A Study on eco-friendly merchandise in a resort retail environment

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A STUDY ON ECO-FRIENDLY MERCHANDISE
IN A RESORT RETAIL ENVIRONMENT

by

Lindsey Clarissa Patrick

Bachelor of Science
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A thesis submitted in partial fulfillment of
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Lindsey Clarissa Patrick

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ABSTRACT

A Study on Eco-Friendly Merchandise in a Resort Retail Environment

by

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The purpose of this study is to determine consumer purchasing habits of eco-friendly apparel in a retail resort environment. In order to find the rationale behind purchasing decisions, this study measured sales and survey responses based on the choice of two tee shirt options, eco-friendly tee shirts and regular cotton tee shirts. The survey was given to all customers purchasing these tee shirts in order to determine specific demographic information as well as their personal opinions on eco-friendliness, and willingness to pay a premium for eco-friendly products. Due to a lack of previous research in this field, this study is considered exploratory.

The data was collected from a resort retail store in Ocean Beach, NY. All surveys were completed during the 2010 summer season. Data analysis found that positive attitudes regarding eco-friendliness and the willingness to pay a premium for eco-friendly products were indicators of eco-friendly apparel purchases. There was also a positive relationship between the percentage more customers were willing to pay for eco-friendly products and their overall eco-friendliness. The respondent demographics that led to an increased purchase of eco-friendly apparel included gender (females) and permanent residence (urban).
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Dr. Karl Mayer has been a wonderful advisor throughout my time at the College of Hotel Administration and has not only helped to perfect the final copy of my thesis, but has also provided his breadth of knowledge and assistance to my entire experience in this program. Dr. Bo Bernhard was the catalyst in my idea to write a thesis. Due to his enthusiasm for research, I was motivated to develop my own study and compile data through original research. Dr. Jack Schibrowsky has assisted me in the development of my topic and the examination of the data results. He has also provided insight into the importance of research studies and will have a lasting impression on me due to his unconventional wisdom.

I would like to thank all of the employees at my store, Bambootique. Without their support in this study and their assistance in dispersing the surveys to customers, I would not have been able to collect enough data to conduct this study.

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CHAPTER 1
INTRODUCTION

Purpose

The purpose of this study is to identify customer buying habits for eco-friendly apparel and the rationale behind their purchasing decisions. This study will involve the measurement of sales of similarly situated tee shirts that are offered in both eco-friendly and regular cotton fabrics. The customers who purchase these products will be surveyed to distinguish the reasons behind their purchase. Other factors, which will be surveyed, include the customers’ demographic information, their personal opinion on eco-friendliness, and their willingness to pay a premium for environmentally-friendly products. All of these factors will be used together to decide if there is similarity and/or meaningful relationships between consumers’ purchasing habits and their survey responses.

Research Questions

The research questions that will be investigated by this study include the following:

1. Are customers willing to pay more for eco-friendly apparel when there is a less expensive non-eco-friendly option available?
2. Which customer demographic groups purchase the most eco-friendly clothing?
3. How much more are customers willing to spend on green products?
**Research Hypotheses**

Based on the research questions previously listed, there are research hypotheses that were tested after the survey data was collected.

H1: Customers are more likely to purchase eco-friendly clothing than non-eco-friendly clothing.

H2: Customers with an eco-friendly attitude are more likely to purchase eco-friendly clothing.

H3: Customers who were willing to pay a price premium for eco-friendly products purchased the eco-friendly clothing more often than the non-eco-friendly clothing.

H4: Customers who stated that eco-friendly was the most important factor during their purchasing decision also purchased eco-friendly clothing.

H5: Customers with an eco-friendly attitude are more likely to pay a premium for eco-friendly products.

H6: Females are more likely to purchase eco-friendly apparel than males.

H6a: Urban residents are more likely to purchase eco-friendly apparel than residents in other areas.

H6b: Respondents with a college degree or higher are more likely to purchase eco-friendly apparel.

**Research Implications**

Because there have not been similar studies on customers who choose to purchase either eco-friendly or non-eco-friendly apparel items, the results of this study can be used by other academics in the future to conduct similar studies on green apparel. As the popularity of eco-friendly clothing continues to grow, there will not only be studies
conducted by academics, but also by the clothing manufacturers themselves. The results from this study can be combined with other research in order to develop “green” apparel customer marketing solutions and product lines. Hopefully, this study will impact other researchers within the apparel industry to conduct further studies and discover the trends among consumers and the necessity of producing eco-friendly apparel. There are also implications for this type of study within the hospitality industry as hotels, casinos, and restaurants are also feeling the impact of the green movement. This study can be useful for resorts and casinos in determining the product mix to sell in their retail outlets and the impact of offering eco-friendly options to guests.

**Limitations/Delimitations**

The limitations of this study include the location, sample size (110 survey respondents), sampling method used (convenience sample), tee shirt display method, and respondent bias. These limitations will be explained in further detail in Chapter 5. The delimitations of this study include the lack of demographic questions asked on the survey and the initiative to study all of the customers in the store instead of only those purchasing the tee shirts used in the study. If more questions had been added to the survey there could have been more statistical relationships derived from demographic information. If customers other than those who purchased the tee shirts were surveyed on their opinions on eco-friendliness there would have been more data and a larger sample size.
Definitions of Key Terms

The following terms were used in conjunction with this thesis. They are defined below and include trade and business terminology that was used to develop the literature review and supporting data analysis.

CSR (Corporate Social Responsibility): when used in this thesis, CSR will be defined as a company’s actions that foster a positive impact on social causes. This definition is derived from previous definitions and can be found on page 12 in Chapter 2.

EPA (environmentally preferred apparel): clothing that has been produced using environmentally preferable fibres or environmentally preferred production processes (Connell, 2010).

PET (Polyethylene Terephalate): a polyester fabric made out of recycled plastic bottles (usually soda bottles or water bottles) (Brown & Wilmanns, 1997).

PLA (Polylactic Acid): a fibre derived from corn sugar during the fermentation process (Hustvedt & Bernard, 2008).

Summary

The introduction of this thesis serves as the foundation for the eco-friendly tee shirt study and the literature which supports this study. Chapter 2 will include a literature review which was used in order to develop methodology for the study and the data analysis techniques used. The literature review provides a synopsis of previous research findings which will then be used in order to determine relationships between the survey data analyzed in Chapter 4.
CHAPTER 2
LITERATURE REVIEW

Introduction

In recent years, there has been an influx of eco-friendly apparel by all types of manufacturers. The apparel industry, like many other industries, is focusing on sustainability and the use of green products as clothing components. The integration of these eco-friendly items into a normal product mix constitutes little work on behalf of the manufacturer, but requires retailers to educate consumers. It wasn’t long ago that the only companies who were selling items made out of eco-fabric were so-called “tree-hugging” or “hippie” retailers. In the last twenty years, this has changed drastically as the use of organic cotton, bamboo, and PET (recycled polyester) has become mainstream.

High-fashion designers and lifestyle companies have been gradually placing green merchandise into their product lines. Patagonia, a manufacturer of outdoor apparel and one of the first movers within this industry, was around before the internet and before most consumers had any knowledge of eco-friendly apparel. Today, even mass-market retailers, such as the Gap and Target, are selling EPA (environmentally preferred apparel) merchandise to consumers. However, the question regarding green apparel is whether consumers are ready for it. Consumers may be ready for green clothing, but they also may need more education to entice them to purchase the environmentally friendly options that are available. Although there are green apparel options in most retail outlets today, many consumers need help identifying these items.

As the eco-friendly apparel industry is relatively new within the United States (U.S.), the amount of previous research on eco-friendly apparel is limited. In order to
understand modern research on green clothing, it is also important to understand the history of environmentalism in the U.S. Research in other areas within the hospitality industry, along with organic food and green consumer products can be used as reference studies when discussing eco-friendly apparel.

The History of the Green Movement

Historical Environmental Theories

Throughout history, the rise and fall of civilizations have been directly connected to the environment and the ecosystems created by their inhabitants. Many of the early empires were destroyed due to their lack of environmental consideration as they changed the natural surroundings in order to accommodate population growth (Tainter, 1988). Some examples of these early ecological problems include deforestation, irrigation, and the development of ecosystems uncommon to the respective region (Ponting, 2007). Although science was not as advanced thousands of years ago, modern anthropologists and archeologists have been able to uncover the reasons why many inhabited regions died off, and they have been able to conclude that changes in the environment had a major effect on the population.

As early as 500 BC, the Chinese philosopher Confucius began teaching the Chinese about the importance of the environment (Yao, 2000). Confucian followers developed important environmental ethics to foster the future preservation of nature (Tianchen, 2003). They also made conclusions regarding the possible results that can occur when the environment is not treated properly by its inhabitants. Even though Confucianism teaches to hold nature in high regard, it does not promote a lack of development in order to keep the environment in a constant state (Tianchen, 2003).
According to Yao (2000), “As Heaven has a dimension of Nature or Natural Law, harmony between Heaven and humans is understood to be a co-operative relationship between humans and their natural environment, in which natural laws should be followed and the natural environment protected” (p. 175). The summarized teachings of Confucianism with respect to the environment conclude that humans can take from nature, but they must give back, as people and nature work together as a team.

Ponting (2007) made a great summary of changes in the way nature is viewed by religions:

One of the fundamental issues addressed by all traditions is the relationship between humans and the rest of nature. Are humans an integral part of nature or are they separate from it and in some way superior to it? The answer to this question is crucial in determining how different thinkers and religions decide which human actions can be regarded as legitimate or morally justified (p. 116).

As each religion has its own beliefs on the importance of nature and the environment, each individual also has his own set of beliefs and ideas with respect to the environment. Since most early publications involving the environment were deemed religious, as noted in Confucianism, it wasn’t until the mid-1800s when numerous authors began publishing works on nature.

**Early American Environmentalism**

In the mid-1800s, the western world began focusing on the environment through different outlets, such as writing and artwork. Some famous authors that expressed the value of nature through their individual writing in the 1800s include Charles Darwin, Ralph Waldo Emerson, Henry David Thoreau, and George Perkins Marsh. Charles
Darwin published the highly acclaimed *On the Origin of Species* after developing his scientific theory of evolution (Darwin, 1864). Emerson published *Nature* showcasing a new idea about the environment and the American way of life (Emerson, 1849). Thoreau is known for his environmental views through the publication of his book, *Walden*, which he wrote about his experience living at Walden Pond in the 1840s (Thoreau, 1854). Thoreau accredits his idea for *Walden* to Emerson, as *Nature* was a big influence on his decision to live at Walden Pond (Meltzer, 2007). George Perkins Marsh published *Man and Nature* in 1864 and developed ideas that were not formally researched until the 1960s (Marsh, 1864). Marsh’s book spoke of the amount of destruction and waste occurring in the world, and claimed that it would eventually lead to the demise of the human race.

