CHAPTER III

Statement of the Problem

Store patronage involves the consumer's choice for a particular retail store (Shim & Kotsiopulos, 1992). Past retail and marketing studies have identified several consumer-oriented store attributes (e.g., price, quality, variety, discounts, store reputation) and their relationship to store patronage, but these studies overlooked how the physical environment affects retail store patronage. The purpose of this study was to examine the influence of 12 environmental dimensions on store patronage for female consumers. This research examined differences in (a) importance ratings of environmental dimensions for three shopping scenarios, (b) importance ratings of environmental dimensions for each shopping orientation, (c) perceptions of the store environment for each shopping orientation, and (d) attitude toward the store environment and first store choice. The statement of problem, research objectives, conceptual framework, hypotheses, conceptual definitions, assumptions, and limitations are presented in this chapter.

Gaps in the literature: The Problem

Environmental psychologists have discussed the physical environment, emotional responses to environments, and resulting patronage, but no studies have identified specific environmental dimensions and their influence on retail store patronage relative to apparel shopping scenarios. Earlier environmental studies conducted by Mehrabian and Russell (1974) and Donovan and Rossiter (1982) identified the emotional responses (i.e., pleasure, arousal, dominance) that individuals exhibit while in a particular environment. Furthermore, Donovan and Rossiter proposed that an individual would engage in either approach or avoidance behaviors to show preference or lack of preference for several types of retail stores. Of the four approach-avoidance dimensions (i.e., physical, exploratory, communication, performance/satisfaction) discussed by these researchers, physical approach-avoidance was expressed as store patronage; however, these

researchers did not explore the relationship between specific environmental dimensions (e.g., layout, style of décor, temperature, lighting) and physical approach-avoidance (i.e., store patronage).

While Donovan and Rossiter (1982) randomly assigned subjects to different stores and investigated responses to stores under different situations (i.e., different day, time of day), this study examined the influence of environmental dimensions on store patronage for subjects across different shopping scenarios. Subjects were asked to complete a survey questionnaire to address this gap in the retail store patronage literature.

Objectives

1. To determine differences in importance ratings of selected environmental dimensions for each shopping scenario.
2. To determine differences in importance ratings of selected environmental dimensions for each shopping orientation.
3. To determine differences in perceptions of the store environment by store type for each shopping orientation.
4. To determine differences in attitude toward the stores and first store choice.

Conceptual Framework

The conceptual framework for this research was based on the proposed influence of specific environmental dimensions on retail store patronage. Models and concepts developed by Bitner (1992), Engel, Blackwell, and Miniard (1995), Mehrabian and Russell (1974), Monroe and Guiltinan (1975), and Shim and Kotsiopulos (1992) were adapted to form the framework for this study. The following paragraphs discuss each model individually, then provide an overall summary of concepts combined to form the framework.

Environmental Responses and Approach-Avoidance Behavior

Bitner (1992) developed a framework for environment-user relationships in service organizations. The overall objective of this model was to explore the role of the physical environment in service organizations. Bitner's framework proposes that consumers and employees in service settings perceive a variety of environmental factors. These factors are ambient conditions; space/function; and signs, symbols and artifacts. Ambient conditions consist of temperature, air quality, noise, music, and odor. The space/function dimension includes the layout, equipment and furnishings. Signage, styles of décor and personal artifacts are among the sign, symbols and artifacts dimension. Both consumers and employees respond to the environment cognitively, emotionally, and physiologically. These internal responses then influence the behavior of consumers and employees, as well as affect their social interactions. Furthermore, Bitner states that the perceived servicescape (i.e., physical setting, environment in service organizations) and environmental factors does not directly cause people to behave in certain ways. Instead, consumer perceptions of the servicescape lead to certain beliefs, emotions and physiological actions that influence behaviors.

To discuss individual behavior, Bitner incorporates the concept of approach-avoidance behavior (i.e., patronage behavior) studied by Mehrabian and Russell (1974) and Donovan and Rossiter (1982). Bitner states that individuals react to environments in two ways to show preference (i.e., approach) or lack of preference (i.e., avoidance) for a particular environment. Designing environments, which enhance approach behaviors (i.e., store patronage) and encourage social interactions, present many challenges for service organizations because optimal design for one person or group of people may not be the optimal design for others. For example, a setting that is conducive to an employee's work needs may not enhance the social interaction between employees and consumers (Bitner). Furthermore, an environment that promotes approach or patronage behavior for one consumer may not elicit the same response in another consumer or group of consumers.

