CONSUMER PREFERENCES FOR BLENDED ORGANIC COTTON APPAREL

by

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B.S., University of Nebraska, 2000
M.S., University of Nebraska, 2003

AN ABSTRACT OF A DISSERTATION

Submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Department of Apparel, Textiles and Interior Design
College of Human Ecology

KANSAS STATE UNIVERSITY
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ABSTRACT

The blending of small percentages of organic cotton has been a successful way for apparel manufacturers to introduce organic cotton into their supply chain. However, little is known on how consumers perceive small percentage blended organic cotton apparel products.

The purpose of this study was twofold. One goal was to identify the groups of consumers who might be interested in buying blended organic cotton clothes and find out what kind of labeling they preferred. The second goal was to find out more about the consumer's attitudes and interest in purchasing the organic cotton clothing. Theory in consumer behavior, and social psychology provided the conceptual framework for the study. Major variables included in the study were environmental attitudes, attitudes of the consumers and important other people towards organic cotton clothing, skepticism toward environmental product claims, consumer self-identity, and future purchase intention.

Data were collected with a mail survey of consumers, stratified by state population, that was randomly drawn from a national mailing list of health and natural foods consumers (usable response rate=14.9%, n=422). Factor analysis uncovered latent variables from among the large number of items. Conjoint analysis revealed which product attributes were salient and cluster analysis identified segments of consumers with different attribute preferences. Finally, multiple regression analysis was used to examine the causal relationships among variables affection future purchase intention.

Percentage of organic cotton content, price, and labeling for fairly traded fibers and donations to cancer research were all attributes used by the consumers to decide how

likely the would be to purchase an organic cotton t-shirt. Two segments of consumers (53%) used the percentage of organic cotton more than any other attribute to decide their purchase likelihood. Results from the multiple regression were used to make a model of socially responsible consumer behavior.

The research makes numerous contributions. Apparel manufacturers will benefit from knowing that seeing even small percentages of organic fiber helps consumers decide to purchase organic clothing. Theoretical contributions include the determination that the relationship between future purchase intention and both self-identity and the personal norm is mediated by the consumers' evaluation of outcomes of the purchase.

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CHAPTER 1: INTRODUCTION

Background

"Lifestyles of health and sustainability," sometimes used as the acronym of

LOHAS, is a consumer trend that has been growing over the past decade. LOHAS

consumers, estimated at 63 million U.S. consumers in 2002, are interested in making sure

that they are healthy and that the way they are living is something they can pass onto

their children (Everage, 2002). They want to do what is good for themselves and their

communities and they also want to do what is good for people around the world and the

world itself. There is a growing portion of the economy, $230 billion dollars in 2000,

that is focused on providing the LOHAS consumer the products that will fit with their

lifestyle (Cortese, 2003).

This consumer vision of health and sustainability is a holistic vision, which means

that these consumers want companies to provide products that originate from a process

that matches their personal image of health and sustainability (Everage, 2002). The

growing corporate focus on social responsibility is an effort, in part, to ensure that the

production processes of the corporation align properly with this vision of health and

sustainability. Companies who provide products for the 'lifestyle of health and

sustainability" often feel the need to ensure that their products and services reduce the

negative human and environmental impact of doing business (Everage, 2002).

When examining the environmental impact of the apparel supply chain,

consumers, environmental advocates and apparel manufacturers have identified several

areas of concern. These areas include pollution by wastewater originating from textile

and garment processing plants as well as pollution by the inputs required for producing

the most popular textile fiber, cotton (Gap, 2004; Nike, 2004). Cotton production is a

major contributor to the total environmental damage done by the apparel supply chain.

The major environmental damage from cotton comes in the form of pesticides applied to

cotton. Worldwide, 11% of pesticides are used on cotton, and globally cotton production

is the single most insecticide intensive crop with almost 25% of the world's insecticides

used on cotton in the 1990s (Myers & Stolton, 1999). The pesticides used on organic

cotton include organophosphates, chemicals developed as nerve-agents during WWII.

The risk posed by these chemicals is not only to the environment, nor to the soil and

water that are contaminated by runoff from cotton fields. The risk also is to farmers, their

families and communities. These risks are especially great in areas, such as the third

world, where whole families are in the fields in contact with the cotton, where they may

be able to afford the chemicals, but not the proper equipment to apply them (Ton, 2002).

Up to 10% of fatal injuries in the agricultural sector of the third world were attributable to

accidents with pesticides in the 1990s. Even in the United States, cotton production can

be hazardous to farm workers, with a third of farm worker illness in California

attributable to the single crop of cotton (Myers & Stolton, 1999).

Faced with these serious concerns, cotton producers, environmental advocates and

apparel manufacturers have turned to the production of cotton using organic methods.

Organic cotton, as opposed to conventionally produced cotton, has been produced using

methods that are free from most synthetic chemical inputs such as pesticides, herbicides

and chemical fertilizers. Farmers who use these methods for at least two years, long

enough for residual chemical levels to leave the fields, are eligible to have their crops

certified as organically produced. This certification may allow them to charge premium prices for their crop (Myers & Stolton, 1999).

The path toward increased organic production of cotton has not been smooth, despite the benefits to small-scale and third world farmers, socially responsible apparel manufacturers, and consumers seeking the 'lifestyle of health and sustainability'. While the price for organic cotton in the United States in the mid 1990s reached above $2.00 a pound, compared to $1.00 a pound for conventional cotton, the market for organic cotton went through a shock in 1995. Weak consumer response to organic apparel products caused apparel retailers like Levi's and Esprit to cancel purchase contracts for organic cotton. Other retailers, while interested in organic cotton for certain products, refused to sign purchase contracts with organic cotton farmers (Imhoff, 1995).

The lack of consumer interest in organic cotton products in the late 1990s may stem from several sources. First, consumers apparently did not have a clear understanding of the complex issues surrounding organic cotton and apparel production. The main difference between conventional and organic cotton involves the use of pesticides during growing and processing (Imhoff, 1995). Educating consumers about environmental issues that may not directly affect them is problematic. Another reason for lack of consumer interest may involve the styling associated with organic products in the 1990s. Unbleached and undyed cotton products with poor styling have not been successful with consumers (Imhoff, 1995). Besides the poor styling, the fact that the attribute of organic cotton production is one that consumers cannot detect meant the organic apparel faced competition from undyed, unbleached conventional cotton products sold as "natural cotton." Finally, while there are methods of dyeing organic cotton, such

as using low-impact dyes that create minimal levels of pollution, consumers had difficulty distinguishing between dyed organic and conventional products (Imhoff, 1995).

Despite these difficulties, some companies made the commitment to use 100% organic cotton in all their products. Patagonia, an example of a company that made this commitment, completed an analysis of the environmental impact of their fiber use, including cotton, in 1991. Based on the environmental principles developed for the company and because of education of shareholders about the impact of conventional cotton production, the company's board of directors approved a decision to switch to organic cotton in 1994. Patagonia decided not to sell 'organic' clothing but 'clothing made with organic cotton.' To Patagonia and many consumers, 'organic' clothing would imply production without the use of synthetic inputs, i.e., the use of organic thread and trim, and dyed and processed without synthetic chemicals (Organic Trade Association, 2003). Despite difficulties establishing a supply chain and higher prices for products containing cotton, Patagonia has been successful in the switch from conventional to organic cotton (Chouinard & Brown, 1997).

During the mid 1990s, the production of organic cotton increased across the globe. Countries such as Turkey, which had success with organic food production for the European Union found that a market also existed for organic cotton. Farmers producing cotton in regions where they could not afford synthetic inputs anyway, found that certification for organic production allowed them to access a new and better paying market. Turkey has since become the world's largest producer of organic cotton, producing 1,750 metric tons in 2000-01. India is also a significant organic cotton producer (1,000 metric tons in 2000-01) and many countries in cotton growing regions,

from South America to Africa and Asia, have organic cotton production at this time.

Despite the growth in organic cotton production, it represents less than 1% of the more

than 20 million metric tons of cotton traded globally (Ton, 2002).

Blending Programs

While some companies have chosen to fully convert to organic cotton for all their

products, other companies, especially ones that produce a large amount of cotton apparel,

reacted to the difficulties in the organic cotton market of the 1990s (i.e. insufficient

supply and quality) by using a different approach. Blending bales of raw cotton before

spinning ensures a consistent level of quality throughout the yarn. Blending of different

levels of quality (i.e. strength or length) can help achieve a specified, acceptable quality

level for yarns. This approach to increasing quality is used in both organic and

conventional yarns and requires a certain amount of the fiber be of a high enough quality

in order to meet the level of quality needed for spinning (Myers & Stolton, 1999).

Organic yarn spinners can have problems when there is insufficient organic cotton fiber

available at a high enough quality to counteract the problems created by low quality fiber.

Organic cotton has the same quality fluctuations across crops as conventional cotton,

there is just so much less of it that any drop in quality becomes significant to overall

quality levels (Myers & Stolton, 1999).

By blending small amounts of organic cotton (3-10%) with conventional cotton,

producers could achieve several goals. First, small percentage blends reduce the

difficulty posed to a large manufacturer by insufficient supply or quality of organic

cotton, allowing room for fluctuations in supply or quality. The available quantity of

organic fiber could be spread thinly across all products, simultaneously adjusting for

quality issues by blending, and allowing an expansion in organic cotton use without commitment to 100% organic cotton products. The second goal of blending programs is to gradually increase the volume of organic cotton needed for production, allowing the market to stabilize. For example, in 2005, Nike would need 120 million pounds (60,000 tons) of organic cotton to produce only 100% organic cotton products (Eraina Duffy, personal communication, November 4, 2004). Finally, producing '100% organic' apparel products requires costly adjustments to production, while blending organic cotton into all products is a small but reasonable starting point for reducing the environmental impact of the apparel lifecycle (Ton, 2002).

There are some problems with blending programs. First, the use of small percentages (3%-10%) of organic cotton will not decrease the amount of pesticide-waste associated with cotton apparel production as quickly as the use of larger percentages (90-100%). Some suggest that blending creates additional costs, although blending occurs in conventional yarn production and would be required for quality adjustment even for 100% organic yarns. Finally, when small percentage blends are sold as conventional products, the practice does not help to increase consumer awareness about the availability of organic apparel products (Boone, 1999).

Despite concern by some stakeholders in the organic industry that small percentage blending programs would undermine the market for organic products by eroding the standards, the blending programs have been successful (Ton, 2002). Nike began a blending program in 1998, purchasing 320,000 pounds of U.S. organic cotton and producing nearly 4 million t-shirts with 3% organic cotton. Expanding to 800,000 pounds (over 21 million 3% t-shirts) in 1999, approximately 36% of all cotton apparel

products produced by Nike contained at least 5% organic cotton, by 2002. In 2004, 48 million garments (47% of cotton apparel products) were produced with at least 5% certified organic cotton, a ten-fold increase since the beginning of the project. These 5% organic cotton apparel products are not labeled in any way, so many consumers are not aware that they are purchasing a product that contains organic cotton. Nike has developed labeling for their product lines containing 100% organic cotton, which are sold in the United States and Europe (Nike, 2005).

Nike is not alone in pursuing blending programs for organic cotton apparel products. In 2002, several apparel companies, including Nike, Patagonia and Timberland, formed the Organic Exchange, an organization focused on expanding organic agriculture worldwide. The first goal of the Organic Exchange was to increase the worldwide production of organic cotton to 10% of all cotton production within 10 years. Many well known companies have joined the Organic Exchange and several, such as Marks & Spencer, have also set goals involving blended organic cotton apparel products (Organic Exchange, 2005).

Labeling of Organic Apparel Products

Small percentage blend organic cotton apparel does qualify for labeling under many of the proposed standards for organic or eco-labeling. Eco-textile labeling, such as the Nordic Swan, covers the environmental impact of every portion of the apparel production chain, including (but not necessarily requiring) organic fiber use. However, the use of synthetic dyes on small percentage blends would disqualify them from certain labeling under organic apparel standards (Myers & Stolton, 1999). The recently adopted Organic Trade Association (OTA) standard for organic fibers covers all aspects of

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apparel production from fiber harvest and handling to garment labeling. The standard

includes an extensive list of materials permitted or prohibited during processing of the

organically produced fibers in order for the resulting apparel products to be considered

organic. Chlorine bleach, formaldehyde, some azo dyes, and plastisols are among

prohibited materials. Permitted materials must be biodegradable and be cleared of any

known environmental risk or risks to human such as cancer or birth defects. Compliance

with this voluntary standard would allow apparel manufacturers to label apparel products

with the OTA seal (Organic Trade Association, 2003).

There are four categories for labeling of organic apparel products under the OTA

standard: "100% organic", "organic", "made with organic" and a listing of the individual

organic components on the ingredients panel. A product labeled as "100% organic" has

to contain 100% USDA certified organically produced components by weight, including

sewing thread. The "organic" category requires that the product must contain at least

95% USDA certified organically-produced fibers by weight. Non-organic constituents

can be used if they are not commercially available or cannot be made from organic

sources, such as elastic yarns. The "made with organic" category requires at least 70%

USDA certified organically-produced constituents. All of these categories prohibit the

inclusion of any materials that are listed as prohibited in the processing standard, such as

carcinogenics, mutagenics or derivatives of genetically modified organisms (GMOs)

(Organic Trade Association, 2003).

The final labeling category allows for a straightforward listing of the percentage

by weight of individual organic components on the label, excluding non-textile

accessories such as buttons and zippers. The Federal Trade Commission (FTC)

regulations allow for the listing of a descriptive to be used with fiber content on required content labels ("Calling it cotton," 1999). The FTC will allow the use of the word 'organic' to describe the fibers (e.g., 5% organic cotton/95% cotton). Some companies use organic cotton certified according to an international standard. Because these standards are voluntary, as long as the labeling claims are truthful (e.g., the organic fiber certifier is recognized by the USDA), companies may sell products certified internationally as organic in the U.S. (Organic Trade Association, 2005).

While companies selling small percentage blends with organic cotton have not yet begun to label these products, labeling of apparel with small amounts of organic cotton is a possibility. There is no published research on the percentage level at which organic content in apparel products becomes meaningful to consumers. Identifying the segment of consumers who are interested in small percentage blends will assist marketing of the products currently being produced, as would identification of possible segments of consumers who would be interested in somewhat larger percentages. It may also be helpful to companies which create small percentage blend products, either yarn, fabric or apparel, to be able to identify a percentage level of organic cotton at which consumers would be willing to pay more for the apparel product. If this level is feasible for large apparel companies, in the way that the 100% organic level is currently not, the identification of this level may assist in revising blending program goals to match consumer interest. Conversely, if there is no organic percentage level at which consumers, even environmentally concerned consumers, are willing to pay more for apparel products, this knowledge will allow companies to continue on their current blending programs without concern for potential missed opportunities.

Social Responsibility and Cotton Production

Consumers who are willing to pay more for blended organic cotton apparel products may be motivated by altruism. Altruistic consumers are those who are willing to sacrifice something, in this case money, to help others (Dickson, 1994). An important question is whether some consumers who are willing to pay more for organic cotton may be interested in helping improve the lives or health of organic cotton producers as well as improving the environment.

Environmental impact is not the only area where cotton production can be modified to meet the expectations of concerned consumers. There has been a trend in recent years toward increasing expectations held by stakeholders (employees, consumers, and outside organizations) concerning the social responsibilities of multi-national corporations. The apparel industry in particular has been the focus of scrutiny related to working conditions around the world (Dickson, 2001).

Cotton production is not free from the issues that have plagued apparel production, such as child labor or unsafe working conditions. A recent report to the India Committee of the Netherlands describes the use of girls as 'bonded labor' (i.e. slaves) on farms producing hybrid cottonseed for multinational corporations (Venkateswarlu, 2003). One cottonseed producer, Syngenta, has asked the Fair Labor Association (FLA), an American organization formed to address labor abuse in the apparel industry, to create a monitoring protocol to ensure that working conditions on its farms meet FLA standards (FLA, 2004). Monitoring by outside organization such as the FLA is one way for companies to combat consumer skepticism about social responsibility claims. The FLA monitoring program is part of Syngenta's commitment to social responsibility, along with

goals for sustainable agriculture, human rights, and the ethical treatment of animals used in research (Syngenta, 2005).

Agrocel is an organic fiber producer that has adopted fair trade standards so that they can label the yarn they produce as both organic and fair trade. Agrocel's fair trade standards mean that they not only meet minimum labor standards for associated cotton farming operations, but they also ensure that cotton producers receive fair payment for their fiber (Agrocel, 2003). Agrocel is the only member of Organic Exchange to issue fair trade standards or seek fair labor certification for their products in addition to organic certification.

While consumers are only beginning to be aware of the potential environmental and social issues associated with cotton production, it is reasonable to expect that their interest will grow. Apparel producers who have made the commitment to social responsibility and are now blending organic cotton need to understand the implications of growing consumer concerns with cotton production.

Purpose

The purpose of this study was to further understanding of consumers who purchase apparel products made with a percentage of organic cotton. Objectives for the project included: (1) determining the levels of organic apparel product attributes (e.g., percentage of organic cotton, certification type and price) salient to consumers and comparing respondents who found the percentage of organic cotton salient to those who did not, on key variables, (2) identifying and characterizing market segments interested in blended organic cotton apparel products, and (3) testing a conceptual model of social-psychological variables related to altruistic consumer behavior. The hypotheses related

to these objectives are listed at the end of chapter two, following the review of relevant literature.

Limitations

1. The random sample will be limited to health and natural foods consumers in the database of a national mailing list service, thus findings will not be directly generalizable to all consumers or to other types of businesses that sell organic apparel products, such as brick and mortar or online stores.

2. The amount of variation within the groups may be limited since the health and natural food consumers on a commercial mailing list could have other things in common that will not be considered in this study.

3. The results of asking respondents to evaluate hypothetical clothing in a conjoint task may differ from evaluation of an actual garment in a real purchase setting.

Definitions

<u>Attitudes toward purchasing organic cotton apparel</u>: The evaluation and importance of beliefs held by individuals related to the purchase of organic cotton apparel.

<u>Conventional cotton</u>: Cotton produced using the most common production method that is dependent on a wide array of chemical inputs (Myers & Stolton, 1999).

<u>Environmental/ethical consumers</u>: People who consider the social or environmental implications of their purchase choices, including not purchasing products that do not, in some way, meet their environmental or ethical standards.

<u>Environmental/ethical self-identity</u>: The relatively enduring characteristics related to environmental or ethical belief, attitudes and behaviors ascribed to the self, synonymous

with self-perception or self-concept as an environmental or ethical concerned person (Sparks & Guthrie, 1998).

Organic cotton: Cotton produced using production methods that is certified to be free from any genetically modified or synthetic chemical inputs, including pesticides, herbicides, and chemical fertilizers (Myers & Stolton, 1999).

Personal norm for environmental/ethical consumer behavior: The internal evaluation of consumer behavior in relation to environmental or ethical self-expectations for behavior, with sanctions attached to a violation of the personal norm including guilt or loss of self-esteem (Schwartz, 1977).

Skepticism of environmental product claims: Disbelief or lack of trust in the claims made in product advertising or on product labeling/packaging concerning the existence or nature of environmentally related attributes (Mohr, Eroglu, & Ellen, 1998).

Subjective norm for purchasing organic cotton apparel: The evaluation of the attitudes toward purchasing organic cotton apparel products of other individuals or groups of individuals who are socially important to the respondents.

CHAPTER 2: LITERATURE REVIEW

The review of literature related to consumer preferences in organic cotton apparel products ranged across many disciplines. First, a small part of the extensive literature on environmentally related consumer behavior was examined to identify variables commonly measured in relation to environmental behavior. Next, literature that used a commonly used theory of behavior, the Ajzen and Fishbein (1980) theory of reasoned action, was used to lay a theoretical basis for the model of behavior proposed for this study. Other factors, such as self-identity or the personal norm for altruistic behavior, that might apply to environmental behavior were also examined for addition to the proposed model. Finally, an exploration of the evaluative criteria associated with apparel purchases was conducted to help build a connection between the model of the behavioral variables and consumer preferences for organic cotton apparel attributes. This connection was assisted by the inclusion of another behavioral variable, skepticism of environmental product claims, which directly relates to attribute evaluation.

Variables Related to Environmental Behavior

Socio-Demographics

Socio-demographics such as age, income, education, household size, and gender have frequently been included in studies of environmental consumers. Analysis of the relationship between socio-demographics and environmental attitudes and behavior has been complicated by the lack of consistency in the measurement of these variables. When the behaviors or attitudes are measured in a very general fashion (e.g., "Recycling is a good idea"), socio-demographics do not play a large or significant role in predicting

the possession of environmental attitudes or behaviors (Van Liere & Dunlap, 1980). In a meta-analysis of 128 studies of environmental behavior, Hines, Hungerford, and Tomera (1986) found no significant relationship between any of the socio-demographics variables and environmental behavior. As proenvironmental attitudes have become more widespread since the 1980s, the lack of consistently significant relationships between environmental attitudes and socio-demographics is not surprising (Fransson & Garling, 1999).

Studies that define environmental attitudes toward behaviors more specifically (e.g., "I frequently recycle newspapers at the curbside") have shown a slightly stronger relationship with socio-demographics as compared to those that define attitudes toward environmental behaviors very generally (Hunter, Hatch, & Johnson, 2004). A study of consumer product attribute preferences, similar to that outlined in this study, concluded that socio-demographics are useful for predicting environmental product preferences (Auger, Burke, Devinney, & Louviere, 2003).

In terms of apparel related environmental behavior, a few studies report the influence of socio-demographics on attitudes related to either purchasing or recycling/disposal of apparel (Butler & Francis, 1997; Shim, 1995). Butler and Francis (1997) found a slightly negative relationship between age and attitudes toward environmental regulation (β = -.154) with age explaining only a small portion of the variance in proenvironmental regulation attitudes (R^2 = .02). Age was also positively related to considering the environment when purchasing apparel (β = .247) while education was negatively related to attitudes toward conserving clothing (β = -.173). Shim (1995) found women and whites to have significantly stronger general

environmental attitudes, but while men were less likely to engage in environmentally motivated clothing disposal, non-whites had the same level of environmentally motivated clothing disposal as whites. The lack of difference in clothing specific recycling behavior based on race, in spite of difference in general environmental attitudes, may be related to the difficulty of predicting specific behavior using general attitudes.

Based on the review of environmental consumer literature, no significant relationship was proposed between socio-demographics and the more general variables, such as awareness of environmental consequences or environmental concern. However, evaluation of the likelihood of purchase of the organic cotton apparel profiles included in the conjoint task is much more specific and may differ based on socio-demographics. Because one of the purposes of this project was to suggest market segments for small blend organic cotton apparel products, socio-demographics were collected in order to determine if they related to specific product attribute preferences revealed in the conjoint analysis.

Environmental Concern

Environmental concern is one of the most commonly studied variables related to environmental consumer behavior. It can be defined most simply as the possession of a concern for the ecosphere itself or over the degradation of the ecosphere created by human beings. Dunlap and Jones (2002), researchers in the field of environmental sociology define it thusly: "Environmental concern refers to the degree to which people are aware of problems regarding the environment and support efforts to solve them and/or indicate a willingness to contribute personally to their solution" (p. 485). Examples of statements designed to measure environmental concern include

"Environmental issues are important and concern me" or "The balance of nature is very delicate and easily upset by human activities" (p. 433, Dunlap, Van Liere, Mertig, & Jones, 2000). Basically, environmental concern is an attitude toward the environment. Attitudes can be described or measured at various levels of specificity, ranging from very specific "It would be satisfying to purchase this recycled toilet paper at this exact moment in time" to the very general "I desire to live in a world of pleasure."

Concern for the environment can be measured at the most general (least specific) levels, where it resembles an ideology or worldview. Attitudes or beliefs about attitude objects that are part of a larger cognitive structure reflect an ideology or worldview (Eagly & Chaiken, 1993). When Dunlap and Van Liere (1978) developed a measure of environmental concern, they called it the New Environmental Paradigm and characterized concern for the environment as a new way of thinking about nature and the role of humans in nature. This new paradigm views the environment as increasingly endangered by the impacts of human behavior. The authors were contrasting this new environmental paradigm with the dominant social paradigm, a worldview where people act out of concern for their personal benefit rather than concern for the environment. They hoped to use their scale to identify "environmentalists" in much the same way that other scales have identified "liberals" or "conservatives."

Other researchers have looked at the possibility that environmental concern is not an ideology of its own, but rather an expression of other ideologies. Examples of these other ideologies include cultural bias created by shared values of egalitarianism or individualism or religious beliefs such as Judeo-Christian beliefs (Schultz, Zelezny, & Dalrymple, 2000; Steg & Sievers, 2000).

Environmental concern can also be described in terms of deeply held values. Values are concepts or beliefs organized into stable motivational constructs that relate to fairly abstract goals (peace on earth or inner harmony). One value orientation that has been related to environmental concern is that of universalism, an orientation that includes values such as social justice, equality, a world at peace, and unity with nature (Schwartz, 1992). Stern, Dietz, Abel, Gaugano, and Kalof (1999) labeled this same group of values as altruistic in their study of support for the environmental movement. Altruism, which can be defined as behavior motivated by these altruistic values, is a variable that will be discussed in greater depth with Schwartz (1977) moral norm activation theory.

While some theorists (Rokeach, 1973; Schwartz, 1992) separate values from attitudes, in the case of the discussion of environmental concern it might be briefly helpful to see values as part of an attitude continuum, where the object of the attitude is at an abstract level. Some researchers suggest that environmental behaviors are the results of a special type of altruistic values that include the natural world as an attitude object (Stern, Dietz, & Kalof, 1993). Using factor analysis, Stern, Dietz, and Kalof (1993) divided environmental values into three dimensions; the egoistic, the social altruistic and the biospheric. The social altruistic dimension of environmental altruistic values is the dimension that most resembles altruism as used by Schwartz (1977). The biospheric dimension, as described by Stern, Dietz and Kalof (1993) is an application of the concern for the welfare of an "other" where the other is the biosphere. The egotistic dimension is that portion of environmental behavior reflecting a concern for the self. Anthropocentric environmental attitudes as conceptualized by Thompson and Barton (1994) combine the egoistic and social altruistic dimensions suggested by Stern, Dietz and Kalof (1993)

based on their similar focus on outcomes for humans. The environmental values related to the biospheric dimension, are conceptualized as ecocentric environmental attitudes based on the concern for nature or the ecosphere.

The Thompson and Barton (1994) ecocentric/anthropocentric attitude scale has been used as a measure of environmental concern in several studies (Bjerke & Kaltenborn, 1999; Kaltenborn & Bjerke, 2002; Nordlund & Garvill, 2002, 2003). Nordlund and Garvill (2002) related the ecocentric and anthropocentric environmental value orientations to environmental problem awareness and a measure of moral obligation to protect the environment (a personal norm). Using structural equation modeling, they found that the ecocentric values had the predicted positive effects on problem awareness ($\beta = 0.31$) and on the personal norm ($\beta = 0.21$). The personal norm had a strong positive effect on general proenvironmental behavior ($\beta = 0.46$). Nordlund and Garvill (2003) used structural equation modeling again to measure the effect of ecocentric/anthropocentric environmental values on both problem awareness relating to the impact of environmental degradation on the biosphere and on awareness of the impact of environmental degradation on humans. Again, ecocentric values had a positive effect ($\beta = 0.34$) on problem awareness ($\beta = 0.43$). Anthropocentric values had a small positive effect ($\beta = 0.07$) on problem awareness related to environmental impact on humans and none on the personal norm.

Bjerke and Kaltenborn (1999) measured the correlation between the Thompson and Barton (1994) ecocentric/anthropocentric environmental values and attitudes toward landscapes. Ecocentrisim was positively correlated with a preference for spending time in wildlands (r =.34) and anthropocentrism was positively correlated with a preference

for spending time in farmlands (r = .18). Kaltenborn and Bjerke (2002) found that

anthropocentric environmental values were positively correlated with dominionistic and

negative attitudes held toward large carnivores by sheep farmers (r= .34), wildlife

managers (r =.28) and research biologists (r =.23). Ecocentric environmental values were

negatively correlated with utilitarian attitudes toward large carnivores in the case of

wildlife managers (r =-.13) and research biologists (r =-.18). The authors interpreted

these findings as an indication that all three groups (sheep farmers, wildlife managers,

and research biologists) shared a similar general environmental value structure.

In terms of studies on environmental concern related to apparel, several different

segments of the apparel lifecycle have been examined, from advertising to clothing

disposal/recycling (Butler & Francis, 1997; Kim, Forney, & Arnold, 1997; Kim &

Damhorst, 1998; Shim, 1995). Shim (1995) used a five-item measure of general

environmental attitude with good reliability (α = .81) that includes both positive and

negative items such as "Too much emphasis is placed on environmental issues and

concerns" (p. 42). The general environmental attitude measured by this scale predicted

both charitable (β =.40) and environmentally motivated behaviors (β = .33) as well as

environmentally motivated reuse (β = .42). The measure also negatively predicted

discarding of clothes, both convenience-oriented (β = - .59) and unawareness-based (β = -.57).

Kim, Forney, and Arnold (1997) used the forty-item Socially Responsible

Consumption Behavior index (Antil & Bennett, 1979) to measure environmental concern

in their study of environmental messages in fashion advertising. Subjects were shown

fashion ads manipulated to include environmentally related tag lines and product claims.

Subjects with higher levels of environmental concern preferred the 'environmental" ads over the control ads, while subjects with lower levels of environmental concern preferred the control ads. There was no effect based on the type of environmental claim made in the ads (e.g., a process related "recycled fiber" versus an ecosystem related "save the rainforest with this fiber").

Butler and Francis (1997) also used the Socially Responsible Consumption Behavior scale to measure environmental attitudes, using eleven of the forty items. One of the three factors in this measure, proenvironmental regulation had a significantly positive relationship ($\beta = .26$) with environmental purchasing behavior related to clothing. Another factor from the shortened scale, called "pro-consumption limitation," negatively predicted ($\beta = -.18$) disinterest in conserving clothing.

A study by Kim and Damhorst (1998) showed that environmental concern, measured by the New Environmental Paradigm, was not directly related to environmental apparel behavior. However, it did predict general environmental behavior ($\beta = .39$), which in turn predicted the apparel specific environmental behavior ($\beta = .67$). They also found that environmentally related knowledge about the apparel industry predicted general environmental concern ($\beta = .32$), as measured by the New Environmental Paradigm.

While commonly used, environmental concern is multidimensional, with the dimensions dependent on the topics included in the measures of this variable. Further, measures such as the New Environmental Paradigm seem too general to predict specific behaviors well. Measuring generalized environmental attitudes or values may be helpful for understanding the psychology of environmental consumers, but researchers warn that

when studying specific behavior, generalized attitudes are not as useful as specific, behavior-related attitudes (Fransson & Garling, 1999). In their review of the conceptualization and measurement of environmental concern, Fransson and Garling (1999) point out that only recent models of the relationship between environmental attitudes and behavior have been careful to measure attitude at the same level of specificity as the behavior.

The improvement made by matching levels of specificity is an underlying principle of attitude theory (Ajzen & Fishbein, 1980). Because of the broad and unspecific nature of environmental concern, as it is typically operationalized by measures such as the New Environmental Paradigm, it is unlikely to relate strongly to specific environmental behaviors, such as the consumer organic apparel attribute preferences of interest to this study. For this reason, no general measures of environmental attitudes were included in the study. Based on the stronger relationships seen with more specific measures, as seen in several of the above studies, it seemed more appropriate to measure specific environmental attitudes relating to fiber and apparel production or the role of the apparel industry and apparel consumers in environmental protection. Like the socio-demographics, these specific environmental attitudes were used to better understand the market segments created during the conjoint analysis.

<center>Models of Behavior</center>

Variables such as environmental concern are often measured or conceptualized as part of larger models of behavior, theories that suggest why or when behavior occurs. A theory of decision-making popular in both psychology and economics, the subjective expected utility model of decision-making assumes that an individual is motivated to

choose the alternative (behavior or object) that affords the highest overall utility (value). By modeling consumer behavior as a search for utility, an assumption is made that consumers behave rationally, always choosing the alternative that will lead to the highest utility (Eagly & Chaiken, 1993). The modeling of consumer behavior using the subjective expected utility model of decision-making has become increasingly complex as researchers strive to improve the ability to predict consumer behavior. This section will look at behavioral models, beginning with the simplest models of attitude such as Fishbein's (1967) expectancy-value model and moving to the slightly more complex Azjen and Fishbein (1980) model of behavioral intention, also called the theory of reasoned action, and ending with Azjen's (1991) theory of planned behavior. Following this discussion of these important theories, literature relating to both environmental consumer behavior and apparel related behavior will be examined.

Expectancy-Value Model

A commonly used subjective utility model of the relationship between attitudes and behavior is the expectancy-value model. The expectancy-value model defines the attitude toward an attitude object as the sum of expectancy-value products related to the attributes of the attitude object (Fishbein, 1967). The expectancy-value products are the result of the expectation that the attitude object possesses specific attributes and the value that the attitude holder places on those specific attributes (Eagly & Chaiken, 1993).

Attitude $= \Sigma$ (Expectancy $\times$ Value)

For example, a person's attitude toward an item of apparel may depend on the attributes of durability and styling. If the individual believes that the apparel possesses durability and they value durability highly, the product of this expectancy-value for durability can be summed with their expectancy-value for styling to determine the individual's attitude toward the apparel item.

Theory of Reasoned Action

In the theory of reasoned action, Fishbein and Ajzen (1975) expanded the expectancy-value model and related attitudes to behavior by suggesting that attitudes toward an attitude object, in this case a behavior, will predict an individual's intention to engage in a particular behavior. Besides attitudes toward the behavior, the subjective (social) norm, an evaluation of the attitudes of socially important other individuals, is another variable included in the model. The theory of reasoned action is also sometimes called the behavioral intentions model.

As the name implies, the theory of reasoned action is based on a cognitive perspective and suggests that the cause of behavior is the decision (intention) to act in a particular way. The important difference between behavior and behavioral intention is that, despite intentions, specific behaviors may not be possible in a given context (Fishbein & Ajzen, 1975). People may lack the skills, resources or opportunities to translate their behavioral intentions into actual behaviors. The difference between behavior and behavioral intention is that behaviors can only be predicted from attitudes that are volitional, under the control of the individual. This focus on behavioral intention also means that, according to the theory of reasoned action, attitudes do not predict

habitual behaviors. Habitual behaviors are defined as behaviors performed repeatedly without thought.