Most of the prominent nature-inspired artwork developed a little later than its literary counterparts. Notable artists that portrayed the natural environment of the United States include Ansel Adams, Georgia O’Keefe, and John James Audubon. As these artists were influenced by the changing views on the natural world, they became very popular for their work depicting the environment as its own form of art. Ansel Adams became a famous photographer due to his environmental black and white photographs of Yosemite National Park in the early 1900s (Alinder, 1996). Georgia O’Keefe, the most popular of these artists, is known for her simplistic paintings that portray American culture and nature (Robinson, 1989). John James Audubon was a naturalist, taxidermist, and the most renowned ornithologist known throughout history (Herrick, 1917). Audubon is most famous for his 12-year creation of *Birds of America*, which was issued
in volumes that featured his paintings of over 700 different species of birds from North America (Herrick, 1917).

Environmental protection was not only seen in literature and artwork at this time, but societies and foundations began to form in the late 1800s and early 1900s, whose main goal was to protect nature and promote further emphasis on the environment. In 1905 Gilbert Pearson created The National Audubon Society, which was named in honor of Audubon (Herrick, 1917). Prior to the National Audubon Society, Pearson had established smaller Audubon clubs around the concept to protect wild birds and their eggs. Its mission statement explains its conservation efforts, “to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity” (National Audubon, 2010).

One of the major events in U.S. history of environmentalism, which was a turning point for the government’s emphasis on sustaining nature in a pure form, was the 1864 public transfer of land from Yosemite and the Mariposa Grove to the state of California (McCormick, 1989). This area was donated as public use land for California residents to enjoy. In 1872, the government signed over two million acres of what is now known as Yellowstone National Park, in Wyoming (McCormick, 1989). This marked the first national park to be created in the entire world. Many other countries modeled own national parks after Yellowstone.

Theodore Roosevelt was an environmental activist who assisted the country during his Presidency to develop programs to increase knowledge and awareness of conservation. Before Roosevelt took office in 1901, the federal government of the U.S. did not take a significant number of precautions to protect the natural environment. As
President, Theodore Roosevelt assisted in the expansion of Forest Reserves in the United States through his appointment of Gifford Pinchot to the U.S. Forest Service (formerly the Division of Forestry) (Brinkley, 2009, p. 341). During Roosevelt’s presidency (1901-1909), Pinchot effectively expanded forest reserves from 43 million acres to 174 million acres (Brinkley, 2009, p. 803). In February, 1909, Roosevelt held the North American Conservation Conference where discussions were held regarding the international aspect of future conservation especially and the idea of a further meeting to continue the idea of global conservation (Brinkley, 2009, p. 804). Overall, Roosevelt is remembered by Americans, even today, as one of the early supporters of nature on a national level.

**Modern Day Environmentalism**

In the 1960s, the U.S. was in the beginning stages of the modern environmental movement. During this time the American public became more aware of adverse environmental impacts, which were causing changes to the earth as a whole. Although there were many federal environmental laws on record before this time, it took until the 1970s for many of these laws to be fully enforced. The issue with these federal laws involved the assignment of responsibility of enforcement, as each state was deemed responsible for “policing” all of the environmental laws without federal assistance (Freeman, 2002).

According to Freeman (2002), not only did the 1970s bring about the first Earth Day (April 22, 1970), but this time period also saw the beginning of strict federal involvement in passing and enforcing necessary environmental laws. In 1970 alone, the Clean Water Act was passed and the Environmental Protection Agency was founded. In the years that followed, the federal government passed the following acts in order to
subside the detrimental harm to the earth: Federal Water Pollution Act (1972), Safe Drinking Water Act (1974), Toxic Substances Control Act (1976), Resource Conservation and Recovery Act (1976), and the “Superfund” (Comprehensive Environmental Response, Compensation, and Liability Act, 1980). These acts were passed after toxic substances had entered the environment, but they were still viewed as a step towards greater environmental concern (Freeman, 2002).

In order to enforce these new legislative acts and also further the focus on the state of nature in the U.S., the federal government has spent billions of dollars over the years and will continue to spend more into the future. The Environmental Protection Agency has spent a lot of time assessing the environmental damage that has occurred and has developed approximate costs for research and “clean up” to be well into billions of dollars (Freeman, 2002). All of the above acts which were passed in the 1970s and the Superfund (1980), have lead to an overall movement throughout the U.S. towards further prevention of pollution and other activities that are detrimental to the earth’s ecosystem.

The first world environmental summit was held in Stockholm in 1972, followed by Rio de Janeiro (1992) and Johannesburg (2002) (Najam & Cleveland, 2003; Seyfang, 2003). The objective of these conferences was to discuss and find ways to achieve global sustainability by working together and finding goals which could be achieved by UN (United Nations) member nations, both individually and as a group (Seyfang, 2003). Between the first summit and the second, the Brundtland (1987) Report was delivered to the World on Environment and Development to discuss methods to reduce further environmental problems. Brundtland (1987) explained that governments must take responsibility for their actions, all environmental agencies must be strengthen at the
national and international level, and environmental agencies within the United Nations should take steps to link international politics on this important topic.

**Consumer and Corporate Driven Green Initiatives**

**Marketing towards Green Customers**

According to Peattie (2001) there are three different ways to market towards green customers. These include ecological marketing, environmental marketing, and sustainable marketing. Ecological marketing is not geared towards the typical consumer; it is used more with consumers who are looking to minimize their use of products, which are detrimental to the environment. Environmental marketing is a more popular approach, as it allows for companies to use green customers to drive the demand for products. Environmental marketing can be used by industries, like the hospitality and apparel industry, in order to sell products that reduce damage to the environment. Sustainable marketing covers a niche customer base due to offering sustainable products that through creation and purchase lead to a sustainable economy. Overall, these three different marketing concepts can be used to attract different types of consumers, ranging from those only slightly impacted by the idea of purchasing eco-friendly products, to those who will only buy items that are produced, packaged, and sold in a green manner (Peattie, 2001).

Peattie and Crane (2005) dissected the idea of green marketing throughout the 1990s and its falloff in the 2000s. The early stages of green marketing were seen in the late 1980s as corporations began to look to green products and academia began producing more research on green businesses. According to the authors, the 1990s were expected to provide much steam behind the idea of green marketing due to the large corporate
investments in the promotion of green products. Unfortunately, this was not the case due
to the change in advertising that featured green components of products, without further
development of items into eco-friendly offerings. This was an easy way for companies to
make money without investing in new production techniques. Since the products being
marketed to consumers were not truly eco-friendly, this lead to a distrust of the green
products industry and a reluctance of consumers to want to “go green”. The companies
that made an investment in order to make actual eco-friendly products found that
production costs on eco-friendly items were decreasing; however, the products were still
selling at a higher price with no savings passed down to the consumer (Peattie & Crane,
2005).

Producing Green Products

Many companies claim that producing green products can cause manufacturing
costs to increase drastically while the actual sale of eco-friendly items does not
necessarily cover these expenses. When looking at eco-friendly items for sale in any type
of retail environment, there is normally a premium price associated with the items
available in a green alternative. Sometimes, this increased price can be due to a higher
cost associated with production, but many instances the price increase is due to materials
in the product and the marketing costs associated with promoting these items.

A study conducted by Pujari, Wright, and Peattie (2003) found that manufacturers
in the United Kingdom have been moving towards more eco-friendly approaches to
creating new products due to an increase in environmental production policies.
According to Frei (1998) and Pujari et al. (2003), companies have been developing
methods in order to produce new goods in the most environmentally friendly ways
possible, beginning with the first steps taken in product development. Many companies have also been working on developing more eco-friendly production methods for items already in existence (Pujari et al., 2003). Their study also created a set of standards for companies to use in order to make sure their new product development coincides with their initiatives to make their products by using the most efficient, environmentally sound methods.

**Customers Demand Green Products**

Due to an increasing interest by the public, both within the U.S. and internationally to protect the environment, companies have been faced with major decisions regarding their production methods. Companies have been lured by consumers into producing products and offering services, which take the state of the environment into account. By the mid-1990s, many consumer studies showed that at least 70% of consumers considered the environment while making purchasing decisions (Wagner, 1997). At this point in time, eco-friendly products were sold at a premium price whether the items did or did not cost more to produce than conventional equivalents (Peattie & Crane, 2005). For some customers, this concept was equated to green products (they are good for the environment so they should cost more), but for many consumers, this attitude could have a negative impact on overall green sales.

Peattie and Crane (2005) explained that many startup companies, considered enviropreneurs, developed in the 1990s to only create environmentally friendly products. Many of these companies did not make profits consistent with the numbers produced by marketers inducing these trends. Many surveys conducted in the late 1980s and early 1990s showed that Americans cared about the environment and wanted to pay more for
products which were created in an eco-friendly manner (Roberts, 1996). Even though such results came from these surveys, the buying patterns of consumers did not always agree with their aforementioned habits (Peattie & Crane, 2005).

Much of the research was inconclusive due to a wide scope of differentiated results in the relationships between demographic groups, and their environmental awareness and concern (Roberts, 1996; Straughan & Roberts, 1999). There has been much controversy over the different research findings as marketing efforts may not have been directed towards the correct consumers. Straughan and Roberts (1999) and Roberts (1996) studied different variations on purchasing behavior of eco-friendly products and green intentions of customers.

Roberts (1996) developed a validated survey to determine the demographics of U.S. customers who behaved in an ecologically conscious manner. The outcome of this study found the following demographics were more ecologically conscious: older consumers; females; lower income (very small difference); and higher education (however, when attitudes were entered into the study, education did not make a difference). Roberts (1996) results conformed to prior research in the field; however, due to the variation in study results from other publications it is hard to determine who the green customer is and why they buy green products.

The study conducted by Straughan and Roberts (1999) looked at the future of green marketing and developed a way to test psychographic criteria instead of only using customer demographics. Based on Roberts (1996) and other studies in this field, they concluded that demographic data is not always the most sufficient to determine green consumers. Using original measures from the study conducted by Roberts (1996), the
authors developed specific criteria to test both the demographics and psychographics of customers. The following demographics were used: age; family income; gender; and, academic classification (students were surveyed). The following psychographic information was collected using a Likert scale from 1-5: liberalism; perceived consumer effectiveness; environmental concern; and, altruism. The overall findings of this study when compared to Roberts’ prior work in this area, found that the best approach to determine potential green customers is with psychographic data, or a combination of psychographic and demographic data.