The Consumer Decision Process

Engel, Blackwell, and Miniard (1995) developed the consumer decision process and the store choice decision model. The decision process model can be applied to all decisions that consumers make in the marketplace; however, the store decision model applies only to decisions made about specific retail stores. Seven stages are included in the consumer decision process model. They are need recognition, search for information, pre-purchase alternative evaluation, purchase, consumption, post-purchase alternative evaluation, and divestment. A need is recognized when a perceived difference between the desired and the actual state of affairs occur. For instance, a consumer may recognize the need for a new dress. Next, the consumer engages in an information search to facilitate decision making and to reduce the perceived risk often associated with purchasing a dress. Pre-purchase evaluation involves assessing several criteria, such as fabric type, construction detail, and brand name to decide on an appropriate dress. At the purchase stage, the consumer makes decisions related to whether to buy, when, what, and where to buy, as well as how to pay for the dress. After purchase and use of the dress, the consumer makes a post-evaluation. This evaluation involves determining whether the dress meets the expected level of performance. The consumer often expresses their satisfaction or dissatisfaction with the dress. Finally, after using the product over time the consumer disposes of the dress because it no longer meets functional or psychological needs or because the item is obsolete.

At the purchase stage in the consumer decision process, the consumer decides where or what stores to purchase a product (e.g., a dress) once the need is recognized. With respect to the store decision model, Engel, Blackwell, and Miniard (1995) examined store choice as a function of consumer characteristics and store characteristics. The store decision process involves four variables: evaluative criteria or attributes, perceived characteristics of stores, comparison process, and acceptable and unacceptable stores. The model proposes that consumers form images (i.e., overall perception) of stores based on the combination of perceived criteria or attributes. Often these attributes are combined to form categories. Some attributes include location, assortment breadth and depth, price, advertising and sales promotion, store personnel, services, and other store characteristics.

In retail studies, consumers list attributes that come to mind when thinking about a particular store or store type or they are often given a list. Consumers rate stores relative to each attribute or category on Likert-type scales of importance (e.g., 1-to-7). At the comparison process (i.e., in the mind of the consumer), the consumer compares the importance of store attributes with the store's image (i.e., overall perception) to determine which stores are acceptable and those that are unacceptable. For example, if quality is important to the consumer, and if Store A is perceived as having lower quality, while Store B is perceived as having higher quality, the consumer will choose Store B rather than Store A.

Retail Patronage Behavior

Store patronage is identified in Bitner's (1992) model as approach-avoidance behavior. Bitner proposes that perceptions of the environment or environmental dimensions lead to certain beliefs or emotions about the environment, which then determine whether a consumer will approach (i.e. patronize) or avoid a particular setting.

Shim and Kotsiopulos (1992a) used Darden's (1980) patronage model of consumer behavior as the theoretical framework in the first of a two-part study. Darden's model proposed shopping orientations as the key construct, and information sources and personal characteristics as antecedents to shopping orientations. He also hypothesized that shopping orientations determine the importance of store attributes, which in turn impact patronage behavior. In 1992, Shim and Kotsiopulos proposed relationships among the following: (a) personal characteristics and importance of store attributes, (b) personal characteristics and patronage behavior, (c) information sources and importance of store attributes, (d) information sources and patronage behavior, and (e) shopping orientations and patronage behavior. The objectives were to predict patronage behavior of apparel shopping; predict store attributes, which impact patronage behavior; predict shopping orientations, which impact store attributes; and predict information sources, which impact shopping orientations.

The researchers tested these relationships with 482 female shoppers. Women were

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asked to indicate where they purchased clothing most often, the importance of 24 retail attributes, a shopping orientation that reflected their shopping styles, how often they used apparel information sources, personal characteristics, and demographics. Shopper profiles included 11 categories: confident apparel shopper, brand conscious, convenience/time conscious, mall and local, apathetic toward "made in the USA", catalog, appearance manager, credit user, economic shopper, and the fashion conscious shopper. Results indicated that all four variables (i.e., importance of store attributes, shopping orientations, information sources, personal characteristics) were predictors of store patronage for each store type (i.e., discount, specialty, department, catalog). Shopping orientations and importance of store attributes were better predictors of store patronage than the other two variables (i.e., information sources, personal characteristics).