Taking into account all of these limitations about the ability of behavioral intentions to predict behaviors, the theory of reasoned action can be written:

$$B \approx BI = w_A A_B + w_{SN} SN$$

In this algebraic representation, B is behavior, BI is behavioral intention, A_B is the attitude toward the behavior, SN is the subjective norm, and w_A and w_{SN} are weights of the relative importance of the indicated terms. Intention to engage in a behavior is a function of the individual's evaluation of the personal beliefs about the behavior as well as the belief of important others about the individual engaging in the behavior (Eagly & Chaiken, 1993).

Attitude

Attitude toward a behavior can be further described in the expectancy-value mode as the sum of behavioral beliefs, the evaluation of consequences of the behavior, along with the perceived likelihood of those consequences.

$$A_B = \sum_{i=1}^{n} b_i e_i$$

where b_i is the belief that performing the behavior will lead to some consequence i, e_i is the evaluation of the consequence i and n is the number of salient consequences (Eagly & Chaiken, 1993). For example, a behavioral belief such as "my purchasing an organic

cotton apparel product is (unlikely to likely) to result in a fair price for organic cotton producers" can be combined with "I believe that a fair price for organic cotton producers is (unimportant to important)."

Studies that measure attitude using the theory of reasoned action will often measure attitude in two ways, one using a semantic differential scale (e.g. eating organic food is… (good/bad) or (foolish/wise)), and the other as described previously. The two measures of attitude can then be correlated to check reliability while retaining the detail provided with the expectancy-value formulation. Attitude has been measured in various manners by a number of studies related to environmental consumer behavior (Bamberg & Schmidt, 2003; Harland, Staats, & Wilke, 1999; Kaiser & Gutscher, 2003; Kalafatis, Pollard, East, & Tsogas, 1999; Sparks & Shepherd, 1992).

Sparks and Shepherd (1992) in their study of self-identity and 'green consumerism' measured attitude using three items. The first item used a traditional semantic differential scale as suggested by Azjen and Fishbein (1980). The other two items were simple ratings such as "In general, my attitude toward eating organic vegetables is…extremely negative to extremely positive" (Sparks & Shepherd, 1992, p. 392). These items were significantly positively correlated ($r = .44$) with the sum of behavioral beliefs and outcome evaluations. They then used these items, rather than the summed behavioral beliefs and outcome evaluations, to predict ($\beta = .21$) behavioral intention to consume organic vegetables in the next week.

Harland, Staats, and Wilke (1999) did not measure the sum of behavioral beliefs and outcome evaluations, instead using just a rating of attitude such as "In general I think

using unbleached paper is...very negative to very positive" (p. 2512). This measure of attitude predicted behavioral intention well for five environmentally related behaviors.

Kaiser and Gutscher (2003) also used just the attitude statements without the summed behavioral beliefs and outcome evaluations. Twelve items related to six behaviors (e.g. recycling paper) were rated using 2 bipolar scales (good/bad, appropriate/inappropriate) and were summed to create a single measure of attitude. This measure of attitude predicted behavioral intention ($\beta = .46$), which in turn predicted self-reported general environmental behavior ($\beta = .73$).

Kalafatis et al. (1999) measured both attitude and (in their words) "the antecedents" to attitude of behavioral beliefs and outcome evaluations. They do no list the items used to measure either attitude or behavioral beliefs and outcome evaluations. In the results of their structural equation modeling that included both attitude and the summed antecedents, the behavioral beliefs and outcome evaluations predicted attitude well, while attitude did not predict behavioral intention well. The modification indices for the model suggested that there was some interaction with the measure of subjective norm. The authors suggest that other variables, such as the personal norm, that were not included, might improve the model fit.

Finally, Bamberg and Schmidt (2003) also used a modification of the Azjen and Fishbein (1980) method of assessing attitude in their study of campus car use. First, four items related to behavioral beliefs (e.g., "When I use the car for university routes next time, this will be quick, flexible, etc." p. 270) were assessed on a bipolar scale from likely to unlikely. There were no items to assess outcome evaluation, items that measure how important speed or flexibility was to the respondents. Two bipolar semantic

differential scales measured general attitude toward car use for the next university trip. Attitude measured in this fashion predicted (β = .32) intention to use a car for the next university trip and this intention also predicted the actual car use (β = .60).

Attitude has been measured according to the theory of reasoned action in clothing literature, although not in the context of environmentally related apparel purchase behavior (Kim, Kim, & Kumar, 2003; Perkins, Crown, Rigakis, & Eggertson, 1992; Shen, Dickson, Lennon, Montalto, & Zhang, 2003). Perkins et al. (1992) measured attitude using five items on a semantic differential scale described by Azjen and Fishbein (1980) as well as measuring the components of behavioral beliefs and outcome evaluations. The direct measure of attitude correlated (r=.46) with the intention to wear protective clothing when administering pesticides. The semantic differential measure of attitude also explained 18% of the variance in intention to wear protective clothing.

Shen et al. (2003) also used the sum of behavioral belief and outcome evaluations associated with the beliefs to measure attitude in a study of Chinese consumers. They found attitude toward purchasing apparel made in the United States significantly predicted purchase intentions for U.S. made apparel (β = .726) . Kim et al. (2003) measured attitudes toward online apparel shopping using the sum of beliefs and outcome evaluations. They found that attitude significantly predicted intention to purchase clothing online (β = .33).

Subjective Norm

The other element in the theory of reasoned action, the subjective norm, can be treated in the same way as attitude:

$$SN = \sum_{j=1}^{r} b_j m_j$$

where b_j is the belief that some significant other person j thinks that the individual should engage in a behavior, m_j is the individuals motivation to comply with j, and r is the number of significant other persons included in the formation of the behavioral intention (Fishbein & Ajzen, 1975). For example "please indicate below how (unlikely to likely) it is that friends think you should purchase organic cotton apparel products" would be combined with "please indicate below how much (not at all to very much), in general, you want to do what friends think you should do."

Like attitude, some studies that measure the subjective norm will measure both the sum of the normative beliefs and the motivation to comply as well as a single general subjective norm item. This general measure of subjective can then be correlated to the sum of the normative beliefs and the motivation to comply. The subjective norm has been measured in these different ways by a number of studies related to environmental consumer behavior (Bamberg & Schmidt, 2003; Harland et al, 1999; Kaiser & Gutscher, 2003; Kalafatis et al., 1999; Sparks & Shepherd, 1992). Only Sparks and Shepherd (1992) used the single measure of subjective norm. They found that a simple statement of subjective norm measured on a bipolar scale "Most people who are important to me think I should…I should not eat organic vegetables" (p. 392) predicted ($\beta = .16$) intention to eat organic vegetables during the next week.

Several studies used the sum of normative beliefs and motivation to comply to measure the subjective norm. The subjective norm significantly predicted behavioral intention to restrict car use ($\beta = .17$, Kaiser & Gutscher, 2003), behavioral intention to

purchase an environmentally friendly product ($\beta = .11$, Kalafatis et al., 1999), and behavioral intention to use energy saving light bulbs ($\beta = .12$, Harland et al., 1999).

Finally, Bamberg and Schmidt (2003) measured a simple statement of the subjective norm as well as normative beliefs in their study of student car use. Respondents rated two simple items about referent others "How strong would (1) your friends; (2) your partner support you, if you use the car for university routes next time" (p. 271) on a bipolar scale from unlikely to likely. They also rated two general normative belief items (i.e., "most people who are important to me"), but no motivation to comply items. This measure of the subjective norm successfully predicted intention to use a car ($\beta = .40$).

Apparel related studies that measured the subjective norm do not focus on environmental consumer behavior, but do demonstrate the ability of the variable to predict behavioral intention (Kim et al., 2003; Perkins et al., 1992; Shen et al., 2003). Perkins et al. (1992) measured the subjective norm using a semantic differential scale described by Azjen and Fishbein (1980) as well as measuring the components of normative beliefs and motivation to comply. They found the semantic differential measure of subjective norm to be correlated ($r = .43$) with behavioral intention to wear protective clothing when administering pesticides. Using stepwise regression on behavioral intention, they also found that adding subjective norm to attitude significantly improved the R-squared (.15 to .23).

In their study of Chinese consumers, Shen et al. (2003) measured subjective norm as the sum of normative belief items and motivation to comply. They did not find the subjective norm to significantly predict intention to purchase apparel made in the United

States. One of the objectives of the survey was to test the theory of reasoned action in the context of apparel purchases made by Chinese consumers and they concluded that purchasing apparel made in the United States, being fairly unusual at that time, might not have developed a subjective normative component.

Finally, Kim et al. (2003) measured the subjective norm in the context of online apparel shopping. They modified the subjective norm by using social approval, rather than motivation to comply. Social approval would measure a perception of the referent others' approval for a particular behavior. Using the sum of normative beliefs and social approval, they found that the subjective norm significantly predicted intention to purchase clothing online ($\beta = .27$).

<center>Other Variables Related to Socially Responsible Behavior</center>

While commonly used and successful at predicting a great variety of behaviors (see Ajzen, 1991), not all researchers have considered the variables included in the theory of reasoned action to be sufficient for predicting behavior or behavioral intention in every case. Eagly and Chaiken (1993) make the case that the method used by Ajzen and Fishbein (1980) to test the theory of reasoned action tends to underestimate the contribution of additional variables. A common method for testing the utility of additional variables is to enter the additional variables into the regression equation in addition to the predictors specific to the models and determine if the additional variables increase the amount of explained variance. However, according to Harland, Staats, and Wilke (1999), an increase in explained variance is not the only rational for determining the appropriateness of a model. In the case of environmental behaviors, they suggest that the inclusion of an additional variable (in this case the variable called personal norm,

which is covered subsequently), while improving prediction of behavioral intention only slightly, rebalances the importance of the normative portion of the model in that prediction. Prior to the inclusion of the personal norm, the attitudinal portion of the model explained nearly twice the variance of the normative portion. Once the additional variable was added, this dominance by the attitude toward the behavior is reduced.

The lack of balance between the predictive ability of attitudinal and normative (social norm) components was previously noted by Ajzen (1991) in his overview of the theory of planned behavior. The theory of planned behavior is an expansion of the theory of reasoned action that includes the variable of perceived behavioral control. Predicting behavior via behavioral intention is one important role of models such as the theory of reasoned action. However, another important use of behavioral models is to understand how behavior can be influenced or changed. For example, one way to change behavior might be to change the behavioral beliefs that contribute to the attitude toward the behavior. But if a portion of the behavioral variance explained by the model belongs not to the attitudinal domain, but to another domain such as personal moral norms or self-identity, the importance of changing the behavioral beliefs in order to change the behavior is overstated. Thus, a case might be made that if a behavioral model is parsimonious to the extent that it reduces the clarity of the variables involved, this lack of clarity can impact the usefulness of the model for suggesting paths to behavior change.

In their argument for the expansion of the theory of reasoned action, Eagly and Chaiken (1993) mentioned both self-identity and the personal norm as variables of potential interest. While neither variable has been examined in apparel related literature,

based on the examination of research on environmental or ethical behavior, these variables were included in this study.

Self-Identity

Self-identity is a variable that has been shown to influence behavior and behavioral intentions independently of attitude and the subjective norm. Self-identity can be defined as the "relatively enduring characteristics that people ascribe to themselves," and is often synonymous with self-perception or self-concept (Sparks & Guthrie 1998, p. 1396). In the case of consumers of organic cotton apparel, it might be possible that a self-identification as a "green consumer" or an "organic consumer" would have some impact on their behavior in addition to their attitudes toward the products, beliefs about the environment, or their moral obligation to buy organic products.

Self-identity, often studied along with the personal norm (described in the following section), increases the ability of a model including the other variables traditional to the theory of planned behavior to predict various ethical behaviors. Sparks and Guthrie (1998) found that the addition of a measure of self identity ("I think of myself as a health conscious person," p. 1399) to the variables of attitude, subjective norm, perceived behavioral control and perceived moral obligation increased the amount of explained variance (R^2=.69 to R^2=.72). The health-conscious identity significantly predicted intention to eat a diet low in animal fats. Sparks and Shepherd (1992) looked specifically at the role of identification in green consumerism in their study of self-identity and the theory of planned behavior. Agreement with statements such as "I think of myself as a 'green consumer'" (p. 392) correlated as highly with behavioral intention to purchase organic foods (r= .37) as did attitudes toward organic foods (r= .38).

Stets and Biga (2003) included the variable of environmental self-identity in their

study of environmental behavior along with the variables of environmental concern

(measured with the New Environmental Paradigm scale) and awareness of consequences.

Their measure of environmental self-identity was slightly different from the previous

studies. The researchers asked survey participants to rate how they viewed themselves in

relation to a series of eleven bipolar statements (e.g., "an advocate of the natural

environment…disinterested in the natural environment," p. 409). The variables of

awareness of consequences and environmental concern together significantly predicted

general proenvironmental behavior ($R^2 = .23$). However, the addition of environmental

self-identity increased the amount of variance explained by the model ($R^2 = .38$).

Further, once environmental identity was included in the model the variable of

environmental concern no longer significantly predicted behavior. This suggests that

some portion of awareness of consequences or environmental concern (as it is measured

by the New Environmental Paradigm scale) is tied to self-identity. The role of self-

identity in predicting environmental behavior also suggests that efforts to change

environmental consumer behavior might focus on creating or reinforcing self-concepts of

environmental consumerism.

Shaw, Shiu and Clark (2000) also found that including self-identity along with

the variables from the theory of planned behavior and personal norm of perceived ethical

obligation in their survey of ethical consumers slightly improved the ability of the model

to predict the purchase of fair trade groceries ($R^2 = .21$ to $R^2 = .24$). Agreement with items

such as "I think of myself as someone who is concerned with ethical issues" (p. 894)

correlated with behavioral intention to purchase fair trade groceries ($r = .25$). Attitude

measured as the sum of behavioral beliefs and outcome evaluations was also correlated with behavioral intention to purchase fair trade groceries (r = .24). Perceived behavioral control had the highest correlation with behavioral intention (r = .42) followed by the personal norm of ethical obligation (r = .26). When self-identity and perceived ethical obligation were regressed along with the variables used in the theory of planned behavior, the subjective norm became insignificant while the coefficient for attitude decreased (β=.44 to β=.22). Interestingly, perceived behavioral control remained unchanged. This change in the significance of both attitude and subjective norm supports the contention that variables related to ethics, such as ethical self-identity or perceived ethical obligation capture some element of personal beliefs previously attributed to attitude or subjective norm. This clarification of the contribution of the moral elements to behavioral intention is suggestive. If consumers of organic apparel products are found to be motivated by an ethical or environmental self-identity, an appeal to or reinforcement of that self-identity may be helpful in motivating them to purchase organic cotton apparel. The findings related to self-identity suggested that was an important variable to include in the model of behavior proposed for this study.

Personal Norm for Altruistic Behavior

Much of the literature related to environmental behavior cited in this review have concluded that environmental behavior is a form of altruism. Some studies have identified a significant relationship between altruistic values and environmental behavior (Dietz, Kalof, & Stern, 2002; Nordlund & Garvill, 2002, 2003; Stern, Dietz, & Kalof, 1993; Stern, Dietz, Abel, Guagnano, & Kalof, 1999). Others have gone further and determined that the variable of the personal norm is important for translating personal

values such as altruism into environmental behavior (Blamey, 1998; Bratt, 1999; Ebreo, Hershey & Vining, 1999; Guagnano, 2001; Harland, Staats, & Wilke, 1999; Hines, Hungerford, & Tomera, 1986; Hopper & Nielsen, 1991; Kaiser & Gutscher, 2003; Osterhus, 1997; Sparks & Shepherd, 1992, 2002; Widegren, 1998). Most of these studies cited work by Schwartz (1977) on the activation of the personal norm for altruistic behavior. This model of altruistic behavior will be discussed in the next section on the personal norm.

Two apparel related studies have focused on altruism as value related to socially responsible (ethical) apparel consumer behavior (Dickson & Littrell, 1997; Dickson, 2000). Dickson and Littrell (1977) measured altruistic attitudes in relation to purchases of clothing from an alternative trading organization (ATO). ATOs (also referred to as fair trade organizations) are companies that sell products, often crafts or clothing, from developing countries to consumers in developed countries with the hopes of maximizing the prices paid to the producers. Seven items were used to measure altruistic attitudes, which loaded onto two factors. Four items related to support for ATOs in general (e.g. "I like the idea of having a direct link to the producers of my clothing") and three items related to acceptance of potential tradeoffs in product attributes in an ATO purchase (e.g. "I would settle for a lower quality product in order to buy something from an ATO", p. 26). Multiple discriminant analysis between three groups, respondents who made ATO clothing purchases, those who made other ATO purchases, and those who received an ATO catalog but made no purchases, found that the three groups did not differ in terms of these altruistic items. Dickson and Littrell (1997) concluded that altruism does not appear to lessen the demand for high-quality products.

Dickson (2000) measured altruistic attitudes related to apparel purchases from socially responsible businesses, apparel businesses that had taken steps to meet high ethical or environmental standards. Measures included, "I would buy clothing from a socially responsible business just to help support their business practices" and "I would settle for a lower quality garment in order to buy something from a socially responsible clothing business" (p. 25). By posing situations in which the respondents would either not gain or actually lose benefit by taking an action, the two items used in this measure seem to capture the essential definition of altruism, which involves "self-sacrificial acts intended to benefit others regardless of material or social outcomes for the actor" (Schwartz & Howard, 1984, p. 229). Dickson (2000) did not find this measure of altruism to be a significant predictor of support for or intention to buy from socially responsible apparel business.

The items used to measure altruistic attitudes in these apparel studies included the idea that consumers would have to tradeoff attributes creating apparel product quality in order to obtain other attributes such as socially responsible (environmental/ethical) production. In the case of organic cotton apparel, including both 100% and blends, many products now offered do not require the consumer to make a tradeoff in terms of the attributes that create quality, just in terms of price (an attribute that may signal quality as well as having economic ramifications, see Wheatley, Chiu & Goldman, 1981). While it is possible that some consumers believe that purchasing organic cotton apparel may give them perceived health benefits similar to organic food products, in the case of products with only a small percentage of organic cotton, altruistic purchase motivations would seem to become more likely. The personal norm for environmental or ethical behavior

may be a way to measure altruistic attitudes without suggesting that consumers are making a tradeoff on quality attributes.

Personal Norm

The model of altruistic behavior that has been most often studied in relation to environmental consumer behavior is the Schwartz (1977) moral norm activation model. His model of the moral norm is one that seeks to improve the power of behavioral models like the theory of reasoned action to predict altruistic behavior such as blood donation or volunteering to help blind children (Schwartz, 1977).

Schwartz (1977) suggests that in the case of behaviors that have a moral aspect, such as altruistic behavior, the normative component of the motivational construct for this behavior includes a personal (also called moral) normative variable in additional to the social (subjective) normative variable. The social norm is an evaluation of the attitudes of socially important other individuals related to a specific behavior. The personal norm is an evaluation of the specific behavior in relation to a specific internal standard. The personal norm, as described by Schwartz, differs from the social norm because the sanctions attached to a violation of the personal norm are tied to self-expectations rather than the expectations of the social group. He stipulates that the personal norm is related to the social norm in that these self-expectations are learned from the same social interactions that form the social norm. Equity and social responsibility are two widely accepted social norms that have been shown to create self-expectations (Berkowitz, 1972; Walster & Piliavin, 1972).

While conforming to the social norm may be important in maintaining the social esteem of important others, conforming to the personal norm is important for maintaining

self-esteem. Violations of the personal norm can produce feelings of guilt or other negative self-evaluations (Schwartz, 1977). For example, if a consumer has a personal norm to purchase organic cotton apparel, failure to purchase organic cotton apparel, might cause the consumer to feel guilty or otherwise poorly about her or himself. Even the regard or disregard of important others concerning the purchase of organic cotton apparel may not mitigate the effect of the negative self-evaluation resulting from a failure to comply with the personal norm.

The personal norm itself (e.g. "I feel a moral obligation to…") has been repeatedly shown to influence environmental behavior. In one of the earliest studies to test the Schwartz (1977) model of altruistic behavior, Black, Stern, and Elworth (1985) used path analysis to show that the personal norm related to energy use had the greatest direct influence (r = .12-.30) on energy saving behavior. They measured two personal norms. The personal norm for curtailment of energy use was described as a "sense of obligation to 'cut back' or use less heat in winter" (p. 9). The personal norm for efficiency of energy use was described as the "sense of personal obligation and pride with respect to insulating the home and getting the same comfort for less energy" (p. 9).

Stern, Dietz, and Black (1986) took an interesting departure from the Schwartz (1977) moral norm-activation model by examining the beliefs that either the industries involved or the government has a moral obligation to action concerning hazardous chemicals. At this point, while Stern et al. (1986) call this moral obligation a personal norm for industry or government action, it seems to be clear that this is not a personal norm in the manner in which Schwartz (1977) framed his theory of altruistic behavior. Stern et al. (1986) did find that people who hold the chemical industry responsible for the

effects of hazardous chemicals should be morally obligated to action concern the situation (r = .46). The belief that industry was responsible did not reduce the individual commitment to act to influence industry behavior.

Because his study was not specifically designed to test variables from Schwartz's (1977) model of altruistic behavior, Widegren (1998) used measures of guilt and embarrassment for harming the environment as a measure of the personal norm. Items included "Suppose that you at some time were using a motor car, instead of bus or train, would that make you feel guilty…or embarrassed at the thought of what impression of you other would get?" (p. 84). Widegren (1998) believed that these measures captured the "essential aspects of the concept" of the personal norm (p. 84). While the concept of guilt would seem to reflect the negative self-evaluation at the heart of the personal norm as described by Schwartz (1977), because embarrassment involves the negative evaluation based on the opinions of others, it might be better related to the social norm. Fortunately, Widegren (1998) separated the influence of guilt and embarrassment on willingness to pay for environmental improvement (a form of behavioral intention) and self-reported proenvironmental behavior. Guilt had a significant correlation with both willingness to pay (r = .42) and proenvironmental behavior (r = .33). Schwartz (1977) pointed out that when measures of obligation, which is a fairly neutral self-evaluation, and guilt, a more negative self-evaluation, were compared, measures that use the obligation format outperformed those of guilt in their ability to predict behavior.

Stern et al. (1999) also used a measure of the personal norm that included three items about personal moral obligation, three about government obligation, and three about industry obligation. While the concern with using non-personal obligations to

reflect a personal norm has been noted, the nine items formed a single factor with a Cronbach's alpha of .88. The personal norm measured in this manner was correlated with environmental consumer behavior ($r = .41$), had a large predictive value ($\beta = .53$), and together with the measure of awareness of consequences accounted for 18% of the explained variance. The addition of other variables, such as the New Environmental Paradigm and values such as altruism increased the explained variance in consumer behavior only slightly ($R^2 = 22$).

Ebreo et al. (1999) found the personal norm for recycling had the greatest predictive relationship with consumer preference for conservation related attributes of products ($\beta = .30$), such as recycled material content. Variables such as gender and the New Environmental Paradigm did not predict preference for conservation attributes and other demographics and motives for recycling such as economic or household factors did not significantly predict preference. The only other variable significant to preference, described as environmental altruism, had a similar regression coefficient as the personal norm ($\beta = .27$).

As mentioned previously, Harland et al. (1999) concluded that the inclusion of the personal norm along with the variables from the theory of planned behavior improves the prediction of proenvironmental behavior and behavioral intention. Three items such as "I feel a strong personal obligation to…(one of the five behaviors) on a regular basis" (p. 2513) formed a single measure of the personal norm for each of five environmental consumer behaviors with Cronbach's alphas ranging from .77 to .81. Regression analysis of the two consumer related behaviors showed the personal norm to be significantly predictive of use of unbleached paper ($\beta = .32$), and the use of energy-saving light bulbs

(β = .39). Harland et al. (1999) also pointed out that with the addition of the personal

norm, the large contribution of attitude was decreased to the extent that it was on balance

with perceived behavioral control and the personal norm, suggesting that the additional

variable was increasing the variance explained by isolating the part of attitudinal beliefs

that involve moral judgment specifically.

Kaiser and Scheulthlé (2003) also tested the personal norm along with variables

from the theory of planned behavior. However, they found that the addition of twelve

items measuring the personal norm such as "it is responsible toward other people and/or

environment…" and "it is my obligation toward other people and/or environment…"(p.

1037) did not improve the ability of the variables from the theory of planned behavior to

predict intentions toward ecological behavior. Structural equation modeling showed

attitude had the greatest positive impact on behavioral intention (r = .72), while the

personal norm had a negative impact (-.33). Kaiser and Scheulthlé (2003) concluded that

the influence of personal norms on behavioral intention may be mediated by attitude, at

least in the environmental domain, an idea that will be tested in this study.

Guagnano (2001) did not include a measure of personal norm, but the two items

he used to measure ascription of responsibility could be a good example of Schwartz's

(1977) concern that ascription of responsibility is actually an aspect of the personal norm.

"It is my personal responsibility to protect the environment for other people even if they

seem to be unconcerned" and "It is my responsibility to ensure the well being of other

species on earth" (p. 432) formed a single factor (α = .65) that significantly predicted

willingness to pay for recycled products (b = 2.70). Other variables, such as awareness of

consequences, personal cost and income were not significant predictors of willingness to pay for recycled products.

Nordlund and Garville (2003) found "a personal moral obligation to reduce car use, in order to reduce the environmental problems" (p. 341) had a direct positive (r = .44) effect on willingness to reduce car use. The personal norm also mediated the influence of awareness of environmental problems and values such as self-transcendence, anthropocentrism and ecocentrisim on willingness to reduce car use. These general values and environmental problem awareness explained 41% of the variance in the personal norm.

While studies of apparel related behavior have not used either the Schwartz (1977) model of altruistic behavior or the variable of the personal norm, the results in studies of environmental and ethical behavior indicated that the variable of the personal norm for environmental/ethical behavior was a valuable one to include in this study.

Boomerang Effect

According to Schwartz (1977), the activation of or defense against the personal or moral norm can be predicted using the variables seen in his normative decision-making model (see Figure 2-1).
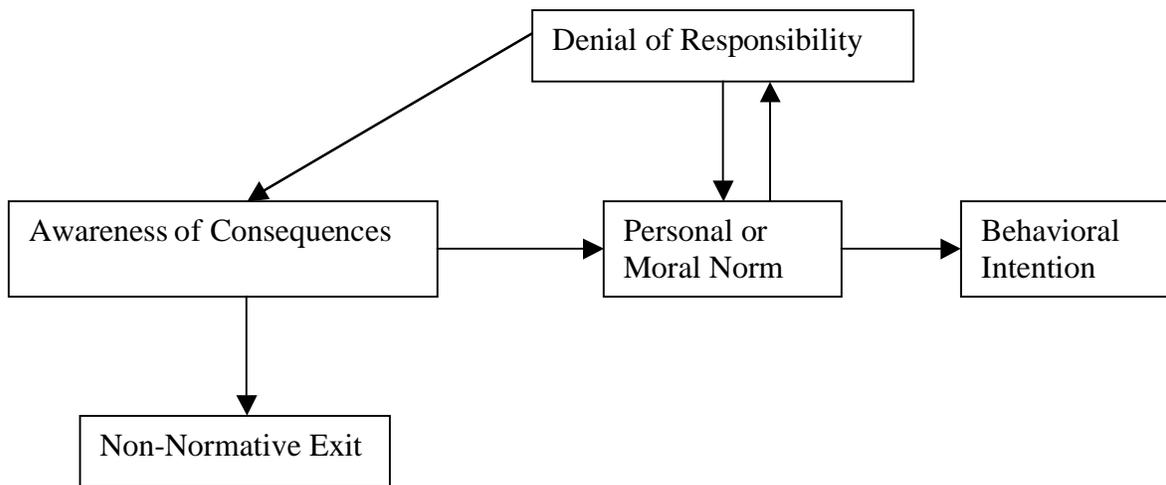
Figure 2-1: Normative Decision-Making Model (adapted from Schwartz & Howard, 1982, p. 204)

The Schwartz (1977) model of altruistic behavior also provides an explanation for lack of altruistic behavior in situations where the levels of the pertinent variables suggest it should occur. An individual with a high level of awareness of consequences, a strongly felt moral obligation to act and a low level of denial of responsibility who nonetheless does not engage in the morally obligated behavior may be under the influence of the "boomerang effect" (p. 264). For example, in a study of people who had volunteered to run a bake sale booth to raise money for Head Start, an unexpected pattern emerged. When the researchers increased the pressure on the volunteers by exaggerating the seriousness of the need, those with the highest level of awareness of consequences were the least likely to volunteer, where as without the pressure, they were the most likely (Schwartz, 1977). Schwartz calls this abrupt change in helping behavior under certain

circumstances, the 'boomerang effect'. The boomerang effect has a couple of possible sources, lack of trust in the legitimacy of the need and undue pressure to provide help. Schwartz (1977) points out that people who engage in altruistic behavior are vulnerable to being exploited by others and that some altruistic individuals are sensitive to the possibility of exploitation. If altruistic individuals sense that "the needs to which they responded were not genuine, that they were created or portrayed to gain resources which the needy party could have sought through their own efforts." (p. 264) they are less likely to help.

Schwartz (1977) also theorized that the ability of altruists to trust in the legitimacy of the need can be undermined when they are subjected to higher levels of pressure to provide the help. Basically, altruists do not want to be manipulated. Besides violating a basic desire that most people feel to have the freedom to decide one's own actions, external pressure can end up substituting for internalized motivations for helping. Altruists can resent this substitution of motivation (the personal for the social), because while violating personal norms may lead to negative self-evaluation, acting on personal norms leads to positive self-evaluation. This sense of self-satisfaction is an important benefit of altruistic behavior and may not be nearly as valuable as the benefit derived from complying with a perceived social obligation.

Osterhus (1997) found that attribution (ascription) of responsibility played an important role in moderating the impact of the personal norm on participation in an energy-saving utility program. Ascription of responsibility was measured with three items ($\alpha = .76$) that focused on over consumption of energy (e.g. "More conservation of energy by individual households would greatly alleviate the energy problem" p. 22).

When considered without the moderating influence of responsibility, the personal norm did not significantly predict environmental behavior. Further, he noticed that the personal norm was at its lowest when responsibility was at its highest. In a conclusion that echoes Schwartz's (1977) discussion of the boomerang effect, Osterhus (1997) decided to measure consumer trust in the utility company and reanalyze his model. He found that without trust, the moderating effect of a high level of responsibility on the personal norm shifted the direction of the impact of personal norm on behavior from positive ($\beta = .60$) to negative ($\beta = -.36$). This meant that those who felt a high level of responsibility were less likely to participate in the energy-saving program when levels of trust were low. Trust had a moderating impact on responsibility, so when high levels of trust were included with high levels of responsibility, the effect of the personal norm swung back to positive ($\beta = .18$). This suggests that trust, in this case, in the motivations of the utility company (the entity asking for the altruistic behavior), is required to prevent the boomerang effect described by Schwartz (1977).

A model of this potential interaction between trust and the personal norm can be seen Figure 2-2. The line between the personal norm and behavioral intention passes through both trust and denial of responsibility and is dashed to suggest that the exact relationship between these variables is unknown.
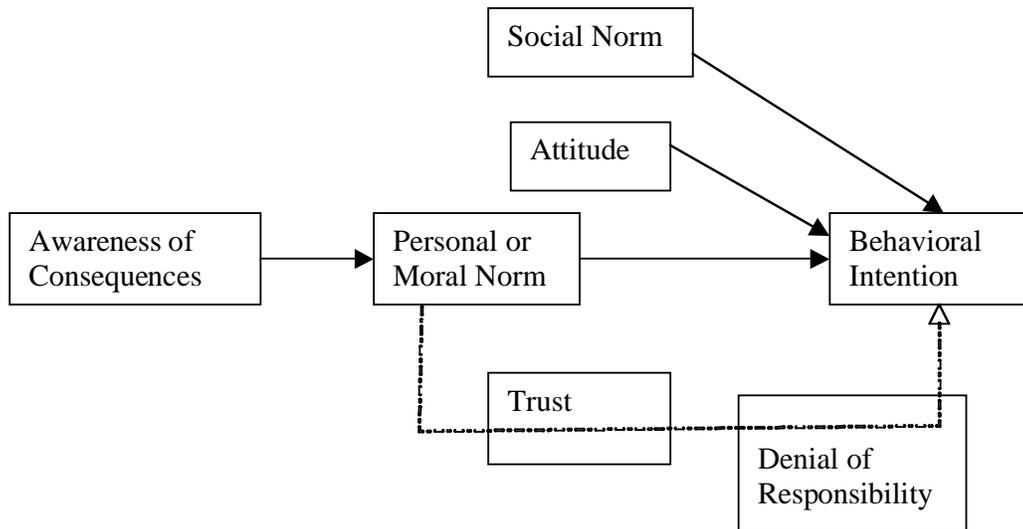
Figure 2-2: Trust and Responsibility as Moderators of the Personal Norm.