**Corporate Social Responsibility**

According to Carroll (1999), many large companies began to acknowledge Corporate Social Responsibility (CSR) in the 1950s. There are many different definitions of CSR that have been developed by different researchers throughout the years. One of the modern definitions of CSR, developed by McWilliams and Siegel (2001, p. 117) is, “actions that appear to further some social good, beyond the interests of the firm and that which is required by law.”

The CSR pyramid was published by Carroll (1991) and develops four segments of CSR, which include philanthropic, ethical, legal, and economic responsibilities. According to Carroll (1991, p. 42) philanthropic responsibilities are at the top of the pyramid and include the following: “Be a good corporate citizen. Contribute resources to the community; improve quality of life.” Ethical responsibilities are the second level down on the pyramid and state, “Be ethical. Obligation to do what is right, just, and fair. Avoid harm.” Legal responsibilities are the third level down on the pyramid and they entail the following, “Obey the law. Law is society’s codification of right and wrong.
Play by the rules of the game.” Carroll (1991, p. 42) placed economic responsibilities on the bottom of his pyramid with the explanation, “Be profitable. The foundation upon which all others rest.” The bottom (economic responsibilities) would go on the bottom as the foundation for the other activities, as a business cannot run without making a profit. Philanthropic responsibilities are at the top of the pyramid, and all other responsibilities (economic, legal, and ethic) must be reached before a company can start taking on the social responsibility of helping others (Carroll, 1991).

Incorporating these different definitions of CSR, it can be defined as a company’s actions that foster a positive impact on social causes. Through the evolution of CSR, companies have taken more steps in order to promote themselves as socially responsible. The public opinion of socially responsible companies helps them to outweigh the costs of following the four segments of Carroll’s (1991) pyramid. A company that is able to promote itself as socially responsible can develop better and longer lasting relationships with customers.

The influx of corporate concern over social responsibility has lead to the development of eco-friendly products in many different industries. The consumer awareness for green offerings has lead to the development of entire industries surrounding eco-friendly products and services, which cater to individuals to whom green products are of value.

**Eco-Friendly Industries**

Over the past 20 to 30 years, specific industries have taken strides towards producing products with less detriment to the environment. Although most products produced today are not completely eco-friendly, there have been industry-wide
movements to further the production of items that cause little or no harm to the environment. Due to the impact of CSR on many companies, they have felt compelled to take initiative to change their production and product offerings due to an increased awareness in sustainability. Many service industries that have taken action to provide eco-friendly alternatives to customers including hotels, restaurants, and airlines. Some of the more prominently purchased consumer goods made out of organic or eco-friendly components include food, clothing, and methods of transportation.

**Green Service in the Hospitality Industry**

Due to the influx of international pressure on corporations to provide services, which have less environmental waste, many service-based organizations have developed green components to keep up with CSR in the current business environment. Using the hospitality industry as a basis for service-based sales, many studies have been conducted to determine the type of green customer and the preferences within this industry for green options.

A study was conducted by Kang, Lee, and Huh (2010), on CSR activities within the hospitality industry. This study encompasses the hotel, casino, restaurant, and airline industry to determine the relationship between these industries and CSR activities (including environmental concerns). The overall results of this study found that within each separate industry (i.e. hotel, casino, restaurant and airline), there were different financial results based on both positive and negative CSR. Hotels and restaurants should continue to increase their positive CSR initiatives while the airlines need to decrease their negative CSR issues. Similar studies have been conducted not only on CSR activities
(environmental concerns are included in CSR activities), but also on the direct impact of environmentally friendly alternatives (Kang et al., 2010).

During the last 10-15 years, many areas of the hospitality industry have been working towards more environmental concern in order for the business to compete in terms of expenses (lower cost can sometimes be associated with more eco-friendly practices- i.e. less water and electricity consumption), the attraction of green customers, and the compliance with environmental regulations (Font, 2002; Kasim, 2008). There have been many different debates on the willingness for customers to spend more for accommodations that are more eco-friendly; however, this industry is still implementing a movement towards greener practices (Kasim, 2008). Many small hospitality firms are implementing environmentally friendly initiatives at a slow and steady rate in order to save them money and keep up with the current socio-cultural trends within this industry (Tzschentke, Kirk, & Lynch, 2007).

The findings on eco-friendly consumers within the hospitality industry are not always the same (Kasim, 2008). As will be seen later in the literature review, the organic food industry and the apparel industry also have conflicting results on customer price sensitivity with respect to green products.

**Environmentally Focused Products**

Two large worldwide industries in which eco-friendly products are prominent include the grocery/food industry and the transportation industry. There was a 20.9% annual increase in the sale of organic food products between 2005 and 2006 (Organic Trade Association, 2007). In 2006, overall consumer spending on organic foods reached $16.7 billion due to increased knowledge by consumers of organic products and
environmental factors (OTA, 2007). The USDA (United States Department of Agriculture) requirements for food labeling (organic) require that at least 95% of the product must be made out of organic ingredients (Winter & Davis, 2006). Organic food products can be similarly associated with other products that are eco-friendly in nature, such as cars and apparel.

With respect to research and findings on green consumers within the transportation industry, Kahn (2007) found that green consumers were more likely to use green methods of transportation which included the purchase of hybrid vehicles. Due to government incentives and high gasoline prices, many consumers who are not typically considered “green” have been purchasing hybrid automobiles. Although the increase of hybrid purchases can correlated with the price of gas, an increase was not correlated with the government incentives offered with purchases of hybrid vehicles. The calculated premium price associated with the purchase of a hybrid vehicle versus the necessity based on variables (incentives, gas price, and mileage driving) was unable to solidify exact reactions to each of these factors individually. As gas costs rise, it is hard to determine the real reason behind hybrid vehicle purchases. Hybrid vehicle purchasing without incentives and increasing gas prices, could use research techniques similar to those used within the apparel industry.

**Eco-Friendly Movement in the Apparel Industry**

One of the first movers in the early years of the eco-friendly clothing movement was Patagonia. Patagonia, a large manufacturer of outdoor sportswear, began using organic cotton in its product mix in the early 1990s. As this was early on in the movement for retailers to sell merchandise online, there were many small catalog
companies offering eco-friendly apparel in the late 1990s. The catalyst of the internet made it easier for many of these small EPA manufacturers to sell their products and develop a larger customer base. According to Nimon and Beghin (1999), the potential market power of Patagonia was important to the price of the entire eco-friendly apparel industry. As the future of environmentally preferred apparel (EPA) was predicted to increase in the late 2000s, Nimon and Beghin (1999) concluded that Patagonia would be able to charge a premium for its products due to the eco-fabric content, brand name, and demand for Patagonia products. Since the study in 1999, it has become apparent that Patagonia has been successful in marketing its eco-friendly apparel and building its brand name. Now, in 2010, Patagonia is sold at outlets worldwide.

One of the biggest issues prevalent in the eco-friendly apparel industry is the high price to produce merchandise made out of organic and eco-friendly materials. After years of producing organic cotton, it still costs anywhere from 20% to 50% more than regular cotton and is not offered in as many ranges as normal cotton. Even though the demand and production of apparel made out of organic cotton is increasing, the prices associated with its growth have not. There are many companies that have began to focus on not only organic cotton tees, but they are now producing jeans made out of organic cotton and dyed using vegetable, soy, and other natural dyes (Tran & Isabelle, 2009).

Some other popular fabrics used in creating EPA clothing include bamboo and PET. These two fabrics are both used in the same manner as organic cotton in order to market products as eco-friendly. There has been some controversy over bamboo since some companies use harsh chemicals to turn bamboo (which is a sustainable, renewable resource) into a fabric like viscose (Binkley, 2009). PET which is a polyester fabric
made out of recycled water bottles has made its way into the eco-fabric mainstream as well. PET is used in items from tee shirts (blended with cotton), fleeces, and men’s swim shorts. Patagonia first began using PET in its fleeces in 1993 (Brown & Wilmanns, 1997) and many companies have since jumped on the concept of PET fiber in various apparel items.

**Studies on Eco-Friendly Products**

**Organic Food Studies**

Many studies on eco-friendly products have been conducted within the organic food segment, and can be used as a comparison to studies on eco-friendly apparel. Although the product is not the same, a lot of consumers who will only purchase organic food are the same consumers who will only purchase eco-friendly clothing. This type of consumer has changed a lot in the last 20 to 30 years. As organic food has been available for sale and consumption for years, environmentally friendly apparel has not been mass-produced until the late 1990s or 2000s.

Beaudreault (2009) developed a study in on consumer preferences within the organic food market. This study took place at Ohio State University and was made up of undergraduate students enrolled in a course in the College of Food, Agriculture, and Environmental Sciences’. This class was chosen because its students were familiar with the topic and subject matter, and a thorough investigation into customer price preferences was possible without additional information and training. The students in this study claimed that their perceptions of organic food came from both celebrities and “green” non-profit organizations. According to this study, 53% of students stated the media influenced their personal perception of organic food. Beaudreault (2009) also concluded
that female students were more price-sensitive with respect to organic food, as 86% claimed that price influenced their perception versus 68% of males.

Another study on organic foods was conducted by Pearson and Henryks (2008), which focused on pricing and the perceived quality of organic foods. They found that consumers are likely to follow an inverse demand curve in regards to price and quantity purchased when buying organic food products. Normal food products (non-organic) will typically constitute fewer purchases as price increases; organic products have the opposite effect because customers perceive a better quality when they are paying a higher price. Although consumers of organic food products perceive higher quality when prices are higher, there is a certain point when price overcomes quality. Many grocery store customers are also less price sensitive when purchasing organic food as they are normally purchasing multiple items at a discount (other than their organic merchandise), so to these customers, paying a little more for a few items becomes irrelevant (Pearson & Henryks, 2008).

The same study found that customers were very confused over branded labeling of organic food products. Due to the lack of distinct branding in this industry and the confusion over USDA certified organic products versus products that claim to be organic, many consumers are confused and unaware of specialty organic brands. As there aren’t any specific federal guidelines in place for labeling organic products, the only guarantee of an organic food item is one that states, USDA certified organic. According to Pearson and Henryks (2008), the only way to persuade grocery store customers, who are not eco-savvy, to buy organic, is to display organic products in an easily visible location in the grocery store that is regularly passed on the way to other items.
Dettmann and Dimitri (2010) conducted a study on the demographics of consumers who purchased organic produce by using Nielsen data in order to compile customer demographics. This study concluded that Caucasian households were more likely to purchase organic produce than African-American households. Other findings of this study were as education level increased, the percentage of consumers purchasing organic produce increased as well (Dettmann & Dimitri, 2010).

