of the participants identifying themselves as Caucasian (89.5%), followed by African American/Black (5.8%), Hispanic and Asian (2.1%), and Native American (0.5%). A majority of the participants were between the ages of 19 and 21 (67.5%); 29.7% were between the ages of 22 and 24, and 2.5% were 25 or older. The mean age of all participants was 21 years old. Thus, nearly all were 19-24.

Frequencies were run to determine swimsuit-shopping behaviors. The number of swimsuits owned by the sample varied widely, from one person owning none to participants who owned at least 13. The mean was five swimsuits, with 43.2% reporting that they currently owned between four and six; 26.8% owned more than six, and fewer owned just three or less. The most swimsuits reported were an astonishing 40 by one participant. Slightly more than half of the participants reported purchasing swimsuits both in-store and through the internet; 38.8% said they only bought swimsuits in-store; 8.4% said that they bought swimsuits exclusively through the internet. Table 3 shows these sample characteristics and frequencies.

Table 3

Swimsuit Purchase Demographics

Characteristic	<i>n</i>	%
Number Of swimsuits currently owned (<i>n</i> = 183)		
0	1	.5%
1-3	40	21.9%
4-6	79	43.2%
7-9	14	7.6%
10-12	24	13.1%
13 or more	25	13.7%
Purchase site for swimsuits (<i>n</i> =191)		
Through the internet only	16	8.4%
In-store only	74	38.8%
both	101	52.8%

Table 4 shows what types of retailers young female adults visit to purchase swimsuits. More than 70% of participants reported sometimes or often purchasing swimsuits from specialty retailers (75.5%) and mass merchants (71.3%), whereas 75% reported that they never or rarely purchased swimsuits from off-price chain retailers. Purchasing swimsuits at department stores was split among participants with 50% reporting that they never or rarely did and 49% reporting that they sometimes or often did.

Table 4

Swimsuit Purchase Frequency From Type of Retailers

Frequency	Specialty Clothing Stores ^a		Department Stores ^b		Merchants ^c		Off-Price Chains ^d	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Never	10	5.2%	39	20.4%	19	9.9%	74	38.5%
Rarely	37	19.3%	57	29.8%	36	18.8%	70	36.5%
Sometimes	69	35.9%	74	38.7%	69	35.9%	39	20.3%
Often	76	39.6%	21	11.0%	68	35.4%	9	4.7%

^a(e.g., Victoria Secret, Old Navy, American Eagle). ^b(e.g., Dillard's, Macy's, J.C.Penney). ^c(Target, Wal-Mart, Kohls. ^d(e.g., T.J. Maxx, Marshall's, Ross).

Table 5 addresses some swimsuit aesthetic preferences in choosing a swimsuit top and bottom style. A majority said that it didn't matter to them whether they had a pattern or solid for their top or bottom style. However, one-third did say that they preferred a solid color for a swimsuit bottom; similar proportions preferred a pattern (18%) or a solid color (15%) for their top. In choosing between a dark or light color as their swim suit top or bottom more than 60% said that it didn't matter to them. Of those for whom it did matter, nearly twice as many preferred a darker color bottom than preferred it for the top.

Table 5

Swimsuit Aesthetic Preference Frequencies and Percentages

Aesthetic Characteristic	Swimsuit Top		Swimsuit Bottom	
	<i>n</i>	%	<i>n</i>	%
Pattern	35	18.3%	12	6.3%
Solid color	29	15.2%	67	35.1%
Doesn't matter	127	66.5%	112	58.6%
Dark color	35	18.5%	69	36.1%
Light color	18	9.5%	7	3.7%
Doesn't matter	138	72.2%	115	60.2%

Note. *n* = 191

Table 6 shows the means and percentages for the purchase likelihood (measured using a five-point Likert scale) of each top and bottom style, with 1 being *very unlikely* and 5 being *very likely*. For the entire sample, results revealed the bandeau versions (with or without straps) to be the most likely top styles to be purchased. These and the triangle top were between “unsure” and “likely” to be purchased. The bra and halter-tops were between “unsure” and “unlikely.” The tankini was unlikely to be purchased. Overall results were more clear-cut in terms of the most favored bottom style. The hipster was the bottom style that most likely to be purchased with 28.6% participants likely purchasing the hipster and 61.4% most likely purchasing this bottom style. The string was the next most likely style to be purchased. The boy short, skirt, and brief styles all scored as being unlikely to be purchased.

Table 6

2-Piece Swimsuit Style Purchase likelihood Means and Percentages

Top Style	<i>M</i>	Purchase Likelihood (%)				
		Very Unlikely	Unlikely	Unsure	Likely	Very likely
Bandeau with straps	3.74	10.5%	10.5%	9.9%	33%	36.1%
Bandeau w/o straps	3.50	20.4%	12%	6.3%	19.4%	41.9%
Bra	2.84	23.3%	24.3%	13.8%	22.2%	16.4%
Halter	2.82	25.1%	21.5%	14.7%	24.1%	14.7%
Tankini	1.96	58.4%	14.7%	7.9%	10%	8.9%
Triangle	3.25	19.9%	14.7%	11.5%	28.8%	25.1%
Bottom Style						
Boy short	1.90	60.7%	12.6%	10.5%	8.9%	7.3%
Brief	1.81	53.9%	27.2%	5.8%	10.5%	2.6%
Hipster	4.42	3.2%	3.2%	3.7%	28.6%	61.4%
Skirt	1.90	61%	14.4%	5.9%	11.2%	7.5%
String	3.63	16.8%	7.4%	8.9%	30%	36.8%

Participants were asked to self-identify body shape by choosing from illustrations of the whole body (frontal silhouette), and bust and buttocks prominence (side views). Frequencies were run on these variables. Table 7 shows that most participants (57.8%) identified their whole body shape as being hourglass. Similar numbers identified average bust and buttocks prominence.

Table 7

Self-Identified Body Shape Frequencies and Percentages

	<i>n</i>	%
Whole Body Shape (<i>n</i> =190)		
Rectangular	24	12.6%
Hourglass	109	57.4%
Pear	14	7.4%
Inverted Triangle	43	22.6%
Bust Prominence (<i>n</i> = 191)		
Flat	37	19.3%
Average	103	54%
Prominent	51	26.7%
Buttocks Prominence (<i>n</i> =191)		
Flat	31	16.3%
Average	109	57%
Extreme	51	26.7%
Total		100%

In Table 8, the frequencies and percentages for participants' body size, as determined by BMI weight status, are shown. Body size was measured by calculating participants' BMI using height and weight numbers provided by participants. Each BMI value was then classified into one of four weight status classifications (Centers for Disease Control, 2013). There were ten participants for whom BMI could not be calculated because they either did not provide their height or weight. A majority of participants were classified into the normal weight status (71.3%). The obese classification had the lowest incidence (6.6%).