Based on this model, and adding the variable Self-Identity shown previously as important to environmental/ethical consumer behavior, a model can be proposed for this study. The model, seen in Figure 2-3 does not include the variables of Awareness of Consequences or Denial of Responsibility, which are beyond the scope of the current study.
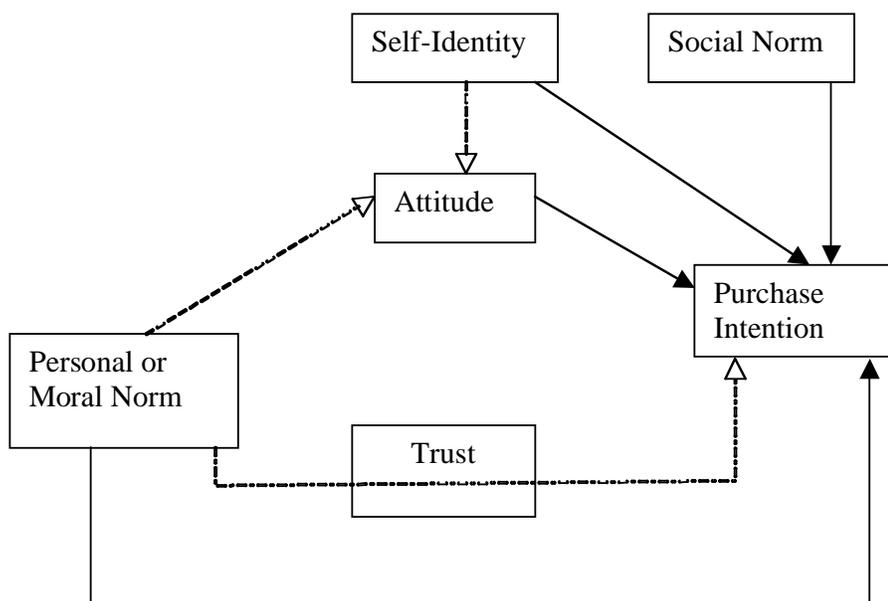
Figure 2-3: Extension of Conceptual Model of Altruistic Consumer Behavior

The variables of Personal Norm and Self-Identity were proposed and tested as possible antecedent to Attitude in further analysis of their study of fair trade consumers by Shaw and Shiu (2002a). This was based on previous research that found both the personal norm and self-identity separately to be antecedents to attitude (Kaiser & Scheuthle, 2002; Shaw & Shiu, 2002a; Sparks & Guthrie, 1998; Sparks & Shepherd, 1992, 2002; Sparks et al., 1998).

Sparks, Shepherd, and Frewer (1995) found that both the Personal Norm (β=-.41) and Attitude measured using the summation of behavioral beliefs and outcome evaluations (β=.46) were highly predictive of the single measure of Attitude (-3 = extremely bad, +3 = extremely good) toward eating genetically modified food products (R^2=.76). Based on the relationship between the Personal Norm and Attitude suggested in this study, Sparks and Shepherd (2002) went on to examine the same relationship in

their studies of attitudes toward buying genetically engineered pork products. They found that the summative measure of Attitude no longer significantly predicted the single measure of Attitude when Personal Norm (β=-.68) was included in the regression equation (R^2=-.45). The failure of the summated measure of Attitude to predict the single measure of Attitude, when included with the Personal Norm is interesting, especially because the study used individually solicited behavioral beliefs and outcome evaluations for each participant, meaning they should be even more salient than researcher constructed behavioral beliefs. They suggest that their results mean that the Personal Norm is capturing an element of Attitude that is not readily accessible using the expectancy-value formula.

Kaiser and Scheuthle (2002) also arrived at the conclusion that the Personal Norm is an antecedent to Attitude in their study of environmental consumers. Their study found that Personal Norm and Attitude were highly correlated (r=0.92) and the fit of their structural equation model using the Theory of Planned Behavior declined significantly (χ^2=97.29, df=13) when the Personal Norm was added. They conclude that the effect of Personal Norm on Behavioral Intention is mediated by Attitude.

Sparks and Shepherd (1992) tested the idea that the influence of Self-Identity on Behavioral Intention is entirely mediated by Attitude. They found that Self-Identity had a significant independent (β=.18) ability to predict the "intention to consume organic vegetables in the next week" (p. 395). They suggest in their conclusions that the variable of Self-Identity measures some aspect of behavioral outcomes not captured in their expressions of attitude. They recommend further investigation of the conceptual relationship between self-identity and attitude.

Shaw and Shiu (2002a) included both the Personal Norm and Self-Identity and found that they both significantly predict Attitude in their study of fair trade consumers. Personal Norm predicted Attitude slightly better (β=.16) than did Self-Identity (β-.13) and they accounted for 25% of the explained variance in attitude. In their further study of the same data using structural equation modeling, they found that a model with these additional relationships to Attitude from both Personal Norm and Self-Identity was not shown to fit significantly better than a model that did not (Shaw & Shiu, 2002b). They concluded that explorations of the antecedents of Attitude should not be conducted in isolation from Behavioral Intention.

The results of these studies suggest that the possibility that Attitude mediates the relationship between either one or both of the variables of Personal Norm and Self-Identity. A mediating role for either variable means that they would not only significantly predict Behavioral Intention, as found by Shaw and Shiu (2002a), but that they would also significantly predict Attitude and Behavioral Intention to some different degree in the presence of Attitude (Baron & Kenney, 1986). A test of the mediation of Attitude for either of these variables has not been conducted, merely suggested, in the previous literature and for this reason, would be an outcome of this study that would add to the understanding of the socially responsible consumer.

<center>Alternative Evaluation</center>

Because one purpose of this study was to ask consumers to evaluate a hypothetical blended organic cotton product and indicate the likelihood of purchasing it, understanding how consumers evaluate apparel products was also important. It is accepted that the differences among consumers in terms of socio-demographics, values,

and attitudes can be expected to influence the formation of behaviors or behavioral intentions. These same differences between consumers can also influence the way in which consumers evaluate various product alternatives based on their attributes.

A commonly used model of alternative evaluation is proposed by Blackwell, Miniard, and Engel (2001). Blackwell, et al. (2001) proposed that the pre-purchase evaluation of alternatives, influenced by both environmental factors and individual differences, follows a consumer search for information. An important note they make about consumer decision-making is that while they present information "search and pre-purchase evaluation as 'separate' stages…you should recognize that the two stages are intricately intertwined during decision making" (p. 111). The "intertwined" nature of information search and alternative evaluation will be important to remember in the discussion of the classification of product attributes based on both information and evaluation.

Classification of Attributes Based on Information

The classification of product attributes based on information possessed by a consumer is derived from Nelson's (1970) extension of Stigler's (1961) theory of the economics of information. Nelson proposes that consumers can incur varying costs (defined in terms of money, time or expertise) or difficulties in their search for information about product attributes. Price is a product attribute commonly used by consumers in their alternative evaluation, including the evaluation of apparel products (Eckman, Damhorst, & Kadolph, 1990). Consumers can obtain information about the price of a product with very little cost or difficulty, a cost that does not even include purchasing the product. When the cost or difficulty of determining the attribute is low, it

is more likely that a consumer can use that attribute during the search stage of product evaluation. For this reason, Nelson (1970, 1974) calls these low cost attributes, such as price, color or style, search attributes. Information about a garment attribute such as fit can also be evaluated at relatively little cost. The consumer must still spend time to ascertain the fit (of a dress in Nelson's example) but information about the attribute can still be used by the consumer during their evaluation without expending the additional cost of purchase (Nelson, 1970). Nelson's example of fit highlights the somewhat fluid nature of these attribute categories. If a consumer is purchasing Nelson's dress from a catalog or online store, there would not be any way to evaluate the attribute of fit without purchasing the garment. At this point, the attribute of the return policy would become important. For this reason, and given the high cost of time, fit may no longer 'fit' in the search category and should be moved firmly to the experience category of attributes.

There may be other attributes that certain consumers can use prior to purchase of the product that require some special knowledge or expertise on the part of the consumer, evaluation of fabric quality for example. For consumers who possess this knowledge there is little cost to evaluate the attribute. Consumers without that knowledge may have to expend some cost (time or tuition) to obtain the expertise to evaluate the attribute. This is one reason why consumers may depend on experts, such as clothing salespeople, when making pre-purchase evaluations.

There are attributes that cannot be evaluated via inspection prior to purchase, however. A consumer, following use of the product, can evaluate an attribute such as durability. Nelson (1970) calls these attributes experience attributes. Consumers may choose to infer experience attributes from search attributes, based on their previous

experience or expertise (Srinivasan & Till, 2002). If a product is inexpensive, consumers

incur little cost to experience the attributes. Indeed, the cost of obtaining information by

inspecting a product might be so large, relative to the cost of the product that consumers

will decide to obtain the information about the product by experiencing it, rather then

comparing it to other alternatives (Nelson, 1970).

Darby and Karni (1973), in their analysis of free competition and fraud, suggested

a third category of product attributes, again based on the idea of cost. They point out that

while search attributes can be ascertained prior to purchase and experience attributes can

be ascertained following purchase, there are some attributes that would require great cost

or difficulty to evaluate and thus "cannot be evaluated in normal use" (p. 69). These

attributes are called credence attributes. An example of a credence attribute might be the

fiber content of a garment. A garment might be labeled as possessing the attribute of

100% cashmere, but there is no easy way for the consumer, even following purchase and

use, to verify that the garment is in fact completely cashmere. The provider of the

information, the manufacturer in the case of fiber content, is claiming an expertise or

experience the consumer does not have personal access to. Because of this, the consumer

will have to trust the source of information, the manufacturer, in order to use the credence

attribute in their evaluation of alternative products (Darby & Karni, 1973). The Federal

Trade Commission, which regulates advertising and labeling regulations for apparel

products, was created, in part, to help protect this trust (Swagler, 1975). Once this trust is

established, manufacturers or retailers can benefit greatly, since it is the credence

attributes of a product that often give "brands the greatest opportunity for generating a

point of difference that is defensible from lower priced competitors" (Srinivasan & Till, 2002, p. 425).

Cues or Evaluative Criteria

According to Olson and Jacoby (1972) a cue (e.g. price, brand name, color) can be understood as the basis on which consumers can form an impression of the product. In studies of quality perception the impression of interest would be the quality of the product. This interest is natural because quality perception has been shown to be related to purchasing behavior (Martin, 1981; Szybillo & Jacoby, 1974; Wheatley, Chiu, & Goldman, 1981). Because the concept of a cue is broad, several different terms are used in various studies, which can create confusion. The terms criteria, evaluative criteria, stimulus, characteristic, or attribute are used interchangeably or instead of cue (Blackwell et al., 2001; Dickson, 2001; Eckman et al., 1990). For the purpose of clarity, the term attribute will be used.

Classification of Attributes Based on Use During Evaluation

Unlike the information-based method of classifying attributes, the evaluation-based method of classification was organized based on the use of attributes by consumers during evaluation. This classification of attributes is based on their relationship to the physical product. Those attributes that are inherent to the product and available for the consumer to use in evaluating the product are called intrinsic attributes. Changing inherent attributes will change the product itself (Eckman et al., 1990; Olson & Jacoby, 1972). Examples of intrinsic apparel attributes include the color, the sizing, or the quality of construction. Extrinsic attributes can be changed without changing the physical nature of the product and are usually "applied by the manufacturer or retailer" (Eckman et al.

1990, p. 14). Extrinsic apparel attributes would include the brand, the price, the return

policy, or the country of origin.

In their review of studies on product attributes used by apparel consumers,

Eckman et al. (1990) found 21 studies in which the product attributes of garments were

classified as intrinsic or extrinsic. Reviewing the results of these studies, they found that

of the 35 extrinsic attributes and 52 intrinsic attributes found to influence consumer

evaluation, the intrinsic attributes were considered more important to consumers during

evaluation. This weight on the intrinsic attributes of these early studies conforms to the

results of Olson and Jacoby's (1972) study of attributes as quality cues. Eckman et al.

(1990) expressed concern about the failure of many previous studies to examine the use

of multiple attributes, which is a more realistic representation of consumer evaluation.

Based on this concern, Eckman et al. (1990) used in-store consumer interviews of female

consumers to determine the frequency of attributes used for apparel evaluation. They

were able to group responses based on the intrinsic and extrinsic nature of the criteria.

The intrinsic attributes were further grouped into three major categories (see Table 2-1).

Table 2-1

Evaluative Criteria

Extrinsic criteria	Intrinsic criteria
Price	Aesthetic
Brand name	color/pattern
Competitor availability	styling
	fabric/fiber
	uniqueness
	Usefulness
	versatility
	matching
	appropriateness
	utility
	Performance and Quality
	fit
	comfort
	care
	workmanship

From Eckman, Damhorst and Kadolph (1990)

The most salient attributes, based on frequency of mention by respondents, were: styling, color/pattern, fit, fabric/fiber, appearance, and price. Eighty percent of responses focused on intrinsic criteria and several extrinsic attributes examined in previous studies, such as country of origin, were never mentioned at all

Sources of Information for Consumer Use

Information about products and attributes of products can come from several sources. Researchers using the theory of economics of information (Nelson, 1970, 1974), where attributes are divided into the search, experience and credence categories, have focused mainly on information provided by advertising claims (Darley & Smith, 1993;

Ekelund, Mixon, & Ressler, 1995; Ford, Smith, & Swasy. 1990; Mitra, Reiss, & Capella, 1999). Ford, Smith and Swasy (1990) created a survey instrument to test consumer skepticism of advertising claims made about search, experience and credence attributes of low and high cost products and services. The results confirmed their hypothesis that consumers would be least skeptical of claims made about search attributes, such as "XX trucks are available with V-8 or V-6 engines" (p. 425). Consumers did not have significantly higher levels of skepticism of advertising claims about credence attributes versus experience attributes. An examination of the nature of the credence and experience claims suggests a possible explanation for this lack of difference. All twenty of the claims about experience attributes were performance related (e.g."XX indoor/outdoor carpeting will not mildew or rot for at least three years" p. 435). It is possible that consumers are more skeptical of performance related claims in general and this effect masked the effect of the nature of the attribute (experience/credence.).

Darley and Smith (1993) looked at another aspect of advertising claims about product attributes suggested by Ford, Smith and Swasy (1990) and others (Edell & Staelin, 1983; Holbrook, 1978; Shimp, 1979). They pointed out that information presented by advertising can be objective, relating to some attribute that is either physical or can be measured in such a way as to be considered factual. If not objective, information in advertising claims is subjective, and relates to some intangible attribute of the product or an impressionistic claim made about a tangible attribute. Darley and Smith (1993) designed a consumer survey to look at the effect that the objective/subjective nature of advertising claims would have on consumer perceptions of the credibility of the claims. They compared both the factual/impressionistic nature of

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the claims and the tangible/intangible nature of the attributes. Analysis of variance

showed that ad attitudes and brand attitudes were significantly more positive and ad

credibility and purchase intention were significantly higher for factual claims about

tangible attributes than impressionistic claims about intangible attributes. Also, factual

claims about tangible attributes produced significantly higher levels of credibility than

impressionistic claims.

Based on these studies, it is reasonable to suggest that consumers of organic

cotton apparel will evaluate the credence attributes of the products differently than the

search attributes, perhaps being more skeptical of claims made about the attributes.

<center>Skepticism of Environmental Product Claims</center>

This study was developed with two basic parts. The behavior of interest for this

study was the purchase of organic cotton apparel products. The first component of this

study, with applications to the development of the organic cotton apparel products, was

basically an experiment where respondents, potential consumers, were asked to evaluate

hypothetical apparel products. The literature related to product evaluation suggests that

consumers have different evaluation tendencies depending on the nature of the product

attributes. Depending on when and how confidently they can evaluate the attribute will

influence whether the attribute is used to make a purchase decision. Of particular interest

to this study was the issue of credence attributes, attributes that consumers cannot expect

to evaluate without great cost. Consumers are being asked to believe or trust that the

credence attribute exists, since they are not in a position evaluate it. The second

component, mainly theoretical in focus, examined how variables such as attitude, self-

identity, or the personal norm would influence the behavior of consumers. The behavior

in this case being the purchase of organic cotton apparel products, thus directly relating the theoretical examination to the product development portion of the study.

Based on the studies of consumer perceptions of information as related to objective/subjective claims about search/experience/credence attributes of products it would be reasonable to expect that consumer skepticism about advertising claims may have some influence on their attitudes and purchase intentions related to organic cotton apparel products. The importance of the concept of trust has already been demonstrated in the discussion of the "boomerang effect" on altruistic behavior. Osterhus (1997) showed that trust moderated the effect of ascription of responsibility on the impact of the personal norm on behavioral intention. Schwartz (1977) mentions "lack of trust" (which will be referred to as skepticism) in the need of the party requesting the helping behavior as on aspect of the "boomerang effect".

Mohr, Eroglu and Ellen (1998) developed and tested a measure of consumer skepticism toward environmental claims in marketing communications based on previous studies into advertising claims (Darley & Smith, 1993;Ford, Smith, & Swasy, 1990). Factor analysis and reliability testing (α =.79) resulted in a four item measure of skepticism including the items "claims are true", "claims are intended to mislead", "claims are exaggerated" and "do not believe the claims" (p. 42). They also showed that this measure was significantly and negatively correlated to a general measure of environmental concern (r = -.13). It was also significantly correlated to measures of negative attitudes toward advertising and cynicism about marketing in general (r = .37 and r = .22 respectively).

Kim (1995) included a measure of perceived environmental claim credibility in her study of consumer response to apparel in advertisements containing environmental claims. Credibility was measured using seven semantic differential scales such as "convincing/unconvincing, biased/unbiased, believable/unbelievable" (p. 77). The seven items formed one factor that explained 62.1% of the total variance (no α was given). Kim found that levels of this variable differed significantly in relation to the type of claim made in the advertisement. The claim "donation of profits" was rated significantly more credible than "organically grown". She suggested that this difference might be due to confusion about the how much organically grown cotton actually does to protect the environment. This measure of skepticism was very straightforward, but it measured responses to specific advertisements, asking respondents to evaluate something in front of them, not to the perceived credibility of environmental claims in general.

The measure of skepticism of environmental products claim tested by Mohr, Eroglu and Ellen (1998) would be a good choice for this study. While none of the other studies included in an extensive review of the literature related to environmental consumerism included this measure of skepticism, given its basis in the studies related to the economics of information, it would be expedient to include an already validated measure of skepticism in this study.
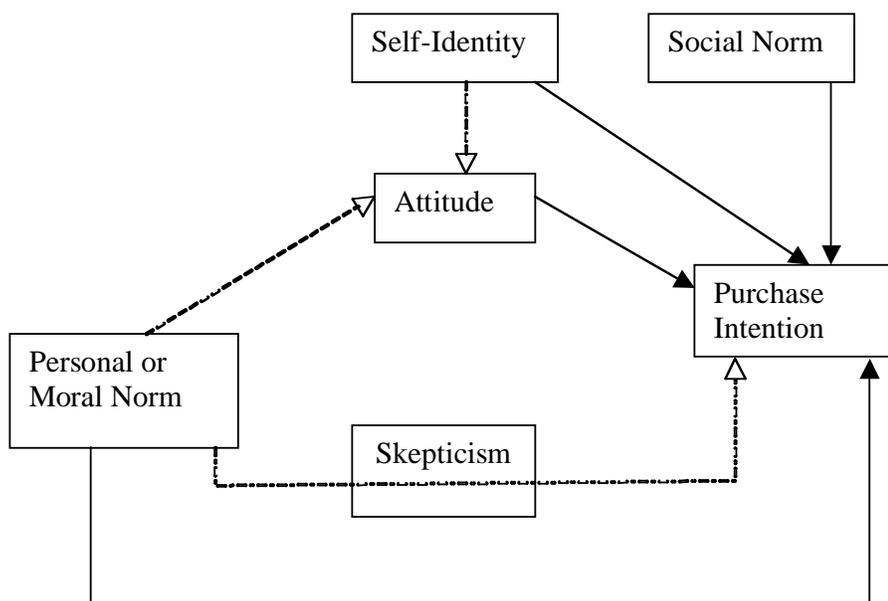
Figure 2-4: Model of the Altruistic Consumer Behavior Including Skepticism

This measure could not only test the role of skepticism of advertising claims in the "boomerang effect" of personal norms on altruistic behavior, it could also be used to determine if skepticism of environmental claims made in advertising influences how consumers evaluate environmentally related credence attributes (see Figure 2-4).

Understanding the influence of consumer skepticism on product evaluation will potentially be helpful to the marketing sections of manufacturers of apparel containing organic cotton blends. If marketers can identify the consumer segments that are likely to perceive advertising and product label claims about environmental attributes with skepticism, they can work to offset this skepticism, perhaps in advertisements. If skepticism is working to hold back some consumers who would otherwise form strong behavioral intentions to purchase organic cotton apparel, analyzing the extent of this

effect may be an important first step in helping organic cotton and apparel manufacturers address negative reactions to their messages.

Rather than including the evaluation of the attributes as a variable in the conceptual model, the impact of attribute evaluation on the overall model can be examined using group comparison. The respondents will be split into potential market segments based on the evaluation of attributes and the theoretical relationships will be analyzed for each of these segments. Any differences in the relationships between the variables in the models for each group could provide insight for marketers.

Having developed a model of consumer behavior that can be related to environmental/ethical attributes of products, it is important to examine any literature that show how consumers evaluate these attributes. This literature might also provide direction for deciding which attributes are important to include in this study.

<center>Environmental/Ethical Attributes</center>

The literature related to products with environmental/ethical attributes is spread across a variety of fields. Because of the popularity of environmentally related products in the 1990s, there is an abundance of studies, particularly marketing studies, on all sorts of products with environmental attributes. Because organic production is most often seen in food products, the agriculture or food science literature related to organics is particularly well-developed. Finally, ethical attributes, such as production under fair labor conditions, have been studied in apparel products.

Environmental Attributes

There are not many environmentally related apparel studies that look at consumer evaluation of environmental attributes. Kim and Damhorst (1998) included a measure of environmentally responsible apparel consumer behavior that included eight items, five of which suggested changes in buying behavior related to product attributes (e.g. "Buy apparel with low impact or no dye processing" p. 130). Based on the overall low means for all eight items, the sample (261 undergraduates) did not seem very interested in environmental attributes of apparel. The highest mean, on a five-point scale was 3.47 for the item "Select apparel that you can wear over a longer term compared to trendy apparel that goes out of style quickly" (p. 129), which was not very strongly related to potential environmental attributes of the apparel. The low means could be related to the nature of the sample.

While there was a shortage of literature related to environmental attributes and apparel, there were a number of studies from an industry that is similar to the apparel industry, the forest products industry, wood and paper. Recycled copy paper and related forest products such as furniture and construction materials produced from wood grown in forests are now certified for environmentally responsible management and harvesting methods (Teisl, Peavey, Newman, Buono & Herman, 2002). The environmentally related attributes of both products can include recycled content or content grown, harvested or produced in an environmentally friendly manner. Like textile and apparel products, mitigation of environmental impacts of forest products production can range from the raw materials with tracking of water, soil, and wildlife management all the way to final production with a reduction or recycling of harmful solvents. Consumer studies

that have looked at environmental forest products include focus groups, surveys of both general attitudes, and those including product profiles for conjoint analysis (Anderson & Hansen, 2004;Donovan, 2004; Ozanne & Vlosky, 1997; Teisl et al., 2002; Vlosky, Ozanne & Fontenot, 1999).

Credibility of the labeling is a major issue identified during focus group discussions, with respondents appearing "to place a higher level of credibility on labels that featured endorsements from relatively familiar entities" (Teisl et al., 2002, p. 44). Credible labeling was the most important attribute of the hypothetical products (a wooden birdhouse or paper), more important even than the price, suggesting that consumers would pay more for credibly labeled products. A survey by Orzane and Vlosky (1997), designed to identify consumer segments interested in certified wood products also suggested a consumer willingness to pay more for environmentally certified wood products.

Anderson and Hansen (2004) used conjoint analysis to determine the impact of environmental certification on consumer preferences for various wooden CD racks. Besides environmental certification of wood origin, they selected four other attributes; price, wood type, adjustability of shelves and storage capacity. Color and size were also considered important by the students, so in the survey, respondents were told to imagine that the product came in the color and size of their own preference. Using a fractional orthogonal design, they created eight profiles of CD racks for respondents to rank in order of preference. Based on analysis of the conjoint, they were able to determine that while consumers preferred environmental certification, overall, they were not actually willing to pay more for the certification.

These studies from the forest products industry also suggest that credibility of labeling is an important issue for consumers of products that might have environmental issues related to harvest and processing. For this reason, it seems reasonable to suggest that there may be a relationship between the environmental processing claims made by organic apparel products and the skepticism of consumers.

Organic Attributes

In terms of apparel related studies, consumer evaluation of the attributes of organic apparel has not been examined widely. Kim and Damhorst (1998) included purchasing apparel made from organically grown fibers in their measure of environmental consumer behavior. Their study, however was looking at the influence of environmental concern on apparel consumption, so they did not look specifically at consumer evaluation of organic attributes.

Organic attributes have been more widely studied in food products. Some studies have even had consumers 'experience' the products and compared their evaluations of the product attributes before and after experience. Other studies looked at the issue of labeling and examined how labeling for organic or environmental attributes (called eco-labels) was perceived by consumers.

Armah (2002) investigated consumer use of eco-labels, including USDA organic labels, related to organic food consumption. The organic consumption variables used in the logit analysis included label use and type (e.g. USDA versus non-governmental) as well as attitudes toward pesticide impact on personal health and the environment. The model also included socioeconomic variables: gender, age, income, education and if there were children in the household. Analysis of the model revealed that the habit of

purchasing organic produce was the most significant variable in the prediction of the use of eco-labels. A USDA label increased likelihood of eco-label usage by only 9%, while a private agency label increased likelihood of eco-label use by 39%. The likelihood of using eco-labels increased 28% for consumers who selected local produce, suggesting that personal knowledge provided necessary information. Demographically, female gender, age, and income all had significant positive impacts on eco-label use and only education did not predict eco-label use.

Hearne and Volcan (2002) also included socioeconomic variables in their study of consumer preferences for organic produce labeling in Costa Rica. The objective of their study was to measure preference for the "Blue Seal", a food safety seal issued by the Department of Public Health, as compared to a "Green Seal" issued by the Ministry of Agriculture for sound environmental production practices. A choice experiment was conducted using a convenience survey of 432 consumers at 10 San Jose area supermarkets. Based on focus group interviews about the attributes commonly used in vegetable selection, price, appearance and size were included as attributes for study, along with four levels of labeling; none, blue label, green label, and both labels. Analysis of the conditional multinomial logit model showed that the combination of the blue and green label significantly increased likelihood of choice in the experiment and analysis of the marginal willingness to pay demonstrated a 38% premium for the double labels. Demographics had no influence on likelihood of label choice.

Some studies included not only search and credence attributes for consumer evaluation, but also experience attributes. The study by Caporale and Monteleone (2004) measured the ability of information about beer manufacturing, including genetically

modified yeast or organic grains, to influence consumer acceptance of beers during a taste test. The objective of the study was to determine how labeling about manufacturing processes, specifically the use of genetically modified micro-organisms or organic grains products, could influence consumers' expectations about how the product tasted. One hundred and five different consumers were asked to rate how well they liked the taste of three beers randomly assigned information about manufacturing processes. This rating was compared to how well they reported expecting to like a well-known brand of beer produced with the three different manufacturing processes: a) using organic barley and hops b) using genetically modified yeast c) using traditional methods. Two-way ANOVA compared the actual liking to the expected liking and showed that information about manufacturing had a significant effect on beer acceptability. Genetic modification labeling significantly reduced expected and actual liking of even the best-rated beer (rated in a previous stage) while organic labeling significantly increased expected and actual liking of even the worst-rated beer.

Dransfield et. al. (2005) conducted a choice experiment with European consumers. The subjects were shown photographs or given taste samples of pork chops and asked to choose their preferred chop and name the maximum price they were willing to pay, relative to a given price. Variables used in both the appearance and taste tests included labeling for country of origin (home country and imported) and production method (indoor/outdoor). In the taste tests, consumers were asked to rank in preference three taste samples from pigs raised indoors and three from pigs raised outdoors. Ninety percent of consumers consistently preferred their own country's pork, and a majority also preferred pork labeled as being raised outdoors. Based on the appearance tests,

consumers were only willing to pay 3% extra for their top preference, but after tasting, the premium for the top preference, domestic pork raised outdoors, increased to 10%. Also, the researchers found that without labels, consumers in this taste test indicated no difference in appreciation for the eating quality of pork raised indoors versus outdoors.

The results of these selected studies from the organic food industry bring up several issues related to evaluation of organic attributes. First, consumers use a variety of information sources, besides labeling (e.g. retailer), to evaluate claims made about organic attributes. Also, experience attributes, such as taste, can be influenced by the information provided about credence attributes. This effect will not be tested in this study, but it is one to keep in mind for future studies about organic apparel.

Ethical Attributes

The issue of ethical attributes is a well-known one in the apparel field. Unethical production methods, including child labor, employee abuse, or imprisonment, have galvanized consumer sentiment and raised discussion of the use of labeling for ethical production (i.e. "No Sweat") to allow consumers to place economic pressure on offending corporations (Dickson, 2001). Labeling for fair trade with the third world has also created an opportunity for consumers to consider ethical attributes in a wide variety of products, from crafts to food such as coffee.

The survey of American consumers by Dickson (2001) included an ethical attribute, a "No Sweat" label in a conjoint task, along with other attributes (quality, color, fabric content, and price). Cluster analysis identified one group of consumers, 16% of the sample (n = 90), who would use the label when making purchase decisions. Other

clusters placed the greatest utility on price (n=200) or on fabric content (n = 119). Quality and color were important, but did not determine the clusters.

Auger et al. (2003) used choice-based conjoint to determine consumer willingness to pay for ethical attributes in athletic shoes. Price was the most important attribute, but ethical attributes were also important to consumers. Consumers were willing to pay the most ($14.49) to switch from shoes that did not fit to shoes that fit, but the next largest increase in willingness to pay ($10.29) was associated with switching from a shoe with no information related to child labor to one that assured no child labor was used. Willingness to pay for other ethical attributes such as minimum wage, safe working conditions, and acceptable living standards, were higher than all performance related attributes except shock absorbers.

Dickson and Littrell (1998) surveyed consumers on the mailing list of an ATO offering fair trade products from Latin America. They found purchasers of ethnic apparel fell into two different segments based on their preferences in aesthetic attributes. One group desired the traditional colors and ethnic styling of Latin America while the other group preferred simple, dark colors. Both groups were purchasing products whose attributes included a Latin American origin, but only one group desired aesthetic attributes that boldly signaled this origin. Both groups were unwilling to compromise attributes related to quality, such as fit, colorfastness, or fabric hand.

This concern for quality-related attributes is echoed in the study by Dickson (2000) mentioned in the discussion of altruism. Desire for fashion, measured by items such as "Colors that are currently fashionable" or "Unique or different styles" (p. 25),

was the only other variable besides past purchase that predicted intention to purchase from socially responsible businesses.

These studies suggest that ethical attributes are important to apparel consumers, though their relative importance varies from consumer to consumer. Consumers of organic cotton apparel may also be interested in potential ethical attributes, such as fair trade, associated with purchases. These studies also suggest that previous trends of marketing organic cotton apparel using 'natural' colors might only appeal to a certain segment of all potential consumers. Assuring respondents that blended organic cotton apparel can be manufactured with the same quality attributes as other apparel will also be important.

While literature related to consumer perceptions of fair trade cotton fiber production or labor issues surrounding cotton fiber production, as mentioned in the introduction, child labor in particular has become an issue of concern for major cotton companies involved in production in India and Central-Asia (Syngenta, 2005; Webb, 2005). The recent disclosure of child labor in cotton fields producing seed for multinational corporations is likely to penetrate the awareness of some consumers, ethical consumers in particular. This suggests that fair trade has the possibility to become an important attribute for cotton fiber in the near future and thus is an attribute that should be included in the study.

<div align="center">Hypotheses</div>

Based on this review of literature, hypotheses can be formed for the proposed study. The hypotheses have been grouped by independent variable.

Hypotheses concerning Product Attributes

H1: Respondents who make greater use of organic cotton content to determine purchase intentions will not differ in their demographic characteristics from respondents who make lesser use of the product attribute.

H2: Respondents who make greater use of organic cotton content to determine purchase intentions will not differ in their psychographic characteristics from respondents who make lesser use of the product attribute.

H3: Respondents who make greater use of fair trade labeling to determine purchase intentions will not differ in their demographic characteristics from respondents who make lesser use of the product attribute.

H4: Respondents who maker greater use of fair trade labeling to determine purchase intentions will not differ in their psychographic characteristics from respondents who make lesser use of the product attribute.

H5: Respondents who make greater use of organic processing labeling to determine purchase intentions will not differ in their demographic characteristics from respondents who maker lesser use of the product attribute.

H6: Respondents who make greater use of organic processing labeling to determine purchase intentions will not differ in their psychographic characteristics from respondents who make lesser use of the product attribute.

Hypotheses concerning Skepticism

H7: Respondents who use credence attributes (organic cotton content labeling, social labeling, processing labeling) in their purchase intentions will have significantly lower levels of skepticism than those who do not.

H8: The personal norm for organic cotton apparel purchases will be positively related to skepticism of environmental product claims.

Hypotheses concerning Purchase Intention

H9: Self-identity as an environmentally/ethically responsible consumer will be positively related to future intention to purchase blended organic cotton apparel.

H10: The personal norm for environmentally/ethically responsible consumer behavior will be positively related to future intention to purchase blended organic cotton apparel.

H11: Attitudes about the purchase of organic cotton apparel will be positively related to future intention to purchase blended organic cotton apparel.

H12: The subjective norm for the purchase of organic cotton apparel will be positively related to future intention to purchase blended organic cotton apparel.

H13: Skepticism of environmental product claims concerning environmental attributes of products will be negatively related to future intention to purchase blended organic cotton apparel.

H14: Skepticism acts as a mediator between the personal norm for environmentally/ethically responsible consumer behavior and the future intention to purchase blended organic cotton apparel.

H15: Skepticism acts as a moderator of the relationship between the personal norm for environmentally/ethically responsible consumer behavior and the future intention to purchase blended organic cotton apparel

H16: Attitude acts as a mediator between self-identity as an environmentally/ethically responsible consumer and the future intention to purchase blended organic cotton apparel.

H17: Attitude acts as a mediator between the personal norm for environmentally/ethically responsible consumer behavior and the future intention to purchase blended organic cotton apparel.

Summary of Research

The Azjen and Fishbein (1980) theory of reasoned action, the Schwartz (1977) theory of altruistic behavior, and Shaw et al. (2000) suggest the theoretical interrelationships, including causal ordering, for the variables proposed for this study. The study proposed to measure the 1) variables of attitudes, personal and social norms, self-identity, and skepticism of environmental product claims and 2) self-reported rating of likelihood of purchase for apparel products containing organic cotton. The analysis of these variables will examine how they could be used to predict future purchase intentions of blended organic cotton apparel.