Lohr and Park (1999) conducted another study on organic produce. They tested price sensitivity among consumers purchasing organic broccoli and carrots. Wholesalers of organic produce, such as broccoli and carrots reported an average mark up of 36% and 37% respectively, on the retail price of these items. This study found that a 1% increase in retail price for broccoli resulted in a 9.9% decrease in quantity demanded, and a similar 1% price increase for carrots results in a 5.7% decrease in quantity demanded. Lohr and Park (1999) established that retail demand elasticity would increase due to the shift of organic products becoming mainstream and being sold in regular supermarkets. They also indicated that most organic produce was sold at specialty retailers instead of being sold in regular supermarkets as it is today.

The results from the studies on organic food vary drastically. Lohr and Park (1999) claimed that when the price of organic produce (specifically broccoli and carrots) increased demand decreased, whereas Pearson and Henryks (2008) found that perceived quality of organic food increases when price increases therefore no decrease in demand (to a specified limit). Due to an inconsistency of results, specific conclusions cannot be drawn with respect to these studies.
Studies on Eco-Friendly Apparel

Nimon and Beghin (1999) developed one of the first studies on eco-friendly fabrics used in the apparel industry. This study showed that there was a significant price premium for organic cotton, as the average markup given to organic items was 33.8%. Nimon and Beghin (1999) concluded that similarly situated organic products resulted in similar price markups across the apparel industry. Although this research was conducted in the late 1990s, there is still a higher cost associated with organic apparel today. A study in 2010 would most likely yield smaller results in price differentials since the EPA industry has become more prominent in the last ten years.

Hustvedt and Bernard (2008) conducted a study with students from Texas State University in order to determine the prices that participants were willing to pay for eco-friendly, genetically modified, corn based fabric and regular cotton. Price differentials were developed for the different fabrics by asking the students to assign monetary value to different socks. The socks that were tested in this study were made out of five different fabrics, including regular cotton, non-genetically modified (GM) cotton, organic cotton, regular PLA (a fiber derived from corn), and non-GM PLA.

In the first phase of research the students were asked to feel five socks, each one made out of one of the previously listed fibers. After feeling the socks, the students were asked to determine a sales price that they would be willing to pay for the socks without knowing their actual fabric composition. The results from the first price determination were used as the dependent variable to determine a base price for the socks. In their study, the base prices were used as a comparison to the price assigned when the participants were informed of the fabric content of each sock. The results of this study
found that the students were willing to pay up to $1.86 more for the organic socks. The consumer willingness to spend more on EPA can be used in this study as a comparison, the only hindrance on this result is that the students did not actually purchase the product; they were simply asked how much more they would be willing to spend.

Another study on EPA apparel was conducted by Connell (2010), on eco-conscious consumers who were preselected from two email listservs (lists of all email addresses of members). One of the email lists was from a retail company that sold EPA and the other email list was from a list of members at an environmental organization. The findings of this study were that the green consumers had a difficult time distinguishing between the fiber content of the eco-friendly apparel. Consumers from this study were unaware of brick-and-mortar retail stores that offered EPA products and even if they wanted to try and purchase EPA items, they were unsure where to find them. According to Connell’s (2010) findings, eco-friendly apparel needs to be more fashion-forward, heavily marketed, and have more choices available for consumers.

**Summary of Literature**

The previous studies related to the green movement were used to develop the methodology and the survey for this study. Since there is limited published research on eco-friendly apparel, other studies on green products and green industries can be used as a comparison. Overall, many of the studies within the different industries (hospitality and organic foods) are somewhat similar in scope and test the amount of money customers are willing to spend on green accommodations or products. Some other research tests customer willingness to “go green” with, or without a price premium for eco-friendly products.
The research studies developed on green consumers and their preferences can be used as references to create a study on eco-friendly clothing in a resort-retail environment. The survey found in Appendix B was derived from prior research studies on green products. Conclusions based on the data analysis of the survey results will be discussed in Chapter 5 and inferences between the research results from the literature review and the findings from this study will be made. Due to a lack of research on EPA, the other industries discussed in this chapter will be used as references throughout the study. Chapter 3 will discuss the methodology that was used to investigate the Research Hypotheses stated in Chapter 1.
CHAPTER 3

METHODOLOGY

The Setting

The data was collected for this thesis from a resort retail environment in Ocean Beach, NY during the summer of 2010. The store where the study took place is called Bambootique, a boutique surf shop that is open seasonally from May until October. Ocean Beach is a resort beach community located on Fire Island and has daily seasonal population fluctuations based on tourist visitation. The population fluctuation depends upon various factors, such as the day of the week, the weather, and the economy. The daily population fluctuation could have affect the results of the study because different tourists makes different purchasing decisions.

Bambootique is a brand new store that opened in May 2010. It sells apparel and accessories for men, women, and kids. Bambootique has been marketed as an eco-friendly store, as many of the items carried are made out of organic or recycled goods. Some of the clothing materials used in products sold in the store include bamboo, organic cotton, and recycled PET. The store also has many components made out of bamboo, such as the window display and the clothing racks. The use of bamboo throughout the store furthers the idea of sustainability, as bamboo is a renewable resource. All of the receipt paper and shopping bags used at Bambootique are made out of recycled paper and plastic. Customers are encouraged to recycle or reuse their shopping bags. Due to the publicity on the eco-friendly component of Bambootique, customers who are environmentally savvy have heard about the different initiatives Bambootique has taken in order to eliminate waste and sell merchandise with an eco-friendly flair.
Ocean Beach Customers

The only way to get to Ocean Beach is by taking a ferry ride from Long Island. Due to the tourism on the island, there are different types of customers. The community consists of summer homes that have individual owners. There are a few hundred people that live on the island year round and there are many homeowners that spend their entire summers in Ocean Beach. Some owners go back and forth from their permanent residence to their beach home, while others rent out their house for a week, a month, or the entire summer season. Due to the different rental options available to beachgoers, there are many changes in the population during the summer. Other than just single-family rentals, there are share houses, where numerous people rent alternating weeks or weekends for the summer. Along with the house rental options, there are also a few hotels where guests can spend a night or a week.

There is another segment of the market in Ocean Beach, which consists of people that take the ferry to come out to the beach for the day. These potential customers are not as likely to spend money as the customers spending the night, the week, or the entire summer season. Many people that come to Ocean Beach for the day are frequent visitors, whereas others spend the $16 needed for the ferry ride, pack lunch, and do not even visit the commercial district.

As this is a resort environment with different types of customers, there is a demand for different items. All different types of customers purchase Fire Island and Ocean Beach-branded logo merchandise, and there are many different types of logo items available. Bambootique sells Fire Island branded tee shirts for men, women, and children. These tee shirts are available in many different colors, sizes, and even fabrics.
In order to continue with the eco-friendly items available in the store, many of the Fire Island tee shirts are available in eco-friendly fabrics.

**Eco-Friendly Tee Shirt Study**

The study that took place at Bambootique involved the sale of different tee shirts that were available in both regular cotton and an eco-friendly material, which was either organic cotton or bamboo. The tee shirts used in this study were identical in terms of size, color (slight variations), design, and branded label. All of the shirts were ordered from the same manufacturer ensuring that all of the items are made in the same size sets. The colors were almost identical between the different fabrics in order to keep the tee shirts consistent and comparable, there were slight variations between the plain white tee shirts and the white bamboo tee shirts. Each shirt with the same design was offered in two different fabrics. There were four design options for men’s tee shirts and four design options for women’s tee shirts. All of the tee shirts were branded with Fire Island along with the designated design. All of the tee shirts were branded with a label inside the top seam with the “Bambootique” logo. The care labels underneath the Bambootique label stated the fabric content. Table 1 shows the different tee shirts that were used in this study.
### Table 1

*Customer Tee Shirt Options*

<table>
<thead>
<tr>
<th></th>
<th>Eco-Friendly</th>
<th>Regular Cotton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men’s Surfboard Tee Shirts</td>
<td>Black Organic Cotton</td>
<td>Black</td>
</tr>
<tr>
<td>Men’s “Gas is for Suckers” Tee Shirts</td>
<td>Black Organic Cotton</td>
<td>Black</td>
</tr>
<tr>
<td>Fire Island Wagon Tee Shirts *</td>
<td>White Bamboo</td>
<td>White</td>
</tr>
<tr>
<td>Fire Island Bicycle Tee Shirts *</td>
<td>White Bamboo</td>
<td>White</td>
</tr>
<tr>
<td>Women’s Fire Island Beach Chair Tee Shirts</td>
<td>Black Organic Cotton</td>
<td>Black</td>
</tr>
<tr>
<td>Women’s Fire Island Girl Tee Shirts</td>
<td>Black Organic Cotton</td>
<td>Black</td>
</tr>
</tbody>
</table>

Note: * Available in men’s and women’s tee shirts.

In order to make sure that customers were aware of the different fabric options available to them, there were a few steps taken to distinguish the fabrics from one another. Each display had a sign to show which tee shirts were found in each pile. All of the eco-friendly tee shirts were placed in a different pile than the regular cotton tee shirts. Each individual tee shirt had a sticker placed on it showing the fabric content as well. This step was taken in order to eliminate the mix-up of the tee shirts as shoppers tend to put items back in the wrong piles. The pictures located in Figure 1 show the placement of the tee shirts and associated signage.
The price differential between the regular cotton and eco-friendly tee shirts was $3.00. The regular cotton tee shirts retailed for $24 and the organic/bamboo tee shirts retailed for $27. Towards the end of the study, the tee shirts were on sale (20-50% off), as the store only operates seasonally. Although this could have had an effect on purchasing decisions, during the sale the tee shirts still had a price differential of 12.5%. The tee shirts did not go on sale until the after fifth week they were offered in the store at full price.

**Customer Survey**

Each customer who purchased one of the tee shirts was asked to fill out a survey when they approached the cash register. The survey was used to determine customer preferences and why customers chose either the eco-friendly tee shirts or the regular cotton tee shirts. The goal for the survey was to get at least 100 customer responses in order to have an adequate sample size to conduct further statistical analysis of the data. Each survey was filled out by a customer who purchased one of the tee shirts from the study and the corresponding receipt, or a copy of the receipt, was attached to each of the surveys to track which type of tee shirt each customer decided to purchase. Customer
incentives were not used to stimulate the response rate. The survey can be found in Appendix B.