Part II of the study used sampling and data collection techniques as documented in Part I. In addition to the five linkages proposed by Darden (1980), Shim and Kotsiopulos (1992a) examined two additional linkages. The linkages were (a) store attributes depend on shopping orientations, an antecedent to information sources, and (b) patronage behavior depends on store attributes, an antecedent to shopping orientations. Results revealed a direct relationship between information sources and the importance of store attributes. In addition, shopping orientations had a stronger impact on patronage than did store attributes. Therefore consumer patronage is influenced more by shopping orientations rather than store attributes (Shim & Kotsiopulos, 1992b). Although the Shim and Kotsiopulos study explored many variables with a store patronage model, their study was based on shoppers' memory and not on specific products or usage situations.

Monroe and Guiltinan (1975) also proposed a model of retail patronage. They suggested that four sets of variables: (a) general opinions and activities concerning shopping (i.e., shopping orientations); (b) specific planning and budgeting strategies; (c) importance of store attributes dealing with buyer information; and (d) perceptions of stores in terms of attributes dealing with buyer information influence store choice. The researchers developed a preliminary model, from the review of literature, to show directions of influence among these variables, and then used time-path analysis to test the model. The model is primarily dependent upon the consumer's attitude toward stores,

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which is a function of importance of store attributes and perceptions of store attributes (i.e., overall image). Shopping orientations directly influence importance of store attributes and perception of attributes. If perceived importance of store attributes and perceptions of these attributes match, then the consumer chooses the store. One hundred sixty-nine grocery shoppers participated in the study. Data was collected at three time intervals. The first interval was completed four weeks prior to the opening of a new grocery store, followed by two week and 13 week intervals after the store opened. Respondents indicated their feelings about the relative importance of grocery store attributes (e.g., advertising helpful, relatively low prices) on a 7-point scale. They rated each store on the attributes using a 7-point semantic differential scale for each item. Respondents of the first and third interval completed a shopping orientation (e.g., planning, budgeting strategies) questionnaire. Results revealed that combining attribute importance with store perceptions contributes little in their ability to predict attitudes about retail stores or retail patronage. Shopping orientations were more stable and did not readily change; however, attribute importance did. Therefore, the researchers suggested that shopping orientations and store perception had a stronger influence on patronage than shopping orientations and the importance of store attributes. This finding is supported by research conducted by Shim and Kotsiopulos (1992b).

Summary of the Conceptual Framework

Environmental Dimensions

Bitner (1992) proposed a framework for studying environment-user relationships. Her model suggests that consumers in service settings have perceptions about several environmental dimensions that influence individual or approach-avoidance behavior. Her framework focused on the environmental dimensions of temperature, lighting, noise, scent, background music, layout, carpeting, signage, and style of décor or aesthetics, which will be examined in this study. The present study also uses the additional environmental dimension variables of air quality, lighting, layout, carpeting, and aisle placement/width discussed by Engel, Blackwell, and Miniard (1995).

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Importance and Perceptions of Store Attributes

Monroe and Guiltinan (1975) discussed a model of retail patronage. They studied the influence of four variables on store patronage. Of these variables were importance and perceptions of store attributes. The model suggested that a consumer's attitude toward stores was a function of importance and perceptions of store attributes. Furthermore, consumers engage in a comparison process (i.e., occurs in the mind of consumers) to determine if perceived attributes and perceptions of these attributes match. If the two variables match, then the consumer chooses the store. Engel et al. (1995) discusses a similar comparison process. The consumer compares the importance of store attributes with the store's image (i.e., overall perception) to determine acceptable and unacceptable stores. With respect to the comparison process, if a specific environmental dimension is important and the respondent's perception of the store is positive or the store is perceived as offering that particular dimension, then the respondent will decide to select or patronize that particular store. On the other hand, if the environmental dimension is important and the respondent's perception of the store environment is negative, then the respondent would most likely decided to avoid or not shop in the store.

Shopping Orientations

Shim and Kotsiopulos (1992) and Monroe and Guiltinan (1975) studied shopping orientations. Orientations are shopper styles that reflect consumer needs for product and services (Shim & Kotsiopulos, 1993). Monroe and Guitinan found that shopping orientations directly influenced the importance of store attributes and perceptions of attributes. Furthermore, Shim and Kotsiopulos and Monroe and Guiltinan studied the influence of shopping orientations and the importance of store attributes on store patronage. Both studies found that shopping orientations rather than the importance of store attributes have a stronger influence on patronage.