Table 8

*Body Size BMI Weight Status Classifications
Frequencies and Percentages*

	<i>n</i>	%
Weight Status		
Underweight	13	7.2%
Normal	129	71.3%
Overweight	27	14.9%
Obese	12	6.6%
Total	181	100%

Hypotheses Testing

For Hypotheses 1-4, which all inquired into the effects of body shape on style purchase likelihood, one-way multivariate analyses of variance were run. The self-identified body shape (independent) variables were whole body shape (rectangular, hourglass, pear, or inverted triangle), bust prominence (flat, average, and prominent), and buttocks prominence (flat, average, and extreme). Styles (dependent variables) were categorized within tops (bandeau without straps, bandeau with straps, halter, triangle, bra, and tankini) and bottoms (string, skirt, boy short, brief, and hipster) groups.

Hypothesis 1: Self-identified whole body shape will affect swimsuit top style purchase likelihood

MANOVA results revealed that the effect of self-identified whole body shape on the combined dependent variables was not statistically significant, [$F(18, 540) = 1.483, p = .09, Wilks' \Lambda = .864; \text{partial } \eta^2 = .048$]. Thus, self-identified whole body shape did not affect swimsuit top style purchase likelihood. Although the p value of 0.09 was larger than the rejection point, it was less than 0.10, suggesting that the relationship could be probed again in subsequent research, possibly with a larger sample or another means of assessing body shape.

Hypothesis 2: Self-identified whole body shape will affect swimsuit bottom style purchase likelihood.

MANOVA results revealed that the effect of self-identified whole body shape on the combined dependent variables was not statistically significant, [$F(15, 483) = 1.112, p = .342$; $Wilks' \Lambda = .911$; partial $\eta^2 = .031$]. Self-identified whole body shape was not found to affect swimsuit bottom style purchase likelihood; thus no further analyses were performed.

Hypothesis 3: Self-identified bust prominence will affect swimsuit top style purchase likelihood.

MANOVA results revealed that the effect of self-identified bust prominence on the combined dependent variables was statistically significant, [$F(12, 360) = 1.893, p = .034$; $Wilks' \Lambda = .88$; partial $\eta^2 = .059$]. Follow-up univariate ANOVAs showed that the means (Table 9) for purchase likelihoods for a bandeau without straps [$F(2, 185) = 9.331, p = .000$; partial $\eta^2 = .092$] and a tankini [$F(2, 185) = 3.056, p = .049$; partial $\eta^2 = .032$] were significantly different according to participants' self-identified bust prominence. Tukey post-hoc tests showed that participants who identified their bust as prominent had a statistically lower purchase likelihood mean for a bandeau without straps than participants who identified average bust prominence ($p = .000$) and those with flat bust prominence ($p = .002$). Thus, participants who perceived that they have a prominent bust are least likely to purchase a bandeau without straps. Tukey post-hoc tests showed that participants who self-identified a prominent bust had a statistically higher mean for the purchase likelihood of a tankini than participants who identified their bust prominence as average ($p = .042$); there was not a significant difference for those who identified bust prominence as flat. Therefore, tankini tops were found to be a more likely purchase for this

sample of self-perceived prominent bust females in comparison to average bust prominent participants but not in comparison to flat bust participants.

Table 9

Bust Prominence and Top Style Means

Top Style	Flat	Average	Prominent
	<i>M</i>	<i>M</i>	<i>M</i>
Bandeau w/Straps	3.65	3.89	3.46
Bandeau w/o Straps	3.84	3.77	2.70
Bra	2.49	2.90	2.98
Halter	2.78	2.81	2.90
Tankini	1.86	1.79	2.36
Triangle	3.38	2.29	3.02

Hypothesis 4: Self-identified buttocks prominence will affect swimsuit bottom style purchase likelihood.

MANOVA results revealed that the effect of self-identified buttocks prominence on the combined dependent variables was not statistically significant [$F(10, 354) = 1.02, p = .426$; $Wilks' \Lambda = .945$; partial $\eta^2 = .969$]. Thus, this research did not find that self-identified buttocks prominence affected swimsuit bottom style purchase likelihood.

Hypothesis 5a: Upper torso body satisfaction will have a negative influence on purchase likelihood of high coverage swimsuit top styles.

Hypothesis 5b: Upper torso body satisfaction will have a positive influence on purchase likelihood of low coverage swimsuit top styles.

To address whether upper torso body satisfaction influences swimsuit top style purchase likelihood, multiple simple regressions were performed with the independent variable being upper torso satisfaction (bust, shoulders,) and the dependent variable being the six swimsuit top styles (bandeau with straps, bandeau without straps, bra, halter, tankini, and triangle). Table 10

presents descriptive statistics for the dependent variables. The results of these simple regressions revealed that upper torso satisfaction positively influenced the purchase likelihood of the following two top styles:

- bandeau without straps [$\beta = .203, p = .005, \text{Adjusted } R^2 = .036, F(1, 187) = 8.021$], and
- triangle [$\beta = .204, p = .005, \text{Adjusted } R^2 = .037, F(1, 187) = 8.122$].

These two styles offer the least amount of coverage, making them the most revealing because one is strapless and the other covers the smallest breast area. Thus, hypothesis 5b was accepted.

Upper torso satisfaction negatively influenced the purchase likelihood of the tankini top style [$\beta = -.120, p = .028, \text{Adjusted } R^2 = .020, F(1, 187) = 4.910$]. Because this top style provides the most coverage, hypothesis 5a was accepted.

Table 10

Descriptive Statistics of Upper Torso Satisfaction Influence on Swimsuit Top Style Purchase Likelihood

Dependent Variable	<i>M</i>	<i>SD</i>	<i>p</i>	β
Bandeau w/Straps	3.75	1.319	.316	.073
Bandeau w/o Straps	3.51	1.597	.005	.203
Bra	2.84	1.427	.829	.016
Halter	2.82	1.421	.126	.112
Tankini	1.95	1.359	.028	-.160
Triangle	3.25	1.476	.005	.204

Following these findings, multiple simple regressions were also performed using just bust satisfaction to determine if the bust variable produced comparable findings. (See Table 11.)