**Survey Response Rate**

The response rate on these surveys was very high because the customers were asked to fill out the surveys while the cashier was conducting the monetary transaction. Out of the total of 132 tee shirts that were sold in the store during the study timeframe, there were 110 surveys filled out. Of these 110 respondents, five of them purchased more than one tee shirt. All five of the respondents who purchased two tee shirts each purchased two eco-friendly or two non-eco-friendly tee shirts. Eliminating these five responses from the overall number of tee shirts purchased leaves 127 (these responses were eliminated because they are considered duplicates and would lower the response rate). The response rate for this study was 87% (110 divided by 127). According to Zikmund (2003), personal interview survey response rates can be as high as 90%. Even though the survey used in this study is considered a self-administered questionnaire, it can be compared to a personal interview as the respondents are already in the store and engaging in conversation with the cashier who will then hand them the survey to fill out.

Due to the nature of the location where the study took place, a resort retail environment, most customers were not in a rush to leave the store as soon as their purchases were put into the computer, so they were not opposed to filling out the survey. The only customers who did not want to fill out the survey were those who were in a rush in order to get on the ferry back to Long Island. The overall responses to each of the survey questions can be found in Appendix C.
Data Analysis Methods

SPSS version 18.0 will be used to analyze the survey data. The types of tests that will be used include a simple frequency test, cross tabulations, chi-square test, and a Spearman’s Rho test. The frequency test will be used to get the number of respondents who chose the eco-friendly or non-eco-friendly tee shirts. The frequency test will be used to determine the number of purchases of each item. The cross tabulations will be used in order to show the respondents’ frequency of two separate variables. The chi-square test will be used to find out if there is a statistical relationship between the two variables presented in the cross tabulation or the frequency table. The chi-square will adjust any disparity in the data in order to test the relationship between the variables. Spearman’s Rho will be used to test the relationship of two variables in order to see if they show a correlation.

The statistical significance level that will be used for this study will be a p-value of 5% or less than .05. This significance level was chosen as the research conducted was exploratory in nature.
CHAPTER 4

STUDY RESULTS

Coding of the Responses

Once all of the surveys were completed, the data collected was entered into SPSS version 18 in order to determine specific relationships and statistical significance. The data was entered based on each question asked on the survey and was coded numerically. The coding was as follows (see also Appendix B):

Question 1: How eco-friendly are you?
Answers were coded from 1-5 in accordance with the survey response. The scale used on the survey was a Likert scale where “1” signified not eco-friendly and “5” signified very eco-friendly.

Question 2: What was the most important factor when buying this t-shirt?
Answers were coded based on the four response options given. The four responses were price, eco-friendly, appearance, and other (with a blank for a written response). Each of these four responses was coded with a “0” for no and a “1” for yes. The responses were coded this way because some survey respondents chose multiple answers in this section.

Question 3: How much more are you willing to pay for eco-friendly products?
Answers were coded on a 1-4 scale with “1” representing 0%, “2” representing 1-20%, “3” representing 21-40%, and “4” representing over 40%.

Question 4: What is your age?
Answers were coded based on the four age brackets given with “1” representing “under 20”, “2” representing “20-40”, “3” representing “40-60”, and “4” representing “over 60”.
Question 5: What is your gender?
Answers were coded with “1” representing male and “2” representing female.

Question 6: Are you a Fire Island Resident or a Tourist?
Answers were coded with “1” representing Fire Island Resident and “2” representing Tourist.

Question 7: Where is your permanent residence?
Answers were coded with “1” representing city/urban, “2” representing suburban, “3” representing rural. One respondent added another answer which was coded as “4”, representing a year round Fire Island resident.

Question 8: What is the highest education level you have obtained?
Answers were coded with “1” representing some High School, “2” representing High School, “3” representing some College/Associates, “4” representing College, and “5” representing Masters Degree or higher.

**Total Responses**

For each of the questions on the survey, the total responses were tabulated in order to understand the overall purchasing decisions and the overall demographics for the study. Each individual response was also measured based on the responses from the customers who purchased an eco-friendly tee shirt and those who did not. The overall results can be used in determining the different factors within the sample. The sample size for this study was n=110, which was derived to be adequate for purposes of this thesis. There were 110 surveys filled out by customers who purchased one of the tee shirts (eco-friendly or regular) and opted to fill out the survey. The total responses can be seen in Appendix C.
The responses to Question 1, as seen in Appendix C show that 54 out of the 110 respondents or 49% claimed to be somewhat eco-friendly, or 3 on the Likert scale. The overall responses for 3, 4, and 5 on the Likert scale totaled 99 or 90%. This high of an interest in eco-friendliness shows that consumers are concerned about the environment.

For Question 2, respondents were able to choose multiple answers, so the total number of responses for the four answers combined totaled 131 different factors. There were multiple surveys where respondents chose more than one factor as to their buying decision. Some of the respondents had multiple reasons because multiple factors influenced their purchasing decision and/or they could not narrow down their answer to only one. The survey also did not specify the number of answers respondents were allowed to choose, so they had the ability to pick more than one. Of these responses, there were an overwhelming number of surveys where the response was appearance, 87 respondents or 79%. Appearance can include encompass items such as color, design, or a combination of them. Due to a lack of explanation of the definition of appearance, many customers chose this option because it was broader than the others.

Question 3 had a majority of respondents claiming that they were willing to pay 1-20% more for eco-friendly products. This response of 67% is very high and shows that the majority of customers who filled out this survey are willing to pay more for green products. Overall, 102 respondents or 93% claimed that they would pay more for eco-friendly products, and only 8 stated they would not pay more for eco-friendly products. Since 93% of respondents claimed to be willing to pay more for eco-friendly products, then using the price differential in this study did not hinder the purchase of the eco-friendly tee shirts.
Question 4, which asked respondents about their age showed that there were a variety of age groups that participated in the study; however, the largest age group was from 20-40. There were 59 respondents were in the 20-40 age bracket, and this would be consistent with the type of merchandise sold in the store.

The responses to Question 5 found that there were 35 males and 75 females who completed the survey. Although there were a lot more female respondents, the chi-square test was used in order to remove this disparity in gender numbers. The gender variation is common as women purchase more goods than men, and will be explained further using cross tabulations.

Question 6 found that there were more survey respondents who were Fire Island residents than there were tourists. Even though this study took place in a resort retail environment, many of the customers in the store either rent or own their summer homes. This shows that many of the respondents spend more time on Fire Island than the tourists (who were only there for a day or two).

Question 7 asked respondents about their permanent residence and showed that most (90%) of the customers came from an urban or suburban area. This finding is consistent with both the residents and tourists who visit this area as many of them come from Long Island or New York City (5 boroughs). There was an outlier response that was written in by a respondent as a Fire Island year round resident. Due to the population fluctuation on Fire Island during the different seasons, it was hard for the respondent to determine which category to choose.

Due to the responses from Question 8, it can be seen that the overall education level of respondents was much higher than expected. Overall, 75% of the respondents
were college graduates or had a master’s degree or a doctorate. Since education correlates with knowledge of eco-friendliness and eco-friendly behaviors (Roberts, 1996; Straughan & Roberts, 1999) the customers should have had enough education when making their purchasing decisions.

**Hypothesis Testing**

H1: Customers are more likely to purchase eco-friendly clothing than non-eco-friendly clothing.

Table 2 is the frequency table of overall customer tee shirt choices and is based on the total number of responses when n=110. N=71 for those who purchased eco-friendly tee shirts and n=39 for those who purchased the tee shirts made out of regular cotton. Research in this field has shown that customers take environmental factors into consideration when making purchasing decisions (Wagner, 1997). The chi-square test in Table 3 shows that there is significance between the two different tee shirt choices (p-value is less than .05).

**Table 2**

*Customer Tee Shirt Choice Frequencies*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-friendly</td>
<td>71</td>
<td>64.5</td>
</tr>
<tr>
<td>Regular</td>
<td>39</td>
<td>35.5</td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 3
Chi-Square Test for Tee Shirt Choice Frequencies

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>9.309$^a$</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>1.000</td>
</tr>
<tr>
<td>Asymptotic Significance</td>
<td>.002</td>
</tr>
</tbody>
</table>

Note. $^a$ 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 55.

H2: Customers with an eco-friendly attitude are more likely to purchase eco-friendly clothing.

Table 4 shows the cross tabulation of the tee shirt choices and eco-friendliness. The customers who purchased eco-friendly tee shirts gave higher responses to Question 1 than those who did not purchase the eco-friendly tee shirts. There is a relationship between eco-friendly t-shirt purchased and attitudes on “being eco-friendly”. As explained previously, 54 (49%) of respondents chose 3-somewhat eco-friendly on the Likert scale as to their level of eco-friendliness. The tee shirt choices of these respondents who answered 3-somewhat eco-friendly were identical between eco-friendly and non-eco-friendly (27 respondents for each type). This shows that 3-somewhat eco-friendly is not weighted high enough to ensure the purchase of eco-friendly products.

There were 22 respondents who claimed to be 4-more eco-friendly and also purchased an eco-friendly tee shirt. There were only 6 respondents who claimed to be 4-more eco-friendly and purchased a regular cotton tee shirt. There were 16 respondents who claimed to be 5-very eco-friendly and purchased an eco-friendly tee and there was only 1 respondent who stated 5-very eco-friendly and purchased a regular cotton tee shirt.

Even without looking at the chi-square value in Table 5, it can be seen by the numbers
that the higher the eco-friendly attitudes were of the customers, the more likely they were to buy the eco-friendly product.

Based on the chi-square significance in Table 5, being below .05, there is statistical significance between the respondent’s tee shirt choices and how eco-friendly they claim to be.

Table 4

Cross Tabulation of Eco-Friendliness and Tee Shirt Choice

<table>
<thead>
<tr>
<th>Eco-Friendliness</th>
<th>Eco-Friendly</th>
<th>Regular</th>
</tr>
</thead>
<tbody>
<tr>
<td>not eco friendly (1)</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>a little eco friendly (2)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>somewhat eco friendly (3)</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>more eco friendly (4)</td>
<td>22</td>
<td>6</td>
</tr>
<tr>
<td>very eco friendly (5)</td>
<td>16</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 5

Chi-Square Test of Eco-Friendliness Cross Tabulation and Tee Shirt Choice

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Degrees of Freedom</th>
<th>Asymptotic Significance (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>14.496a</td>
<td>4</td>
<td>.006</td>
</tr>
</tbody>
</table>

Note. a 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.77.