CHAPTER 3: METHOD

The purpose of this study was to further understanding of consumers who may be

interested in purchasing apparel products made with a percentage of organic cotton. The

research could have been conducted in several ways, involving observations, surveys, or

experiments. The survey method was chosen for this study because it allowed for

relatively inexpensive access to a group of consumers that was spread across the United

States. Also, using a survey was a good way to obtain information in a systematic way

about variables that are not easy to observe, such as attitudes and intentions. Surveys can

be vulnerable to some sources of bias when respondents do not respond or overstate their

intentions or answer in a socially desirable manner (Lehmenn, Gupta, & Steckel, 1998).

But, surveys are an accepted and popular method of obtaining descriptive data and

careful design of the survey instrument sought to reduce these sources of bias (Dillman,

2000). The data obtained from the survey allowed for the testing of proposed

relationships between observed variables, identification of market segments for the tested

products, and determination of the attribute levels of interest to those segments.

Population and Sample

The research objectives of this study were to analyze consumer preferences for

apparel products produced from small percentage blends of organic cotton, as well as to

contribute to the understanding of the socially responsible consumer by modeling aspects

of the formation of behavioral intention to purchase these products. For this reason, it

was important to target a group of consumers who were likely to purchase organic cotton

apparel products and who possessed values and attitudes that may lead to the inclusion of

ethically/environmentally related variables in their purchase decision-making process.

While the results of a study that focused on this population cannot be generalized to all consumers, the growing size of the market segment of consumers interested in ethical/environmental products, including organic products, made this a group that should not be ignored. To obtain a sample from this population, a list of consumers was obtained from a national mailing list database firm. The 2905 names and addresses, stratified by state population, were selected randomly from a list of consumers who had an identified interest in health and natural foods, the portion of the market of interest that is currently best defined.

Questionnaire

The questionnaire mailed to the survey sample measured the following variables: general attitudes, the variables from the theory of reasoned action (i.e., attitudes and subjective norm toward purchasing organic cotton apparel, future purchase intention), skepticism of environmental product claims, environmental/ethical self-identity, personal norm for environmental/ethical consumer behavior, and demographics (see Appendix A). Items to measure these variables were adapted for the context of organic cotton apparel purchases from existing items used in the literature. Additionally, the questionnaire contained a conjoint task designed to elicit consumer evaluations of apparel product attributes relevant to the purchase of organic cotton apparel.

Independent Variables

General Attitudes

The general attitude items included in the questionnaire were designed to aid

apparel manufacturers in the improvement of marketing of organic cotton apparel

products. The eleven items, measured with a 1 to 7 Likert type scale (1 = strongly

disagree, 7 = strongly agree), covered a range of topics related to organic cotton and

apparel production (see Table 3-1). Three items (2.1, 2.2, and 2.4) were included to

measure general attitudes toward organic agriculture. Attitudes toward the environmental

impact of clothing production were measured with items 2.3 and 2.5.

Table 3-1

Items Used to Measure General Attitudes

Number	Item
2.1.	Organic agriculture is good for the environment
2.2.	Sustainable agriculture is important to me
2.3.	The dyes and chemicals used in apparel production can be harmful to the environment
2.4.	I prefer to "buy locally"
2.5.	I am concerned about the impact of clothing production on the environment
2.7.	Cotton producers in foreign countries do not get a fair price for their cotton.
2.9.	I would go out of my way to buy organic clothing
2.10.	I would buy organic clothing to help support organic farming
2.11.	Government subsidies of U.S. cotton producers are unfair to farmers in developing countries
2.12.	I would go out of my way to buy clothing produced from fairly traded fibers
2.13.	I am interested in organic products, but they seem expensive

Two of the items (2.7 and 2.11) were designed to determine if some of the fair trade issues of concern to social responsibility organizations, specifically U.S. trade policy, resonate in any way with consumers. Finally, items 2.9, 2.10, 2.12, and 2.13 measured attitudes of support for organic and fairly traded fiber clothing production.

Personal Norm for Organic Cotton Apparel Purchases.

Three items designed to measure the personal norm were intermixed with the general attitude items. Shaw et al. (2000) used a single item to measure the personal norm "I feel that I have an ethical obligation to purchase organic cotton apparel products" (p. 894). The wording of this item was substantially similar to those used by Schwartz (1977). This variable was expanded for this study to three items to allow testing for reliability (see Table 3-2).

Table 3-2

Items Used to Measure Personal Norm

Number	Item
2.6.	I feel that I have an ethical obligation to purchase organic cotton apparel products.
2.8.	I have a responsibility to purchase organic cotton apparel products.
2.14.	I am personally obligated to purchase organic apparel products.

Skepticism of Environmental Product Claims

The measure of skepticism developed and tested by Mohr, Eroglu, and Ellen (1998) was used for this study. Their measure included four items measured on 7-point Likert type scale (1 = agree, 7 = disagree). The overall reliability they reported for the scale was acceptable, as indicated by the Cronbach's alpha of 0.79 for the four-item scale. Because apparel products are not always packaged, all the items were modified by changing "package labels" to a more general "product labels." One item in their scale, "Because environmental claims are exaggerated, consumers would be better off if such claims on package labels or in advertising were eliminated" (p. 37) was considered double barreled. For this reason, it was split into two items; "Environmental claims on product labels or advertising are exaggerated" and "Consumers would be better off if environmental claims on product labels or in advertising were eliminated." Note that the first item was reverse coded to indicate belief rather than skepticism (see Table 3-3).

Table 3-3

Items Used to Measure Skepticism Toward Environmental Product Claims

Number	Item
3.1.	Most evironmental claims made on product labels or in advertising are true.
3.2.	Environmental claims made on product labels or in advertising are exaggerated.
3.3.	Consumers would be better off if environmental claims on product labels or in advertising were eliminated
3.4.	Most environmental claims on product labels or in advertising are intended to mislead rather than inform consumers.
3.5.	I do not believe most environmental claims made on product labels or in advertising

Environmental/Ethical Self-Identity

The measure of self-identity used in the study was also adapted from Shaw et al. (2000). Their measure was very straightforward, with a single item, "I think of myself as someone who is concerned about ethical issues" (p. 894). This item was adapted and another item "I am a socially responsible consumer" was created to measure socially responsible consumer self-identity (4.1 and 4.4).

Because of the potentially dual environmental/ethical nature of organic apparel products, several more items were added reflecting the environmental or organic side of this issue. Sparks and Shepherd (1992) used two items (α = .80); "I think of myself as a 'green consumer'" and "I think of myself as someone who is very concerned with 'green issues'" (p. 392). These items were adapted to capture the self-identity of the organic and environmentally responsible consumer (items 4.2, 4.3 and 4.5) and all five items (see Table 3-4) were measured on a 7-point Likert type scale (1=strongly disagree, 7=strongly agree).

Table 3-4

Items Used to Measure Self-Identity

Number	Item
4.1.	I think of myself as someone who is concerned about social issues.
4.2.	I think of myself as an 'environmental consumer'.
4.3.	I think of myself as an 'organic consumer'.
4.4.	I am a socially responsible consumer.
4.5.	I think of myself as someone who is concerned about environmental issues.

Attitudes Toward Purchasing Organic Cotton Apparel

The attitude variable included in this study was modeled on Azjen and Fishbein's (1980) theory of behavioral intention. Using this model, attitude was measured by responses to both behavioral beliefs and outcome evaluations related to the behavioral beliefs. A number of the items designed to measure attitude for this study were derived in part from Shaw, Shiu, and Clarke's (2000) survey of consumers of fair trade grocery products. The behavioral beliefs cover a wide range of issues related to ethical/environmental consumerism (see Table 3-5).

Table 3-5

Behavioral Belief Items Used to Measure Attitude

Number	Item
	The following would result from my purchasing an organic cotton apparel product…
10A.1.	A fair price for organic cotton producers
10A.2.	More retailers selling organic cotton apparel products
10A.3.	Purchasing a product which is more expensive
10A.4.	A reduction in the use of pesticides
10A.5.	Increasing my peace of mind
10A.6.	Improving my health or the health of my family
10A.7.	Purchasing a product which Is not readily avialable
10A.8.	Supporting organic cotton producers
10A.9.	Supporting pro-environmental companies
10A.10.	Supporting organic farming
10A.11.	Purchasing a quality product

The outcome evaluations were measured by asking respondents to rate the

importance (1 = very unimportant to 7 = very important) "How important is each of the

following to you?" for each of the outcomes suggested in the behavioral beliefs.

Besides calculating the Cronbach's alpha for the measure created from these

items, there were two other steps taken to ensure that they reliably measured attitudes

toward organic cotton apparel purchases. First, these items were examined by an outside

professional associated with blended organic cotton apparel production to ensure that no

important "dimension" had been overlooked. Also, a single item measure of attitude,

adapted from Shaw et al. (2000), was also included in this study (item 7). "In general,

my attitude toward purchasing an organic cotton apparel product is…" (bad to good).

This item was included in order to allow a reliability check using the correlation of the

sum of the behavioral beliefs and outcome evaluations to the simple attitude statement as suggested by Azjen (1985).

Subjective Norm Toward Purchasing Organic Cotton Apparel

The variable of subjective norm in this study was also modeled on Azjen and Fishbein's (1980) theory of behavioral intention. The subjective norm was measured by responses to both normative beliefs and the motivation to comply with the important or referent others' normative beliefs. The items used to measure subjective norm for this study were adapted from Shaw et al. (2000). The normative beliefs measured by Shaw et al. (2000) covered a wide range of referent others related to ethical/environmental consumerism. Respondents rated each item on a scale from unlikely (1) to likely (7). The referent others included in this study were broadened by changing 'church' to 'religious organizations' (see Table 3-6).

Table 3-6

Normative Belief Items Used to Measure Subjective Norm

Number	Item
	How likely is it that the following groups think you should purchase organic cotton apparel?
9B.1.	Friends
9B.2.	Family
9B.3.	Religious organizations
9B.4.	Environmental or social responsibility organizations
9B.5.	Multinational corporations
9B.6.	Retailers who stock organic cotton apparel products

Motivation to comply was measured by asking respondents to rate their motivation to comply from not at all (1) to very often (7) with each of the important

others included in the normative beliefs. For example "How often, in general, do the following groups influence your opinions or actions?"

Like the single measure of attitude, Shaw et al. (2000) also included a single item measure of the subjective norm to compare to the multi-item measure, "Most people who are important to me think I should purchase organic cotton apparel products." (likely to unlikely). This single item was included in this study (item 8). Like attitude, this item was included in order to allow a reliability check using the correlation of the sum of the normative beliefs and motivation to comply to the simple subjective norm statement.

Clothing Attributes

The attributes of the clothing (a t-shirt) used in the conjoint profile were chosen to create a realistic product that consumers could meaningfully consider, as well as including those attributes of interest for the study. Rather than looking at attributes one at a time or in pair-wise comparisons, full-profile conjoint was used to ask respondents to evaluate the entire product, based on all the presented attributes, just as they might in the actual decision-making process (Hair, 1995). The use of a conjoint task allowed respondents to focus on attributes that are meaningful to them and ignore other attributes (Dickson et al. 2004).

The main attribute of focus for this study was the percentage of organic cotton content. This attribute was listed first in the profiles and included three levels. While adding to the complexity of the design and analysis of the conjoint task, this attribute needed at least three levels for a couple of reasons. First, because there is no information available about the relevant level of organic cotton content in organic conventional blends, there was no way to target just two levels and ensure that they were meaningful.

Secondly, because percentage is a continuous variable, having at least three levels would help to determine the appropriate structure of the model. Having three levels improved the determination of the shape (linear or quadratic) of the demand curve for percentage of organic cotton content.

The levels chosen for organic cotton content for the study were 5%, 45%, and 70%. These levels were chosen in part because there were currently apparel products available made with 5% and 45% organic content and because 70% organic content was the lowest level allowed for a label of 'made with organic cotton' by the OTA organic fiber handling, processing and labeling standard. The focus of the study was on blended organic cotton apparel and for this reason, the levels of 0% and 100%, while certainly realistic, were not used. For one thing, these levels would present the respondents with an "easy" out in the conjoint task by offering them products that seem familiar.

The second attribute included was price. Including this attribute was important because it provided the opportunity to understand the importance of the other attributes relative to the attribute of price, an important consideration for most consumers (Louviere et al., 2004). The two price levels chosen for this study were $15 and $18. The relative amount of both levels were chosen to reflect a typical price of organic cotton t-shirts. Also, because price can signal quality to consumers, it was important that the price level was high enough to remove any quality concerns for the respondents (Hill et al., 2006). The range of the prices was determined after several rounds of pre-testing with groups of student subjects to determine when the levels were distinct enough from each other to ensure the differences in prices were perceived by respondents.

The final two attributes consisted of additional labeling related to social responsibility and processing methods. An examination of producer members of the Organic Exchange organization showed several fiber and yarn producers are obtaining fair trade or fair labor certification (e.g., Skal International certification) for their products in addition to organic certification. Companies are allowed, according to FTC guidelines, to state the exact organic cotton content on the fiber content label sewn into garment at any level of organic content, as long as the claim is truthful. But, in order for products to be separately labeled (e.g. "100% organic") under the Organic Trade Association's new organic fiber handling, processing and labeling standard, they will also have to be certified that processing conditions meet the certification requirements. These standards are new, however, and many consumers will not be familiar with the difference between organic content and organic production indicated by the use of these labels.

One issue created by using the attribute of additional labeling was to create levels that were meaningful, both to the respondents and in analysis. Studies have shown that the amount of information (the number of attributes) presented to consumers for use during a decision-making task has an impact on the decision (Keller & Staelin, 1987). For this reason, if one level is the presence of a label, making the other level the lack of a label might tend to bias the respondents toward or against the profiles with more information. If instead, both levels were labeling of some type, the choice would reflect the respondent's interest in the information itself, rather than the mere presence or lack of more information.

The first labeling attribute used for this study was that of labeling for fairly traded fiber, a social responsibility issue. Fair trade labeling is familiar to many consumers

already, since fair trade coffee is available at coffee shops in cities across the United

States. The idea of fairly traded clothing may or may not be familiar to consumers, but

apparel is not currently being labeled for fairly traded fiber. The alternate level of social

responsibility labeling chosen was that of labeling for a donation to cancer research with

the purchase of a garment. Donations to cancer research are currently being touted by

manufacturers who also produce organic apparel products, suggesting that it may be an

alternative attribute of interest for some consumers (Nike, 2005).

The levels of the attribute of labeling for processing methods were developed in a

similar manner. While an important issue, it was not the purpose of this survey to

determine which labeling organizations are more salient to consumers.   For this reason,

organic processing was defined simply as 'the dyes and methods used to make this shirt

meet organic standards.' Like fair trade labeling, the alternate processing level, eco-

friendly, was also chosen based on product claims currently being made by

manufacturers. Labeling textiles as eco-friendly is more common in European countries

where they have certifying organizations, but may be of interest to American consumers

as well (Hyvarinen, 2001). Based on current use by advertising of eco-friendly clothing

by American retailers, eco-friendly processing was defined as 'the garment was made

using low-impact synthetic dyes that reduce water pollution." The term synthetic was

added to help distinguish the label from organic processing, which does not allow

synthetic chemicals.

Creating the profiles

Based on the number of attributes and levels selected (see Table 3-7), there were

24 (3x2x2x2) different possible profiles. However, 24 conjoint tasks would have been

too many to expect respondents to complete, along with the rest of the survey. For this reason, only eight profiles were included in each of four different versions of the questionnaire. Having four versions allowed all 24 profiles to be rated by respondents at least once.

Table 3-7

Attributes and Levels Used in Conjoint Profiles

Variables	Levels
Organic Content	5%
	45%
	70%
Price	$15
	$18
Social Label	Fair trade fiber
	$1 donated to cancer research
Processing Label	Organic processing
	Eco-friendly processing

The first version of eight profiles selected was an orthogonal design that included all of the main effects but did not include any interaction effects. There were no interactions hypothesized for the attributes and levels in this study and research has shown that a majority of the variance (up to 90%) in an experiment would be accounted for by the main effects (Hill et al., 2006). The orthogonal design used (see Table 3-8) was selected from a manual of experimental designs (Hahn, Shapiro, General Electric Company, & Research and Development Center, 1966).

Table 3-8

Orthogonal Selection of Profiles for Conjoint Task

Content	Price	Social	Processing
0	0	0	0
0	1	1	1
1	0	0	1
1	1	1	0
1	0	1	0
1	1	0	1
2	0	1	1
2	1	0	0

The levels for organic cotton content were 0=5%, 1=45%, and 2=70%. The levels for price were 0=$15 and 1=$18. The levels for social labeling were 0=fairly traded fiber and 1=$1 donatation to cancer research. The levels for processing labeling were 0=organic processing and 1=eco-friendly processing. The 16 profiles (out of 24) that were not selected for the version with the orthogonal profiles were divided into two groups and each used in another of the four versions. The two groups were chosen to be nearly orthogonal (see Table 3-9). They were orthogonal in the three attributes that have two levels, but not in the single three level attribute (organic cotton content).

Table 3-9

Remaining Profiles in Nearly Orthogonal
Arrangement

Content	Price	Social	Processing
0	0	1	0
0	1	0	1
0	0	1	1
0	1	0	0
1	0	1	1
1	1	0	0
2	0	0	0
2	1	1	1
0	0	0	1
0	1	1	0
1	0	0	0
1	1	1	1
2	0	1	0
2	1	0	1
2	0	0	1
2	1	1	0

Finally, the PROC OPTEX procedure in SAS software (SAS Institute, 1993) was used to select eight profiles based on the maximum statistical efficiency, using the D-efficiency, rather than orthogonality. These eight were included in the fourth version (see Table 3-10).

Table 3-10

D-Efficiency Profiles

Content	Price	Social	Processing
0	0	0	0
0	1	1	0
0	1	1	1
1	0	0	0
1	1	0	1
1	1	1	0
2	0	0	1
2	1	0	1

Each profile set was then randomized so that the profiles occurred in a random order at the beginning of each of the four survey versions. The four versions were distributed randomly to respondents in the sample.

Dependent Variables

Future Purchase Intention

Based on the theory of reasoned action, the dependent variable predicted by the variables of attitude and subjective norm was the behavioral intention (Ajzen & Fishbein, 1980). In the case of organic cotton apparel, the behavioral intention in question was that of purchasing organic cotton apparel products. For this reason, it was referred to as purchase intention. Placing a time constraint on the intention has been shown to improve the ability of attitude and subjective norm to predict the behavior itself by limiting the temporal context of the behavior (Eagly & Chaiken, 1993). An item adapted from Shaw et al. (2000), "The next time you go apparel shopping, how likely are you to purchase an

organic cotton apparel product?" was included, using a 7-point scale from likely (1) to unlikely (7).

Because some consumers may never have encountered an organic cotton apparel product while shopping, it was suggested by an organic industry consultant that a second purchase intention question be included. This second item asked respondents how likely they would be to purchase an organic cotton apparel product if they found one the next time they went shopping for apparel. This removed the issue of actually looking for an organic cotton apparel product, allowing respondents to focus on the actual purchase.

Likelihood of Purchasing a Specific Garment Profile

Respondents were asked to examine the eight conjoint profiles of t-shirts and rate their intentions to purchase each of the t-shirts. Respondents were told to imagine that the shirts were available in their favorite style and color. For each shirt they were asked to indicate "How likely would you be to buy this shirt?" (Dickson, 2001, p. 103). The scale of the rating was from 0 = "absolutely would not purchase" to 100 = "absolutely would purchase" the shirt.

Questionnaire Format

The questionnaire format was a 12 page 7" x 8 ½" booklet similar to that recommended by Dillman (2000). The cover of the questionnaire included a simple title and a list of the names and address of the sponsoring departments. A simple graphic of t-shirts was also used on the cover to help respondents remember the survey (e.g. when they received the "thank you" post-card).

The conjoint task was presented on the first three pages of the questionnaire because this section was the main focus of the study and helped to create a context for the

following questions. The general attitude and personal norm questions were followed by

the skepticism scale and the self-identity questions on page six. Purchase intention and

the single items measure of attitude and subjective norm were followed by the multi-

items scales to measure subjective norm and attitude. The final section of the

questionnaire included two questions using the choice format of conjoint and a page of

demographic items. The back page of the questionnaire was left open with only a single

open-ended question asking for comments on the survey. The return address and return

instructions were also included on the back cover. Every attempt was made to ensure the

questionnaire was attractive, professional and "user-friendly."

<div align="center">Mailing Procedures</div>

The mailing procedures included three mailings based on the recommendations of

Dillman's Tailored Design survey method (Dillman, 2000). The first mailing, sent in late

October of 2005, was 2905 survey packets mailed first class in a business size envelope.

The survey packet contained a cover letter (Appendix B), the questionnaire, and a

business-size, postage-paid return envelope. The questionnaire was marked with a

tracking code to facilitate follow-ups and to keep track of the date of return for response

analysis. The 2905 packets were randomly assigned one of four versions of the survey

using different conjoint profile sets, with n = 616 using the completely orthogonal

version, n = 779 using the first nearly orthogonal version, n=788 using the second nearly

orthogonal version and n = 722 using the d-efficiency version.

Approximately one week after the first mailing, a personally signed thank

you/reminder postcard was sent to 2905 names on the mailing list (see Appendix B). The

third and final mailing was sent approximately three weeks after the first mailing to all

names on the mailing list with valid addresses who had not returned their questionnaires.

This final mailing, sent in mid-November of 2005, included a replacement questionnaire,

a postage-paid return envelope, and a letter designed to convince the subjects that

stressed the importance of the response of each individual (Appendix B).

Data Analysis

Following the preliminary data analysis, the analytical thrust of this project

focused on two main tasks, descriptive analysis of the respondents and their preference

for the selected attributes followed by predictive analysis of the conceptual model. The

preliminary phase focused on examining the returned surveys for subject, item, and

section non-response. If a respondent did not answer more than 15% of the

questionnaire, they were considered a non-respondent. An exception to this 15% rule

was made for the conjoint task. Some respondents answered the rest of the survey, but

failed to complete the conjoint section in such a way that it could be analyzed. This

meant that while data from the behavioral section of their survey could still be analyzed,

the lack of conjoint data prevented analysis of the behavioral model that included a

comparison of respondents based on the conjoint data. For this reason, these respondents

were set aside for future analysis.

Returned surveys were also coded based on response date so that the results for

early respondents could be compared to those responding later, after the reminder notice.

Later respondents tend to look more like non-respondents and a comparison of the two

groups helps to determine if non-response bias was an issue (Dillman, 2000). To

determine whether there was a non-response bias, the means and frequencies of the

demographic data collected from late responders were calculated and compared with the

same statistics for early responders to assess whether there were significant differences. Following coding, means and frequencies of each item were calculated and examined in order to identify outlying responses.

Factor Analysis

Factor analysis, used to create summated measures from individual items with an underlying relationship, was conducted separately on the items comprising each variable or questionnaire section (Hill et al., 2006). These included: attitudes toward organic agriculture, the environmental impact of clothing production and organic and fair trade cotton or clothing products, the personal norm for purchase of organic cotton apparel products, skepticism of environmental product claims, consumer self-identity, the attitudes of others toward purchasing organic cotton products, the motivation to comply with the attitudes of others, attitudes toward outcomes related to purchasing organic cotton apparel products, and the importance of these outcomes.

In the case of this study, factor analysis was used as a data reduction tool on three types of items. The technique was used to determine if there was an underlying dimension to these items so that they could be reduced to one or two latent variables. The second instance in which factor analysis was useful was in the case of those variables, which had only previously been reported as single- or perhaps double- item variables. The intention of including three items in the survey to measure Personal Norm and five items to measure Self-Identity was to ensure that there were at least three items to include in measures created for both variables, improving reliability. Factor analysis was used to determine if these additional items did in fact represent a single dimension.

Finally, those items included or adapted from previously published scales, such as behavioral beliefs, were examined using factor analysis in case they contained any dimensions, such as purchase attitudes, that would be of specific application to the understanding of the conjoint experiment data.

The analysis itself was performed using the Principal Factor method of extraction, along with Varimax rotation, which simplifies the results while maintaining orthogonality (Hill et al., 2006). The Eigenvalues were examined to determine the appropriate number of factors. Factors with an Eigenvalue greater than one were kept for further examination. Factors were created from groups of items that had a factor loading over .5 that were not cross-loaded onto another factor. Cross-loading was determined by comparing the factor loadings of the item on each possible factor. Those items with factor loadings on more than one factor that were less than .2 apart in absolute value were considered cross-loaded and not included in any measures created from the factor. These rules ensured that the factors formed were less likely to be highly correlated, reducing the issue of multicolinearity in later analyses. In order to measure the internal reliability of each factor, Cronbach's alpha, a coefficient of inter-item correlation, was also calculated for each item.

Conjoint Analysis

Conjoint analysis using ordinary least squares (OLS) regression was used to decompose the dependent variable, the likelihood of purchasing a specific garment profile, into the individual respondent's parts-worth utilities for each of the attributes included in the conjoint task. The likelihood of purchasing a specific garment profile represents the total utility for a particular respondent j.

$$U(x_i) = \sum_{i=1}^{m} U_{ij}(x_{ij})$$

This total utility U, according to the random utility theory, is composed of the parts-worth utilities derived by the respondent from each attribute i at a particular level (Hair, 1995). For this study, the rated purchase likelihood (from 0 to 100) can be expressed using the regression equation below. The coefficients for the independent variables represent the parts-worth utilities for each attribute.

$$PL = b_0 + b_1\text{Price} + b_2\text{Organic} + b_3\text{Process} + b_4\text{FairTrade}$$

The first step in conducting the conjoint analysis was to code the profiles of the hypothetical products in order to allow for statistical analysis. Effects coding, a type of dummy variable allowing for a comparison of each level with the mean of all levels, was used to create the dummy variables for each of the attributes. Each of the attributes were coded using n-1 (where n = the number of levels) number of dummy variables. The three levels of organic cotton content were coded using two dummy variables; OrganicA (5% = -1, 45% = 1, 70% = 0) and OrganicB (5% = -1, 45% = 0, 70% = 1). The two levels of price were coded with one dummy variable ($15 = -1, $18 = 1). The two levels of the social labeling attribute were coded with one dummy variable (Fair Trade = -1, Cancer Research = 1), as was the processing labeling attribute (Organic = -1, Eco-Friendly = 1). The organic cotton content was also coded into a continuous variable using the percentages (0.05, 0.45, 0.70) to assist in the selection of the appropriate model.

The next step in analyzing the conjoint data was to identify the most appropriate

statistical model that would be used for determining the relationships of the part-worths.

Two of the four attributes used in the model, social and processing labeling, were

categorical. Categorical attributes must be modeled using dummy variables, which are

called separate part-worths in conjoint analysis. The attributes of price and organic

content are actually continuous and while modeled using dummy variables, could also be

modeled by linear or quadratic variables, called linear and ideal-point part-worths (Green

and Srinivasan, 1978). A model with more than one type of part-worth is called a mixed

model.   The three possible models, the separate part-worths, a linear and a quadratic

mixed models were tested empirically to aid in selection of the best model. Following

selection of the model, the individual part-worths were calculated.

Cluster Analysis

The part-worth utilities derived from the ordinary least squares regression of the

purchase likelihood for each individual would not be terribly useful in understanding how

to market organic cotton apparel. Groups of consumers, market segments, were used as

the basis for a reduction of individual data into four groups of consumers. Using k-means

cluster analysis, the respondents were grouped based on the similarity of the part-worth

utility they placed on each of the four attributes. Because k-means cluster analysis is a

non-hierarchical clustering method, the number of clusters was specified prior to analysis

(Hair, 2006).

Four sets of clusters, containing between two and five clusters, were examined to

determine the most appropriate number of clusters. With no specific statistical criteria

generally used to determine the correct number of clusters, the choice of the best number

of clusters was based on whether or not the chosen solution made theoretical or common sense, and also on the amount of variance accounted for by the clusters in each sets.

The main objectives of this study were to determine the salience of the percentage of organic cotton content in blended organic cotton apparel. For this reason, the size of the coefficient for organic cotton content in each of the clusters was the first basis of determination for the appropriate choice of cluster sets. The size of the clusters in each set was also taken into consideration, since some solutions produced clusters that comprised too small of a percentage to be useful for marketing.

Scaling of Part-Worth Utilities

The part-worth utilities were scaled to allow a meaningful comparison of their size, both within and between clusters. The method used, recommended by Hair, et al. (2006) was to scale the values so that the total of the scaled part-worths was equal to the number of attributes used in the conjoint. This, in effect, assigned a value of 1 to each attribute and then allowed the respondents in a cluster to re-allocate that value, the part-worth, to other attributes as they saw fit. The first step in scaling the part-worths was to set the lowest part-worth for each attribute to zero by adding or subtracting the lowest value from each part-worth. Next, all of the part-worths for each level of each attribute were added to determine the total value of the part-worths. Then, each part-worth was divided by this total and multiplied by 4, the number of attributes used for this conjoint analysis.

Analysis of Cluster Differences

The differences between the clusters were explored using the demographic characteristics and psychographic variables created earlier during factor analysis. The

means for each cluster were calculated and one-way analysis of variance was used to determine if the cluster differed in terms of these psychological variables. The following demographic variables; age, education, children under 18 at home and income were also included in the analysis of variance. The differences between clusters in terms of gender, a nominal variable, were calculated using chi-square analysis.

Predictive Data Analysis

The predictive portion of this study examined the ability of the conceptual model to predict purchase intention for organic cotton apparel during the next apparel shopping trip. The technique of predictive data analysis used in this study was multiple regression analysis. Multiple regression is a very popular technique that can be used to understand the relationship between a dependent variable and several independent variables (Hill et al., 2006).

The multiple regression was conducted using regression equations derived from the conceptual model, meaning the entry of all the variables was predetermined rather than entered stepwise. In the instance where the purpose of the analysis was to compare forms of the model, the variables unique to the larger model were entered after the smaller model had been estimated. The amount of variance accounted for by each model was examined and the significance of the model was determined using the F-test. In the case of model comparisons, the F-test of the difference in R^2 between the models was used to determine if the difference was significant. The significance of the regression coefficients was determined using the p-values from the t-tests and the implications of the sign and magnitude of the standardized regression coefficients was considered. The standard for all tests of significance was at the 5% level ($p<.05$).

Regression Diagnostics

A correlation analysis was conducted prior to the multiple regression to check for multicolinearity, which would have been indicated by a high correlation (above .80). Q-Q plots of the residuals were examined after each regression to determine that the linear patterns indicated normality (see Ott & Longnecker, 2001).

Tests of Moderation and Mediation

Additional regression analyses were conducted on several of the variables to determine if they had a moderating or mediating effect on any other variables. Moderation and mediation are two different effects that an independent variable can have on the relationship of another independent variable with the dependent variable. An independent variable (X_1) can be said to moderate another independent variable (X_2) when the moderator changes the "direction and/or strength" (p. 1174) of the relationship between the target variable (X_2) and the dependent variable (Baron & Kenney, 1986). This moderation effect would mean, for example, that if Skepticism were a moderator of Personal Norm when Skepticism was included in a model of Purchase Intention along with the Personal Norm, it would have the ability to change the sign or magnitude of the coefficient for the Personal Norm. The method of testing for the moderator effect by the suspected variable (X_1) is to run an additional regression model that includes an interaction term (X_1*X_2) for the moderator and the target variable. If the model that includes this interaction term fits significantly better than a model without this term, then the moderation effect is confirmed (Baron & Kenney, 1986).

An independent variable (X_1) can be said to be a mediator when some of the effect of another independent variable (X_2) on the dependent variable is passed on to the

dependent variable through the mediator (X_1). For example, if Self-Identity were to play

a role in the formation of Attitude along with the formation of Purchase Intention, and the

effect of Self-Identity on Attitude changed how Attitude predicted Purchase Intention, the

Attitude could be said to mediate the relationship between Self-Identity and Purchase

Intention. A mediator is different from a moderator because a moderator only has to

affect the relationship of the independent variable (X_2) with the dependent variable but

does not also have to be predicted by the independent variable, unlike the mediator.

.Many researchers hypothesize that the mediator (X_2) would completely remove any

independent effect of the other variable (X_1), but in the case of exploratory variables,

such as Self-Identity, this is an unrealistic expectation (Baron & Kenney, 1986). The test

of mediation is to confirm first that the independent variable (X_1) can significantly

predict the mediator (X_2) and that the mediator can significantly predict the dependent

variable. Next, the relationship of the independent variable (X_1) with the dependent

variable is examined in a model that also includes the mediator (X_2). If the magnitude of

the relationship of the independent variable and the dependent variable is reduced when

the mediator is included in the model, then a mediating relationship is confirmed (Baron

& Kenney, 1986).

<div align="center">Statement on the Use of Human Subjects</div>

Before any pre-testing and prior to the actual survey, an application for the use of

human subjects was submitted and approved by the Internal Review Boards (IRB) at

Kansas State University and at the University of Delaware (See Appendix C). The IRB

determined that participants' rights and welfare were protected, informed consent was

obtained from every participant, steps were in place to ensure that the confidentially of

the participants and their responses, and that no part of the study caused any risk or

discomfort to the participants.

CHAPTER 4: RESULTS

This chapter details the preliminary analyses conducted on the survey data followed by the product development and marketing portion of the study using conjoint and cluster analysis and finally the predictive analysis of the conceptual model using multiple regression analysis. The first objective of this study was to determine the organic apparel product attributes (e.g. percentage of organic cotton, certification type and price) that were salient to consumers. The second objective was to identify and characterize market segments interested in blended organic cotton apparel products. The third and final objective was to test a model of altruistic consumer behavior.

The first step of the preliminary data analysis following coding was to examine the responses to remove any questionnaires that were not complete enough to include in analysis. The questionnaires of respondents who failed to complete at least 90% of the psychographic items were removed from further statistical analysis. Those surveys that were incomplete in either the conjoint or choice task were kept for analysis of the psychographic variables not related to the conjoint, such as the exploratory factor analysis and reliability analysis of the variables. Finally, descriptive analysis was performed on each item to identify values that fell outside of the expected minimum and maximum in order to correct the coding in the useable questionnaires.

Response Rate

The total number of returned questionnaires was 577 out of 2846 questionnaires that were delivered (overall response rate of 20.1%). Of the 577 questionnaires, 422 were usable (14.9%).