Results revealed that bust satisfaction by itself positively influenced the purchase likelihood of two styles; these were:

- triangle [$\beta = .267, p = .000, \text{Adjusted } R^2 = .066, F(1, 188) = 14.375$], and
- halter [$\beta = .163, p = .024, \text{Adjusted } R^2 = .022, F(1, 188) = 5.155$] top styles.

These two styles appear to have in common a relatively greater emphasis on displaying cleavage even though the halter style provides more coverage than the triangle. (Table 1 provides a visual representation of these styles.) Thus, findings suggest that bust satisfaction influences the choice of styles that accent cleavage, which was not hypothesized.

Table 11

Descriptive Statistics of Bust Only Satisfaction Influence on Swimsuit Top Style Purchase Likelihood

Dependent Variable	<i>M</i>	<i>SD</i>	<i>p</i>	β
Bandeau w/Straps	3.75	1.316	.834	-.015
Bandeau w/o Straps	3.51	1.596	.821	.017
Bra	2.84	1.432	.295	.077
Halter	2.82	1.426	.024	.163
Tankini	1.95	1.356	.193	-.095
Triangle	3.26	1.474	.000	.267

Hypothesis 6a: Lower torso body satisfaction will have a negative influence on purchase likelihood of high coverage swimsuit bottom styles.

Hypothesis 6b: Lower torso body satisfaction will have a positive influence on purchase likelihood of low coverage swimsuit bottom styles.

Multiple simple regressions were performed to determine the influence of lower torso (buttocks, hips, thighs, and legs) satisfaction on swimsuit bottom styles. (See Table 12.) Three of the five styles were significant; these were the boy short, brief, and string. Lower torso satisfaction positively influenced the purchase likelihood for a string bottom [$\beta = .240, p = .001, \text{Adjusted } R^2 = .052, F(1,188) = 11.468$], whereas it negatively influenced the purchase likelihood for the boy short and brief styles [$\beta = -.174, p = .016, \text{Adjusted } R^2 = .025, F(1,189) = 5.905$ and $\beta = -.164, p = .023, \text{Adjusted } R^2 = .022, F(1,189) = 5.236$, respectively]. The string bottom provides the least coverage of the five styles, and the boy short and brief are two of the three styles that

offer the most coverage. Although the third style, a skirt, offers more coverage than the brief and had low likelihood of purchase like the boy short, it was not quite significant ($p = .126$).

Hypotheses 6a and 6b were accepted. Because the string style can offer very limited coverage of the buttocks and the positive influence found for lower torso satisfaction, multiple simple regressions were performed on just the variable, buttocks satisfaction, with swimsuit bottom styles. (See Table 13.) Only the string style was again found to be positively significant [$\beta = .213$, $p = .003$, Adjusted $R^2 = .040$, $F(1,188) = 8.970$].

Table 12

Descriptive Statistics of Lower Torso Satisfaction Influence on Swimsuit Bottom Style Purchase Likelihood

Dependent Variable	<i>M</i>	<i>SD</i>	<i>p</i>	β
Boy short	1.90	1.314	.016	-.174
Brief	1.81	1.105	.023	-.164
Hipster	4.42	.945	.426	.058
Skirt	1.90	1.338	.126	-.120
String	3.63	1.463	.001	.240

Table 13

Descriptive Statistics of Buttocks Only Satisfaction Influence on Swimsuit Bottom Style Purchase Likelihood

Dependent Variable	<i>M</i>	<i>SD</i>	<i>p</i>	β
Boy short	1.90	1.314	.116	-.114
Brief	1.81	1.105	.127	-.111
Hipster	4.42	.945	.276	.080
Skirt	1.90	1.338	.112	-.117
String	3.63	1.463	.003	.213

Hypothesis 7a: Weight satisfaction will have a negative influence on purchase likelihood of high coverage swimsuit top and bottom styles.

Hypothesis 7b: Weight satisfaction will have a positive influence on purchase likelihood of low coverage swimsuit top and bottom styles.

Multiple simple regressions were performed to determine the influence of weight satisfaction on swimsuit top and bottom styles. Three of the six top styles, bandeau without straps, tankini, and triangle, and two of the five bottom styles, hipster and string, were significant. Weight satisfaction positively influenced two top styles and two bottom styles leading to hypotheses 7b being supported; these were:

- Bandeau without straps $\beta = .214, p = .003, \text{Adjusted } R^2 = .041$
- Triangle $\beta = .227, p = .002, \text{Adjusted } R^2 = .046$
- String $\beta = .249, p = .001, \text{Adjusted } R^2 = .057$
- Hipster $\beta = .149, p = .043, \text{Adjusted } R^2 = .017$

The bandeau without straps and triangle top styles offer the least coverage of all top styles and string and hipster offer the least coverage for bottom styles. Weight satisfaction was found to negatively influence only the tankini top style ($\beta = -.250, p = .001, \text{Adjusted } R^2 = .057$); no bottom styles were negatively influenced; thus, hypothesis 7a was partially supported.

Hypothesis 8: BMI body size classification will affect swimsuit top style purchase likelihood.

A one-way MANOVA was run to determine the effect of BMI body size classification on the purchase likelihood of swimsuit top style. All six swimsuit top styles were assessed. The differences among body sizes on the combined dependent variables were statistically significant [$F(18, 478) = 2.871, p = .000; \text{Wilks}' \Lambda = .748; \text{partial } \eta^2 = .092$]. Follow-up univariate ANOVAs showed that the purchase likelihoods for five of the six top styles were statistically significantly different between participants' body sizes:

- bandeau with straps [$F(3, 174) = 4.821, p = .001$; partial $\eta^2 = .077$],
- bandeau without straps [$F(3, 174) = 6.247, p = .000$; partial $\eta^2 = .97$],
- bra [$F(3, 174) = 3.816, p = .006$; partial $\eta^2 = .062$],
- tankini [$F(3, 174) = 7.833, p = .000$; partial $\eta^2 = .119$], and
- triangle [$F(3, 174) = 3.201, p = .01$; partial $\eta^2 = .052$].

Tukey post-hoc comparison tests offered further insights into the mean differences among body sizes in relation to purchase likelihood for these five styles. (See Table 14.)