Relationship Between Variables

This study will investigate the influence of environmental dimensions on store patronage as discussed by Bitner (1992). The comparison process of importance and perceptions studied by Engel et al. (1995) and Monroe and Guiltinan (1975) will be used

to predict store patronage. Finally, the influence of shopping orientations on importance of the environment and perceptions of the store environment, as studied by Monroe and Guiltinan (1975) will be investigated. As shown in Figure 1, the illustration merges the concepts and relationships from these researchers.

<u>Conceptual Definitions</u>

1. Apparel store patronage is "a store choice behavior which represents an individual's preference for a particular store for purchasing apparel products" (Shim & Kotsiopulos, 1992a, p. 50).

2. The physical environment is "a composite of the tangible elements of form as reflected in the way land, building, equipment, and fixtures are assembled for the convenience and comfort of both consumers and retailer" (Lewison, 1994, p. 265).

3. Environmental dimensions are physical store attributes such as air quality, lighting, layout, carpeting, aisle placement and width, temperature, noise, and background music used to project store image and influence store choice (Bitner, 1992; Engel, Blackwell, & Miniard, 1995).

4. Consumer perceptions are influenced by tangible cues. They represent the consumer's expectation for service (Baker, 1987).

5. Shopping orientations are categories of shopper styles that reflect consumer needs for products and services and determine personal, economic, recreational, and social motivations for shopping (Lumpkin et al., 1986; Shim & Kotsiopulos, 1993; Shim & Mahoney, 1992).

6. Brand conscious/loyal shopper is a shopper category that reflects the consumer's desire to purchase certain well-known brands of clothing from particular stores (Shim & Kotsiopulos, 1992a).

7. Convenience/time conscious shopper is a shopper category that reflects the consumer's desire to purchase clothing at the most convenient store. Also, this shopper prefers not to spend too much time planning clothing shopping (Shim & Kotsiopulos, 1992a).
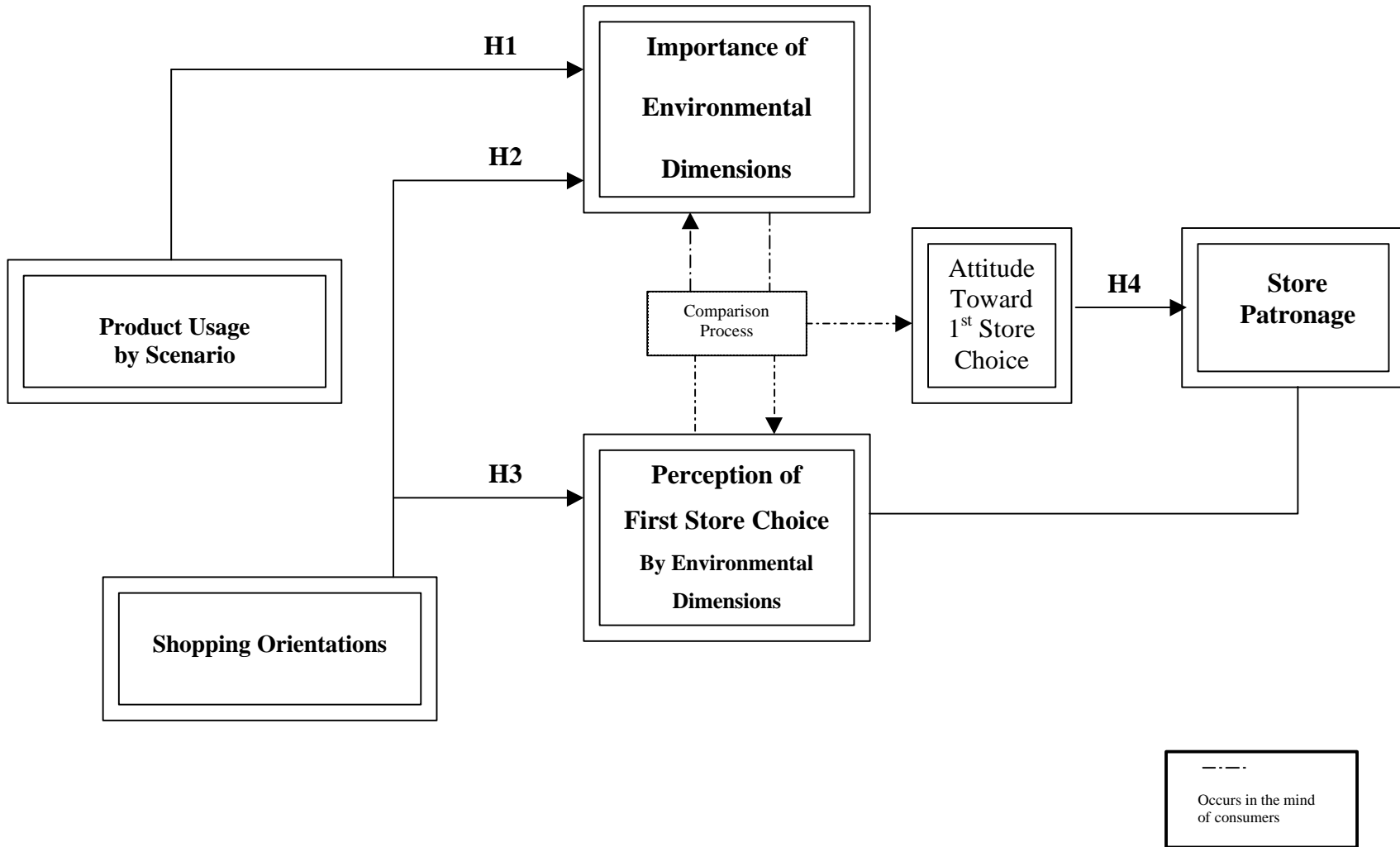
Figure 1. A proposed model of consumer patronage adapted from Bitner (1992); Engel, Blackwell, & Miniard (1995); Monroe & Guiltinan (1975); Shim & Kotsiopulos (1992)