Nonresponse and Incomplete Questionnaires

Of the 2905 surveys mailed in November of 2005, 2847 or 98% were deliverable. Of the returned surveys 136 (5%) were completely blank or blank except for comments. The letters included with both mailings of the surveys asked respondents to return a blank survey to indicate confidentially that they were not interested in participating in the survey. Participants who returned blank surveys prior to the mailing of the duplicate survey were not sent a duplicate survey. Comments included on the blank surveys mainly suggested that the respondents were not interested in the subject of organic cotton or did not feel themselves qualified to participate for some reason. Subtracting the blank surveys, the number of surveys completed or partially completed was 422, giving a final response rate of 14.9%. This response rate was not as high as those suggested as possible (30%) by Dillman in his book on survey administration (Dillman, 2000). At the very least, the poor response rate may be due to the timing of the survey, as the holiday season would not be a convenient time for respondents to complete a lengthy survey.

As suggested by Dillman (2000), an analysis was conducted to compare the first and second wave of respondents in terms of several socio-demographic and psychographic variables in order to better understand the non-respondents. Items measuring age, education, and income, as well as measures created for environmental attitudes, skepticism toward environmental product claims, and self-identity were used in one-way analyses of variance to examine whether there were any differences between the two waves of respondents. There were significant differences between two groups of respondents in terms of education. The first wave of respondents was more educated (3.79) than the second wave (3.45). This suggests that the topic or format of the survey

may have been slightly more appealing to respondents with more education. They may have felt motivated by a desire to help university research.

Chi-square analysis of gender found that the first wave consisted of a higher proportion of females (56%) than expected and the second wave consisted of a higher proportion of males (59%) than expected. This was not surprising considering the topic of the study was apparel, thus the men who received the study were probably less interested in the topic.

The potential difference between respondents and non-respondents suggested by this analysis were not particularly troubling in terms of the marketing objectives of this study, since the market for organic cotton apparel is most certainly more educated and more female than the general population. These results, along with the nature of the sample, should be kept in mind, however, when generalizing the theoretical results.

Respondent Demographics

The demographics of survey respondents are summarized in Table 4-1. The age of participants ranged from 25 to 90; the average age was 57 years. When broken down into categories, the majority of respondents fell in the 45 to 64 year age category. While the survey was limited to those over 18 years of age, no one under the age of 25 responded. The number of respondents over the age of 65 was larger than those under

Table 4-1

Overall Demographic Characteristics

Characteristic	f	% Frequency
Age		
24 and Under	0	0.0
25 to 44	71	16.8
45 to 64	220	52.1
65 and Over	114	27.0
Gender		
Male	202	47.9
Female	210	49.8
Education		
Completed elementary school (grades 1 through 8)	3	0.7
Completed high school (grades 9 through 12)	81	19.2
1-3 years technical, vocational, or college	145	34.4
Completed baccalaureate degree	74	17.5
Some graduate work	35	8.3
Completed graduate degree	73	17.3
Children under the age of 18 living in the home		
No	325	77.0
Yes	87	20.6
Income		
Less than $10,000	7	1.7
$10,000 to $24,999	40	9.5
$25,000 to $49,000	100	23.7
$50,000 to $74,999	89	21.1
$75,000 to $99,999	55	13.0
$100,000 and over	70	16.6

the age of 45. The sample, therefore, is skewed toward older respondents. (This means it would be more appropriate to generalize the results for older consumers.)

The gender of respondents was fairly evenly divided between male (47.9%) and female (49.8%) with 2.4% of respondents declining to specify gender. More than half of respondents did not report having completed a baccalaureate degree. Less than one percent reported not completing high school, while 19 % reported high school as their highest level of education completed. Of the approximately 43 % of respondents who completed a college degree, 59 % had been engaged in gradate education at some point, with 17 % of overall respondents reporting a completed graduate degree

Fourteen percent of respondents declined to answer the questions about income. Of the 361 respondents who answered the question, 35 % reported a total before tax household income of $49,000 or less and 17 % reported a total before tax household income of $100,000 and over. Only 7 respondents (1.9% of all respondents) reported an annual household income of less than $25,000 in 2004. The largest single income category was those respondents reporting a 2004 annual household income of $25,000-$49,000.

A comparison of the demographics of the survey respondents with the demographics of the population as a whole is helpful for understanding the demographics of the sample. The respondents were somewhat older (*M*= 57 years) than the general population. Approximately 49% of Americans 18 and older were 45 years old and older (U.S. Census Bureau, 2004). When broken down into categories (see Table 4-2) the largest age group in the general population was under 24, with 24 to 44 being the next largest. The largest age group of respondents for this study, on the other hand was 45 to

Table 4-2

United States Demographic Characteristics

Characteristic	% Frequency
Sex	
Male	48.9 %
Female	51.1
Age	
Under 24 years	34.8 %
25 to 44 years	28.8
45 to 64 years	24.5
65 and Over	12.0
Education	
Less than 9th grade	6.3 %
9th to 12th grade, no diploma	9.8
High school graduate (including equivalency)	29.5
Some college, no degree	20.3
Associate degree	7.1
Bachelor's degree	17.2
Graduate or professional degree	9.9
Percent high school graduate or higher	83.9 %
Percent bachelor's degree or higher	27.0
Households with one or more people under 18 years	35.2 %
Household Income	
Less than $10,000	8.9 %
$10,000 to $24,999	18.6
$25,000 to $49,999	27.5
$50,000 to $74,999	19.0
$75,000 to $99,999	11.1
$100,000 and over	15.0

From U.S. Census Bureau. 2004

64, with the next largest group being 65 and over. The fact that respondents were older

than the average U.S. citizen may be explained by sample (health and natural foods

consumers). While it is possible that the population of consumers interested in health and

natural foods is somewhat older than the general population, recent studies have found

that organic food consumers are no longer much different from the general population in

terms of their demographics (Dimitri & Oberholtzer, 2005).

   The percentage of female respondents was similar to the U.S. average of 51.1%

in 2004 (U.S. Census Bureau, 2004). A majority (77.0%) of respondents did not have

children under the age of 18 living in their home. This was somewhat higher than the

general population (64.8%) but may be explained by the greater number of older

respondents, likely past the age where children live at home.

   The level of education reported by respondents was higher than the national

average. Only 27 percent of the general population have completed a bachelor's degree

or higher, compared to 43 percent of the sample. Conversely, fewer people in the sample

reported a high school diploma as their highest degree (19.2%) compared to 29.5 percent

of the general population. Respondents reported receiving a graduate degree at a rate

(17.2%) nearly twice the national average (9.9%).   The high level of education in the

sample may also be attributable in part to the sample used for the survey. Interest in

health and natural foods may be more prevalent among more highly educated consumers.

   Far fewer of the respondents in the study reported an income lower than $50,000

(34.9%) than in the general population (55%). The percentage of respondents reporting

incomes over $100,000 (16.6%) was very similar to the national average (15%). If the

respondents who did not report income are excluded, the percentage of respondents

reporting an annual pre-tax income above $50,000 was around 14% higher than the national average (45.1%).

Finally, because the sample was stratified by state population, the geographic distribution of the respondents was also examined. The number of responses from each geographic region were compared to the number of responses that would be expected based on the number of survey sent to the region. Fewer responses than expected were received from the Northeast (-3.91%) and the South (-1.79%), while more responses than expected came from the Northwest (2.27%) including Alaska and the Southwest (2.40%) including Hawaii. While these geographic differences are slight, this would seem to suggest that consumers in the western half of the United States were more interested in organic cotton apparel products.

The results of the analysis of the demographic data show that the respondents in the study were older, more highly educated and better off financially than the typical American consumer. The fact that the sample was skewed in this direction means that the results will be better generalized toward this part of the U.S. population.

Respondent Psychographics

While the demographics may be helpful in understanding some of the more basic motivations of organic cotton apparel consumers, the psychographic variables provide insight into the psychology of consumers, helping to predict behavior or understand market segments for organic cotton apparel.

Exploratory factor analysis was conducted separately on the items comprising each psychographic variable or questionnaire section. These included: attitudes toward the environmental impact of clothing production, organic agriculture and organic and fair trade cotton or clothing products, the personal norm for purchase of organic cotton apparel products, skepticism toward environmental product claims, consumer self-identity, the attitudes of others toward purchasing organic cotton products, the motivation to comply with the attitudes of others, attitudes toward outcomes related to purchasing organic cotton apparel products, and the importance of these outcomes. The names of the resulting factors were selected either based on the latent variables they were designed to measure or on the issues the items seemed to have in common. What follows is a discussion of the analysis of each set of items and tables showing the factors loadings for each of the resulting factors.

General Attitudes

Factor analysis of the eleven items measuring general attitudes related to organic agriculture, organic clothing, and the impact of clothing production on the environment found three factors (see Table 4-3).

Table 4-3

Factor Loadings of General Attitude Items

Items	Factor Loading
Factor 1: Environmental Attitudes	
2.3. The dyes and chemicals used in apparel production can be harmful to the environment	0.73
2.1. Organic agriculture is good for the environment	0.66
2.2. Sustainable agriculture is important to me	0.60
2.4. I prefer to "buy locally"	0.58
2.5. I am concerned about the impact of clothing production on the environment	0.57
Eigenvalue=3.70 Variance accounted for=33.67% Cronbach's alpha=.69	
Factor 2: Clothing Attitudes	
2.9. I would go out of my way to buy organic clothing	0.89
2.10. I would buy organic clothing to help support organic farming	0.74
2.12. I would go out of my way to buy clothing produced from fairly traded fibers	0.72
Eigenvalue=1.30 Variance accounted for=11.80% Cronbach's alpha=.79	
Factor 3: Fair Trade Attitudes	
2.11. Government subsidies of U.S. cotton producers are unfair to farmers in developing countries	0.83
2.7. Cotton producers in foreign countries do not get a fair price for their cotton.	0.62
Eigenvalue=1.04 Variance accounted for=9.46% Cronbach's alpha=.44	

Environmental attitudes. A variable that was named Environmental Attitudes was created from the five items loading onto the first factor. A Cronbach's alpha of .69 was just below the level of .70 desired for multiple-item measures, however a Cronbach's alpha as low as .60 is often used in exploratory research (Hill et al., 2006). This factor accounted for 33.67% of the variance among these items with an Eigenvalue of 3.70. The values for each item were summed and then divided by five to return the scale to values ranging from one to seven. The responses for this variable had a mean of 5.73 (SD= .89), indicating that respondents agreed that organic agriculture is good for the environment and that sustainable agriculture is important.

Clothing attitudes. Another variable that was named Clothing Attitudes was created from the three items loading onto the second factor (see Table 4-3). Reliability analysis indicated the measure of Clothing Attitudes was internally reliable ($\alpha = .79$). This factor accounted for 11.80% of the variance between the items. The values for each item were summed and then divided by three to return the scale to values ranging from one to seven. The responses for this variable had a mean of 4.55 (SD= 1.30), indicating that respondents slightly agreed that they would go out of their way to buy organic or fair trade clothing with the aim of supporting organic farming.

Fair trade attitudes. A final factor was identified from the two items related to fair trade attitudes (see Table 4-3). This factor accounted for 9.46% of the variance between the items. Reliability analysis indicated a measure created from these items was not reliable enough for even exploratory research ($\alpha = .44$), so it was not used for further analysis.

Personal Norm

The three items measuring the personal norm for organic cotton apparel purchase all loaded onto a single factor with a Cronbach's *alpha* of .89 (refer to Table 4-4). This factor accounted for 80.54% of the variance between the items. The values for each item were summed and then divided by three to return the scale to values ranging from one to seven. The mean for the variable called Personal Norm was 4.14 (SD=1.44), indicating overall that respondents were neutral in their agreement with statements about their obligation or responsibility to purchase of organic cotton apparel products.

Table 4-4

Factor Loadings of Personal Norm Items

Items	Factor Loading
2.8. I have a responsibility to purchase organic cotton apparel products.	0.92
2.6. I feel that I have an ethical obligation to purchase organic cotton apparel products.	0.92
2.14. I am personally obligated to purchase organic apparel products.	0.88
Eigenvalue=2.47 Variance accounted for=80.54% Cronbach's alpha=.88	

Skepticism Toward Environmental Product Claims

The five items included to measure skepticism toward environmental product claims all loaded onto a single factor, (see Table 4-5). Reliability analysis showed that the Cronbach's *alpha* of the measure was .72. The factor accounted for 48.27% of the variance between these five items. The values for each item were summed and then

divided by five to return the scale to values ranging from one to seven. The mean for the variable called Skepticism was 3.83 (SD= .78), indicating that on average, respondents neither agreed nor disagreed with statements about the truth of environmental claims in product advertising or labeling.

Table 4-5

Factor Loadings of Skepticism Toward Environmental Claim Items

Items	Factor Loading
3.5. I do not believe most environmental claims made on product labels or in advertising	0.84
3.4. Most environmental claims on product labels or in advertising are intended to mislead rather than inform consumers.	0.82
3.2. Environmental claims made on product labels or in advertising are exaggerated.	0.64
3.1. Most evironmental claims made on product labels or in advertising are true.*	0.62
3.3. Consumers would be better off if environmental claims on product labels or in advertising were eliminated	0.54
Eigenvalue=2.45 Variance accounted for=48.27% Cronbach's alpha=.72	

* This item has been reversed coded.

Self-Identity

The five items related to consumer self-identity all loaded onto a single factor (see Table 4-6). Reliability analysis ($\alpha = .84$) indicated the five items reliably measured a common variable. This factor accounted for 63.57% of the variance between these items. The values for each item were summed and then divided by five to return the scale to values ranging from one to seven. The mean for the resulting variable, called Self-

Identity, was 5.32 (SD= .96), indicating that respondents somewhat agreed that their

identity was as socially responsible, organic or environmental consumers.

Table 4-6

Factor Loadings of Consumer Self-Identity Items

Items	Factor Loading
4.2. I think of myself as an 'environmental consumer'.	0.88
4.4. I am a socially responsible consumer.	0.81
4.5. I think of myself as someone who is concerned about environmental issues.	0.79
4.3. I think of myself as an 'organic consumer'.	0.77
4.1. I think of myself as someone who is concerned about social issu	0.71
Eigenvalue=3.13 Variance accounted for=63.57% Cronbach's alpha=.84	

Subjective Norm

The subjective norm, a variable used in the theory of reasoned action (Azjen &

Fishbein, 1980), was measured using the product of two sets of variables, the normative

beliefs about the opinions of others and the motivation to comply with those opinions.

For the purpose of exploration of the conjoint data, factor analysis was performed on the

normative beliefs and motivations to comply separately, rather than on the subjective

norm itself. The subjective norm created from the product of these two sets of variables

was used in the model of consumer behavior in the second portion of this study.

Normative beliefs. Normative beliefs ranged from the intimate attitudes of family and friends to the more formal attitudes of organizations such as church and multinational corporations. The factor analysis of the normative beliefs indicated that they could be separated into two factors, see Table 4-7.

Table 4-7

Factor Loadings of Normative Belief Items

Items	Factor Loading
Factor 1: Informal Normative Beliefs	
How likely is it that the following groups think you should purchase organic cotton apparel?	
9A.2. Family	0.88
9A.1. Friends	0.87
9A.3. Religious organization	0.70
Eigenvalue=2.75 Variance accounted for=45.89% Cronbach's alpha=.79	
Factor 2: Formal Normative Beliefs	
How likely is it that the following groups think you should purchase organic cotton apparel?	
9A.6. Retailers who stock organic cotton apparel products	0.89
9A.4. Environmental or social resonsibility organizations	0.85
Eigenvalue=1.24 Variance accounted for=20.58% Cronbach's alpha=.78	

Three items related to informal normative others (friends, family and religious organizations) loaded most strongly onto the first factor. The measure of Informal

Normative Beliefs had good reliability ($\alpha = .79$) and accounted for 45.89% of variance between all the items. The values for each of these items were summed and then divided by three to return the scale to values ranging from one to seven. The resulting variable was called Informal Normative Beliefs. The respondents found it neither likely nor unlikely that informal normative groups would think they should purchase organic cotton apparel ($M= 3.58, SD = 1.32$).

The two items related to the formal normative groups loaded onto the second factor. The measure of Formal Normative Beliefs also had good reliability ($\alpha = .78$). The values for each item were summed and then divided by two to return the scale to values ranging from one to seven. This variable was called Formal Normative Beliefs. Respondents felt it somewhat likely that the formal normative group would think they should purchase organic cotton apparel ($M= 5.34, SD = 1.54$).

Motivation to comply. The items that measured the respondent's motivation to comply with the various groups measured in the subjective beliefs were all loaded onto one factor with high reliability ($\alpha = .81$, see Table 4-8). This factor accounted for 51.80% of the variance between the items. The values for each item were summed and then divided by six to return the scale to values ranging from one to seven. The measure created from these six items, called Motivation to Comply, indicated that the respondents somewhat seldom found their opinions or actions to be influenced by the six selected normative groups ($M=3.49, SD = 1.22$).

Table 4-8

Factor Loadings of Motivation to Comply Items

Items	Factor Loading
How often, in general, do the following groups influence your opinions or actions?	
9B.1. Friends	0.79
9B.2. Family	0.79
9B.4. Environmental or social responsibility organizations	0.74
9B.3. Religious organizations	0.68
9B.5. Multinational corporations	0.63
9B.6. Retailers who stock organic cotton apparel products	0.61
Eigenvalue=3.02 Variance accounted for=51.80% Cronbach's alpha=.81	

Attitudes Toward Organic Cotton

Like the measure of subjective norm, the measure of attitude used in the theory of reasoned action (Azjen & Fishbein, 1980) is comprised of the sum of the product of behavioral beliefs and the importance of those beliefs. At this stage, however, the items were analyzed separately to derive the most information. The combined measure of attitudes was used in the model of consumer behavior in the second portion of this study.

Behavioral beliefs. The eleven items measuring behavioral beliefs about the purchase of organic cotton products loaded onto two factors (see Table 4-9). The measure also had good reliability ($\alpha = .83$) and accounted for 46.52% of the variance between all eleven items.

Table 4-9

Factor Loadings of Behavioral Belief Items

Items	Factor Loading

Factor 1: Self-Centered Behavioral Beliefs

The following would result from my purchasing an organic cotton apparel product.

10A.6.	Improving my health or the health of my family	0.88
10A.5.	Increasing my peace of mind	0.76
10A.11.	Purchasing a quality product	0.72
10A.1.	A fair price for organic cotton producers	0.69
10A.4.	A reduction in the use of pesticides	0.65

Eigenvalue=5.12
Variance accounted for=46.52%
Cronbach's alpha=.83

Factor 2: Altruistic Behavioral Beliefs

The following would result from my purchasing an organic cotton apparel product.

10A.8.	Supporting organic cotton producers	0.73
10A.9.	Supporting pro-environmental companies	0.72
10A.3.	Purchasing a product which is more expensive	0.71
10A.10.	Supporting organic farming	0.70
10A.7.	Purchasing a product which is not readily available	0.63

Eigenvalue=1.44
Variance accounted for=13.11%
Cronbach's alpha=.80

The five items loaded onto the first factor all related in some way to the potential personal benefits that might be derived from purchasing organic cotton apparel. The values for each of the items were summed and then divided by five to return the scale to values ranging from one to seven. The measure called Self-Centered Behavioral Beliefs had a mean of 5.28 (SD = 1.26), indicating that respondents slightly agreed with statements that each of the benefits would result from their purchasing an organic cotton apparel product. The measure also had good reliability (α = .83).

Five items also loaded onto the second factor (see Table 4-9). Three of the five items related directly to the benefits (support in this case) for others that would result from the purchase of organic cotton apparel. The other two items loaded onto this factor, "Purchasing a product which is more expensive" or "…not readily available" relate to the personal costs in time or money associated with organic cotton apparel purchase. This suggests that these costs are considered part of the altruistic behavior that benefits others in spite of costs to the self. The values for each item were summed and then divided by five to return the scale to values ranging from one to seven. The variable, called Altruistic Behavioral Beliefs, had good reliability (α = .80). This factor accounted for an additional 13.11% of the variance between the items. It had a mean of 5.06 (SD = 1.06), indicating that respondents agreed that each of the benefits to others or costs to themselves would result from their purchasing an organic cotton apparel product.

Importance of behavioral outcomes. The eleven items measuring the importance of outcomes measured in the behavioral beliefs about the purchase of organic cotton products also loaded onto two factors (see Table 4-10). Nine items loaded onto the first

Table 4-10

Factor Loadings of importance of Behavioral Outcome Items

Items	Factor Loading
Factor 1: Benefit Related Outcomes	
How important is each of the following to you?	
10B.6. Improving my health or the health of my family	0.77
10B.10. Supporting organic farming	0.76
10B.8. Supporting organic cotton producers	0.76
10B.2. More retailers selling organic cotton apparel products	0.76
10B.4. A reduction in the use of pesticides	0.72
10B.1. A fair price for organic cotton producers	0.68
10B.11. Purchasing a quality product	0.68
10B.9. Supporting pro-environmental companies	0.68
10B.5. Increasing my peace of mind	0.64
Eigenvalue=5.14 Variance accounted for=46.75% Cronbach's alpha=.89	
Factor 2: Cost Related Outcomes	
How important is each of the following to you?	
10B.3. Purchasing a product which is more expensive	0.82
10B.7. Purchasing a product which is not readily available	0.78
Eigenvalue=1.28 Variance accounted for=11.66% Cronbach's alpha=.59	

factor and two items loaded onto the second factor. The measure created from the first

factor was highly reliable (α = .91) and accounted for 46.75% of the variance between

the eleven items. The nine items loaded onto the first factor all related to the benefits derived for self and others from the purchase of organic cotton apparel. The values for all nine items were summed and then divided by nine to return the scale to values ranging from one to seven. The variable, called Benefit Related Outcomes, had a mean of 5.54 ($SD = .97$) indicating that respondents felt the outcomes of benefits to self and others, were important. The two items that loaded onto the second factor (see Table 4-10) were related to the costs, either time or money, associated with the purchase of organic cotton apparel. The Cronbach's *alpha* for this measure (.59) was just below the level considered acceptable for even exploratory research. For this reason, it was dropped from further analysis.

<div align="center">Behavioral Intention</div>

Two items were included in the questionnaire to measure behavioral intention. The first item asked respondents to indicate how likely they were to purchase an organic cotton apparel product the next time they go apparel shopping. Respondents indicated they were somewhat likely ($M = 4.71$, $SD = 1.5$) to purchase an organic cotton apparel product the next time they went shopping. Some consumers may never have encountered an organic cotton apparel product while shopping. For this reason, the second item asked respondents how likely they would be to purchase an organic cotton apparel product if they found one the next time they went shopping for apparel. As might be expected, the mean for this item (5.00, $SD = 1.28$) was slightly higher. The first item was called Search Intention, since it did not provide the respondents with the assumption that they would find an organic cotton apparel product. The second item was called Purchase Intention, since it allowed the respondents to assume that the decision to purchase did not depend

on searching for the product. The mean for both items indicated that respondents were somewhat likely to purchase organic cotton apparel products.

To summarize, the psychographic variables and the two types of purchase intentions provide a means to better understand the opinions and attitudes of the respondents in this study (see Table 4-11). While none of the values of these variables are extreme, it would be appropriate to characterize this sample as environmentally concerned and interested in the benefits that the purchase of organic cotton apparel could provide. They also agree that pro-environmental organizations or retailers of organic cotton products are likely to encourage them to purchase organic cotton apparel products. Respondents believe that the purchase of organic cotton apparel will have a direct impact on their lives, but also agree that it will support the organic apparel supply chain. Those surveyed agree that they are more likely to purchase organic apparel if they do not have difficulty finding it. The respondents only slightly agreed that they would go out of their way to purchase organic or fair trade clothing and they were neutral in terms of their personal obligation to purchase organic cotton apparel products. As a whole, they also neither agreed nor disagreed that they were environmental or organic consumers and they were neutral in terms of their skepticism of environmental product claims. Finally, while they neither agreed nor disagreed that important people in their lives, such as friends and family, would want them to buy it, they did somewhat disagree with the idea that they would be likely to comply with the opinions of these others or the more formal normative groups.

Table 4-11

Summary of Psychgraphic Variables

Variable	*M*	*SD*
Environmental Attitudes	5.73	0.89
Benefit Importance	5.54	0.97
Formal Normative Beliefs	5.34	1.54
Self-Centered Outcomes	5.28	1.26
Altruistic Outcomes	5.06	1.06
Purchase Intention	5.00	1.28
Search Intention	4.71	1.50
Clothing Attitudes	4.55	1.30
Self-Identity	4.32	0.96
Personal Norm	4.14	1.44
Skepticism	3.83	0.78
Informal Normative Beliefs	3.58	1.32
Motivation to Comply	3.49	1.22

Conjoint Analysis

The conjoint task was designed to allow the respondents to follow their own decision-making pattern and rate their purchase likelihood of hypothetical product/s based on the attribute/s that are salient to them.

Model Selection

The selection of the appropriate statistical model, based on the types of part-worths used, was the first step in the conjoint analysis. Two of the four attributes, price and organic content, could potentially be modeled by linear or quadratic variables, resulting in a mixed model. Choosing the appropriate type of part-worth involved first identifying possible theoretical support for one model over another (Hair, 2006). The

price variable was modeled using separate part-worths in at least two other conjoint

studies of apparel consumers (Auger et al., 2003; Dickson et al., 2004).

From a theoretical perspective, the levels of price were chosen to represent

moderate and high priced products, not to test specific pricing. This provides support for

using the separate part-worths to model the price. The content variable, on the other

hand, has not been previously used in apparel studies. While it does not seem likely, it

was possible that consumers would use the levels as a continuous variable (e.g. 5% has a

different relationship with 70% than 6% or 1% would). It was also possible that

consumers would see the content percentage as merely representing very small, small,

moderate, or large amounts of organic cotton. For this reason, the three possible mixed

models were tested empirically.

The first model was entirely composed of separate part-worths terms (see Table

4-12). The other two models were both mixed models. The second model, a quadratic

mixed model, contained two continuous variables for organic cotton content, Percent and

Percent Squared. The final model was the linear mixed model with only the continuous

Percent term used for organic cotton content. All three models explained the same

amount of variance in the data, according to the R-squared terms and the other variables

in the models (Price, Social and Processing) were also the same in each model. The only

differences between the models lay in the Organic Content variables.

Table 4-12

Regression Equations for Conjoint Using Part-Worth, Quadratic, and Linear Models

		Variables					
Type	Constant	Organic Content		Price	Social Label	Processing Label	R^2
		DummyA (-1 = 5%, 1 = 45%, 0 = 70%)	DummyB (-1 = 5%, 0 = 45%, 1 = 70%)	(-1 = $15, 1 = $18)	(-1 = Fair trade fiber, 1 = $1 donated to cancer research)	(-1 = Organic processing, 1 = Eco-friendly processing)	
Part-Worth	59.72***	1.57*	12.16***	-2.99***	-0.51	0.39	0.13
		Percent (.05 = 5%, .45 = 45%, .70 = 70%)	Percent Squared (.25 = 5%, .20 = 45%, .49 = 70%)				
Quadratic	41.22***	35.03***	6.41	-2.99***	-0.51	0.39	0.13
		Percent (.05 = 5%, .45 = 45%, .70 = 70%)					
Linear	40.86***	39.66***		-3.00***	-0.51	0.42	0.13

*p < .05. **p < .01. ***p < .001.

The squared percent of organic cotton content term in the quadratic model was not significant. This meant that the linear mixed model was the only alternative to the separate part-worths model. There was one other consideration in the choice of models, which was that this comparison of the models was based on the overall regression of all the respondents. A final consideration was that because cluster analysis to create market segments was also planned, the model selected at this phase should be suitable for that analysis as well. The cluster analysis was based on the regression coefficients for each individual, not the overall data set. So while the comparison of the models showed that overall set of respondents could be adequately modeled using the linear mixed model, it could not be assumed at this stage that this would hold true for any specific clusters created based on the individual regression equations. The separate part-worth model was chosen because it was the least restrictive model and would allow for clusters that did not have a linear relationship among the levels of the organic, which was a possibility (Hair et al., 2006).

Individual Part-Worths

Ordinary least squares (OLS) regression was used to decompose the dependent variable, the likelihood of purchasing a specific garment profile, into the individual respondent's parts-worth for each of the attributes included in the conjoint task. The ratings of purchase likelihood (PL) for each of the eight profiles were used to calculate the regression coefficients (the part-worths) in the following equation.

$$PL = b_0 + b_1 \text{OrganicA} + b_2 \text{OrganicB} + b_3 \text{Price} + b_4 \text{Social} + b_5 \text{Process}$$

The resulting coefficients in this equation can be used to calculate the purchase likelihood of each respondent for any possible combination of attribute levels of particular interest.

Cluster Analysis

K-means cluster analysis was used to group the respondents based on the similarity of the part-worth utility they placed on each of the four attributes. Four sets of clusters, containing between two and five clusters, were examined to determine the most appropriate number of clusters. The decision regarding which set of clusters (two through five) was based on whether or not the chosen set was appropriate for the study. While there are no statistical criteria that are generally used to determine the correct number of clusters, the amount of variance accounted for by the cluster sets, as measured by the r-squared values, was used to aid in the choice of a cluster set. The size of the resulting clusters was also examined. Sets with very small clusters would not be useful for marketing purchases. The solutions for two through five clusters, including the R-squared for each is shown in Table 4-13. Based on F-tests, all the equations were significant.

Table 4-13

Regression Equations for Two to Five Cluster Sets

Cluster	N	Constant	Organic A	Organic B	Price	Social Label	Processing Label	R^2
None	377	59.52***	1.65*	12.12***	-2.93***	-0.55	0.4	0.13***
Two	234	58.51***	3.06**	2.97**	-2.80***	-0.49	1.17	0.03***
	143	52.64***	-0.25	26.70***	-3.12***	-0.85	-0.71	0.48***
Three	175	57.59***	0.93	0.80	-3.27***	-2.08*	1.21	0.02***
	66	47.00***	-6.94***	34.49***	-3.43**	-1.71	-1.98	0.53***
	136	59.51***	6.72***	16.24***	-2.15*	1.97*	0.43	0.30***
Four	170	58.45***	0.26	2.32*	-4.08***	1.13	1.29	0.03***
	62	47.01***	-7.67***	35.00***	-4.48***	-0.43	-1.34	0.54***
	132	59.23***	7.29***	17.24***	-1.32	-2.38**	0.31	0.37***
	13	43.01***	8.47	-24.62***	2.46	-4.99	0.77	0.22***
Five	33	55.87***	5.39*	8.07**	-8.44***	12.76***	3.57	0.20***
	161	58.91***	-0.50	4.31***	-2.23**	-1.85*	1.13	0.03***
	104	59.97***	9.06***	20.51***	-1.52	-1.41	0.22	0.49***
	51	44.88***	-10.57***	36.36***	-4.42***	-1.72	-1.08	0.59***
	28	50.16***	5.53	-12.59***	-7.46***	-2.26	1.01	0.11***

* $p < .05$. ** $p < .01$. *** $p < .001$.

Each of the cluster solutions had clusters with significant coefficients for OrganicA and OrganicB. They each also had a cluster with a low r-square (from 0.02 to 0.03) and a high r-square (from 0.48 to 0.59). The clusters with the low r-square for each solution had a similar pattern of coefficients, but after the three cluster solution, the size of the low r-square cluster remained pretty much the same (from 161 to 170). The second organic cotton content coefficient, OrganicB, was where the difference between the clusters in the three cluster solution were most obvious. The four cluster solution had OrganicB coefficients with similar magnitudes that were of similiar size to the three cluster solution. The new, fourth cluster ($R^2 = 0.22$) was very small (n = 13) and had a negative OrganicB coefficient (b=-24.62). While a group that was more interested in 5% organic cotton was of interest, the cluster was not large enough to warrent using the four cluster solution. The slight increase in the r-square of some clusters in the four and five cluster solutions did not reduce the size of the cluster with the low r-square to any great degree. Overall, the three cluster solution provided the best balance of parsimony and meaningful differences between the clusters.

Market Segments

The three clusters represent potential marketing segments for organic cotton apparel products. The first observations made about the nature of these market segments were based on the sign and magnitude of each of the part-worths (see Table 4-14). One obvious pattern to the part-worths was that all of the clusters had a negative sign on the price variable, indicating that all groups preferred the lower price level to some degree. Not all of the price part-worths were statistically significant, however. The second cluster did not use the price to a significant degree.

Table 4-14

Regression Equations and Model Statistics for Likelihood of Buying by Clusters and Overall Sample

Cluster	Constant	Organic Content A (-1 = 5%, 1 = 45%, 0 = 70%)	Organic Content B (-1 = 5%, 0 = 45%, 1 = 70%)	Price (-1 = $15, 1 = $18)	Social Label (-1 = Fair trade fiber, 1 = $1 donated to cancer research)	Processing Label (-1 = Organic processing, 1 = Eco-friendly processing)	F	R^2
Cluster 1 (n = 175)	57.59***	0.93	0.80	-3.27***	-2.07**	1.21	6.50***	.02
Cluster 2 (n = 66)	47.00***	-6.94***	34.49***	-3.43***	-1.71	-1.98	117.23***	.53
Cluster 3 (n = 136)	59.51***	6.72***	16.24***	-2.15**	1.97*	0.43	94.57***	.30
Overall (N = 377)	56.52***	1.65*	12.12***	-2.91***	-0.55	0.41	86.67***	.13

* p < .05. ** p < .01. ** p < .001.

The content part-worths that were significant, those of cluster two and three, were positive and the largest of all the part- worths. The content variable was not statistically significant to the first cluster. The social label variable was significant to the first and third cluster, with similar magnitudes but opposite signs. The first cluster made greater use of the fair trade labeling and the third cluster made greater use of the cancer research labeling. Thus, while the social labeling part-worth was not significant for the overall regression, this was because there were two clusters with directly opposing values for the part-worths. The processing labeling was not significant for any cluster or overall. The primary difference in the clusters was in the Content variable, which was not significant to the first cluster and of different magnitudes for clusters two and three. This means that there is one cluster in this set that does not use organic cotton content in its purchase decisions and two other segments that use the organic cotton content, but to different extents.