- Bandeau with straps: Obese participants had a significantly lower purchase likelihood mean than underweight ($p = .004$), normal ($p = .001$), and overweight participants ($p = .027$).
- Bandeau without straps: Obese participants had a significantly lower purchase likelihood mean than participants who were underweight ($p = .011$) and normal ($p = .000$), but not than overweight participants.
- Bra: Normal and overweight participants had statistically higher purchase likelihood means than obese participants ($p = .028, p = .005$ respectively), but not than underweight participants.
- Tankini: Obese participants had significantly higher purchase likelihood means compared to underweight ($p = .003$) and normal ($p = .000$) weight females but not compared to overweight participants.
- Triangle: Normal and underweight participants had significantly higher purchase likelihood means than obese participants ($p = .008, p = .15$ respectively), but not than overweight participants.

These results support H8 not only with differences in means between top styles and body sizes, but also revealing that obese participants showed a higher purchase likelihood for tankini top which offers higher body coverage than the other styles.

Table 14

Descriptive Statistics of Body Size and Swimsuit Top Style Purchase Likelihood

Top Style	Body Size (BMI)							
	Underweight		Normal		Overweight		Obese	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Bandeau w/straps	4.1	.388	3.8	.113	3.6	.247	2.3	.405
Bandeau w/o straps	3.7	.426	3.7	.136	2.9	.296	1.8	.486
Bra	2.4	.398	2.9	.125	3.3	.272	1.6	.448
Halter	2.5	.393	2.8	.125	3.0	.273	2.6	.448
Tankini	1.8	.360	1.7	.115	2.5	.250	3.5	.410
Triangle	3.6	.403	3.3	.128	3.2	.279	1.9	.459

Hypothesis 9: BMI body size classification will affect swimsuit bottom style purchase likelihood.

A one-way MANOVA was run to determine the effect of BMI body size classification on the purchase likelihood for swimsuit bottom styles. All five-swimsuit bottom styles were assessed. The differences among body size classifications on the combined dependent variables were statistically significant, $F(15, 504) = 3.054, p = .000$; $Wilks' A = .250$; partial $\eta^2 = .083$.

Follow-up univariate ANOVAs showed that the purchase likelihoods for four of the five styles were statistically significantly different between participants' body sizes:

- boy short [$F(3, 170) = 3.680, p = .013$; partial $\eta^2 = .061$],
- brief [$F(3, 170) = 2.988, p = .033$; partial $\eta^2 = .50$],
- hipster [$F(3, 170) = 12.161, p = .000$; partial $\eta^2 = .177$], and
- string [$F(3, 170) = 5.927, p = .001$; partial $\eta^2 = .095$].

Tukey post-hoc comparison tests were used to probe the differences among body sizes in purchase likelihood for the styles. (See Table 15.)

- Boy short and brief: Obese participants had a statistically significant higher purchase likelihood mean than normal size participants ($p = .007$ boy short, $p = .025$ brief).
- Hipster: Obese participants had a significantly lower purchase likelihood mean compared to the three other sizes of underweight, normal, and overweight ($p = .000$ for all three classifications).
- String: Underweight, normal, and overweight participants had significantly higher purchase likelihood means than obese participants ($p = .011$, $p = .000$, $p = .002$ respectively).

Supporting H9, results revealed obese participants preferred to purchase boy short and brief bottom styles over the more revealing bottom styles like the string and hipster.

Table 15

Descriptive Statistics of Body Size and Swimsuit Bottom Style Purchase Likelihood

Bottom Style	Body Size (BMI Weight Status)							
	Underweight		Normal		Overweight		Obese	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Boy short	2.0	.362	1.78	.117	2.0	.241	3.0	.377
Brief	1.92	.308	1.71	.10	2.0	.222	2.67	.320
Hipster (bikini)	4.38	.237	4.52	.077	4.64	.171	3.0	.246
Skirt	1.54	.352	1.72	.114	2.08	.254	2.5	.366
String	3.69	.395	3.7	.128	3.76	.285	1.92	.411

CHAPTER 5: DISCUSSION, IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

The purpose of this study was to investigate and fill in gaps of understanding the two-piece swimsuit style choices of young adult females by relating stylistic choices to self-identified body shape, body size and body satisfaction. This chapter discusses the findings reported in Chapter 4 in relation to literature on body shape, size and satisfaction, as well as previous research on style choices. Further, this chapter addresses the limitations in the study, implications, and recommendations for future research.

Discussion and Conclusions

Style Choices Related To Self-Identified Whole Body Shape, Bust Prominence, and Buttocks Prominence

Objective 1 of this study was to identify swimsuit top and bottom style choices in relation to self-identified whole body shape, bust prominence, and buttocks prominence. Hypotheses 1-4 addressed this objective. Self-identified whole body shape was found to not have an effect on either swimsuit top or bottom style choices, expressed as purchase likelihood, in relation to six top and five bottom styles. One possible reason for this result is that participants may not have all correctly self-identified their shape. More than half of the participants identified themselves as hourglass, whereas just approximately 20% self-identified their shapes as either pear or rectangle.

Previous research using body scan technology suggests that these percentages do not represent what has been found in the adult female population. Using the BSAS© scale that was

applied in my study, Alexander (2003) found that 34% of a sample of 529 females aged 19-55 was hourglass shape; 45% was pear shape, and 16% was rectangular. When comparing participants' self-identification of body shape and the BSAS© software's assignment of body shape, Alexander (2003) found for the hourglass shape that there was agreement only 32% of the time; more participants thought that they were hourglass, a fashion ideal, than the BSAS© system designated. It should be noted, however, that in Alexander's sample, 41% of the 19-25 year olds was hourglass shape; this was higher than the overall sample but still lower than the self-reported number in my research. Simmons (2002), also using body scan technology, found only 21% of her study's participants were classified as having a true hourglass shape, with 40% being classified as pear shaped. Sidberry's (2011) sample was nearly identical to mine. Both of our studies used students from the same university and department. He found that over half the participants' ideal body shape was hourglass, however about 38% actually reported being hourglass. This further contributes to the possibility that my sample wasn't identifying their shape correctly and some could have chosen hourglass because it is a fashion ideal.

Ross (2010) analyzed data from a company from which customers purchased customized swimwear. The purchase process included customers participating in a body scan with software to identify their shape. Of a sample of 463 female customers, 27% were identified as having an hourglass shape and 35% were identified as rectangle shape. Ross (2010) did find that body shape was related to swimsuit style preference, but customers only had three categorical options from which to choose, one-piece, tankini, or bikini, and they had a consultant's help with choosing the broad style in relation to their assigned body shape. If very many female consumers are not able to correctly identify their whole body shape, retailers that offer swimwear style and fit guides requiring consumers to pick out their body shape might not end up offering

as helpful a guide as they think. If females do not correctly identify their body shape, then swimwear style and fit guides recommendations may not yield satisfied consumers, and the companies may need to rethink their guides.