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8. Economic/price conscious shopper is a shopper category that reflects that consumers' desire to shop around for bargains and pay attention to clothing prices (Shim & Kotsiopulos, 1992a).

9. Fashion-conscious shopper is a shopper category that reflects consumers that keep their wardrobe up-to-date with latest trends, one who is confident about shopping for clothing and feels that dressing is an important part of one's life. This shopper thinks of herself as a good clothing shopper, has the ability to choose the right clothing and will usually purchase clothing without hesitation (Shim & Kotsiopulos, 1993).

Null Hypotheses

1-H_O. There is no difference in importance ratings of selected environmental dimensions for each shopping scenario.

2-H_O. There is no difference in importance ratings of selected environmental dimensions for each shopping orientation.

3-H_O. There is no difference in perception of first store choice by selected environmental dimensions for each shopping orientation.

4-H_O. There is no difference in attitude toward first store choice for each store type.

Assumptions

1. Respondents included in the sample could accurately answer questions related to their apparel store patronage experiences.

2   Individuals place a certain level of importance on environmental dimensions included in this study.

3. Environmental dimensions included in this study exist in all types of retail stores.

4. Respondents' behavior reflected one of the three types of shopping orientations included in this study.

5. Respondents could read and understand the questionnaire.

Limitations

1.	This study involved only one product category (i.e., apparel), and the results may not apply to shopping for other products.

2.	Only one type of apparel product (i.e., dress) was addressed. Respondents may have different responses for other apparel products.

3.	Only female apparel consumers were included; therefore, results may not apply to male consumers.

4.	This study focused on the subjects' responses based on scenarios and not their actual behavior while shopping for apparel in the retail stores.

CHAPTER IV

Research and Design Methods

This study was designed to examine the influence of 12 environmental dimensions on store patronage for female consumers. More specifically, this research determined (a) importance of environmental dimensions relative to three shopping scenarios, (b) importance of environmental dimensions relative to shopping orientations, (c) perceptions of first store choice relative to shopping orientations, and (d) attitude toward first store choice. Questionnaires used in previous research conducted by Pangan (1984), Robinson (1986) and Leach (1990) were adapted to measure the variables included in this study. This chapter discusses the sample, instrument, operational definitions, data collection, and statistical analysis.

Sample

Data was collected using a random sample of female consumers. Women age 18 and over were solicited to participate in this research. A consumer list of names was purchased from an independent sampling company in Omaha, Nebraska. A total of 900 women were selected from 110 million households throughout the United States. The only selection criterion used was that of gender and age (i.e., women, 18 and over). In addition, the phone number of each subject was requested to conduct follow-up telephone interviews. After the names were received, subjects were assigned a respondent number. The researcher then used the select case option in SPSS-PC to assign the subjects to one of three scenarios included in the study.