Prediction of Future Organic Cotton Apparel Purchases

The regression equations developed for each cluster were used to understand how changes in the levels of each attribute would influence the likelihood of purchase by each market segment. The hypothetical shirt selected (45% organic cotton, $15, fair trade labeled, organic cotton labeled) was varied one attribute at a time to see how the likelihood of purchase changes. The appropriate effects codes for the hypothetical shirts were used, along with the regression coefficients, to calculate the purchase likelihood. Because the purchase likelihood of the shirt profiles in the questionnaire were rated by the respondents on a scale of 0 to 100, the ratings could be treated as percentages, so a rating of 62 for example would indicate a 62% likelihood of purchase. In fact, a number

of respondents used a percent symbol after their rating number, indicating that the implied use of a 0-100 rating was understood by some respondents.

Change in Purchase Likelihood Due to Organic Cotton Content

Holding all other attributes constant, when the level of organic cotton content was increased, the purchase likelihood of each cluster increased but by differing amounts (see Table 4-15). For cluster one, the likelihood of purchasing the hypothetical t-shirt decreased slightly (2.66%) when the level of organic cotton content was increased from 5% to 45%. It decreased slightly further to 2.52% when the level was raised to 70%. Recall however, that the part-worths for the organic cotton content were not significantly different from zero for this cluster. This cluster served as an illustration of why the separate part-worth model chosen earlier was appropriate. The unexpected relationship of the part-worths, where the part-worth for a higher level takes on a lower value, called a reversal, may not have been modeled adequately using a linear variable.

Table 4-15

Prediction of Purchase Likelihood for Shirts Varying in Organic Content

	Shirt A	Shirt B	Shirt C	Change in Likelihood of Purchasing Due to Higher Organic Cotton Content (5% to 45%)	Change in Likelihood of Purchasing Due to Higher Organic Cotton Content (5% to 70%)
	5% Organic Cotton (-1,-1) $15 (-1) Fair Trade Fiber (-1) Organic Processing (-1)	45% Organic Cotton (1,0) $15 (-1) Fair Trade Fiber (-1) Organic Processing (-1)	70% Organic Cotton (0,1) $15 (-1) Fair Trade Fiber (-1) Organic Processing (-1)		
Cluster 1	60.00 %	62.66 %	62.52 %	2.66 %	2.52 %
Cluster 2	26.56	47.17	88.60	20.62	62.04
Cluster 3	36.29	65.98	75.50	29.68	39.20
Overall Sample	45.81	61.23	71.70	15.41	25.89

The change in purchase likelihood for cluster two increased significantly (20.62%) when the percentage of organic cotton content was increased from 5% to 45%. The likelihood of purchase doubled to 88.60% when the organic cotton content was increased from 45% to 70%. While this response to the increase of organic cotton content seemed much greater that any of the other clusters, it should be noted that the likelihood of purchasing the hypothetical t-shirt with only 5% organic cotton was very low for this group, 26.56%, much lower than any other cluster. So while the purchase likelihood increased dramatically with the additional organic cotton, the resulting likelihood at 70% was actually13.10% higher than cluster two and 26.08% higher than cluster one.

The purchase likelihood of the third cluster increased as the percentage of organic cotton content was increased, but at a different rate than that of cluster two. When the organic cotton content was increased from 5% to 45%, the purchase likelihood increase was the largest, going from 36.39% to 65.98%. This was increase of almost 30%, which was 10% larger than the increase in cluster two with the corresponding change. When the hypothetical shirt was made with 70% organic cotton, members of cluster three rated their purchase likelihood as 75.50 on a scale of 0 to 100. This was only around a 10% increase in purchase likelihood for a 35% increase in the amount of organic cotton in the blend.

Change in Purchase Likelihood Due to Price

The same hypothetical shirt (45% organic cotton, $15, fair trade labeled, organic processing labeled) was next varied in price to determine how each of the clusters responded to an increase in the price of the shirt (see Table 4-16). It was not surprising

that, overall, the purchase likelihood went down somewhat (5.83%) when the price of the

shirt was increased from $15 to $18. The purchase likelihood of cluster one decreased

6.54% to 56.12% when the price was increased. Cluster two had a similar decrease in

price and was 6.86% less likely to purchase at the higher price. The group least

concerned about the price change was group three, whose purchase likelihood decreased

by 8.28%. The purchase likelihood of cluster two was lower than the other two clusters,

47.17% at 15%, and the increase in price put the purchase likelihood well below 50%

down to 40.32%.

Table 4-16

Prediction of Purchase Likelihood for Shirts Varying in Price

	Shirt A		Shirt B		Change in Likelihood of Purchasing Due to Higher Price
	45% Organic Cotton (1,0) $15 (-1) Fair Trade Fiber (-1) Organic Processing (-1)		45% Organic Cotton (1,0) $18 (1) Fair Trade Fiber (-1) Organic Processing (-1)		
Cluster 1	62.66 %		56.12 %		-6.54 %
Cluster 2	47.17		40.32		-6.86
Cluster 3	65.98		61.68		-4.30
Overall	61.23		55.40		-5.83

Change in Purchase Likelihood Due to Social Labeling

The part-worth for social labeling was only significant for cluster one and cluster

three, not cluster two or overall. Cluster one was 4.15% more likely to purchase the 45%

organic cotton shirt when it was labeled for fairly traded fiber and cluster three was

3.95% less likely to purchase the same shirt labeled for fairly traded fiber (see Table 4-

17). The social labeling was thus only slightly less determinant for the consumers in

these two clusters than an increase in price. Admittedly, neither attribute had as much

impact as the change in organic cotton content, at least for cluster two and three.

Table 4-17

Prediction of Purchase Likelihood for Shirts Varying in Labeling for Fair Trade Fiber

	Shirt A	Shirt B	Change in Likelihood of Purchasing Due to Fair Trade Fiber Label
	45% Organic Cotton (1,0) $15 (-1) $1 Donated to Cancer Research (1) Organic Processing (-1)	45% Organic Cotton (1,0) $15 (-1) Fair Trade Fiber (-1) Organic Processing (-1)	
Cluster 1	58.51 %	62.66 %	4.15 %
Cluster 2	43.76	47.17	3.41
Cluster 3	69.93	65.98	-3.95
Overall	60.12	61.23	1.10

Change in Purchase Likelihood Due to Processing Labeling

There were no clusters with a significant part-worth for processing labeling. This

lack of salience for either label suggests that either the labels did not seem different

enough to make one or the other more useful or the idea of processing labeling itself did

not seem important to the consumers. In any event, of the two processing labels tested,

neither eco-friendly processing ("this garment was made with low-impact synthetic dyes

that reduce water pollution") or organic processing ("the dyes and methods used to make

this garment meet organic standards") were useful to the consumers in the sample.

Scaling the part-worth values was the best way to compare their relative salience. The method used, recommended by Hair et al. (2006), was to scale the values so that the total of the scaled part-worths was equal to the number of attributes used in the conjoint. Each of the part-worths for each of the three clusters, plus the overall set of part-worths were scaled using this method (see Table 4-18).

Table 4-18

Scaled Part-Worths

Attribute/Level	Cluster 1	Cluster 2	Cluster 3	Overall
5%	0.00	0.00	0.00	0.00
45%	0.58	0.85	1.52	1.26
70%	0.55	**2.56**	**2.01**	**2.11**
$15	**1.43**	0.28	0.22	0.47
$18	0.00	0.00	0.00	0.00
Fair Trade	0.91	0.14	0.00	0.09
Cancer	0.00	0.00	0.20	0.00
Organic	0.00	0.16	0.00	0.00
Eco	0.53	0.00	0.04	0.07
Total	4.00	4.00	4.00	4.00

Seventy percent organic cotton was the largest part-worth over all and for clusters two and three. This means that the respondents' purchase likelihood was most influenced by a high level of organic cotton content. The largest part-worth for 45% organic cotton (1.52) was in cluster three, and was 20% larger than part-worth for the overall sample. The highest part-worth for price, specifically the lower price ($15) was for cluster one, which was almost two times larger than it was for the overall sample. This means the first

cluster was more concerned about the price than the other two clusters. The price part-worth was lowest for cluster two (0.22), just slightly larger than the part-worth for donations to cancer research (0.20), which means that members of this cluster were not as concerned about price. Of the other labeling, the fair trade part-worth in cluster one was more than fourfold larger than the part-worth for cancer research in cluster three.

Defining the Market Segments

Based on the examination of the change in purchase likelihood caused by the manipulation of the determinant attributes and a comparison of the scaled part-worths, conclusions were drawn about the nature of the marketing segments, allowing them to be preliminarily defined. Because the importance of the percentage of organic cotton content was the main focus of this study, this was the first criterion that was used to understand the clusters.

Indifferent Segment

In the case of cluster one, the fact that all of the organic cotton content levels were less important than both price and fair trade labeling meant that organic cotton content was not of concern to this cluster. For this reason, cluster one was called the Indifferent cluster. They were not indifferent to any of the hypothetical shirts, merely uninterested in using the organic cotton content to make their decision. However, the fairly traded fiber and the eco-friendly labeling were of some interest to this group.

The indifference of cluster one can be illustrated in Figure 4-1 as well, where it is clear that no one attribute used close to even half of the four scaled part-worths that could be allocated by the cluster members. This cluster had an r -square of 0.02, which was very low and much lower than the overall sample or the two other clusters. This means

that almost none of the variance in the rating (PL) of the members of this cluster was explained by the regression equation. For this reason, it was not appropriate to draw many conclusions about this market segment.
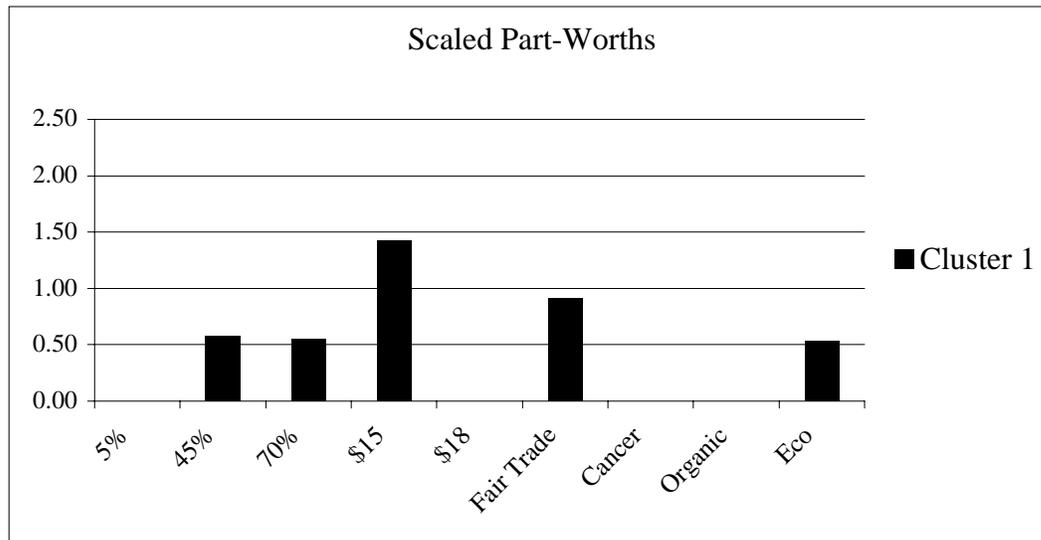
Figure 4-1: Scaled Part-Worths of Indifferent Cluster

The Indifferent cluster was the largest single cluster comprising almost half of the sample (46%, n=175). While they were indifferent to the organic cotton content, if the price of products offered to them is low enough, they would not be averse to purchasing small percentage blends.

High-Percentage Segment

In contrast with cluster one, where no single attribute dominated the decision-making of cluster members, cluster two was focused almost entirely on the organic cotton content. The single attribute of 70% organic cotton content used over half (2.56) of the four scaled part-worths available. In terms of the size of part-worths, the attribute of 45% organic cotton content was the next largest (0.85), but approximately a third the size of the 70% organic cotton content part-worth. The smaller but significant part-worths for

$15 (0.28) and the insignificant part-worths for fair trade and organic processing labeling (see in Figure 4-2) meant that content (45% and 70%) was the most important attribute to consumers in this market segment. Because the highest percentage was so much more important, this cluster was called the High-Percentage cluster.
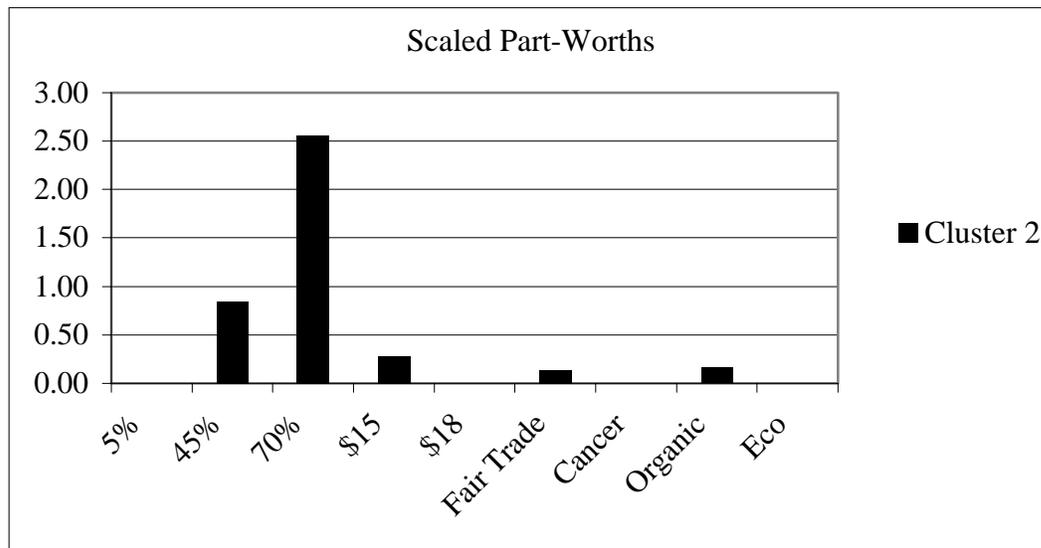
Figure 4-2: Scaled Part-Worths of High-Percentage Cluster

With 66 out of 377 respondents, the High-Percentage cluster was the smallest, but still important market segment at 17.5% of the overall. Increasing the likelihood of purchase for this market segment was accomplished primarily by an increase in the amount of organic cotton content in the apparel product. When the content was increased from 45% to 70%, they were 87% likely to purchase the t-shirt, which is a very high likelihood. And, while it is unadvisable to extrapolate outside the bounds of the levels used, it would seem that this market segment would be the most likely to be very interested in the 90-100% organic cotton product covered under the Organic Trade Association's organic processing guidelines. The fact that this cluster did not use the

processing labeling to any degree suggests that a listing of the percentage of organic

cotton content would be sufficient to secure a purchase by this segment.

Blend Segment

While twice as large (n=136), the last group of consumers was similar to the

High-Percentage segment in terms of the size of the part-worths of organic cotton content

relative to those of the other attributes. The part-worth for 70% organic cotton used more

(2.01) of the four available scaled part-worths than all the other part-worths combined.

The main difference between this cluster and the High-Percentage cluster was the size of

the part-worth for 45% organic cotton content (1.52). This final cluster of consumers was

interested in an increase in the organic cotton content. Like the High-Percentage cluster,

interest in the lower price, while significant, was small with a scaled part-worth of only

0.22. This is about the same size as the part-worth for the attribute of the $1 donation to

cancer research with the garment purchase (0.20).
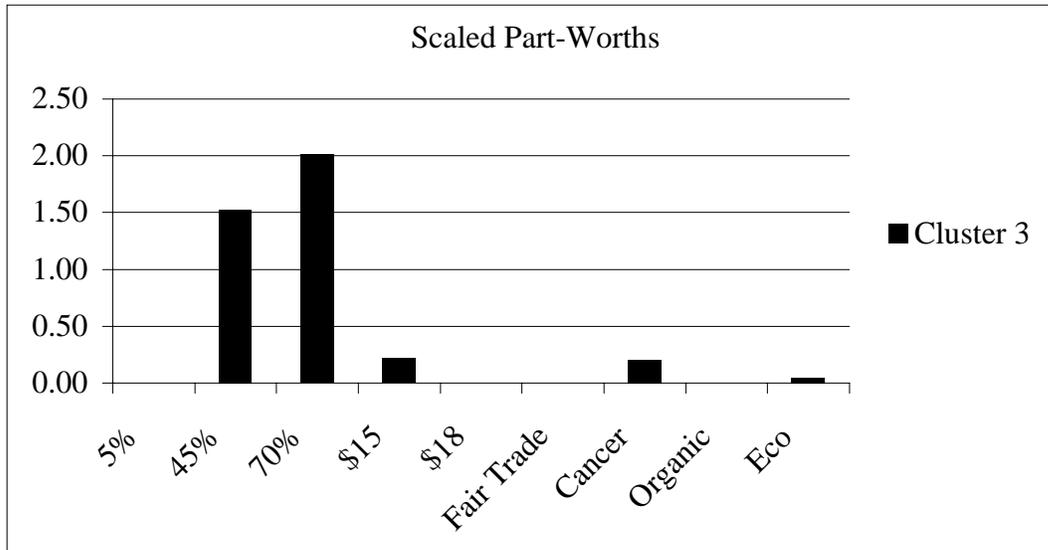
Figure 4-3: Scaled Part-Worths of the Blend Cluster

This market segment was almost twice as interested in the 45% blend as the High-Percentage cluster. Calling this cluster the Blend segment was a reflection of the contribution of the moderate blend to increasing the likelihood of purchase. The size of this market segment (36.1%) and their interest in the 45% blend meant that even a moderate increase in the organic cotton content in blends increased the purchase likelihood for more than a third of the sample, an important result for marketing purposes.

Having delineated the market segments in terms of the changes in purchase likelihood with changes in the attributes, and in terms of the relative sizes of the scaled part-worths, the analysis turned to describing the psychographic and demographic characteristics of the market segments.

Analysis of Segment Differences

Analysis of variance was used to determine if the segments differed significantly in terms of the psychographic and demographic variables. The two variables created

from the general attitude items using factor analysis were analyzed first, along with

Search Intention and Purchase Intention. The clusters means were significantly different

for Environmental Attitudes, Clothing Attitudes, Search Intention and Purchase Intention

(see Table 4-19).

Table 4-19

One-Way Analysis of Variance for Effects of Cluster Membership on General Attitude Variables and Purchase Intention

Variable and source	df	SS	MS	F
Environmental Attitudes				
Between groups	2	6.86	3.43	5.07 ***
Within groups	369	248.22	0.68	
Clothing Attitudes				
Between groups	2	32.02	16.01	10.29 **
Within groups	367	570.85	1.56	
Search Intention				
Between groups	2	50.17	25.09	12.55 ***
Within groups	369	737.40	1.998	
Purchase Intention				
Between groups	2	31.56	15.78	10.16 ***
Within groups	369	572.99	4.55	

*$p < .05$. **$p < .01$. ***$p < .001$.

     Analysis of variance for the rest of the psychographic variables showed that only

the means for Skepticism, Formal Normative Beliefs, and Motivation to Comply did not

differ significantly between the clusters (see Table 4-20). The lack of difference between

the clusters in terms of Skepticism means that the data failed to support the hypothesis

(H7) that "respondents who use credence attributes (organic cotton content labeling,

social labeling, processing labeling) in their purchase intentions will have significantly

Table 4-20

One-Way Analysis of Variance for Effects of Cluster Membership on Nine Psychographic Variables

Variable and source	*df*	*SS*	*MS*	*F*
Personal Norm				
Between groups	2	28.56	14.28	7.16 **
Within groups	368	733.41	1.99	
Skepticism				
Between groups	2	1.86	0.93	1.54
Within groups	368	221.97	0.60	
Self-Identity				
Between groups	2	6.38	3.19	3.76 *
Within groups	370	313.78	0.85	
Self-Centered Outcomes				
Between groups	2	19.52	9.76	8.37 ***
Within groups	351	409.53	1.17	
Altruistic Outcomes				
Between groups	2	13.80	6.90	7.07 **
Within groups	350	341.51	0.98	
Benefit Importance				
Between groups	2	11.94	5.97	7.13 **
Within groups	359	300.39	0.84	
Informal Normative Beliefs				
Between groups	2	12.86	6.43	3.78 *
Within groups	368	625.29	1.7	
Formal Normative Beliefs				
Between groups	2	8.30	4.15	1.87
Within groups	368	817.00	2.22	
Motivation to Comply				
Between groups	2	0.65	0.33	0.23
Within groups	371	534.79	1.44	

* $p < .05$. ** $p < .01$. *** $p < .001$.

lower levels of skepticism than those who do not." If Skepticism were related to the use of credence attributes, there should be some difference between the segments. The Indifferent segment did not use the credence attribute to determine their likelihood of

purchase, unlike the High-Percentage and Blend segments. The segments are also different in terms of the social labeling, with the Indifferent and Blend segments using the social labeling while the High-Percentage segment did not. None of the clusters used the processing attribute.

The analysis of variance for the demographic variables showed that the clusters did not differ in terms of age, education, income, or the presence of children at home (see Table 4-21)

Table 4-21

One-Way Analysis of Variance for Effects of Cluster Membership on Demographic Variables

Variable and source	df	SS	MS	F
Age				
Between groups	2	1.20	0.56	1.37
Within groups	358	156.41	0.44	
Education				
Between groups	2	1.61	1.44	0.77
Within groups	362	676.61	1.87	
Children in the Home				
Between groups	2	0.12	0.06	0.35
Within groups	363	61.26	0.17	
Income				
Between groups	2	3.89	1.95	1.08
Within groups	320	573.91	1.79	

$* p < .05. ** p < .01. *** p < .001.$

The differences between clusters based on gender, a nominal variable, were analyzed using chi-square. There were no significant differences in the actual and expected number of men and women in each cluster (see Table 4-22).

Table 4-22

Mean Scores and Frequencies of Gender as a Function of Conjoint Cluster

Cluster	N	Men	Women	$\chi^2(1)$	p
Indifferent	169	94	75	2.14	ns
High-Percentage	63	25	38	2.68	ns
Blend	134	59	75	1.91	ns

The results of analyses of the demographic data indicated that there were no differences between the three segments in terms of demographic variables. The analyses of variance found that there was no significant difference in the age, education, children under 18 at home, or income between the Indifferent, High-Percentage, and Blend segments. The chi-square analysis also found that there was no significant difference in gender between the Indifferent, High-Percentage, and Blend segments.

Psychographic Characteristics of Market Segments

The analysis of variance revealed that the differences between the clusters were only in terms of the psychographic characteristics. Post-hoc testing was used to locate which clusters differed on these variables.

Environmental attitudes. Based on a post-hoc Tukey's test, the attitudes of members of the High-Percentage and Blend market segments toward organic agriculture and the environmental impact of clothing production were significantly different at the .05 level than the Indifferent market segment (see Table 4-23). The High-Percentage and Blend segments were in agreement with statements about organic and sustainable agriculture, local buying, and the environmental impact of clothing. The Indifferent

Table 4-23

Mean Scores on Psychographic Variables as a Function of Conjoint Cluster

| | Conjoint Clusters | | | | | | | | |
| | Indifferent | | | High-Percentage | | | Blend | | |
Psychographic Variables	*N*	Mean	*SD*	*N*	Mean	*SD*	*N*	Mean	*SD*
Environmental Attitudes	173	5.65 a	0.91	63	5.92 b	0.74	134	5.93 b	0.73
Clothing Attitudes	172	4.26 a	1.37	63	4.92 b	1.17	135	4.81 b	1.12
Search Intention	171	4.37 a	1.45	66	5.06 b	1.59	135	5.13 b	1.27
Purchase Intention	172	4.73 a	1.25	66	5.41 b	1.35	134	5.25 b	1.19
Personal Norm	173	3.89 a	1.42	63	4.37 b	1.38	135	4.48 b	1.42
Self-Identity	172	5.26 a	0.95	66	5.48 a	0.88	135	5.53 a	0.90
Self-Centered Behavioral Beliefs	161	5.08 a	1.13	61	5.57 b	1.10	132	5.55 b	1.03
Altruistic Behavioral Beliefs	161	4.90 a	1.10	61	5.36 b	0.83	132	5.26 b	0.90
Benefit Importance	167	5.40 a	0.91	63	5.67 a,b	1.12	132	5.80 b	0.81
Informal Normative Beliefs	172	3.45 a	1.36	66	3.39 a	1.33	133	3.79 a	1.22

Note. Means in a row sharing subscripts are not significantly different at the .05 level based on a Tukey's post hoc test.

consumers were between somewhat agreement and agreement with these statements. The Environmental Attitude of the High-Percentage segment was higher than the Indifferent segment, but was not significantly different than those of the Blend segment. Likewise, the Environmental Attitude of the Blend segment was higher than the Indifferent segment, but was not significantly different than those of the High-Percentage segment

Clothing attitudes. Post-hoc Tukey's testing found the attitudes of members of the High-Percentage and Blend market segments toward going out of their way to purchase organic or fair trade clothing was significantly different at the .05 level than the Indifferent market segment (see Table 4-22). Consumers in the Indifferent cluster had a mean Clothing Attitude that was lower than the other two segments. The Indifferent consumers were closer to neutral than in somewhat agreement with statements in favor of purchasing organic clothing. The High-Percentage and the Blend, segments were somewhat in agreement with these statements. The Clothing Attitude of the High-Percentage segment was slightly higher but not significantly different than that of the Blend segment.

Search intention. The Search Intention of the Indifferent market segment was significantly lower, based on the post-hoc Tukey's test, than that of the other two segments (see Table 4-22). Consumers in the Indifferent cluster had a mean Search Intention of 4.37, meaning they were closer to neutral than somewhat likely to purchase organic clothing the next time they went shopping for apparel. The High-Percentage segment and the Blend segment were somewhat likely to purchase organic cotton apparel. Based on the conjoint analysis, it has been suggested that this likelihood to purchase organic apparel includes moderate or high percentage blends, depending on the

segment. The Search Intention of the Blend segment was slightly higher but not significantly different than the High-Percentage segment.

Purchase intention. The Purchase Intention of the Indifferent market segment was higher than the Search Intention but still significantly lower than the Purchase Intention of the High-Percentage and Blend segments, based on a post-hoc Tukey's test (see Table 4-22). Consumers in the Indifferent cluster had a mean Purchase Intention of 4.73, meaning they were somewhat likely to purchase organic clothing if they happened to find it the next time they went shopping for apparel. The High-Percentage segment had a mean Purchase Intention that was higher but not significantly different than the mean Purchase Intention of the Blend segment. Both segments are somewhat likely to likely to purchase organic cotton clothing if they found some during their next apparel shopping trip.

Personal norm. The Personal Norm of members of the High-Percentage and Blend market segments was significantly higher, according to a post-hoc Tukey's test, than the Indifferent market segment (see Table 4-22). Consumers in the Indifferent cluster had a lower mean Personal Norm than the other two segments, High-Percentage and Blends. The Indifferent consumers were closer to neutral than in somewhat agreement they were personally obligated or responsible for purchasing organic cotton clothing. The High-Percentage segment and the Blend segment, on the other hand, were neutral to somewhat in agreement about their obligations. The Personal Norm of the High-Percentage segment was slightly lower but not significantly different than that of the Blend segment.

Self-identity. The ANOVA of Self-Identity based on cluster membership indicated that there were significant differences. However, the post-hoc Tukey's test, a more stringent test of differences between means, did not find significant differences between the clusters on the mean of Self-Identity.

Self-centered behavioral beliefs. Post-hoc Tukey's testing of the Self-Centered Behavioral Beliefs of members of the High-Percentage and Blend market segments toward the outcomes of organic cotton apparel purchases that benefit themselves in some way was significantly different than the Indifferent market segment (see Table 4-22). The mean Self-Centered Behavioral Belief variable of consumers in the Indifferent cluster was significantly lower than the other two segments. The Indifferent consumers somewhat agreed that they would personally benefit from purchasing organic cotton clothing. The High-Percentage segment and the Blend segment were between somewhat agreement and agreement that they would personally benefit from the purchase of organic cotton apparel. There was no significant difference between the Self-Centered Behavioral Beliefs of the High-Percentage segment and that of the Blend segment.

Altruistic behavioral beliefs. A post-hoc Tukey's test of the mean Altruistic Behavioral Beliefs of members of Indifferent market segments, found it was significantly different than the other two market segments (see Table 4-22). The Altruistic Behavioral Beliefs are beliefs about the outcomes of organic cotton apparel purchases that benefit others, organic cotton producers and manufacturers, at some cost to the self, purchasing an expensive or difficult to find product. The mean Altruistic Behavioral Belief of consumers in the Indifferent cluster was significantly lower at the .05 level than the other two segments. The Indifferent consumers were somewhat in agreement that they might

incur some costs but that others would benefits from purchasing organic clothing. The

High-Percentage segment and the Blend segment were between somewhat agreement and

agreement that they might incur some costs but that others would benefits from the

purchase of organic cotton apparel. There was no significant difference between the

Altruistic Behavioral Beliefs of the High-Percentage segment and that of the Blend

segment.

Benefit importance. Post-hoc Tukey's testing found that the members of the

High-Percentage segment were significantly different from the Indifferent segment in

terms of the importance they placed on the benefit related outcomes of organic cotton

apparel purchases (see Table 4-22). The High-Percentage consumers found these

benefits to be more important than the Indifferent consumers. The members of the Blend

segment found the benefits of purchasing organic cotton apparel to be slightly less

important than the High-Percentage segment, but the difference was insignificant. The

Benefit Importance of the Blend segment was not significantly higher than the Indifferent

segment either.

Informal normative beliefs. Finally, while the ANOVA of Informal Normative

Beliefs based on cluster membership indicated that there were significant differences

between the means the clusters, the post-hoc Tukey's test did not find significant

differences between the clusters based on the mean of Informal Normative Beliefs.

Hypothesis Testing

The results of analysis of the demographic and psychographic data can be used to

test several hypotheses related to the evaluation of attributes. Hypotheses were made

about the attributes of organic cotton content, fair trade labeling and organic processing

labeling, the three attributes that are available for use by organic cotton apparel product developers.

Based on the results of the conjoint and cluster analysis, the two segments that made greater use of the organic cotton content to determine their purchase likelihood ratings were the High-Percentage and Blend segments. The respondents in the Indifferent segment used the organic cotton content to an insignificant degree. The results of the analysis of variance found that the High-Percentage and Blend segments were not different from the Indifferent segment in terms of age, education, children under the age of 18 in the home and income. The chi-square analysis found that the High-Percentage and Blend segments were not different from the Indifferent segment in terms of gender either. Therefore, the hypothesis (H1) that "respondents who make greater use of organic cotton content to determine purchase intentions will not differ in their demographic characteristics from respondents who make lesser use of the product attribute" was supported based on this analysis of the demographic variables.

The results of the analysis of variance did not provide support for the hypothesis relating to the psychographic of consumers who found organic content determinant. The analysis did not support the hypothesis (H2) that "respondents who make greater use of organic cotton content to determine purchase intentions will not differ in their psychographic characteristics from respondents who make lesser use of the product attribute". Specifically, the consumers who made greater use of the organic content attribute, the members of the High-Percentage and Blend segments, had significantly greater environmental attitudes and attitudes toward purchasing organic and fair trade clothing than the respondents in the Indifferent segment. Consumers who found organic

content determinant also had significantly higher search and purchase intention, higher behavioral beliefs and outcome evaluations and higher personal norm.

The results of the conjoint and cluster analysis show that the Indifferent segment made greater use of the fair trade labeling to determine their purchase likelihood rating than the other segments. The respondents in the High-Percentage and Blend segments did not use the fair trade labeling to any insignificant degree. The results of the analysis of variance found that the High-Percentage and Blend segments were not different from the Indifferent segment, in terms of age, education, children under the age of 18 in the home and income. The chi-square analysis found that the High-Percentage and Blend segments were not different from the Indifferent segment in terms of gender either. Hypothesis (H3), "respondents who make greater use of fair trade labeling to determine purchase intentions will not differ in their demographic characteristics from respondents who make lesser use of the product attribute" was supported based on this analysis.

The results of the analysis of variance did not provide support, however, for the hypothesis relating to the psychographic of consumers who found fair trade labeling determinant. The analysis did not support hypothesis (H4) that "respondents who maker greater use of fair trade labeling to determine purchase intentions will not differ in their psychographic characteristics from respondents who make lesser use of the product attribute." The Indifferent segment, consumers who used the fair trade labeling attribute, had significantly lower environmental attitudes and attitudes toward purchasing organic and fair trade clothing, than the consumers who found the organic cotton content determinant. The Indifferent segment also had significantly lower search and purchase intention, higher behavioral beliefs and outcome evaluations and higher personal norm.

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This meant that the segment of consumers that was interested in fair trade labeling was making less of a connection with the benefits and importance of purchasing organic cotton apparel.

None of the segments used the processing attributes to any significant degree. This meant that the hypothesis (H5) that "respondents who make greater use of organic processing labeling to determine purchase intentions will not differ in their demographic characteristics from respondents who maker lesser use of the product attribute" was unable to be tested. As well, the hypothesis (H6) that "respondents who make greater use of organic processing labeling to determine purchase intentions will not differ in their psychographic characteristics from respondents who make lesser use of the product attribute" was unable to be tested. Finally, because all of the respondents used the credence attributes, either organic content or social labeling, there was no way to test the hypothesis (H7) that "respondents who use credence attributes (organic cotton content labeling, social labeling, processing labeling) in their purchase intentions will have significantly lower levels of skepticism than those who do not."

To summarize, the analysis of variance and post-hoc testing revealed that the differences between the clusters were only in terms of the psychographic characteristics and even in that case, there were no differences between the High-Percentage and the Blend clusters (see Table 4-24). The differences between these two clusters and the Indifferent cluster were in the variables of: Environmental Attitude, Clothing Attitude. Search Intention, Purchase Intention, Self-Centered Behavioral Beliefs, and Altruistic Behavioral Beliefs. The Indifferent cluster and the Blend cluster differed significantly in Benefit Importance.