Like whole body shape, self-identified buttocks prominence did not have an effect on swimsuit bottom style purchase likelihood. Also as with whole body shape, some participants may not have correctly self-identified buttocks prominence. Whereas in Alexander's (2003) large sample, 70% of the participants had average prominence and less than 10% had extreme prominence, in my sample, just 54% reported average and 27% extreme prominence. It may be that these participants don't think about this aspect of body shape, or it may be that it is not a relevant factor in their choice of swimsuit bottoms.

Another possible reason for whole body shape to not have an effect on purchase likelihood of swimsuit style is because of the lack in diversity within each of the sample sizes for the categories. Hourglass had a larger sample (109 participants) compared to rectangular, pear, and inverted triangle were all under 50 participants. Like whole body shape, lack of diversity in sample sizes between buttocks prominence categories is another reason for H4 being unsupported. Over a hundred participants identified their buttocks prominence as average whereas flat and extreme categories had fewer than 50 participants each.

My participants may have self-identified their bust prominence more accurately than whole body shape and buttocks prominence; 54% said that they were average, and this is almost identical to Alexander's (2003) findings of 55%. However, using the same BSAS© scale, Alexander (2003) found 8% to be prominent, and this sample had a 27% incidence of prominence. Self-identified bust prominence did affect swimsuit top style choices, specifically for the likelihood of purchasing a bandeau without straps and a tankini top. Compared to

participants identifying flat or average bust size, those with a prominent bust were found to be the least likely to purchase a bandeau without straps, but were likely to purchase a tankini top. This finding is in line with swimsuit advice articles and guides that suggest women with a large bust should opt to purchase a top with straps, particularly wide straps that give support for the chest area. (Fashion and fit in swimwear, 2005; Nordstrom.com. 2012; Women's Health, n.d.). A possible reason for prominent bust sized participants to be more inclined to purchase a tankini top compared to those with a smaller size bust is that the tankinis in the market may provide more support, often with underwire cups, and may have wider straps (Nordstrom.com, 2012).

Style Choices Related To Body Size

Objective 2 was to explore style choices related to a participants' body size. Body size was measured by calculating participants' BMI from their self-reported heights and weights, and then grouping them into the weight status categories (underweight, normal, overweight, and obese) delineated by the CDC (2001). The results of two hypotheses (8 and 9) showed that body size did have a significant effect on the purchase likelihood of all top styles except for the halter and all bottom styles except the skirt. The purchase likelihood for both halter and skirt was low to neutral (at best) across body sizes.

Most of the significant findings related to top styles set obese participants apart from other body size groups, especially normal and underweight. Obese participants were the most likely to purchase a tankini top and the least likely to purchase styles with much less coverage (triangle, bandeau with and without straps, and bra styles). On the other hand, underweight and normal participants were most likely, compared to the obese, to purchase the triangle. Supporting information to aid consumers though style choices, Victoria's Secret.com, a leading specialty retailer that sells swimwear, states that the triangle top is the most revealing top style and the

tankini offers the most body coverage (Victoria's Secret.com, 2012). Thus, results can be interpreted to indicate that these larger size, young females preferred the top style with the most coverage, and the smaller sized females wanted little coverage for their top. The overweight group's top choice was significantly set apart from the obese group only for the bandeau with straps and the bra style, which have similarly moderate coverage, and straps. The style that had slightly more coverage than these, halter, was the one top style for which there was no significant body size effect on purchase likelihood.

Findings were similar for obese participants concerning bottom styles. They were more likely to purchase the boy short and brief styles, which covered more of the body, than smaller sized participants, who were more likely to purchase the hipster and string styles that offered less coverage. These results align with swimsuit style guides and literature that say the brief and boy short styles offer maximum buttocks, hip, and thigh coverage, with the brief even hitting above the hip, just below the naval for additional tummy coverage (J.crew.com, 2012, Nordstrom, 2012, Women's Health, n.d.). Despite being statistically more likely to purchase the bottom styles with more coverage, means for obese and overweight participants suggested that they still appeared to prefer to purchase at least the hipster, if not the string, more than or equally to the brief, boy short, and skirt. This observation contradicts the literature positively connecting body size and body coverage. This may be due to participants' young adult age range because over half of all participants were very unlikely to purchase the boy short and brief styles, whereas hipster and string were the top two styles for participants to purchase. Not wanting to purchase boy short and brief styles also may be influenced by seasonal swimsuit trends and whether or not retailers are targeting these styles to the young adult age group.

The results for top and bottom styles generally support body coverage preference findings from Pisut (2001), Fu (2004), Chattaraman and Rudd (2006) and Ross (2010). In Chattaraman and Rudd's (2006) study, results showed larger sized females preferred more body coverage and small sized females preferred to have lesser body coverage. Like my study, Pisut (2001) and Fu (2004) used participants' BMI scores to define size and found larger sized females preferred garments that seemed to camouflage size. Ross (2010) defined body size using dress sizes to relate swimsuit style (one-piece, tankini, and bikini) preference. She, too, found that customers who wore larger dress sizes preferred to be more covered by selecting a tankini style suit, and smaller dress size customers preferred less coverage by preferring a bikini style. Thus, age may be an intervening variable between body size and body coverage.

Body Satisfaction Influences on Style Choices

Objective 3 of this study was to explore style choices related to body satisfaction. Body satisfaction was explored by addressing upper and lower body, as well as weight satisfaction. Hypotheses 5a and 5b anticipated that upper torso satisfaction, operationally defined as a combination of shoulder and bust satisfaction, would have body coverage related effects, and it did. Participants who were more satisfied were more likely to purchase the bandeau without straps and triangle top styles and less likely to purchase the tankini style. This finding paralleled recommendations to swimsuit customers that the main function of the tankini is to provide coverage (Nordstrom.com, 2013; Venus Swimwear.com, 2013; Victoria's Secret.com, 2013). It does appear that a young female who is satisfied with her upper body does not want to cover it up and will tend to purchase swimsuit tops that offer the least coverage to maybe even accentuate this area. Because the bust is the main focus in tops that offer less coverage, bust satisfaction alone was examined, and it was found that the more satisfied a participant was, the more likely

she was to purchase a triangle or halter style. These findings align with swimsuit guides that recommend a triangle style to create less coverage and a halter to enhance cleavage, exposing more of the bust (Nordstrom.com, 2012). In my study, the triangle picture showed cleavage similar to the halter.