Instrument Development

Measures

The instrument was designed using environmental dimensions and scales from previous, related research. The survey consisted of the following sections: importance and perceptions of selected environmental dimensions relative to three shopping scenarios, store patronage relative to each store type, apparel shopping orientations, and demographics. The instrument included questions on 12 environmental dimensions relative to a shopping scenario adapted from

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Robinson (1986) and Leach (1990). Scenario A was, "you have decided to purchase a dress to wear to a formal social gathering". Scenario B was, "you have decided to purchase a dress to wear to a family gathering". Scenario C was, " you have decided to purchase a dress to wear to work or a community activity". Each mail survey had one of the three scenario pages.

Relative to each shopping scenario, respondents were asked to rate the importance of 12 environmental dimensions in choosing a store. The dimensions were measured on a 7-point Likert-type scale of importance with 1 being extremely unimportant and 7 being extremely important.

Next, on the scenario page, respondents indicated how often they would consider shopping in three types of retail stores (i.e., department, discount, specialty), and were asked to list which store type would be their first choice relative to the specific shopping scenario.

Respondents were also asked to indicate their perceptions of their first store choice relative to 12 environmental dimensions on semantic differential scales. The semantic differential scales were developed using adjectives from Pangan (1984), recommendations from committee members, and 12 environmental dimensions discussed in retail and marketing literature.

A section of the questionnaire measured shopping orientations and demographics. Shopping orientations were measured by 19 statements from Shim and Kotsiopulos (1993) on a 7-point Likert-type scale of agreement (i.e., 1 = strongly disagree, 7 = strongly agree). Shopper orientations from previous research by Shim and Kotsiopulos included the categories of brand conscious/loyal, economic/price conscious, convenience/time conscious, fashion-conscious, and confident/appearance. The final section of the instrument consisted of demographic characteristics: age, education, employment, and household income. This section was included for descriptive purposes.

Pilot Test

A preliminary study was conducted to test the questionnaire. Forty-five women at a major university in Southwest Virginia participated in the pilot test. The three scenarios were included in the pilot study. Of those women who participated in the study, 15 responded to each scenario.

Questionnaires were distributed via campus mailboxes, and collected by the researcher. Participants of the pilot study were not included in the main study.

Pilot tests are often conducted to improve the content of questionnaires. Respondents evaluated the structure, wording, difficulty or ease of answering questions, as well as the time necessary to complete the questionnaire. Feedback regarding the format and structure of the questionnaire was considered, and changes were made to the questionnaire to reflect respondents' recommendations. Suggestions included clarifying the survey instructions, using less technical words, giving examples for each store type, and simplifying the semantic differential scales (i.e., placing all positives on one side of the scale and negatives on the other).

Validity

Validity is tested to ensure that the survey instrument is measuring what it is designed to measure or that each scale accurately measures the variables included in the study (Hair et al., 1998). To establish content validity and face validity, faculty members of the researcher's advisory committee were asked to compare and evaluate the items included in the questionnaire with the research objectives. Construct validity (i.e., do items measure hypothetical concepts) was improved by using environmental dimensions studied in previous research.

Operational Definitions

1.   Importance of environmental dimensions is the respondents' ranking of the importance of 12 environmental dimensions as measured on a 7-point Likert-type scale. The ratings range from 1 to 7 (1 = extremely unimportant, 7 = extremely important).
2.   Perception of first store choice by environmental dimensions is the respondent's indication of their opinion/feeling about their first store choice in relation to 12 environmental dimensions
3.   Store patronage is the respondents' indication of how often that would consider shopping a particular store type relative to shopping scenarios (i.e. purchase of dress to wear to a formal social gathering, family gathering, work or community activity). Patronage was measured on a 4-point Likert-type scale, with 1 = "never" patronize and 4 = "frequently" patronize. Respondents also indicated their first choice of stores for shopping scenarios.

4.	Shopping orientations is the respondents' ranking of 19 statements related to four shopper profiles, brand-conscious/loyal, convenience/time-conscious, economic/price conscious, and confident/appearance, fashion-conscious developed by Shim and Kotsiopulos (1993). These statements were measured on a 7-point Likert-type scale, with 1 = extremely disagree and 7 = extremely agree.