H3: Customers who were willing to pay a price premium for eco-friendly products purchased the eco-friendly clothing more often than the non-eco-friendly clothing.

Based on Table 6, there was a relationship between the premium customers said that they were willing to pay for eco-friendly tee shirts and those who purchased eco-
friendly tee shirts. Out of the 71 eco-friendly tee shirt purchasers, 23 (32%) claimed that they would be willing to spend 21% or more on eco-friendly products. Out of the 39 regular cotton tee shirt purchasers, 5 (13%) claimed they would be willing to spend more on eco-friendly products. There were almost 20% more individuals who claimed they were willing to spend 21% or more on eco-friendly products who also purchased the eco-friendly tee shirts. This shows that there is a relationship between willingness to pay more and eco-friendly purchases. Respondents who were willing to pay more also purchased more eco-friendly tee shirts. Eco-friendly products were more important to these respondents as they claimed to be willing to spend more and also purchased the eco-friendly option.

Table 7 shows the chi-square test that the statistical result between the percentage more customers are willing to spend on eco-friendly products and their tee shirt choices is significant; p-value is less than .05.

Table 6

Cross Tabulation of Percentage More Willing to Spend on Eco-Friendly Products and Tee Shirt Choice

<table>
<thead>
<tr>
<th>% More on Eco-Friendly Products</th>
<th>Eco-Friendly</th>
<th>Regular</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% or Less</td>
<td>48</td>
<td>34</td>
</tr>
<tr>
<td>21% or More</td>
<td>23</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 7
Chi-Square Test of Percentage More Willing to Spend on Eco-Friendly Products Cross Tabulation and Tee Shirt Choice

<table>
<thead>
<tr>
<th>Value</th>
<th>Degrees of Freedom</th>
<th>Asymptotic Significance (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>5.083(^a)</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. \(^a\) 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.93.

H4: Customers who stated that eco-friendly was the most important factor during their purchasing decision also purchased eco-friendly clothing.

Question 2 asked respondents what was the most important factor when purchasing the tee shirt and the only response with any significance was eco-friendliness. Based on the numbers shown in Table 8, of the 71 customers who purchased an eco-friendly tee shirt, 23 customers (32%) chose the eco-friendly tee shirt because it was eco-friendly. This shows that there were customers who considered the eco-friendliness of the tee shirts during their purchasing decision.

Based on the results of the chi-square test found in Table 9, the responses of those who purchased an eco-friendly tee shirt because it was eco-friendly were statistically significant (p-value was < .05). There was one respondent who answered eco-friendly was their reason, when the respondent actually purchased a regular cotton tee shirt. It is most likely that the respondent thought that the tee shirt they purchased was eco-friendly, or the respondent could have simply marked the wrong line.
Table 8

Cross Tabulation of Tee Shirt Choice and Eco-Friendly as a Purchasing Factor

<table>
<thead>
<tr>
<th>Eco-Friendly</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eco-Friendly</td>
<td>48</td>
<td>23</td>
</tr>
<tr>
<td>Regular</td>
<td>38</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 9

Chi-Square Test of Eco-Friendly as Purchasing Factor and Tee Shirt Choice Cross Tabulation

<table>
<thead>
<tr>
<th>Value</th>
<th>Degrees of Freedom</th>
<th>Asymptotic Significance (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>13.132*a</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. *0 cells (.0%) have expected count less than 5. The minimum expected count is 8.51.

H5: Customers with an eco-friendly attitude are more likely to pay a premium for eco-friendly products.

Another statistical comparison from this study can be the cross tabulations between how eco-friendly the customers claim to be and the percentage more they are willing to pay for eco-friendly products. Table 10 shows that the more eco-friendly the customers are the more they are willing to spend on eco-friendly products. Of the 54 respondents who claimed to be 3-somewhat eco-friendly 50 of them claimed to be willing to pay more for eco-friendly products. Of the 28 respondents who claimed to be 4-more eco-friendly 27 of them said that they would be willing to spend more on eco-friendly
products. Of the 17 respondents who claimed to be 5-very eco-friendly, all of them claimed to be willing to spend more on eco-friendly products.

As the eco-friendliness of respondents increased, so did the percentage more that they were willing to spend on eco-friendly products. Out of the 23 respondents who claimed to be willing to spend 21-40% more on eco-friendly products, 22 of them claimed to be at least 3-somewhat eco-friendly. All of the 5 respondents who claimed to be willing to spend more than 40% more on eco-friendly products, claimed to also be at least 4-more eco-friendly.

The Spearman’s Rho test in Table 11 shows the positive correlation of these two variables. The respondents’ eco-friendliness increased as the price premium they were willing to spend increased. The significance is below .05 so there is a correlation between the increase in eco-friendliness and an increase in percentage spending on eco-friendly products.

Table 10

Cross Tabulation of Eco-Friendliness and Percentage Willing to Spend on Eco-Friendly Products

<table>
<thead>
<tr>
<th>Eco-Friendliness</th>
<th>0%</th>
<th>1-20%</th>
<th>21-40%</th>
<th>greater than 40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>not eco friendly (1)</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>a little eco friendly (2)</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>somewhat eco friendly (3)</td>
<td>4</td>
<td>41</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>more eco friendly (4)</td>
<td>1</td>
<td>16</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>very friendly (5)</td>
<td>0</td>
<td>10</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>
Table 11

Spearman’s Rho Correlation of Eco-Friendliness and Percentage Willing to Spend on Eco-Friendly Products

<table>
<thead>
<tr>
<th>Spearman Correlation</th>
<th>Asymptotic Standard Error(^a)</th>
<th>Approximate T(^b)</th>
<th>Approximate Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>.343</td>
<td>.085</td>
<td>3.794</td>
<td>.000(^c)</td>
</tr>
</tbody>
</table>

Note. \(^a\) Not assuming the null hypothesis; \(^b\) Using the asymptotic standard error assuming the null hypothesis; \(^c\) Based on normal approximation.

H6: Females are more likely to purchase eco-friendly apparel than males.

Table 12 shows the cross tabulation of gender and tee shirt choice and shows that women are more likely to purchase eco-friendly tee shirts. This is consistent with previous findings (Han, Hsu, & Lee, 2009; Laroche, Bergero, & Barbaro-Forleo, 2001; Roberts, 1996; Staughan & Roberts, 1999) regarding gender and eco-friendliness.

Overall, 71% of females chose eco-friendly tee shirts versus only 51% of males. The male customers were almost evenly split in their purchasing decisions, whereas the females chose the eco-friendly tee shirts more often.

Even though there were many more female respondents than males, the chi-square test the Pearson chi-square test in Table 13 found a significant result between gender and purchasing decision as the p-value was .049 (below .05).

Table 12

Cross Tabulation of Gender and Tee Shirt Choice

<table>
<thead>
<tr>
<th>Gender</th>
<th>Eco-Friendly</th>
<th>Regular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>Female</td>
<td>53</td>
<td>22</td>
</tr>
</tbody>
</table>
Table 13

Chi-Square Test of Gender and Tee Shirt Choice Cross Tabulation

<table>
<thead>
<tr>
<th>Value</th>
<th>Degrees of Freedom</th>
<th>Asymptotic Significance (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>3.859\textsuperscript{a}</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. \textsuperscript{a} 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.41.

There was also a relationship between gender and eco-friendliness, which is consistent with the purchasing decisions made by each gender. The cross tabulation found in Table 20 calculates the relationship between gender and eco-friendliness. As was the case with gender difference between males and females, based on tee shirt choice, females also claimed to be more eco-friendly than males. Out of the 75 female respondents, 28 (37\%) claimed to be at either 4-more eco-friendly or 5-very eco-friendly. Out of the 35 male respondents only 7 (20\%) claimed to be 4-more eco-friendly or 5-very eco-friendly.

Based on the chi-square results, \( p < .05 \), this cross tabulation is significant in respect to gender and eco-friendliness. Women claim to be more eco-friendly than their male counterparts.
Table 14

Cross Tabulation of Eco-Friendliness and Gender

<table>
<thead>
<tr>
<th>Eco-Friendliness</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>not eco-friendly (1)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>a little eco-friendly (2)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>somewhat eco-friendly (3)</td>
<td>23</td>
<td>31</td>
</tr>
<tr>
<td>more eco-friendly (4)</td>
<td>2</td>
<td>26</td>
</tr>
<tr>
<td>very eco-friendly (5)</td>
<td>5</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 15

Chi-Square Test of Eco-Friendliness and Gender Cross Tabulation

<table>
<thead>
<tr>
<th></th>
<th>Degrees of Freedom</th>
<th>Asymptotic Significance (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>11.862^a</td>
<td>4</td>
</tr>
</tbody>
</table>

Note. ^a 4 cells (40.0%) have expected count less than 5. The minimum expected count is 1.59.

H6a: Urban residents are more likely to purchase eco-friendly apparel than residents in other areas.

There was a relationship found between permanent residence and eco-friendly when comparing urban and suburban residents. As seen in Table 16, respondents who live in urban areas were more likely to purchase eco-friendly tee shirts than respondents living in suburban areas. Out of the 45 tee shirt purchases by urban residents, 34 (76%) of respondents chose the eco-friendly tee shirts. In comparison with the suburban residents, only 28 out of 54 (52%) of respondents chose the eco-friendly tee shirts. More urban residents chose the eco-friendly tee shirts because they are more likely to be ecologically conscious as found by Straughan and Roberts (1999).
The chi-square test in Table 17 shows the statistical significance of tee shirt choice based on permanent residence. The p-value is less than .05 therefore there is a statistical relationship.

Table 16

Cross Tabulation of Residence and Eco-friendly Tee Shirts

<table>
<thead>
<tr>
<th>Urban or Suburban</th>
<th>Eco-Friendly</th>
<th>Regular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>34</td>
<td>11</td>
</tr>
<tr>
<td>Suburban</td>
<td>28</td>
<td>26</td>
</tr>
</tbody>
</table>

Table 17

Chi-Square Test for Residence and Eco-Friendly Tee Shirts Cross Tabulation

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Degrees of Freedom</th>
<th>Asymptotic Significance (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>5.892</td>
<td>1</td>
<td>.015</td>
</tr>
</tbody>
</table>

Note. a 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.82.

H6b: Respondents with a college degree or higher are more likely to purchase eco-friendly apparel.