Lower torso satisfaction (measured as a sum of satisfaction with buttocks, hips, thighs, and legs) also was expected to have positive and negative influences on purchase likelihood for styles that offered less or more coverage, and this was found. Participants who were more satisfied with their lower torso were less likely to purchase the boy short and brief styles, and more likely to purchase the string style, meaning that the more lower torso satisfaction a young female had, the less coverage she wanted. Because the buttocks is one main focus for bottom coverage, buttocks satisfaction alone was also examined; it only influenced the purchase likelihood of the string bottom style. The more satisfied a young female is with her lower torso; the less she wants to cover up. She was less likely to purchase the brief and boy short styles that offer maximum coverage for the buttocks and have higher rises for additional coverage (Nordstrom.com, 2012, Victoria's Secret.com, 2012).

Weight satisfaction was found to positively influence the purchase likelihood of hipster and string bottom styles and the triangle top style; it negatively influenced the purchase of the tankini top. Although the hipster covers more than the string, they and the triangle top offer less coverage and more revealment for the weight satisfied young woman. Garner (1997) found body satisfaction was related to weight and that weight accounted for 60% of overall satisfaction for women. Thus, it appears that the participants who were more satisfied with their weight were also probably more satisfied with their body and were more likely to purchase revealing styles.

Body satisfaction and purchase decisions have been researched by Alexander (2003) and Pisut and Connell (2007); each found that females who are satisfied with certain areas/parts of the body prefer garments that are closely fitted to the body rather than looser garments that would cover and camouflage areas. Also, Rudd and Lennon (2000) and Yoo (2003) concluded clothing could accentuate specific areas of the body and camouflage figure flaws. These findings can be applied to the purchase likelihood for certain swimsuit top and bottom styles. The satisfaction of young females with either the upper or lower torso leads them to purchase styles that offer less coverage or to accentuate areas, whereas lower satisfaction for either areas of the body led to more coverage and camouflaging like styles. In conjunction with a 2009 article in *Wearables Magazine*, Mitticia (2009) recommended to women that they should purchase swimwear that emphasizes parts of the body that they like and de-emphasizes the other parts that they don't like. In swimsuits, body revealment or coverage and emphasis or de-emphasis appear related. My research implies that young adult females are not only likely to purchase swimsuit styles that show their bodies if they are smaller and/or more satisfied, but also to emphasize certain body areas.

Swimsuit Shopping Behaviors

Although no hypotheses were proposed to address swimsuit purchase venues, my study offered an opportunity to probe the demographics of shopping. A majority of these young female adults choose to purchase swimsuits in-store and through the internet. Few purchased exclusively through the internet, perhaps because swimwear is body-revealing clothing that they may prefer to try on before purchasing. Most of the sample purchase swimsuits from specialty and mass merchant retailers. Fewer use department stores, and even fewer go to off-price chains to

purchase swimsuits. Pisut and Connell (2007) also encountered a mixed result on shopping venues for female consumers.

Eckman, Damhorst, and Kadolph (1990) found women considered color, pattern, and style as the most important aesthetic attributes in clothing when making decisions during the purchase phase. Color and pattern choices for purchasing top and bottom styles can be related to balancing and enhancing techniques for women's bodies, which is common advice to consumers through magazines, websites, and television (CBSNews, 2009; Women's Health, n.d.; Venus Swimwear.com, n.d.). Purchasing specific swimwear top and bottom styles based on color and print can create optical illusions that reduce the size of larger areas of the body and increase smaller ones (Chattaraman, 2012). Darker colors draw attention away from problem areas and prints draw attention to specific areas (Women's Health, n.d.). Thus, if a female wants to enhance or draw attention to her upper torso, it is recommended that she purchase vibrant prints, with a solid or darker color as her bottom. However, if she wants to shift visual weight to her bottom and de-emphasize her bust, she would choose the opposite. Although color and pattern attributes did not seem to matter to a majority of my participants, their responses may have reflected awareness of the balancing and enhancing techniques. More preferred to purchase a solid color for their bottom style and a pattern style for their top. These choices may also relate to results for style choices based on body satisfaction in that less satisfied females wanted a bottom that top that covered more and satisfied females were likely to choose styles that covered less.

Implications

Although my research could not affirm or deny participants' self-identification of body shape, from comparison of findings to recent body shape research, it appears that these young

female adults could not all correctly identify their body shape. If this is the case, then swimsuit choice guides that ask female consumers to pick out their whole body shape from graphic images could lead them to styles that might not be the best for them. Retailers might want to try alternative means to help their consumers identify swimsuit styles that would be best for them.

For example, they might:

- ask whether or not they purchase the same size garment for the upper and lower body.
- want to focus on fit and style guides that offer recommendations based on body components that females are most satisfied or least satisfied with (likely areas they want to accentuate or camouflage).
- along with visual photographic images of each style, include its features (e.g., coverage) and the “desirables” a female may be seeking when purchasing a swimsuit (e.g., bust support, bust enhancement). Nordstrom.com, J.Crew.com, and Victoria’s Secret.com currently offer guides with one or more of these options.

Retailers may want to take note of Everythingbutwater.com’s perfect fit swim finder guide. It allows customers to first select individual areas of the body where they want to add more coverage, and then they are given visual recommendations of top and bottom styles, along with one-piece swimsuit options. The customer then can choose the specific style of which she wants to see more. Although everythingbutwater.com offers many styles, the customer may still not feel comfortable in certain styles that are recommended based on how satisfied she is with certain areas of her body. When making swimsuit purchase decisions, it doesn’t necessary matter about body or component shape, a customer is going to purchase a specific top or bottom style based on how satisfied she is with areas of her body and based on the areas she wants to accentuate/ emphasize or camouflage/ de-emphasize. Based on my research findings, it could be

beneficial to retailers to reevaluate swimwear guides that they currently offer to aid female consumers in the swimsuit purchase decisions process.