Data Collection

Data were collected during the months of July, August, September, and part of October. Prior to data collection, exemption status for the use of human subjects was sought from the Institutional Review Board (IRB). Exemption status was possible by the Board because there are no risks involved to subjects participating in this study. The IRB did not require a separate consent form for this study. However, a statement regarding a subject's willingness to complete and return the survey was included on the coversheet, and acknowledged as consent to participate.

The research involved a mail questionnaire sent to a sample of women age 18 and over. Data collection was based on a modified version of Dillman's Total Design Method. The initial mailing included a questionnaire and brief summary of the research study, a self-addressed, stamped envelope, and a postcard insert. Postcards were included in the initial mailing to screen respondents based on their willingness to participate in the study, refusal to participate, and for respondents to request a copy of the survey results. For the postcard insert, each respondent was given a respondent number. A second post card was mailed to each respondent within two weeks as a follow-up. Two weeks after the post card reminder, a second questionnaire and self-addressed envelope was sent. Telephone interviews were conducted approximately two weeks after the second questionnaire was mailed to improve the response rate, and to obtain a demographic profile of subjects that chose not to answer the survey.

Statistical Analysis

This research was a quantitative study used to test for statistical differences in (a) importance ratings of selected environmental dimensions for each shopping scenario, (b)

importance ratings of selected environmental dimensions for each shopping orientation, (c) perceptions first store choice, and (d) attitude toward first store choice and store patronage. For all analyses, statistical significance was set at a level of .05. Data analysis consisted of Factor analysis, Cluster analysis, Multivariate Analysis of Variance (MANOVA), Chi-square, and descriptive statistics (i.e., frequencies). A brief description of each statistical technique is discussed in the following paragraphs. Table 3 shows the intended data analysis by objective and hypothesis.

Table 3

Summary of Data Analysis by Objective and Hypothesis

Objective	Hypothesis	Independent Variable Item Number	Dependent Variable Item Number	Statistical Analysis
1	1	Product Usage by Scenario A, B, C	Importance Q1	Factor Analysis MANOVA
2	2	Shopping Orientations Q1-Q19	Importance Q1	Factor Analysis Cluster Analysis MANOVA
3	3	Shopping Orientations Q1-Q19	Perception Q4	Factor Analysis Cluster Analysis MANOVA
4	4	(Σ (Importance x Perception)) / 100 = Attitude Toward Stores	Store Patronage Q3	Chi-square

Previous research by Bitner (1992) and Baker (1987) suggest that environmental dimensions produce factors. Factor analysis is used to reduce the environmental dimension scales into smaller, more manageable factors. This multivariate technique is also used to identify the underlying patterns or relationships for a large number of variables (Hair et al., 1998). Factor analysis was used to summarize the variables by examining correlations between the variables, and to create an entirely new set of variables to replace original variables. Factors were derived using component or principal components, which summarizes the original information into factors for prediction. Only factors with latent roots or eigenvalues greater than 1 were included.

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Factors were rotated using the varimax rotation method. According to Hair et al., factor loadings at ± .30 are considered minimal, ± .40 more important, ± .50 or greater practically significant. Variables with loadings greater than or equal to ± .50 were retained. However, those with several high loadings on more than one factor, variables with low loadings, and those that did not load on any factor were evaluated for possible deletion. Exclusion of a variable was dependent upon its overall contribution to the research. In addition to the variable loading, the communality, total amount of variance shared with other variables was evaluated before deleting the variable. Variables with loadings less than or ± .50 and variables that did not load with communalities less than .50 were deleted. After the factors were formed, they were named according to those variables with higher factor loadings.

Instrument reliability, the degree of consistency between multiple measures of a particular variable was tested using Cronbach's alpha coefficient. Scales measuring importance and perceptions of environmental dimensions, as well as shopping orientations were tested. Cronbach's alpha is the most widely used reliability coefficient and assesses the consistency of an entire scale (Hair, et al., 1998). The size of a reliability coefficient is based on the average correlation among test items and the number of items (Nunnally, 1978). According to Hair et al., the acceptable lower limit is .70; however, .60 is acceptable for exploratory research. Scales for this study were considered to have good reliability if it had an alpha value of .60 or greater.