Previous studies have found that education level makes a difference on the eco-friendliness and eco-friendly purchasing decisions of consumers (Roberts, 1996). When the data was analyzed using the cross tabulation found in Table 18, there wasn’t any statistical relationship between education and tee shirt choice. The chi-square test in Table 19 has a p-value greater than .05. There were some educational levels that
purchased more eco-friendly tee shirts than others, but there wasn’t any finding that as education level increases, the amount of eco-friendly tee shirt purchases increases.

**Table 18**

*Cross Tabulation of Education and Tee Shirt Choice*

<table>
<thead>
<tr>
<th>Education</th>
<th>Eco-Friendly</th>
<th>Regular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some High School</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>High School Grad</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Some College</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>College Grad</td>
<td>28</td>
<td>24</td>
</tr>
<tr>
<td>Masters Degree or Higher</td>
<td>23</td>
<td>7</td>
</tr>
</tbody>
</table>

**Table 19**

*Chi-Square Test for Education and Tee Shirt Choice Cross Tabulation*

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Degrees of Freedom</th>
<th>Asymptotic Significance (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>5.672^a</td>
<td>4</td>
<td>.225</td>
</tr>
</tbody>
</table>

Note. ^a 3 cells (30.0%) have expected count less than 5. The minimum expected count is .71.

**Conclusions of Data Results**

This chapter discussed the testing of the hypotheses developed for this thesis. Chapter 5 will discuss the data analysis covered in this chapter and will expand some of the findings along with prior research findings as seen in Chapter 2. The limitations and future research implications will be described in Chapter 5 as well.
CHAPTER 5

STUDY CONCLUSION

Summary of Data

A further explanation of the survey results and their statistical significance will be explained throughout this chapter. All statistical relationships found in Chapter 4 will be presented along with explanations for the data responses. Previous research from Chapter 2 will be revisited in order to explain data results.

Tee Shirt Choice and Eco-Friendliness

The second hypothesis tested was, H2: Customers with an eco-friendly attitude are more likely to purchase eco-friendly clothing. The customers who purchased eco-friendly tee shirts responded to question 1, “How eco-friendly are you?” with higher responses than those who did not purchase the eco-friendly tee shirts. There is a relationship between eco-friendly tee shirt purchased and attitudes on “being eco-friendly”. Although there were 71 eco-friendly tee shirts and only 39 regular cotton tee shirts purchased, there were the same number of responses, (27) of 3-somewhat eco-friendly in the center of the Likert scale. With regards to the responses of higher eco-friendliness, 4-more eco-friendly and 5-very eco-friendly on the Likert scale, these respondents also purchased a higher percentage of eco-friendly tee shirts. The cross tabulation shown in Table 14 between tee shirt choice and eco-friendliness was statistically significant (Table 15), so the statistical relationship is present.

Kahn (2007) found that consumers who were more eco-savvy overall were more likely to purchase hybrid vehicles, so a similar conclusion can be made from these survey results. The respondents who claimed to be more eco-friendly solidified their claim by
purchasing more eco-friendly products than the consumers that did not claim to be as eco-friendly. Consumer preferences on organic apples in the study by Loureiro, McCluskey, and Mittelhammer (2001) found that attitudes towards the environmental concern lead consumers towards purchasing apples labeled organic or eco-friendly. The consumers with some preference for environment Staughan and Roberts (1999) had a somewhat conflicting result for a similar question in their study. Staughan and Roberts (1999) found that overall environmental concern and ecologically conscious consumer behavior are statistically significant, but many ecologically conscious consumers are not likely to purchase green items unless they know that they are helping with current environmental detriments.

**Price Premium and Tee Shirt Choice**

The third hypothesis was, H3: Customers who were willing to pay a price premium for eco-friendly products purchased the eco-friendly clothing more often than the non-eco-friendly clothing. Using the different values for Question 3 on the price premium customers were willing to pay for eco-friendly products, it can be seen in Table 6 that customers who are willing to pay more for eco-friendly products are also more willing to purchase eco-friendly products. Out of the total responses on percentage more willing to spend, there were 28 respondents who claimed to be willing to spend 21% or more. Of these 28 respondents, 23 purchased eco-friendly tee shirts (82%) and 5 purchased regular cotton tee shirts (18%). Due to the 82% who stated they would spend 21% or more on green products and actually purchased the eco-friendly tee shirts, there was a relationship as seen by the significance in Table 7. Not only did the more eco-friendly customers say that they would spend more than the others, but they did spend
more by purchasing the eco-friendly tee shirts. Even though there was only a 12.5% price differential between the tee shirts in this study, it can still be concluded that customers who say that they are willing to spend more on eco-friendly products actually do purchase the eco-friendly products.

Pearson and Henryks (2008) found that consumers were willing to spend more on organic food products. They found that customers believed that as the price of organic food increases so does the quality, so there is an inverse relationship between price and quality. Due to the increased perception of quality, the quantity purchased of higher priced organic food is not very different from lower priced organic food. Hustvedt and Bernard (2008) found that students were willing to pay up to $1.86 more for organic cotton socks. This conclusion is related to the findings in Chapter 4 as customers were willing to pay more for the eco-friendly tee shirts. However, looking at the data in Chapter 4, this study also shows that customers did in fact purchase the eco-friendly options available.

**Reasons behind Tee Shirt Purchase**

The fourth hypothesis was, H4: Customers who stated that eco-friendly was the most important factor during their purchasing decision also purchased eco-friendly clothing. The second question on the survey asked respondents “What was the most important factor when buying this tee shirt?” and the only factor that showed statistical significance (p-value less than .05) in the cross tabulation between tee shirt choice and associated factor was the response “eco-friendly”. Of the 71 eco-friendly tee shirt purchases found in Table 8, 23 customers claimed to have purchased the tee shirt because it was eco-friendly. This finding shows that at least 23 customers (32% of those who purchased an
eco-friendly tee shirt) were conscious of the eco-friendly component when making their purchasing decision. Due to multiple responses by respondents (n=110 respondents, n=131 different factors that influenced purchasing decision), prior knowledge of eco-friendly merchandise could have been a purchasing motivation.

Based on the findings from Connell (2010) many customers, who purchase other green products, do not know the different types of fabric used in EPA. This was further confirmed in this study, as many respondents claimed to be at least “somewhat eco-friendly” and “willing to spend more on eco-friendly products”, but they did not choose their tee shirt based on its eco-friendliness. One respondent even claimed to have chosen an eco-friendly tee shirt because it was eco-friendly, when in fact the customer actually chose a regular cotton tee shirt. This response could have been a mistake, or the consumer may not have understood the difference between the fabrics offered. This response can also be confirmed by Connell’s (2010) study, as customers may not understand the specifics on which fabrics are eco-friendly. The customers who considered the environment during their purchasing decision are not as significant as the amount stated by Wagner (1997), but the results did show that were some customers considering environmental impact of their decision.

**Eco-Friendliness and Percentage Price Increase**

The fifth hypothesis was, H5: Customers with an eco-friendly attitude are more likely to pay a premium for eco-friendly products. Table 10 shows the cross tabulation between eco-friendliness of consumers and the percentage more they are willing to spend on eco-friendly items. There is statistical significance of a relationship between these two variables as found by Spearman’s Rho in Table 11 is below .05. When looking at the
results found in Table 10, the respondents who answered lower on the scale of eco-friendliness were also not willing to spend as much on green items as the respondents who answered higher on the eco-friendliness scale. The higher the level of eco-friendliness, the higher percentage respondents are willing to pay for eco-friendly products. There were only 5 responses of willingness to pay 40% or more; however, these 5 responses came from customers who rated their eco-friendliness as a “4” or “5”.

Just as customers who are more eco-savvy purchased the eco-friendly tee shirts, the customers who are more eco-friendly will say that they are willing to spend more on green alternatives. In most cases, the more eco-friendly consumers will actually spend more on environmentally friendly alternatives, but sometimes this may not be the case. There are a lot of other factors involved in these types of behavioral decisions, such as reference price; product being purchased; and the actual environmental impact of purchasing the green item.

Research compiled by Hustvedt and Bernard (2008) had similar results towards the amount more that customers are willing to pay for eco-friendly products. Students in this study claimed to be willing to pay up to $1.86 more for eco-friendly socks in comparison with regular cotton socks. Survey results from this study on eco-friendly tee shirts found that customers were also willing to pay more for eco-friendly items. 67% (74 out of 110 respondents) claimed that they will pay 1-20% more for green products, while 21% (23 out of 110 respondents) claimed they are willing to pay between 21-40% more. Some of these customers did purchase the eco-friendly tee shirts, which were priced 12.5% higher than the regular ones, but some respondents also claimed to be willing to spend more on green items, when they actually bought the regular tee shirt.
Gender, Tee Shirt Choice and Eco-Friendliness

The sixth hypothesis was, H6: Females are more likely to purchase eco-friendly apparel than males. The only demographic group that had statistical significance in terms of purchasing decisions was gender. Overall, females purchased more eco-friendly tee shirts (proportionally) compared to men. As seen in Table 12, the cross tabulation of tee shirt choice and gender, males purchased almost the same number of regular tee shirts as they did eco-friendly tee shirts (statistical significance found in Pearson chi-square in Table 13). Using Table 14 for the cross tabulation of gender and eco-friendliness, females are much more eco-friendly than their male counterparts (statistical significance found in Pearson chi-square in Table 15). Looking at Table 14, it is very apparent that few men claimed to be a “4” or “5” on the eco-friendliness scale, while 38 (51%) of women surveyed stated that they were a “4” or “5” on the eco-friendliness scale. The results from the tee shirt choice made by women and how eco-friendly they are is very consistent as for both factors, women far surpassed men in their green habits and claims.

Many studies on environmental concern have found that females are more eco-savvy than males in terms of overall green product recognition and environmental impact (Han, Hsu, & Lee, 2009; Laroche, Bergeron, & Barbaro-Forleo, 2001; Roberts, 1996; Staughan & Roberts, 1999) also found that females were more environmentally conscious. Roberts (1996) and Staughan and Roberts (1999) both concluded that females are more eco-friendly then males and they are also more aware of the impact their purchasing decisions can make on the environment. Han et al. (2009) found that the overall image of staying in a green hotel is higher for females than it is for males.
Laroche et al. (2001) found that females were more likely to pay more for green products than men because being eco-friendly is more important to them.