Table 4-24

Hypotheses Tested Using Analysis of Variance and Chi-Square

Hypothesis	Grouping	Hypothesized Difference	Variable	Supported
1	Use organic cotton content	no	Demographics	yes
2	Use organic cotton content	no	Psychographic	no
3	Use of fair trade labeling	no	Demographics	yes
4	Use of fair trade labeling	no	Psychographic	no
5	Use of organic processing labeling	no	Demographics	untested
6	Use of organic processing labeling	no	Psychographic	untested
7	Use of credence attributes	yes	Skepticism	untested

Predictive Analysis

A conceptual model was developed to predict Purchase Intention for organic cotton apparel during the next apparel shopping trip using the independent variables of Attitude, Subjective Norm, Personal Norm, Self-Identity, and Skepticism. The core of the model, the predicted relationships between Attitude, Subjective Norm, and Purchase Intention, was based on the theory of reasoned action. The addition of the variables of Self-Identity and Personal Norm represent an extension of the model that has been tested with other socially responsible consumers (Shaw, Shiu & Clark, 2000; Sparks & Guthrie, 1998; Sparks & Shepherd, 1992, 2002; Sparks et al., 1998). Based on research of environmentally concerned energy consumers, the variable of Skepticism was included to test the relationship between Skepticism, Personal Norm and Purchase Intention (Osterhus, 1997). The additional relationships between Attitude and the variables of Personal Norm and Self-Identity had been suggested by other research into ethical consumers (Kaiser & Scheuthle, 2002; Shaw & Shiu, 2002a; Sparks & Guthrie, 1998; Sparks & Shepherd, 1992). The role of Personal Norm and Self-Identity as antecedents to Attitude was examined after the structure of the conceptual model was tested and confirmed.

Additional Variables

Before conducting the predictive analysis, three additional variables were created to use in the conceptual model: Attitude, Subjective Norm and Purchase Intention. The other three variables in the model (Self-Identity, Personal Norm, and Skepticism) were

created previously for use during the conjoint analysis and were used in the predictive analysis without any changes.

Attitude

The measures of attitude toward the purchase of organic cotton apparel products were created by multiplying the behavioral beliefs about eleven outcomes with the evaluation of those outcomes. Reliability analysis of the eleven attitude items indicated that they were reliably measuring a single underlying concept with a Cronbach's *alpha* of .91. Before using these items in the model of organic cotton apparel consumer behavior, they were summed to form one variable called Attitude by adding all eleven items and dividing by eleven to return them to their original scale.

Another check of reliability commonly used for the attitude variable in the theory of reasoned action theory of reasoned action is to compare the resulting measure to a single measure of attitude. The variable Attitude had a significant Pearson's correlation of .54 with the direct measure of attitude included in the questionnaire for this purpose. This was higher than the correlation (r=.33) reported for similar measures reported by Shaw, Shiu and Clarke (2000) in their study of fair trade consumers. This correlation, however, fell just below the low end of the range of correlations (*r*=.58 to *r*=.81) found by various studies testing the theory of reasoned action (Azjen, 1985).

While the correlation suggests that it is possible to use the single item measure of Attitude in the multiple regression, the multiple item measure of Attitude that uses the outcome evaluations is a more nuanced form of the variable. An examination of the values of the single item measures for the evaluation of the behavioral beliefs and the importance of the behavioral outcomes illustrates this (see Table 4-25).

Table 4-25

Behavioral Beliefs and Importance of Outcomes

Items	*M*	*SD*
The following would result from my purchasing an organic cotton apparel product.		
10A.11. Purchasing a quality product	5.73	1.27
10A.10. Supporting organic farming	5.65	1.22
10A.4. A reduction in the use of pesticides	5.59	1.41
10A.8. Supporting organic cotton producers	5.49	1.27
10A.6. Improving my health or the health of my family	5.41	1.52
10A.9. Supporting pro-environmental companies	5.36	1.34
10A.2. More retailers selling organic cotton apparel products	5.34	1.21
10A.1. A fair price for organic cotton producers	5.01	1.47
10A.5. Increasing my peace of mind	4.91	1.54
10A.3. Purchasing a product which is more expensive	4.63	1.46
10A.7. Purchasing a product which is not readily available	4.48	142
How important is each of the following to you?		
10B.11. Purchasing a quality product	6.21	0.95
10B.6. Improving my health or the health of my family	6.07	1.13
10B.4. A reduction in the use of pesticides	6.00	1.21
10B.10. Supporting organic farming	5.54	1.27
10B.1. A fair price for organic cotton producers	5.44	1.28
10B.5. Increasing my peace of mind	5.27	1.45
10B.8. Supporting organic cotton producers	5.25	1.32
10B.9. Supporting pro-environmental companies	5.23	1.49
10B.2. More retailers selling organic cotton apparel products	5.17	1.28
10B.3. Purchasing a product which is more expensive	4.33	1.57
10B.7. Purchasing a product which is not readily available	4.24	1.42

The single item measure of Attitude asked for respondents to rate the purchase of organic cotton apparel from good to bad. The expectancy-value measure, on the other hand, allowed the respondents to indicate for example that purchasing a quality product was important to them and that they agreed that by purchasing organic cotton apparel

they would be purchasing a quality product. This evaluation was much more complex than rating the purchase merely "good" or "bad", "wise or unwise", and "smart or foolish" and this difference lies at the heart of the expectancy-value model of consumer attitude.

An examination of the items indicates that supporting organic farming and a reduction in the use of pesticides are other outcomes that respondents agreed would result from their purchase of organic cotton apparel products and also rated as important or somewhat important. While "improving the health of my family" was rated as important, respondents only somewhat agreed that this outcome would result from the purchase of an organic cotton product. The support of organic cotton farmers, pro-environmental companies, and retailers who sell organic cotton products were all rated as both somewhat important and respondents also somewhat agreed that they were outcomes of the purchase. Respondents somewhat agreed that "Improving my peace of mind" was a somewhat important outcome of the purchase. Finally, the least important outcomes, the purchase of a more expensive product (M=4.33) or a product that was not readily available (M=4.24) were also the items with the lowest level of agreement with their being an outcome of the purchase (M=4.63 and M=4.48 respectively).

Subjective Norm

Like attitude, the measure of the subjective norm related to the purchase of organic cotton apparel products was created by multiplying the normative beliefs of six significant others with the motivation to comply with the opinions of each group of others. Reliability analysis of these six subjective norm measures indicated that they were reliably measuring a single underlying concept with a Cronbach's *alpha* of .79.

As with the attitude variable, before using these items in the model of organic cotton apparel consumer behavior, they were summed and divided by six to form one variable called Subjective Norm. This variable, Subjective Norm, had a Pearson's correlation of .43 with the direct measure of subjective norm included in the questionnaire for this purpose. This is somewhat higher than the correlation ($r=.38$) reported for similar measures reported by Shaw, Shiu and Clarke (2000) in their study of fair trade consumers. Yet, this correlation is towards the low end of the range of correlations ($r=.41$ to $r=.83$) found by various studies testing the theory of reasoned action (Azjen, 1985). The multiple item measure of Subjective Norm is valuable for the same reasons as the multiple item measure of Attitude and can be examined to understand the subjective component of motivation for behaviors (see Table 4-26). Specifically, respondents in this study found it likely that retailers who stock organic cotton apparel products and religious organizations would both think they should purchase organic cotton apparel products. But, while respondents were neutral in terms of doing what religious organization think they should do, respondents they somewhat seldom do what retailers thought they should do. Respondents were also neutral in terms of complies with their families opinions and thought their families were neither likely nor unlikely to think they should purchase organic cotton products. The least influential normative group, multinational corporations, were also the group respondents thought was least likely to think they should purchase organic cotton apparel products.

Table 4-26

Normative Beliefs and Motivation to Comply

Items	*M*	*SD*
How likely is it that the following groups think you should purchase organic cotton apparel?		
9B.6. Retailers who stock organic cotton apparel products	5.49	1.68
9B.3. Religious organizations	5.26	1.68
9B.2. Family	3.80	1.61
9B.1. Friends	3.72	1.51
9B.4. Environmental or social responsibility organizations	3.31	1.60
9B.5. Multinational corporations	3.23	1.68
How often, in general, do the following groups influence your opinions or actions?		
9B.2. Family	4.27	1.78
9B.3. Religious organizations	3.88	1.70
9B.1. Friends	3.84	1.68
9B.6. Retailers who stock organic cotton apparel products	3.42	1.76
9B.4. Environmental or social responsibility organizations	3.09	1.84
9B.5. Multinational corporations	2.52	1.48

Purchase Intention

The final variable included in the model of organic cotton apparel consumer

behavior was that of the purchase intention. There were two items included in the

questionnaire to measure behavioral intention, an item that measured purchase intention

along with an item measuring search intention. Reliability analysis indicated that the two

items were reliably measuring a single underlying factor ($\alpha = .77$). The two items were

added and then divided by two to return the variable, called Purchase Intention, to the

original scale.

Correlation Analysis

The relationships between each variable included in the model were examined at this stage using the correlations between the variables. In exploratory research, this analysis would be used to help develop the conceptual model. Because the conceptual model had already been completely developed using previously published research, however, this analysis served merely to confirm the existence of relationships between the variables as measured by this study.

The pairwise correlations between all of the variables were significant, except for those with every other variable and Skepticism, see Table 4-27. The correlations of all the variables with Purchase Intention were moderate (from $r=.34$ to $r=.49$), except for Skepticism. The highest correlation ($r=.60$) was between Self-Identity and Personal Norm. It is important that the correlations not be too high, which can indicate issues with multicollinearity, but the very low correlations of Skepticism suggested that it did not belong in the model. This possibility could be tested by the multiple regression analysis, so Skepticism was retained in the conceptual model for initial analysis.

Table 4-27

Correlation of Variables in the Theoretical Model (N=380)

Variable	1	2	3	4	5	6
Attitude (1)	-					
Subjective Norm (2)	.460***	-				
Personal Norm (3)	.592***	.395***	-			
Self-Identity (4)	.551***	.383***	.600***	-		
Skepticism (5)	-.049	-.038	.088*	.045	-	
Purchase Intention (6)	.460***	.341***	.446***	.493***	-.008	-

$*p < .05.$ $**p < .01.$ $***p < .001.$

Specification of the Model

The multiple regression analysis of the conceptual model was performed in several stages. The first stage of the analysis was a comparison of the conceptual model with the model used in the theory of reasoned action (Azjen & Fishbein, 1980). The next stage was to examine the hypothesized relationship between the Personal Norm and Skepticism to determine if Skepticism either mediated or moderated the Personal Norm. Stage three tested the proposal that Self-Identity and Personal Norm were mediated by Attitude.

Conceptual Model

The conceptual model of organic cotton consumer behavior was developed from previous research and included variables from the theory of reasoned action (Attitude, Subjective Norm, and Purchase Intention) as well as variables shown in other studies to predict the behavior of socially responsible consumers (Shaw, Shiu & Clark, 2000; Sparks & Shepard, 2002). The variable of Skepticism was included to test the concept of the "boomerang effect" cited by Schwartz (1977) whereby the relationship of Personal Norm to Purchase Intention is altered in some way by a lack of trust. The resulting model is seen in Figure 4-4. The suggested relationships indicated by dashed lines were tested in stages two and three.
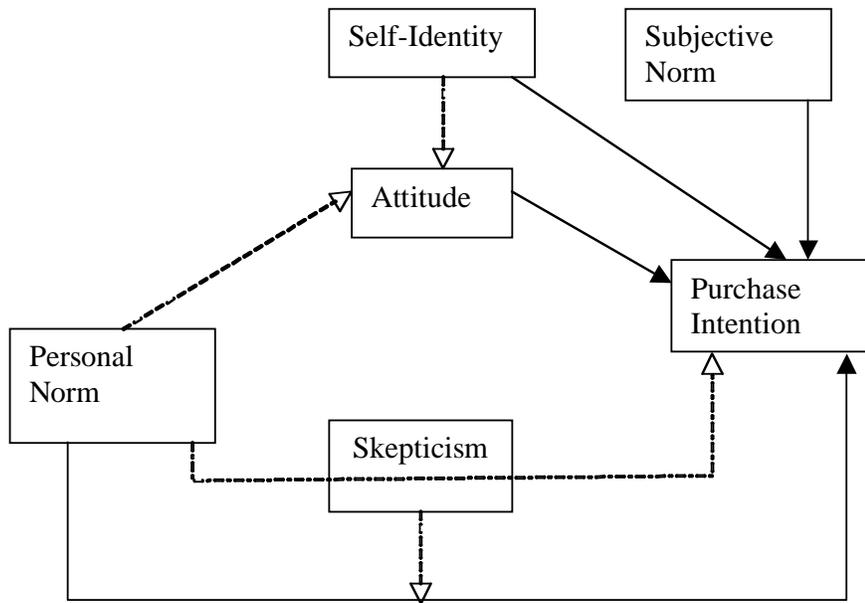
Figure 4-4: Conceptual Model of Organic Cotton Consumer Behavior

Model Equations

  The relationships between the variables in the conceptual model can be expressed in terms of regression equations. The conceptual model was tested in three steps to allow for comparisons with various previously published models. The first step was to model the theory of reasoned action. The theory of reasoned action includes only the Attitude and Subjective Norm variables as independent variables as seen in Equation 1.

$$PI = b_{11}AT + b_{12}SN + e_1 \tag{1}$$

The second step was to analyze the conceptual model using Equation 2. This allowed comparison of the conceptual model with similar, previously published models of environmental or socially responsible consumers (Shaw, Shiu & Clark, 2000; Shaw & Shiu, 2002a; Sparks & Shepherd, 1992; Sparks & Guthrie, 1998).

$$PI = b_{21}AT + b_{22}SN + b_{23}SI + b_{24}PN + e_2 \qquad (2)$$

where PI = Purchase Intention, AT = Attitude, SN = Subjective Norm, SI = Self-Identity and PN = Personal Norm. There are several additional relationships proposed between the variables of the model and regression equations were designed to test each. The first test was on the role of Skepticism as a mediating variable between Personal Norm and Purchase Intention, indicated by the dashed line through the variable in Figure 4-4. This test required two equations. The first, Equation 3, inserted Skepticism (SK) into the main model, to see if it significantly predicted Purchase Intention. The next, Equation 4, was a test of the ability of the Personal Norm to significantly predict Skepticism.

$$PI = b_{31}AT + b_{32}SN + b_{33}SI + b_{34}PN + b_{35}SK + e_3 \qquad (3)$$

$$SK = b_{41}PN + e_4 \qquad (4)$$

The other possible relationship between Skepticism and these variables would be a moderating relationship. This relationship is indicated in Figure 4-4 by the dashed line from Skepticism on the path between Personal Norm and Purchase Intention. Equation 5,

which contains an interaction term (PN*SK), was used along with Equation 3, in the test

of the moderating relationship

$$PI = b_{51}AT + b_{52}SN + b_{53}SI + b_{54}PN + b_{55}SK + b_{56}PN*SK + e_5 \qquad (5)$$

Finally, the possibility that Self-Identity and Personal Norm were antecedent to

Attitude (also indicated by dashed lines in Figure 4-4) would involve several sets of

equations, Equation 6 through 11:

$$AT = b_{61}SI + e_6 \qquad (6)$$

$$AT = b_{71}PN + e_7 \qquad (7)$$

$$PI = b_{81}SI + e_8 \qquad (8)$$

$$PI = b_{91}PN + e_9 \qquad (9)$$

$$PI = b_{101}AT + b_{102}SI + e_{10} \qquad (10)$$

$$PI = b_{111}AT + b_{112}SI + e_{11} \qquad (11)$$

The results of the analyses using each of these equations are outlined in the succeeding

sections. Because this analysis did not depend on any of the conjoint data, the regression

analysis was done using all of the usable data (N=420).

Multiple Regression Analysis

Multiple regression analysis of the conceptual model was conducted using SPSS statistical software. The missing values in data selected for analysis were deleted listwise by the software during the analysis. While this method reduces the number of cases available during the analysis, there were sufficient responses despite the reduction. The alternative of mean substitution has the drawback of reducing the variance for variables that have many missing values. The results are shown in Table 4-28.

Table 4-28

Comparison of the Theoretical Model with the Theory of Planned Behavior (N=380)

Model	Variables	β	R^2	Adjusted R^2	F of Change in R^2	Correlations Zero-order	Partial	Part
TRA	AT	.38 ***				.460	.364	.341
	SN	.16 **	.23	.23		.341	.164	.145
Conceptual Model	AT	.19 ***				.460	.163	.137
	SN	.10 *				.341	.102	.085
	SI	.27 ***				.493	.243	.207
	PN	.13 *	.31	.31	21.886 ***	.446	.117	.097

* p < .05. ** p < .01. *** p < .001.

In the theory of reasoned action, measured with Equation 11, the ability of the independent variables to predict Purchase Intention was confirmed (R^2=.23, *F*=57.24, *p*<.001). Purchase Intention was positively predicted by Attitude (β = .38) and Subjective Norm (β = .16). The signs of the standardized coefficients for these variables

were in the expected direction. The magnitude of the coefficients were similar to previously published research (Ajzen, 1985).

Using the part correlation, the amount of unique variance in Purchase Intention accounted for by each variable could be calculated. Attitude had a part correlation of .342, which meant that it accounted for 11.7% (.342 squared) of unique variance in Purchase Intention. This was larger than Subjective Norm, which accounted for only 2.1% (.145 squared) of unique variance in Purchase Intention.

When the variables of Self-Identity and Personal Norm were added to the model (Equation 2), the ability of the model to explain variance in Purchase Intention increased significantly, as seen by the change in r-square (from .23 to .31, F=42.74, p<.001). Purchase Intention was significantly predicted by Self-Identity (β = .27) and by Personal Norm (β = .13). The predictive ability of Attitude (β = .19) and Subjective Norm (β = .10) was decreased with the addition of these variables. Self-Identity accounted for the most unique variance (4.3%) in Purchase Intention, followed by Attitude (1.9%).

Addition of Skepticism

The conceptual model with the addition of Skepticism (Equation 3) was compared to the conceptual model (Equation 2). The results are seen in Table 4-29.

Table 4-29

Addition of Skepticism to the Theoretical Model (N=380)

Model	Variables	β	R^2	Adjusted R^2	F of Change in R^2
Conceptual Model	AT	.19 ***			
	SN	.10 *			
	SI	.27 ***			
	PN	.13 *	.31	.31	
	AT	.18 **			
Conceptual Model Plus Skepticism	SN	.10 *			
	SI	.28 ***			
	PN	.14 *			
	SKEP	-.02	.31	.30	.206

* p < .05. ** p < .01. *** p < .001.

Although the model was significant, the addition of Skepticism did not improve the ability of the model to predict Purchase Intention (R^2=.31, F=34.16, p<.001) and the variable itself did not significantly predict Purchase Intention. For this reason, the hypothesis (H13) that "skepticism of environmental product claims concerning environmental attributes of products will be negatively related to future intention to purchase blended organic cotton apparel" was not supported.

The hypothesis (H12) that "the subjective norm for the purchase of organic cotton apparel will be positively related to future intention to purchase blended organic cotton apparel" was supported. The Subjective Norm was significantly able to predict Purchase Intention in the model of the theory of reasoned action (Equation 1) and to a lesser degree when Self-Identity and Personal Norm were added using the conceptual model (Equation 2). Also, while the ability of Attitude to predict Purchase Intention was also reduced when the additional variables were added, the hypothesis (H11) that "attitudes about the

purchase of organic cotton apparel will be positively related to future intention to purchase blended organic cotton apparel" was supported.

The hypothesis (H9), "self-identity as an environmentally/ethically responsible consumer will be positively related to future intention to purchase blended organic cotton apparel" was supported by this analysis. The hypothesis (H10), "the personal norm for environmentally/ethically responsible consumer behavior will be positively related to future intention to purchase blended organic cotton apparel" was also supported by the data used in this regression analysis.

Skepticism as Mediating or Moderating Variable

The variable of Skepticism did not significantly predict Purchase Intention. This suggested that it was unlikely that Skepticism was a mediator in the relationship between Personal Norm and Purchase Intention. For this reason, a regression including Skepticism was conducted using Equation 4. The results of this regression analysis, seen in Table 4-30, show that Personal Norm was unable to significantly predict Skepticism (R^2=.01, F=3.75, p=.053).

Table 4-30

The Prediction of Skepticism by Personal Norm (N=414)

Variables	β	R^2	Adjusted R^2
PN	.10	.01	.01

* $p < .05$. ** $p < .01$. *** $p < .001$.

The confirmation of mediation requires three conditions (Baron & Kenney, 1986). The ability of the independent variable to predict the mediator, the test just conducted,

was the first test. The ability of the mediator to predict the dependent variable, in this case Purchase Intention, was the second condition and was tested in Equation 3. The final condition was that when Skepticism was included in the full regression, it must change the relationship of the Personal Norm with Purchase Intention in some way. These failure of Skepticism as a mediator using these last two tests was confirmed in the previously conducted regression analysis. This meant that Hypothesis (H14) "Skepticism acts as a mediator between the personal norm for environmentally/ethically responsible consumer behavior and the future intention to purchase blended organic cotton apparel" was rejected. The failure of Skepticism to have any significant relationship with Personal Norm also means that the hypothesis (H8) that "the personal norm for organic cotton apparel purchases will be positively related to skepticism of environmental product claims" was not supported.

The second possibility for the relationship between Skepticism, Personal Norm and Purchase Intention was that Skepticism moderates the relationship between Personal Norm and Purchase Intention in some way. The test of a moderating relationship was fairly straightforward. As suggested by Baron and Kenney (1986) in their article on this subject, an additional regression analysis was conducted using Equation 5. The results are shown in Table 4-31. If Skepticism were a moderating variable, the inclusion of the interaction term should significantly improve the amount of variance explained by the model (Hair et al., 2006).

Table 4-31

Skepticism as a Moderating Variable (N=380)

Model	Variables	β	R^2	Adjusted R^2	F of Change in R^2
Model Plus Skepticism	ATT	.18 **			
	SN	.10 *			
	SI	.28 ***			
	PN	.14 *			
	SKEP	-.02	.31	.30	
Conceptual Model with Skepticism and Interaction Term	ATT	,18 **			
	SN	.10			
	SI	.27 ***			
	PN	.10			
	SKEP	-.04			
	PN*SKEP	.05	.31	.31	.033

*$p < .05$. ** $p < .01$. *** $p < .001$.

There was no significant change in the r-square of the conceptual model plus Skepticism with the addition of the interaction term, even though the overall model was significant ($R^2=.31$, $F=28.40$, $p<.001$), This was sufficient to determine that the Hypothesis (H15) that "Skepticism acts as a moderator of the relationship between the personal norm for environmentally/ethically responsible consumer behavior and the future intention to purchase blended organic cotton apparel" could be rejected (Hill et al., 2006).

Antecedents of Attitude

The role of Personal Norm and Self-Identity as antecedents of Attitude could also be explored using the data gathered for this study. The variables were entered into Equations 6 and 7. The results of this analysis are shown in Table 4-32.

Table 4-32

Self-Identity and Personal Norm as Predictors of Attitude

Variables	β	R^2	Adjusted R^2
N=389			
SI	.54 ***	.30	.29
N=385			
PN	.58 ***	.34	.33

$* p < .05. ** p < .01. *** p < .001.$

The regression showed that Self-Identity significantly predicted Attitude (β=.54, R^2=.30, F=161.58, p<.0001). Personal Norm also significantly predicted Attitude and accounted for slightly more variance in Attitude (β=.58, R^2=.34, F=192.26, p<.0001). The ability of Personal Norm and Self-Identity to predict Attitude means that Attitude meets the first test of mediation, that the "independent variable must affect the mediator" in this initial regression (Baron & Kenney, 1986, p. 1177).

The next test of mediation was to show that both Self-Identity and Personal Norm can predict Purchase Intention. This involved two equations, Equations 8 and 9. The final test of mediation was to include Attitude along with each variable in the regression of Purchase Intention, using equations 10 and 11, and examine the results. In order to pass this final test of mediation, Attitude "must affect the dependent variable in the third equation" (Baron & Kenney, 1986, p. 1177). The results of these analyses, using both sets of equations are shown below in Table 4-33.

Table 4-33

Self-Identity and Personal Norm as Predictors of Purchase Intention (N=385)

Variables	β		R^2	Adjusted R^2	F of Change in R^2
SI	.48	***	.23	.22	
SI	.33	***			
AT	.28	***	.29	.29	30.344 ***
PN	.43	***	.18	.18	
PN	.24	***			
AT	.32	***	.25	.25	34.877 ***

$* p < .05. \; ** p < .01. \; *** p < .001.$

According to these results, both Self-Identity and Personal Norm have the ability to significantly predict Purchase Intention, meeting the second test of mediation on the part of Attitude. Self-Identity significantly predicted Purchase Intention both alone (β=.48, R^2=.23, F=117.10, p<.001) and along with Attitude (β=.33, R^2=.29, F=78.21, p<.001). When Attitude was added, the ability of Self-Identity to predict Purchase Intention was decreased, but together they accounted for significantly more variance than Self-Identity alone.

Like Self-Identity, Personal Norm significantly predicted Purchase Intention both alone (β=.43, R^2=.18, F=85.87, p<.001) and along with Attitude (β=.24, R^2=.25, F=64.17, p<.001). When Attitude was added, the ability of Personal Norm to predict Purchase Intention was decreased, in fact, unlike Self-Identity, Personal Norm predicted less of Purchase Intention than Attitude (β=.32), and together they accounted for significantly more variance than Purchase Norm alone. Baron and Kenney (1986)

emphasize that the decision in each test is based solely on the regression coefficients, not on "hierarchical or stepwise regression or the computation of any partial or semipartial correlations." (p. 1177).

It is clear looking at the regression coefficients in the third set of equations that the addition of Attitude changed the coefficients of both Self-Identity and Personal Norm. The standardized coefficient for Self-Identity was reduced from .48 to .33 with the addition of Attitude. The standardized coefficient for Personal Norm was reduced from .43 to .24 with the addition of Attitude.

These results suggest that Attitude mediates the influence of both Personal Norm and Self-Identity on Purchase Intention in the case of organic cotton consumers. The results also support the hypothesis (H16) that "attitude acts as a mediator between self-identity as an environmentally/ethically responsible consumer and the future intention to purchase blended organic cotton apparel." The hypothesis (H17) that "attitude acts as a mediator between the personal norm for environmentally/ethically responsible consumer behavior and the future intention to purchase blended organic cotton apparel" was also supported by the results of this analysis.

To summarize, the results of the predictive analysis using multiple regression supported quite a few of the hypotheses (see Table 4-34). Because none of the hypotheses concerning Skepticism were supported, it was not included in the final form of the conceptual model.

Table 4-34

Hypotheses Tested Using Multiple Regression

Hypothesis	Variables		Relationship	Supported	Equations
	Independent	Dependent			
8	SK	PN	positively related	no	4
9	PI	SI	positively related	yes	2
10	PI	PN	positively related	yes	2
11	PI	AT	positively related	yes	1,2
12	PI	SN	positively related	yes	1,2
13	PI	SK	negatively related	no	2
14	PN	SK	mediator	no	3,4
15	PN	SK	moderator	no	5
16	SI	AT	mediator	yes	6,8,10
17	PN	AT	mediator	yes	7,9,11

CHAPTER 5: DISCUSSION AND CONCLUSIONS

Summary of Research

Organic apparel consumers have not been examined in any great extent in previously published research on environmentally/ethically responsible consumers. The motivation for this study was a desire to empirically determine the market potential for apparel constructed from organic cotton blends that have a higher percentage of organic cotton than the small percentage blends currently being offered. The determination and description of the potential market for blended organic cotton apparel would benefit manufacturers of blended organic cotton apparel products who would seek to market to this segment. It would also benefit organic cotton producers, who need greater understanding of any potential for an increase in the size of the potential market for their product.

In an effort to increase understanding of consumers who purchase apparel products made with a percentage of organic cotton, this study was undertaken with two basic aims. The first goal was to determine and characterize the market segments for blended organic cotton apparel products. Besides the marketing implications, the results will be useful to manufacturers and retailers of blended organic cotton apparel in terms of future product development. The first objective of the study involved using conjoint analysis to determine the levels of organic apparel product attributes (e.g. percentage of organic cotton, price, social and processing labeling) salient to consumers. Objective two was to identify the market segments for organic cotton apparel products using cluster analysis of the conjoint results. This objective included using the psychographic and demographic variables to profile the market segments of interest.

The second goal was to add to the theoretical understanding of socially responsible consumers by examining the importance of various psychological variables to the purchase intentions of organic apparel consumers. The third and final objective met this goal by using multiple regression analysis to test a model of psychological variables. This objective included an examination of the possibility of Attitude mediating the relationship of both Self-Identity and the Personal Norm with Purchase Intention.

The study used three basic analytic tools, conjoint analysis, cluster analysis, and multiple regression analysis to achieve the specific objectives. The source of the data was a national mail survey of health and natural foods consumers, a segment of the organic product market that is already well developed and has been previously studied by economists and social psychologists.

Literature from social psychology, consumer behavior, economics and marketing was reviewed to develop direction and a theoretical framework for this study. From social psychology, the Ajzen and Fishbein (1980) theory of reasoned action provided the basis of the conceptual model and three of the psychological variables examined. Studies from the more specific areas of altruistic, environmental, and socially responsible consumer behavior suggested additional variables and expectations for the relationships of these variables with those of the theory of reasoned action. The method for analyzing the salience of organic apparel product attributes, conjoint analysis, was taken from product development and marketing research. Research on product attributes outlined several theories of relationships between product attributes and psychological variables.

A questionnaire, designed using items adapted from previously published research as well as items developed specifically for this study, was mailed to 2905 consumers

across the United States. The questionnaire measured the likelihood of purchasing

specific organic cotton apparel products, future intention to purchase organic cotton

apparel, attitudes, environmental/ethical consumer self-identity, skepticism of

environmental product claims, personal norm, and subjective norm. The sample of

consumers, stratified by state population, was drawn randomly from a national mailing

list of health and natural foods consumers. The survey was administered using Dillman's

Tailored Design survey method (Dillman, 2000).

The total response rate was 20.1% (N=577), with 14.9% usable surveys (N=422).

Analysis of respondent demographics showed that typical participants were equally likely

to be male or female, 57 years of age, and unlikely to have children under the age of 18 in

the home. Over 40% of respondents had completed a college degree. Of respondents

who indicated their income level, 65% had annual pre-tax household incomes of at least

$50,000 in 2004. The sample was skewed toward older, more educated, higher income

consumers.

Summary of Results

Preliminary Analysis

Factor analysis aided in identifying a number of variables within the major

variable groupings included in the questionnaire. The general attitudes section contained

items forming three factors that were called Environmental Attitudes, Clothing Attitudes,

and Fair Trade Attitudes. The Environmental Attitudes included items related to

awareness and concern over the environmental impact of clothing production and support

for organic and sustainable agriculture. Clothing Attitudes expressed a willingness of

consumers to buy clothing to support organic agriculture and go out of their way to buy

organic and fair trade clothing. Fair Trade Attitudes were focused on the fairness of

prices received by foreign cotton producers. Because of low inter-item reliability, Fair

Trade Attitudes was dropped from further analysis.

Factor analysis also aided in identifying a single underlying variable of Personal

Norm that reflected the sense of obligation or responsibility that respondents felt to

purchase organic cotton apparel. Skepticism was a variable indicating question about the

truthfulness of environmental product claims and the benefit of the products to

consumers. The variable Self-Identity indicated how respondents identified themselves

as environmental, socially responsible and organic consumers.

The items included for use in the summated variables of Attitude and Subjective

Norm were also examined using factor analysis. Two variables formed from the

normative belief items, Informal Normative Beliefs and Formal Normative Beliefs,

reflected the attitudes of people important to the respondents in both the private sphere

and the public sphere. Factor analysis also aided the formation of two variables from the

behavioral beliefs. The Self-Centered Behavioral Beliefs focused on how organic cotton

apparel products could benefit the respondents in direct ways, via improved health or

peace of mind, or less direct ways, via a reduction in pesticide use. The Altruistic

Behavioral Beliefs, on the other hand, focused on how the purchase of organic cotton

apparel products, while expensive or inconvenient, would benefit organic producers and

pro-environmental companies.

Internal reliability was confirmed for each variable by calculating Cronbach's

alpha and checking that the *alpha* would not increase significantly if any items were

dropped from the variable. Variables were created by summing the values for each item included in the variable and dividing by the number of items included.

Conjoint Analysis

Conjoint analysis of the likelihood of purchasing eight different t-shirts for 377 respondents was used to determine which attributes of blended organic cotton apparel products were most influential to purchasing decisions. Respondents were asked to rate their purchase likelihood based on the levels of organic cotton content (5%, 45% or 70%), the price ($15 or $18), the social labeling (fairly traded fibers or donations to cancer research), and the processing labeling (organic processing or eco-friendly processing). These ratings, on a 0 to 100 scale, were used to determine the individual part-worths for each attribute using Ordinary Least Squares (OLS) regression. Cluster analysis of the individual part-worths separated the respondents into three clusters that found different attributes or levels of attributes determinant in their purchase decisions.

Purchase likelihood. The regression coefficients for each cluster and the overall sample were used to predict purchase likelihood on the basis of varied attribute levels. The percentage of organic cotton in the blend was the main focus of this study and manipulating the levels of the organic cotton content attribute had the greatest impact on purchase likelihood. Overall, respondents were just over 15% more likely to purchase a 45% organic cotton t-shirt than they were to purchase a 5% organic cotton t-shirt. They were just over 25% more likely to purchase a 70% organic cotton shirt over the 5% organic cotton shirt.

Price, while statistically significant, did not have nearly the same impact as organic cotton content. Overall, the likelihood of purchase decreased by almost 6% when

the price of the t-shirt was increased from $15 to $18. These prices were chosen because they were typical of moderate and higher priced organic cotton t-shirts. Small percentage blends (5%), often sold for the same price as shirts made of 100% conventional cotton, would typically cost less than $15. The social and processing labeling attributes were not determinant for the overall sample of consumers.