Cluster analysis groups objects based on characteristics they possess. The objective of this statistical technique is to segment respondents with similar characteristics into groups. Before performing the analysis, data was visually inspected for outliers. Outliers may simply be an error in data entry and these should be corrected before the data is analyzed. On the other hand, they may represent a unique event that occurred in the sample. If the outlier is representative of the sample, then it should be retained in further analysis, and if not, the outlier should be deleted. The assumptions of cluster analysis include a representative sample and examining the data for multicollinearity. Pearson correlations were computed to test for multicollinearity (Hair et al.,1998). Hair et al. state that multicollinearity is the degree to which a variable's effect can be predicted or accounted for by other variables in the analysis. If multicollinearity is present, the ability to determine the effect of a variable is diminished. In the

case of multicollinearity, some researchers choose to delete the variable, create a composite variable, or use more advanced or stringent statistical methods for data analysis.

MANOVA is used to test for statistical differences on multiple dependent variables across groups. The assumptions of MANOVA include independence of observations, equality of variance-covariance matrices for all independent variables, and normality of the dependent measures. All assumptions were tested before the analysis. Kolmogorov-Smirnov test is used to test for normality, and SPSS-PC gives the option of creating normal Q-Q plots to examine the distribution of the data. The Box's test is used to test for equality of variance-covariance matrices (Hair et al., 1998). Finally, Chi-square tests are used for the distribution of responses for two or more groups (Hair et al., 1998).

Hypotheses Testing

1-H_O. *There is no difference in the importance ratings of selected environmental dimensions for each shopping scenario.*

Hypothesis 1 was analyzed using factor analysis and MANOVA. This hypothesis tested for differences in importance ratings for each shopping scenario. First, factor analysis was used to reduce the 12 environmental dimensions (e.g., temperature, scent, layout, style of décor) into smaller, more manageable factors. Reliability of the factors was tested using Cronbach's alpha. Factor scores were computed for each respondent, then used in the MANOVA analysis as dependent variables. MANOVA tested for differences in the importance of environmental dimensions across the three apparel shopping scenarios (i.e., you have decided to purchase a dress to wear to a formal social gathering, a family gathering, or a work or community activity).

2-H_O. *There is no difference in importance ratings of selected environmental dimensions for each shopping orientation.*

Hypothesis 2 involved a three-step process similar to the analysis used by Shim and Kotsiopulos (1993) to study the apparel shopping orientation segments among female consumers. Shim and Kotsiopulos studied several orientations that female consumers exhibit with respect to shopping. Their study included 31 orientation statements. From these 31 statements, the researcher selected 19 statements to include in the present study.

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For this hypothesis, the factors formed from the 12 environmental dimensions from Hypothesis 1 and the factors formed from a separate factor analysis to reduce the 19 shopping orientation statements were used as variables in testing the hypothesis. Reliability of the factors was tested by Cronbach's alpha. From the 19 shopping orientation statements included in this study, Shim and Kotsiopulos categorized shoppers into the following orientation groups: brand conscious/loyal, economic/price conscious, convenience/time conscious, fashion-conscious, and confident/appearance. Orientations from the present study were compared with those five categories from Shim and Kotsiopulos (1993). After obtaining the shopping orientation factors, respondents were clustered according to their shopper orientations. MANOVA was then performed to test for differences between the shopper categories relative to the environmental factors.

3-H_O. ***There is no difference in perception of first store choice by selected environmental dimensions for each shopping orientation.***

Hypothesis 3 was analyzed using a two-step process (i.e., factor analysis, MANOVA). Shopping orientation statements factor and cluster analyzed in Hypothesis 2 were used in this hypothesis. Perception of first store choice was measured using bipolar adjectives and selected environmental dimension on semantic differential scales. Perception variables were used in factor analysis, tested for reliability, and then used in subsequent analysis. Then, MANOVA included the perception factors and shopping orientation cluster. This analysis tested for differences in perception of first store choice for each shopping orientation cluster female consumers.

4-H_O. ***There is no difference in attitude toward first store choice for each store type.***

The multi-attribute model explained by James, Durand, and Dreves (1976) was modified to form the attitude toward stores variable. The model proposed that attitude was a function of belief toward an attribute for a particular store and importance of that attribute. In the earlier work, the attitude variable was calculated by multiplying belief toward an attribute for a particular store by the importance of that attribute and then averaged across all respondents. For the present study, the perception variable was substituted for the belief variable studied in 1976. Based on James et al., the attitude variable was formed by multiplying importance and perception, then summing the

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products of the two variables and dividing the entire expression by 100. Chi-square was then used to determine differences in attitude for first store choice.