Limitations

Findings should not be generalized and be considered to represent all 19-26 year old females. The sample was from a southern university in the US and had a moderate sample size of just under 200. A larger sample size could have improved the sample size diversity issue within whole body shape and buttocks prominence categories and lead to different results for H1, H2, and H4. The location is a site that is just a four-hour drive from the beaches, so participants were likely to be conscious of swimsuit options and preferences. The sample was also from a single department that specializes in design and merchandising whose students could have been more aware of apparel preferences and fit. Only two-piece swimsuit styles were studied based on findings by Ross (2010) that this was the preferred swimsuit to wear for this age group; thus, one-piece options were not examined in the research. This study did not use body scanning technology or experts to identify participants' body shape. Mistaken self-identification of body shape could have influenced results. Similarly, the research relied on self-report of weight and height to calculate BMI. Weight and height information provided by participants could have been reported incorrectly; past research has suggested that woman tend to underestimate their weight (Strauss, 1999; Lin et al., 2010). Like body scanning, taking actual height and weight measurements would have allowed the researcher to be more sure that BMI scores truly reflected participants' body size.

Recommendations for Future Research

Executing similar research in which participants identify their whole body shape, bust prominence, and buttocks prominence; body scanning technology is utilized so that shapes of

participants can be analyzed by experts; and actually measuring heights and weights to calculate BMI would reduce the limitations of this completed study. Given Sidberry's (2011) findings that body shape influenced dress style choice, more probing of the shape and style relationship for swimsuits would be justified. Alternative or additional questions could also be asked to force participants to choose only one top and one bottom style that they would purchase out of all styles. Doing so would allow the researcher to directly see which styles specific whole body shapes and bust and buttocks prominence levels are purchasing. Asking participants to identify specifically which styles they own would reveal which styles females are actually purchasing. Ranking top and bottom styles is also another way to further explore styles that they would likely purchase over others. Instead of using a body satisfaction scale, participants could be asked to directly identify the specific areas they look to accentuate and/or camouflage when shopping and purchasing swimsuit styles.

Inquiring into the possible effect of body shape and body size on body satisfaction and subsequent swimsuit top and bottom preferences is also another logical direction for research. The significant connections between size and style, as well as satisfaction and style, plus the more limited findings for shape and style suggest that links between these variables should be examined. Developing an understanding of all of the factors that a female considers during the selection process of purchasing a swimsuit could aid retailers with their fit and style guides and inform the broader scholarly literature on style preferences.

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APPENDIX A

QUESTIONNAIRE

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

INFORMATION LETTER

for a Research Study entitled

“Young Female Adults’ Two-Piece Swimsuit Style Choices in Relation to Their Body Shape, Size, and Satisfaction”

You are invited to participate in a research study to examine swimsuit style purchase choices related to my thesis. The study is being conducted by Patrice Beury, graduate student, under the direction of Dr. Pamela Ulrich, Professor in Auburn University’s Department of Consumer and Design Sciences. You were selected as a possible participant because you are an Auburn female student, 19 years of age or older, and enrolled in a selected Human Sciences course.

What will be involved if you participate? Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to complete a questionnaire. Your total time commitment will be approximately 10-15 minutes.

Are there any risks or discomforts? We assure that the participation in this study would put you in no physical or psychological risks other than the minimal inconvenience of completing the questionnaire. Data is collected anonymously and no identifiers will be used to link your responses to your identity.

Are there any benefits to yourself or others? The general population may benefit from this study as product designers and marketers may produce and sell products that better fit the preferences of their target market.

Will you receive compensation for participating? To thank you for your time you will be offered extra credit (amount decided by the professor) in your participating class.

Are there any costs? If you decide to participate, the only cost to you will be your time to participate in taking this survey. This time estimate is between 10-15 minutes.

If you change your mind about participating, you can withdraw at any time by *closing your browser window*. Once you've submitted anonymous data, it cannot be withdrawn since it will be unidentifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University or the Department of Consumer and Design Sciences.

Any data obtained in connection with this study will remain anonymous. We will protect your privacy and the data you provide by not collecting IP or email addresses from research participants. Names are only collected at the end of this survey so you the student can receive extra credit in the appropriate class or classes. No names are linked to any survey results. Afterwards, all names will be destroyed. Information collected through your participation may be published in a professional journal, and/or presented at a professional meeting. If so, no identifiable information will be included. **If you have questions about this study**, please contact Patrice Beury at 813-505-1751, pzb0008@auburn.edu or Dr. Pamela Ulrich at ulricpv@auburn.edu, 334-844-1336.

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

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

Patrice Beury 2/7/2013
Investigator

Dr. Pamela Ulrich 2/7/2013
Co-Investigator

The Auburn University Institutional Review Board has approved this document for use from February 2,2013 to February 1,2016.

Protocol # 13-035 EX 1302






[LINK TO SURVEY](#)

Swimwear Top Styles

Questions 1-6

The next time you shop for a new swimsuit, *how likely is that you will purchase each of the following top styles.*

Select one answer for each style, 1 =very unlikely and 5= very likely



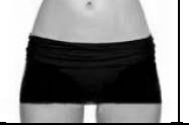


Top Style	Very Unlikely	Unlikely	Unsure	Likely	Very likely
Bandeau w/Straps 	1	2	3	4	5
Bandeau w/o Straps 	1	2	3	4	5
Halter 	1	2	3	4	5
Triangle 	1	2	3	4	5
Bra 	1	2	3	4	5
Tankini 	1	2	3	4	5

Swimwear Bottom Styles

Questions 7-11.

The next time you shop for a new swimsuit, *how likely is that you will purchase each of the following bottom styles.*

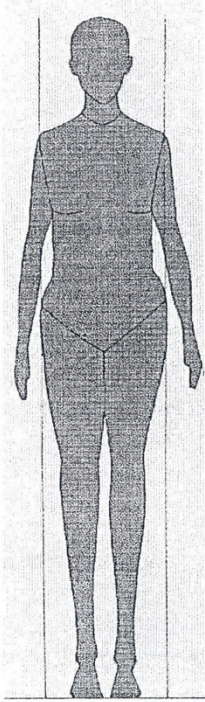
Select one answer for each style, 1 =very unlikely and 5= very likely

Bottom Style	Very Unlikely	Unlikely	Unsure	Likely	Very likely
String 	1	2	3	4	5
Skirt 	1	2	3	4	5
Boyshort 	1	2	3	4	5
Brief 	1	2	3	4	5
Hipster 	1	2	3	4	5

Body Shape

Question 12.

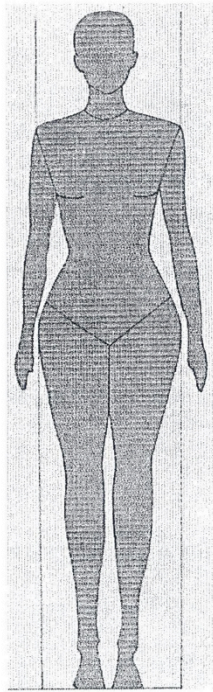
Select which one of the following images best represents your current body shape.