**Tee Shirt Choice and Residence**

The seventh hypothesis was, H6a: Urban residents are more likely to purchase eco-friendly apparel than residents in other areas. The data found in Table 16 shows the difference between the purchases of urban customers and suburban customers and Table 17 shows the significant chi-square value. Rural customers and the 1 year round Fire Island resident were not included in this cross tabulation because there were only 11 responses that fell into these categories, so there was not enough data to show any type of relationship. Examining the cross tabulation numbers between the respondents residence, 34 respondents who are permanent residents in an urban location (47% of overall eco-friendly purchasers, n=71) shows that more eco-friendly tee shirts were purchased relative to the number of regular cotton tee shirts. Only 11 out of 39 respondents who purchased regular tee shirts had a permanent residence in an urban area (28%). There is a 20% difference (proportionally) between the numbers of residents in urban areas who chose an eco-friendly tee shirt.

Due to the location of permanent residents, many may be aware of environmental issues than others. Respondents who live in urban areas may have more environmental knowledge because of the constant presentation by the media. As there are typically more eco-friendly alternatives within urban areas, due to a higher concentration of organic food stores and restaurants, and more clothing retailer options, urban residents can be more educated when it comes to green consumerism. There are also more billboards, advertisements, and constant reminders of the media in urban areas, so this
can have an effect on ecological knowledge as well. Beaudreault (2009) found that 53% of the students he surveyed claimed that the media influenced their perception of organic food. The same could be true for EPA as the mass influence of the media is more evident in urban areas. Straughan and Roberts (1999) also found that customers living in urban areas were more likely to be ecologically conscious.

Data Uncertainty

One of the main issues of customer responses and willingness to pay more for green products, is that customers may claim that they are willing to pay more than they would in actuality. The same issue can be found when asking customers how eco-friendly they are. The socially acceptable answer is normally higher than the person’s actual behavior.

Demographic Findings

Since the only significant demographic finding from this study was that females are more eco-friendly and purchase more eco-friendly tee shirts than males, there are not a lot of demographic assumptions that can be made from this study. Prior research has found similar results based on the eco-friendliness of females. The permanent residency of the respondents was almost significant, but a larger survey would need to be conducted in order to get more conclusive results.

Limitations

There are many limitations for a study that conducts exploratory research in field with limited existing academic publications. The limitations could have impacted the overall data finding, yet can also be used for future research.
Location Limitations

Since the study was conducted in a resort, retail environment there are many factors, which could play into the output of the survey data. Based on daily visitation fluctuations, there could be different results if this study was conducted again next year. There are a mixture of tourist and resident customers, so their overall opinions and concerns about the environment can be very different. This study was only distributed to customers making a purchase in one store in Ocean Beach, the results from another store could have been very different, as Bambootique was a new store and also had a green product focus.

The way that the tee shirts were displayed in the store could have impacted the entire study, as customers may not have read the signs associated with tee shirt study. Underhill (2008) stated the importance of creating signs that are easy to read by shoppers (p. 26). The signage found in the area of the tee shirt study may not have been easy for shoppers to read, they also may not have taken the time to read the sign even though it was right in front of them. The physical location of the tee shirts within the store could have been a problem as well. The men’s tee shirts used in this study were displayed right in the front of the men’s section whereas the women’s tee shirts were harder to find. It is possible that there could have been more sales of women’s tee shirts for this study had they been placed in a better location (Underhill, 2008, p. 40).

Research Limitations

There were some research limitations of this study as well. Many of the limitations involve the different biases associated with the responses to the survey. Some of the biases that may have occurred in this study include an acquiescence bias, auspices...
bias, and social desirability bias. An acquiescence bias is when the respondents attempt to agree with the questions, so in this survey they could have responded that they are more eco-friendly than they really are because it is better and more agreeable to claim to be eco-friendly. An auspices bias is when the respondent is influenced by the company conducting the survey, so some respondents could have claimed to be more eco-friendly because the store sold eco-friendly clothing. A social desirability bias is when respondents answer a survey in the most socially acceptable manner to conform to societal norms. Societal norms involving environmental concern teach people that it is important to be concerned about the environment, so the respondents may claim they would pay more for eco-friendly products.

Since there were only 110 surveys completed, there is also a limitation on how to generalize the results. If there were more respondents, then the study may have had more validity. If the same number of regular cotton tee shirts and eco-friendly tee shirts were purchased, then there may have been more data available to analyze. If the survey had different questions and/or more questions then there could have been better research conclusions.

**Sampling Frame**

The sampling frame of this study is one of its greatest strengths; it took place in an actual retail setting. Many of the research publications found in journals use students in order to determine eco-friendliness and purchasing patterns, but this study was conducted in a live setting. The data gathered from this study can be used by other retailers in order to make decisions on eco-friendly products for their stores.
Future Research

As this study is exploratory in nature, there are hopes that it will influence other researchers to conduct more studies on the eco-friendly apparel industry. Since environmental concern is relatively new to the apparel industry the future may require research in this field to become a necessity to clothing manufacturers. Not only will the apparel industry benefit from future research on the rationale to purchase EPA, but this type of information can be useful for other industries as well. The hospitality industry can use this type of research to determine items to supply in the gift shop and other retail outlets. Information on the importance of eco-friendly product offerings could be very useful to hotels, casinos, and restaurants when determining the types of logo-branded apparel to produce.
APPENDIX A
UNLV IRB APPROVAL

EXEMPT RESEARCH INFORMATION SHEET
Department of Hotel College

TITLE OF STUDY: A Study on Eco-Friendly Merchandise in a Resort Retail Environment

INVESTIGATOR(S) AND CONTACT PHONE NUMBER: Dr. Curtis Love and Lindsey Patrick,
Contact Phone Number 631-431-6991, Lindsey Patrick

The purpose of this study is to determine customer perception and customer attitudes towards eco-friendly apparel. You are being asked to participate in the study because you meet the following criteria. You have decided to purchase a t-shirt that is available in 100% Cotton and an eco-friendly fabric.

If you volunteer to participate in this study, you will be asked to do the following. You will be asked to fill out this survey.

This study includes only minimal risks. The study will take 3 minutes of your time. You will not be compensated for your time.

For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which the study is being conducted you may contact the UNLV Office of Research Integrity – Human Subjects at 702-895-2794, toll free at 877-895-2794, or via email at IRB@unlv.edu.

Your participation in this study is voluntary. You may withdraw at any time. You are encouraged to ask questions about this study at the beginning or any time during the research study.

Participant Consent:
I have read the above information and agree to participate in this study. I am at least 18 years of age. A copy of this form has been given to me. I have shown my consent to this study by answering the questions below.

Participant Initials
APPENDIX B

CUSTOMER SURVEY

Customer Survey

1. How eco-friendly are you? (Please mark with an X on the scale below. The number 1 signifies “not eco-friendly” and the number 5 signifies “very eco-friendly”)

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Eco-Friendly</td>
<td>Somewhat</td>
<td>Very Eco-Friendly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. What was the most important factor when buying this t-shirt? (Please mark with an X)

   - Price
   - Eco-Friendly
   - Appearance
   - Other (Please state why)__________________________

3. How much more are you willing to pay for eco-friendly products? (Please mark with an X)

<table>
<thead>
<tr>
<th>0%</th>
<th>1%-20%</th>
<th>21%-40%</th>
<th>Over 40%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>1%-20%</td>
<td>21%-40%</td>
<td>Over 40%</td>
</tr>
</tbody>
</table>

4. What is your age? (Please mark with an X)

<table>
<thead>
<tr>
<th>Under 20</th>
<th>20-40</th>
<th>40-60</th>
<th>60+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 20</td>
<td>20-40</td>
<td>40-60</td>
<td>60+</td>
</tr>
</tbody>
</table>

5. What is your gender? (Please mark with an X)

   - Male
   - Female

6. Are you a (Please mark with an X):

   - Fire Island Resident
   - Tourist
   - Home Owner/Renter
   - On Vacation

7. Where is your permanent residence?

   - City/Urban
   - Suburban
   - Rural

8. What is the highest education level you have obtained? (Please mark with an X)

   - Some High School
   - High School
   - Some College/Associates
   - College (4 years)
   - Masters Degree or Higher (PhD, MD, JD)
APPENDIX C

CUSTOMER SURVEY RESPONSES

1. How eco-friendly are you? (Please mark with an X on the scale below. The number 1 signifies “not eco-friendly” and the number 5 signifies “very eco-friendly”)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Eco-Friendly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Eco-Friendly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. What was the most important factor when buying this t-shirt? (Please mark with an X)

- Price | 13 |
- Eco-Friendly | 24 |
- Appearance | 87 |
- Other (Please state why) | 7 |

3. How much more are you willing to pay for eco-friendly products? (Please mark with an X)

<table>
<thead>
<tr>
<th></th>
<th>0%</th>
<th>1%-20%</th>
<th>21%-40%</th>
<th>Over 40%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8</td>
<td>74</td>
<td>23</td>
<td>5</td>
</tr>
</tbody>
</table>

4. What is your age? (Please mark with an X)

- Under 20 | 11 |
- 20-40 | 59 |
- 40-60 | 31 |
- 60+ | 9 |

5. What is your gender? (Please mark with an X)

- Male | 35 |
- Female | 75 |

6. Are you a (Please mark with an X):

- Fire Island Resident | 62 |
- (Home Owner/Renter)
- Tourist | 48 |
- (On Vacation)

7. Where is your permanent residence? *

- City/Urban | 45 |
- Suburban | 54 |
- Rural | 10 |

8. What is the highest education level you have obtained? (Please mark with an X)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Some High School</td>
<td>2</td>
</tr>
<tr>
<td>High School</td>
<td>9</td>
</tr>
<tr>
<td>Some College/Associates</td>
<td>17</td>
</tr>
<tr>
<td>College (4 years)</td>
<td>52</td>
</tr>
<tr>
<td>Masters Degree or Higher (PhD, MD, JD)</td>
<td>30</td>
</tr>
</tbody>
</table>

* One respondent chose to add in another answer on Question 7. The answer that was written in was Fire Island Year Round Resident.
REFERENCES


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VITA

Graduate College
University of Nevada, Las Vegas

Lindsey Clarissa Patrick

Degrees:
Bachelor of Science, Business Administration, 2006
University of South Carolina, Columbia, South Carolina

Special Honors and Awards:
McKissick Scholar, 2002

Thesis Title: A Study on Eco-Friendly Merchandise in a Resort Retail Environment

Thesis Examination Committee:
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Committee Member, Karl Mayer, Ph.D.
Committee Member, Bo Bernhard, Ph.D.
Graduate Faculty Representative, Jack Schibrowsky, Ph.D.