1

Rectangular:

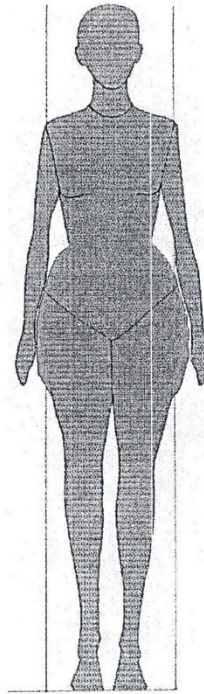
Shoulder and hip width are balanced (equal or nearly equal) with little to no waist definition.



2

Hourglass:

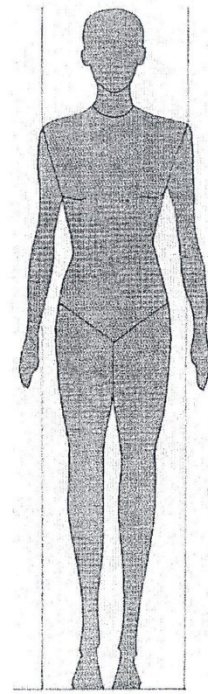
Shoulder and hip width are balanced (equal or nearly equal) with clearly defined to very small waist in relation to shoulder and hip width.



3

Pear:

Hip and/or thigh width is visually greater than shoulder width.



4

Inverted Triangle:

Shoulder width is visually greater than fullest width at hip or thighs.

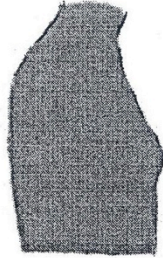
Based on the above visual scale:

My current body shape is: (Please Select ONE) 1 2 3 4

Bust Prominence

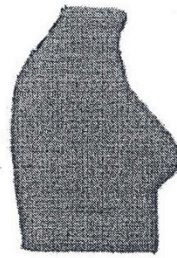
Question 13.

Select which one of the following images best represents your current bust prominence.



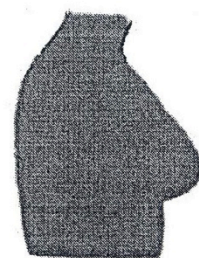
1
Flat

Flat to slightly curved bustline.



2
Average

Moderately curved bustline.



3
Prominent

Full, prominent bustline.

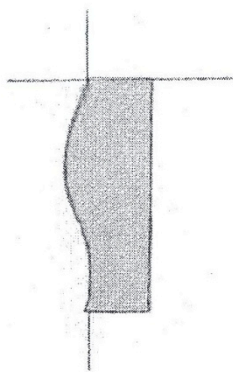
Based on the above visual scale:

My current bust prominence is: (Please select one) **1** **2** **3**

Buttocks Prominence

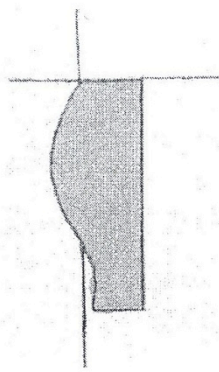
Question 14.

Select which one of the following images best represents your current buttocks prominence.



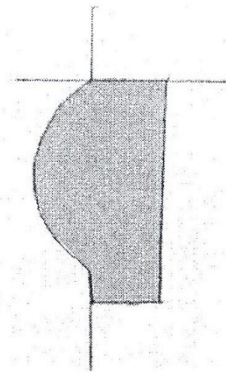
1
Flat

Flattened appearance below waist and minimal curving under to top of leg.



2
Average

Moderate, curve between waist and top of leg.



3
Extreme

Prominent, curve between waist and top of leg.

Based on the above visual scale:

My current buttocks prominence is: (Please select) **1** **2** **3**

Body Satisfaction

Question 15-22

Please indicate your level of satisfaction with each of the following body aspects of your body.

	Very Dissatisfied	Mostly Dissatisfied	Neither Satisfied Nor Dissatisfied	Mostly Satisfied	Very Satisfied
Bust	1	2	3	4	5
Upper Torso (bust, shoulders, & arms)	1	2	3	4	5
Mid Torso (waist & stomach)	1	2	3	4	5
Waist	1	2	3	4	5
Lower torso (buttocks, hips, thighs, & legs)	1	2	3	4	5
Hips	1	2	3	4	5
Buttocks	1	2	3	4	5
Weight	1	2	3	4	5

Question 23

Please provide your current height.

Question 24

Please provide your weight.

Swimwear Shopping

Questions 25-28. Select the answer that best indicates how often you purchase swimsuits from each of the following types of retailers.

Question 25. How often do you purchase swimsuits from specialized clothing stores (e.g., The Gap, American Eagle, Victoria Secret, Pacific Sunwear, Old Navy or Express)

Never	Rarely	Sometimes	Often
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Question 26. How often do you purchase swimsuits from department stores (e.g., J C Penney, Dillard's, Macy's, or Belk's)

Never	Rarely	Sometimes	Often
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Question 27. How often do you purchase swimsuits from mass merchandise chains (e.g., Target, Walmart, or Kohl's).

Never	Rarely	Sometimes	Often
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Question 28. How often do you purchase swimsuits from off-price chains (e.g., T.J Maxx, Marshall's, or Ross)

Never	Rarely	Sometimes	Often
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Question 29.

How many swimsuits do you currently own? Please circle the appropriate number

1 2 3 4 5 6 More than 6 (Please write in the #) _____

Question 30.

Please select one answer.

I purchase swimsuits:

Through the internet	In-store	both
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Question 31

Please select one answer

For my swimsuit top I prefer

A patterned style	A solid color	Doesn't matter
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Question 32

Please select one answer

For my swimsuit bottom I prefer

A patterned style	A solid color	Doesn't matter
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Question 33

Please select one answer

For my swimsuit top I prefer

A dark color	A light color	Doesn't matter
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Question 34

Please select one answer

For my swimsuit bottom I prefer

A dark color	A light color	Doesn't matter
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Please identify your ethnicity

- A. Caucasian/White
- B. African American/Black
- C. Hispanic
- D. Asian
- E. Other (Please write in) _____

Please identify your age.

- A. 19
- B. 20
- C. 21
- D. 22
- E. 23
- F. Other _____ Please write in your age