    Market segments. The results of the conjoint analysis were also used to determine if there were groups of respondents within the overall sample that were different from each other, in terms of the salience of particular attributes and levels. Cluster analysis was used to divide the respondents into groups based on the part-worths in their individual regression equations. Solution sets with between two and five clusters from the k-means cluster analysis were examined to identify the best solution. The choice of cluster sets was based on the differences in the organic cotton content part-worths, the size of the resulting clusters, and the amount of variance accounted for by the clusters in each set. Using these criteria, the three-cluster solution was chosen because it produced sizeable clusters with important differences in the organic cotton content part-worths. Two of the three clusters accounted for more variance than the overall sample. While four- and five-cluster solutions accounted for slightly more variance, the additional clusters were either very small or were not very different from the other clusters. Also, while none of the clusters made significant use of the processing labeling, two of the clusters in the three-cluster solution used the social labeling to a significant degree. The three clusters represent potential market segments for product development for organic cotton blend apparel.

The first cluster, 46% of the sample (n=175), had a very low R-square (.02) of variance accounted for by the attributes. Members of this cluster were mainly interested in the lowest price and did not use the organic content attribute to a significant degree. For this reason, it was named the Indifferent segment. Analysis of variance showed that the Indifferent segment had significantly lower Search and Purchase Intentions than the other two clusters. They also had lower Environmental and Clothing Attitudes and lower Personal Norm, Self-Centered, and Altruistic Behavioral Beliefs.

The second cluster, 17.5% of the sample (n=66), had the highest R-square (.53) of variance accounted for by the attributes in the model and the most interest in the organic cotton content of the t-shirt. The part-worths for both the 45% and 70% organic cotton content were larger than the part-worth for lowest price ($15), but the part-worth for 70% organic cotton was three times as large as the one for 45%. This cluster was named the High-Percentage segment to highlight the importance of the highest level of organic cotton content to the purchase likelihood.

The third cluster, 36.1% of the sample (n=136), had a moderate R-square (.30) of variance accounted for by the attributes in the model and was the only cluster interested in the social labeling for a donation to cancer research. This segment was named the Blend segment because consumers in the segment were the most interested in the 45% organic cotton blend, and thus the best segment to target with blended organic apparel products. There was no difference between this segment and the High-Percentage segment in terms of any of the socio-demographic variables, although, this segment did place a greater emphasis on Benefit Importance than the Indifferent Segment, unlike the

High-Percentage segment. None of the segments differed in terms of the socio-demographic variables.

The tests of hypotheses H1 through H7 regarding the evaluation of attributes produced mixed results (see Table 5-1). Hypothesis (H1), "respondents who make greater use of organic cotton content to determine purchase intentions will not differ in their demographic characteristics from respondents who make lesser use of the product attribute" and hypothesis (H3) "respondents who make greater use of fair trade labeling to determine purchase intentions will not differ in their demographic characteristics from respondents who make lesser use of the product attribute" were both supported. There was no difference between the clusters in terms of the demographic variables.

While the respondents who found the organic cotton content attribute determinant, the High-Percentage and Blend segments, were not different in terms of their demographics, they were different from the Indifferent segment in terms of many of the psychographic variables. For this reason, hypothesis (H2), "respondents who make greater use of organic cotton content to determine purchase intentions will not differ in their psychographic characteristics from respondents who make lesser use of the product attribute", was rejected.

Table 5-1

Summary of Hypotheses and Results of Testing

	Hypothesis	Supported
H1	Clusters that differ in the use of organic cotton content to determine purchase intentions will not differ in their demographic characteristics.	Yes
H2	Clusters that differ in the use of organic cotton content to determine purchase intentions will not differ in their psychographic characteristics.	No
H3	Clusters that differ in the use of fair trade labeling to determine purchase intentions will not differ in their demographic characteristics.	Yes
H4	Clusters that differ in the use of fair trade labeling to determine purchase intentions will not differ in their psychographic characteristics.	No
H5	Clusters that differ in the use of organic processing labeling to determine purchase intentions will not differ in their demographic characteristics.	Not tested
H6	Clusters that differ in the use of organic processing labeling to determine purchase intentions will not differ in their psychographic characteristics.	Not tested
H7	Respondents who use credence attributes in their purchase intentions will have significantly lower levels of skepticism than those who do not.	Not tested
H8	The Personal Norm will be positively related to Skepticism.	No
H9	Self-identity will be positively related to Purchase Intention.	Yes
H10	The Personal Norm will be positively related to Purchase Intention.	Yes
H11	Attitude will be positively related to Purchase Intention.	Yes
H12	Intention.	Yes
H13	Skepticism will be negatively related to Purchase Intention.	No
H14	Skepticism acts as a mediator between the Personal Norm and Purchase Intention.	No
H15	Skepticism acts as a moderator of the relationship between the Personal Norm and Purchase Intention.	No
H16	Attitude acts as a mediator between Self-Identity and Purchase	Yes
H17	Attitude acts as a mediator between the Personal Norm and Purchase Intention.	Yes

Respondents in the Indifferent and Blend segments both found the social attributes determinant. While the Blend segment used the labeling for a donation to cancer research, only the Indifferent respondents used labeling for fairly traded fibers in their purchase decisions. Hypothesis (H4) "respondents who maker greater use of fair trade labeling to determine purchase intentions will not differ in their psychographic characteristics from respondents who make lesser use of the product attribute" was not supported. The two hypotheses (H5 and H6), concerning the organic processing attribute, could not be tested because it was not significantly used by any groups of consumers.

The hypothesis (H7), that "respondents who use credence attributes (organic cotton content labeling, social labeling, processing labeling) in their purchase intentions will have significantly lower levels of skepticism than those who do not" was not tested. This is because in order to test if consumers were skeptical of credence attributes such as organic content labeling, social labeling, and processing labeling there would need to be a group of consumers that did not use one of the credence attributes in their purchase decisions. In this study, each group of consumers was influenced by at least one credence attribute.

Predictive Analysis

Multiple regression analysis was used to test a model of the purchase intention of organic cotton consumer behavior (see Figure 5-1). The variables in the conceptual model included Attitude and Subjective Norm, variables from the Ajzen and Fishbein (1980) theory of reasoned action, as well as Personal Norm and Self-Identity, two variables shown to predict environmental and socially responsible consumer behavior.

The variable of Skepticism was added to the conceptual model to test the importance of

trust (or lack thereof) in the activation of the Personal Norm.
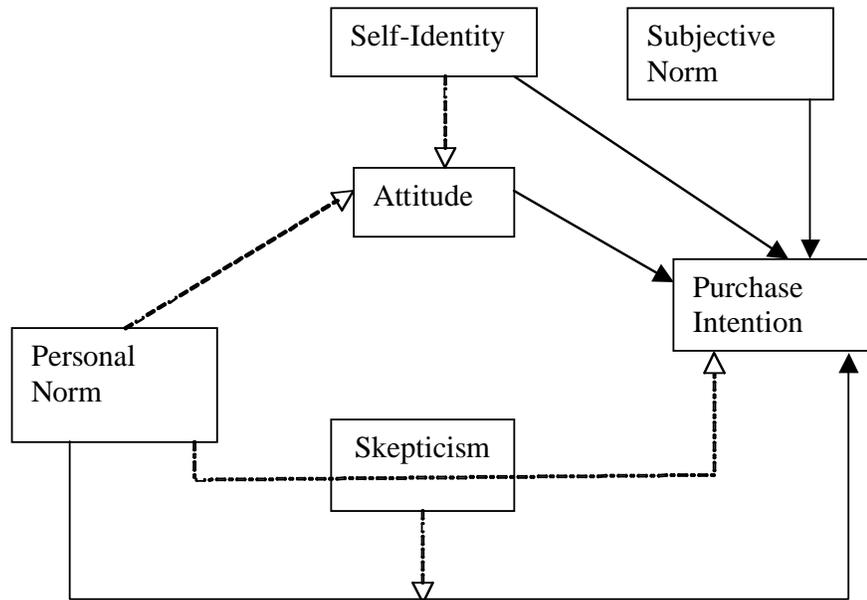
Figure 5-1: Conceptual Model of Organic Apparel Consumer Behavior

Variables. The dependent variable in the model, Purchase Intention, was created

from two items that formed a reliable measure of the respondents stated likelihood of

purchasing organic cotton apparel the next time they went shopping. The variables of

Attitude and Subjective norm were measured using the multiple item measure approach

of the expectancy-value model (Fishbein, 1967). The multiple item measure for Attitude

was very reliable. The multiple item measure for Subjective Norm was also reliable.

The measure of self-identity was formed from the five items included to measure

how strongly the respondents identified themselves as environmental, socially

responsible, and organic consumers. The variable of Self-Identity was reliable and

overall respondents were somewhat self-identified as environmental, socially responsible,

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and organic consumers. Personal Norm measured the sense of obligation or responsibility that respondents felt to purchase organic cotton apparel using three items. The variable of Personal Norm was also reliable, although respondents had fairly neutral responses on the variable. The last independent variable of Skepticism was also reliable. The respondents in this study were neutral in terms of their Skepticism about product claims.

Hypothesis testing. Multiple regression on the responses of 420 respondents was used to test hypotheses H8 through 17. The order of entering the variables into the linear regression was specified to analyze the model in three stages, using equations 1-3. The initial regression included the variables from the theory of reasoned action (Purchase Intention, Attitude, and Subjective Norm). Next, the two variables (Self-Identity and Personal Norm) that had been tested in studies of other environmental or ethical consumer behavior were added to the model to determine the contribution they made beyond the theory of reasoned action. Finally, the full model including Skepticism was tested. All three models were significant based on the F-test.

The F-test of the change in R-squared was used to determine if the addition of variables at each step significantly improved the amount of variance in Purchase Intention accounted for by each model. The addition of Self-Identity and Personal Norm to the model provided a significant improvement over the theory of reasoned action. The further addition of Skepticism, on the other hand, did not significantly improve the amount of variance accounted for by the model.

The Personal Norm significantly predicted Purchase Intention in the conceptual model, so the hypothesis H10 that the Personal Norm would be positively related to Purchase Intention was supported. The test of mediation of the Personal Norm by

Attitude, showed that Personal Norm alone also significantly predicted Purchase Intention (using Equation 9), providing additional support for hypothesis H10. Self-Identity had the largest and positive impact on Purchase Intention, which supported H11 that Self-Identity, would be positively related to Purchase Intention. Attitude significantly predicted Purchase Intention, which supports hypothesis (H11) that Attitude would be positively related to Purchase Intention. Subjective Norm also significantly predicted Purchase Intention, meaning that hypothesis H12 that Subjective Norm would be positively related to Purchase Intention was supported. Skepticism, added to the conceptual model in Equation 3, was not significantly related to Purchase Intention, and the model did not show an improvement in explained variance. This meant that hypothesis H13 that Skepticism would be negatively related to Purchase Intention was not supported.

Skepticism as a mediating or moderating variable. The regression of Personal Norm on Skepticism showed that Skepticism did not significantly predict the Personal Norm (Equation 4), and the model itself was not significant. Because Skepticism had previously failed to predict Purchase Intention (Equation 3), there was no support for the hypothesis (H14) that Skepticism was a mediating variable for Personal Norm. This test also means that hypothesis H8, that the Personal Norm is positively related to Skepticism could also be rejected. The regression of the model including an interaction variable for Personal and Skepticism was not a significant improvement, based on the F-test of the R-squared, over the model without the interaction term. This result, along with the previous analyses, was the only condition required to reject the hypothesis (H15) that Skepticism moderated the Personal Norm.

Antecedents of attitude. The hypothesis (H16) that Attitude was a mediator of the relationship between Self-Identity and Purchase Intention was tested with the regression of Self-Identity onto Attitude. Self-Identity significantly predicted Attitude and the relationship was positive. The result of this analysis, along with the previous analysis showing that Attitude significantly predicted Purchase Intention and that the presence of Attitude changed the relationship between Self-Identity and Purchase Intention, provided support for the hypothesis H16 of mediation by Attitude.

The hypothesis (H17) that Attitude was a mediator of the relationship of Personal Norm and Purchase Intention was tested with the regression of Personal Norm onto Attitude. Personal Norm significantly predicted Attitude and accounted for slightly more variance in Attitude than Self-Identity. The result of this analysis, along with the previous analysis showing that Attitude significantly predicted Purchase Intention and that the presence of Attitude changed the relationship between the Personal Norm and Purchase Intention, provided support for the hypothesis of mediation by Attitude.

Discussion of Results

Discussion of Attribute Evaluation

Overall, the results confirm the salience of four attributes of organic cotton apparel products: organic cotton content, price, fairly traded fiber, and donations to cancer research. The strong influence of the percentage of organic cotton in blends was the main basis for the separation of the respondents into specific segments of consumers, with two of three segments using the organic content in the decision making to a significant degree.

The results also confirmed that consumers who prioritize different attributes have different characteristics. Specifically, this study confirmed the hypothesized relationship of the importance of organic cotton content and various psychological factors. Segments of consumers who used organic cotton content in estimating their purchase likelihood of a t-shirt expressed significantly higher levels of awareness of the environmental impact of clothing products, support for organic agriculture, obligations to purchase organic cotton apparel, and positive attitudes toward purchasing organic cotton apparel products. The relationship between the use of apparel product attributes and fairly specific environmental and apparel related attitudes was not surprising, given previous findings of relationships between more general environmental attitudes and environmental apparel related behavior (Butler & Francis, 1997; Kim et al., 1997; Kim & Damhorst, 1998; Shim, 1995) and greater levels of environmental concern and salience of environmental product attributes (Kinnear & Taylor, 1973).

The demographics of the consumer market segments were not significantly different. These findings are in contrast with previous conjoint studies (Auger, Burke,

Devinney & Louviere, 2003; Dickson, 2001) that found demographics were related to the use of ethical labeling (e.g. "No Sweat" and "No Child Labor"). However, the lack of difference between segments in terms of demographics does echo the failure of demographics to consistently identify environmental consumers in many other studies (Diamantopoulos et al., 2003).

The study found that all of the attributes except for the processing labeling were determinant for the consumers. One explanation of the failure of respondents to use the processing attributes is that they could consider the processing attributes to be credence attributes. Research has shown that consumers have to trust the source of information in order to use the credence attribute in their evaluation of alternative products (Darby & Karni, 1973). While organic content, fair trade labeling, and labeling for cancer research donations are all also credence attributes, consumers may trust the sources of information about these attributes. In the case of the fiber content, the Federal Trade Commission, which regulates advertising and labeling regulations for apparel products, was created, in part, to help protect this trust (Swagler, 1975). Fair trade labeling and especially cancer research labeling are common in certain product segments that consumers use every day and thus have familiarity may have established enough trust in this type of attribute to allow consumers to use it. Therefore, it is possible that the lack of experience with processing labeling could mean that consumers in this study did not trust or understand the information presented in the labels. This lack of trust would not be due to a general skepticism of environmental product claims, since the level of Skepticism for respondents in this study was neutral. It would more likely reflect an uncertainty about what the information meant. This suggests that manufacturers may need to provide consumers

with more information about environmental or organic processing. However, given the importance of the intrinsic attributes of fabric and color to apparel consumers, any educational or promotional effort should include reliable information on the impact of eco-friendly or organic processing methods on performance attributes such as colorfastness, durability, and care.

The lack of relationship between Skepticism and Purchase Intention in the predictive analysis is somewhat surprising. Given that previous studies (Darley & Smith, 1993; Ford, Smith & Swasy 1990) have shown that consumers were more skeptical of claims about credence attributes it would seem reasonable to expect that consumers with higher levels of skepticism would be less likely to purchase an organic cotton apparel product. This lack of relationship between Skepticism and Purchase Intention, the fact that the respondents were neutral overall for Skepticism and the lack of difference of between market segments based on Skepticism would seem to suggest that the measure of skepticism included in this study was not capturing the issue of credibility related to the organic fiber content of apparel. At the very least, it can be concluded that the general skepticism of environmental product claims measured in this study is not strongly related to organic cotton apparel purchases and thus does not need to be addressed by apparel marketers. Further research would be needed to determine if there is are more specific forms of skepticism of organic product claims or apparel product claims that are relevant to organic apparel consumers. Further research with a different sample could help determine if the homogeneous nature of this sample reduced the amount of variance in the variable to the point where relationships with the other variables were unlikely to be detected.

Discussion of Behavioral Model

The inability of Skepticism to either predict Purchase Intention or influence the relationship of the Personal Norm with Purchase Intention means that, as measured in this study, skepticism of environmental product claims does not influence the intention to purchase organic cotton apparel. The objective of including skepticism in the model was to determine if the 'boomerang effect' described by Schwartz (1977) was evident for organic apparel consumers. The 'boomerang effect', Schwartz's (1977) explanation of how lack of trust might work to counter the activation of the personal norm for altruistic behavior, was not evident in this study. In fact, Skepticism was not even significantly correlated with any of the variables in the model. It is possible that, like values and other more general factors, skepticism plays a more distant role in the formation of a specific purchase intention. For example, Dickson (2000) found that altruistic attitudes towards socially responsible apparel business practices were not a significant predictor of support for or intention to buy from socially responsible apparel business. It is also possible that environmental product claims have become prevalent enough that skepticism is no longer an issue. Because there are no other reported uses of this scale other than the initial reliability study (Mohr, Eroglu & Ellen, 1998) it is difficult to tell if the results of this portion of the study indicate an issue with the scale itself or in its lack of relevance to the respondents. The measure of Skepticism had a very low variance (SD=.78), indicating that, in terms of skepticism towards environmental product claims, the sample was fairly homogeneous. The same measure used with a more heterogeneous sample, may have provided different results. Whatever the cause, it cannot be assumed that skepticism or the counterpart of trust are unrelated to environmental apparel consumer behavior.

The variables in the theory of reasoned action have been shown to predict a variety of apparel related consumer behavior (Kim, Kim, & Kumar, 2003; Perkins et al., 1992; Shen et al., 2003). The theory of reasoned action accounted for a slightly smaller amount of variance in Purchase Intention for the data from this study ($R^2 = .21$) as it did in the Kim, Kim, and Kumar (2003) study of online purchase behavior ($R^2 = .23$) and just below the low end of the range ($R^2 = .23$ to .39) found in the Perkins et al. (1992) study of protective clothing behavior. Shen et al. (2003), on the other hand, found the theory of reasoned action accounted for a larger amount of the variance ($R^2 = .53$) in their study of the intention to purchase American made clothing by Chinese consumers. The comparison of the results of this study to previous studies of apparel related consumer behavior suggest that the theory of reasoned action does have the ability to model purchase intention for the organic cotton apparel consumer but that there remains a large amount of variance in Purchase Intention that is not accounted for by this model.

The size of the effects that the independent variables in the theory of reasoned action have on purchase intention has ranged widely in previous apparel studies. But like this study, the influence of Attitude was always larger than that of the Subjective Norm. Shen et al. (2003) found that attitude toward purchasing apparel made in the United States significantly predicted purchase intentions for U.S. made apparel (β = .73), which is much higher than in this study. The beta for Attitude in this study was 0.37, which is slightly higher than that found by Kim et al. (2003) for attitudes toward the purchase of clothing online (β = .33).

In their study of Chinese consumers, Shen et al. (2003) found the subjective norm did not significantly predict intention to purchase apparel made in the United States while

Kim et al. (2003) found that the subjective norm did significantly predicted intention to purchase clothing online with a beta of 0.27, which is larger than the beta of 0.16 in this study. This relative difference between the predictive abilities of Attitude and Subjective Norm is consistent with findings from other fields (Azjen, 1985) where only two of the nine studies examined found the subjective norm to more strongly predict behavioral intention than attitude. Based on this, it seems likely that the behavior of purchasing organic cotton apparel would be similar to the purchase of any other apparel, in spite of the fact that organic apparel is not yet readily available in the United States.

The addition of the variables of Self-Identity and Personal Norm created a model of apparel related behavior that had not been previously reported in apparel literature, and that increased the amount of variance accounted for by the model (R^2 = .21 to .29). This was a slightly greater increase than that found for the addition of these same variables to a similar model (R^2 = .21 to .24) in a study of fair trade grocery consumers by Shaw et al. (2000) but a similar increase to that of a study of healthy eating (R^2=.66 to R^2=.72) by Sparks and Guthrie (1998). Both of these studies also included a measure of perceived behavioral control, which would be increasing the amount of variance in Behavioral Intention explained by the model. Both of these studies (Shaw et al., 2000; Sparks & Guthrie, 1998) reported that Self-Identity had a stronger relationship with Behavioral Intention than the Personal Norm. In this study, as well, the Personal Norm played less of a role in predicting Purchase Intetion when included in a model with Self-Identity.

Sparks and Shepherd (1992), in their study of the Self-Identity of 'green consumers', suggest that the variable of Self-Identity measures some aspect of behavioral outcomes not captured in the current method of measuring attitude, a conclusion

supported by the results of this study. A test of mediation, using multiple regression, showed that both Self-Identity and Personal Norm were mediated by Attitude when measured using the sum of behavioral beliefs and outcomes evaluations. The variables of Personal Norm and Self-Identity were proposed and tested as possible antecedents to Attitude based on previous research that found both the personal norm and self-identity separately to be antecedents to attitude (Kaiser & Scheuthle, 2002; Shaw & Shiu, 2002a; Sparks & Guthrie, 1998; Sparks & Shepherd, 1992, 2002; Sparks et al., 1998).

This study, unlike others, examined the ability of the summated measure of Attitude to mediate the relationship of Personal Norm and Self-Identity with Purchase Intention. Some studies (Shaw & Shiu, 2002a; Sparks et al, 1995) have examined the ability of the Personal Norm and/or Self-Identity to predict the single measure of Attitude, along with the behavioral beliefs and outcome evaluations. Other studies have also concluded that either Personal Norm or Self-Identity are mediated by Attitude (the single item measure). Kaiser and Scheuthle (2002) concluded that the effect of Personal Norm on Behavioral Intention is mediated by Attitude in their structural equation modeling study of environmental behaviors. Sparks and Shepherd (1992) tested and rejected the idea that the influence of Self-Identity on Behavioral Intention is entirely mediated by Attitude. They found that Self-Identity had a significant independent ability to predict Behavioral Intention related to organic food, a conclusion echoed in this study.

The results of this study add to the body of literature that has shown that Self-Identity and the Personal Norm are useful in predicting the Behavioral Intention of socially responsible consumers. However, this study has tested and shown that both of these variables were mediated by Attitude. Sparks and Shepherd (1992) suggest that the

expectancy-value model of attitude tends to include only instrumental outcomes and tends to ignore the symbolic outcomes of behaviors, such as the affirmation of a self-identity. The results of this study suggest that, in the same way, the behavioral outcome of avoiding a negative self-evaluation is also an outcome not included in the current assessment of attitude.

What would it look like if both self-identity and the personal norm were included in the assessment of attitude? Along with behavioral outcomes such as "support for organic cotton farmers" and "improve the health of myself and my family" would be included outcomes like "help me be an organic consumer" or "let me meet my personal obligation to purchase organic products." However, the measures of Self-Identity and Personal Norm included in this and other studies continue to independently predict Behavioral Intention for specific types of behavior, including environmental and socially responsible behavior (Kaiser & Scheuthle, 2002; Shaw & Shiu, 2002a; Sparks & Guthrie, 1998; Sparks & Shepherd, 1992, 2002; Sparks et al., 1998). For this reason, both the variables of Self-Identity and Purchase Intention were included in a Final Conceptual Model (see Figure 5-2) that can be used to better understand socially responsible consumer behaviors.
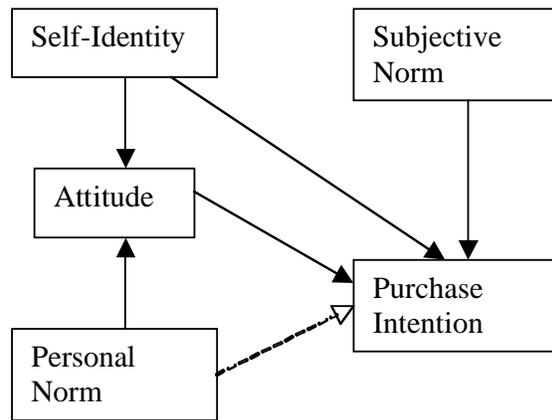
Figure 5-2: Final Conceptual Model

Conclusions and Implications

The main contribution of this study to the development of products for organic apparel consumers was the determination of the strong salience of the percentage of organic cotton in blends for specific segments of consumers. Consumers in segments that found the organic cotton content determinant had positive attitudes toward organic and sustainable agriculture and were more concerned about the impact of clothing production on the environment than other consumers. They also preferred to "buy locally" and had a strong self-identity as environmental, organic, and socially responsible consumers.

Other contributions of this study were made to the understanding of socially responsible consumer behavior. First, it was demonstrated that skepticism of environmental product claims was not related to the evaluation of credence attributes of organic cotton apparel. Skepticism was also shown to have no impact on the ability of a sense of personal obligation to motivate the purchase of organic cotton apparel products. The conceptual model, which included both the Personal Norm and Self-Identity, was

able to account for more variance than the theory of reasoned action. But, the variables of Personal Norm and Self-Identity were also shown to explain a significant amount of variance in Attitude. This suggests that, in the case of socially responsible consumers, the conceptual model was not so much a replacement for the theory of reasoned action as much as a refinement of the measurement of the key variable.

Theoretical Implications

The results of this study have several implications for the study of consumer behavior. First, the results of this study demonstrate that organic cotton content, an attribute that cannot be reasonably verified by consumers, was more determinant in determining the likelihood of purchase than the attribute of price. According to the theory of the economics of information, it is possible for a credence attribute to be converted into an experience or even a search attribute if the information about the attribute comes through "normal channels of information" (p. 435, Ford, Smith, & Swasy, 1990). The labeling for fiber content on apparel is regulated by the FTC, an agency designed to protect the consumer's trust in product claims. The results of this study provide support for the proposition that consumers transform credence attributes into a search attributes on the basis of this trust. The practical implication, of course, is that apparel manufacturers should not disregard the ability of the FTC regulated labeling to allow consumers to use the attribute of organic fiber content during their search. Specifically, manufacturers should include the percentage of organic cotton content on the fiber content labels.

The main theoretical implication of this study for the field of socially responsible consumer behavior is that self-identity and the personal norm are not necessarily

variables that are missing from the theory of reasoned action, but are rather, dimensions

of Attitude that can be captured with the appropriate set of evaluations of the behavior.

The results of this study show that, in terms of behaviors that are connected to an

established self-identity such as 'organic consumer', the evaluative component of attitude

plays a role in mediating the translation of self-identity into behavioral intention. Self-

Identity, along with the evaluative measures of attitude, has been shown to predict the

single measure of Attitude in previous studies. This study showed that Self-Identity was

in fact mediated by the evaluative measure of Attitude. This means that the evaluation of

the behavior in terms of beliefs in outcomes and the importance of this outcome had the

ability to intervene in the formation of a behavioral intent based on self-identity. In other

words, there may be an element of evaluation of the behavior related to self-identity as

well. "I am an organic consumer" therefore "I must examine the outcomes related to this

behavior to determine if they support my self-identity as an organic consumer." In fact, it

makes sense that the attitude towards organic cotton apparel purchases should be

predicted by the belief that "Purchasing organic cotton apparel makes me an organic

consumer" and "It is important to me to be an organic consumer". This puts the self right

into the attitude equation. It is not just "I" who is evaluating the possible outcomes of a

behavior, it is "I, the organic consumer".

Another theoretical implication of this study is that the personal norm and self-

identity are aspects of the same consideration of the self in the evaluation of a behavior.

Basically, it is possible that consumers might be defining an "organic consumer" as

someone who has the "personal responsibility to purchase organic products". It makes

theoretical sense that the Personal Norm (e.g. "I have a personal obligation to purchase

organic cotton apparel products") would be related to the evaluation of the behavior in Attitude. Deciding that "the health of my family" is an outcome of purchasing an organic product and that "the health of my family" is important would be a moral decision for some respondents. It is also possible that this and many of the other evaluations respondents made about organic cotton apparel in this study were based on the outcomes that were important to "I, the organic consumer".

Practical Implications

The practical concern of this study was to answer the question "who are the consumers of organic cotton apparel products and what do they want?" In terms of the identification of organic cotton consumers, the results of this study answered this question within the limitations of the sample. The consumers of organic cotton apparel products are not any different from other health and natural foods consumers, at least in terms of their demographics. equally likely to be male or female and are older (57 years of age). They are less likely than the general population to have children under the age of 18 in the home. They are well educated and are financially well off. In terms of psychological characteristics, analysis of the consumer self-identity showed that respondents see themselves as environmental, organic and socially responsible consumers. The organic cotton consumers are concerned about the environmental impact of apparel production and believe that organic farming is good for the environment. They are less motivated by a sense of personal obligation for organic cotton apparel product purchases than by their beliefs about the beneficial outcomes of the purchase, for themselves, the organic industry, and the environment.

What do organic cotton consumers what in their organic cotton apparel products? Again, this study answered this question within the limits of the attributes examined in the conjoint task. When provided with only a small amount of information (such as might fit on a label or in a catalog description), these consumers prioritized organic apparel products that are made of at least a moderate amount of organic cotton fiber versus organic apparel products that have been processed according to organic standards. Some, but not all of them were interested in additional social responsibility attributes such as fairly traded fibers or donations to cancer research with their purchase. For the consumers in this study, the most important outcome of purchasing an organic cotton apparel product was the purchase of a quality product. Fortunately, the respondents also agreed that the purchasing an organic cotton apparel product provided them with a quality product.

Finally, how should companies market to organic cotton apparel consumers? Consumer self-identity was the psychographic variable best able to predict the intention to purchase an organic cotton apparel product. This suggests that marketing should focus on showing consumers how the purchase of organic cotton apparel products would contribute to any or all of these aspects of their consumer self-identity. For example, "socially responsible consumers will enjoy knowing that purchasing organic apparel benefits not only the environment, but also organic farmers." Also, the evaluation of the behavioral outcomes showed that supporting organic farming in general was more important to these consumers than supporting organic cotton farmers in particular or supporting pro-environmental apparel companies or retailers of organic products. This suggests that consumers would be receptive to marketing messages that place an

emphasis on how the purchase of organic cotton apparel supports not just cotton farmers, but the growth of organic farming in general. And because respondents agreed that organic farming is good for the environment, it is clear that marketing about how organic cotton apparel supports organic farming is another way to market the environmental benefits of purchasing organic cotton apparel.

The results demonstrated that while labeling for the percentage of organic cotton content was useful to apparel consumers, other labeling, including fair trade and donations to cancer research, while useful, was not as determinant as the percentage of organic cotton content. Consumers are already likely to use fiber percentage labels to make apparel purchase decisions (Eckman et al., 1990). Including the organic cotton content on the fiber percentage label would be a good way to allow consumers who self identify as environmental, socially responsible, or organic consumers to include the percentage of organic cotton in their decision-making.

The results of this study show that it is worth the effort and expense to label organic cotton blends, even at levels below the current organic processing guidelines. Results indicate that at least fifty percent of health and natural foods consumers are more likely than not to purchase an organic cotton apparel product made with at least 45% organic cotton. On average, the consumers in the sample rated their likelihood of purchasing a 45% organic cotton blend to be at least 61 on a scale of 0 to 100. The overall likelihood of purchasing the 5% organic cotton blend was somewhat lower, 45 on the 0 to 100 scale, but still at a level that suggests it would be beneficial to label for even this small of a percentage of organic cotton in a blend.

The two market segments for whom the attribute of 45% organic cotton content was determinant were different in their likelihood of purchasing a t-shirt at that level. The Blend segment was 66% likely to purchase a moderate blend at the lower price, while the High-percentage segment was only 47% likely to purchase the same shirt. However, the two segments did not differ in terms of any of the demographic or psychographic variables. For this reason, a marketing scheme developed for a moderate percentage (45-70%) blend garment in order to appeal to the Blend segment could be equally appealing to the High-Percentage segment, even if the product itself would be less appealing.

The importance of the organic content over any other type of labeling included in this study has important marketing implications. The lowest percentage by weight of organic cotton content currently allowed under the new Organic Processing Standards certified by the Organic Trade Association is 70%. The increased cost associated with meeting standards that require more than 70% organic cotton may be acceptable to the High-Percentage segment, given the linear trend of their interest. However, even the High-Percentage segment was uninterested in the processing labeling, so products that are certified under processing standards would also be wise to ensure that the percentage of organic cotton is also included in the garment's fiber content labeling. More importantly, the lack of interest in the processing labeling means that promotional activity might be required to increase the interests of even the self-identified organic consumer in additional labeling beyond the fiber content labeling. This is especially true if the costs of the additional processing labeling were passed on to the consumer.

Recommendations for Future Research

The success of the conjoint portion of this study in identifying the segments of consumers that use the organic cotton content attribute in determining purchase likelihood simultaneously uncovered several further avenues of exploration. First, because this study was not designed to determine the reason why certain credence attributes, including fair trade and organic processing labeling, were not determinant for the consumers included in this study, another survey should be conducted that includes this objective. A survey with a more heterogeneous sample would also be useful in further exploration of the role of skepticism in both attribute evaluation and purchase intention.

The results of this study and studies from the organic food industry also bring up several issues related to evaluation of organic attributes. First, consumers use a variety of information sources, besides labeling (e.g. retailer), to evaluate claims made about organic attributes. In the case of food products, experience attributes, such as taste, can be influenced by the information provided about credence attributes. Some organic cotton producers assert that organic cotton is softer than conventional cotton. An experimental study could be conducted to determine if organic labeling would influence consumer perceptions of experience attributes such as hand. Also, information about attributes that involve the use of genetically modified organisms (GMOs) might be important enough to consumers to change their evaluation of all the attributes. At the very least, including GMO related issues or attributes in future surveys would provide quantitative information about consumer concerns regarding this increasingly important issue.

Finally, the most important next step based the results and implications of this preliminary study would be to use a real purchase setting to determine how the type of labeling (e.g. organic content, social, and processing) and the location of labeling (e.g. fiber content label, hang tags or stickers on the garment) influence actual sales. The real purchase setting could also be useful in determining what type of promotional materials (e.g. advertisements, signage, in-store sales pitches) are effective in increasing sales of both blended and 100% organic cotton products.

CHAPTER 6: REFERENCES

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APPENDIX A: QUESTIONNAIRE

Organic Cotton
and the
Apparel Consumer

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Buying Organic T-Shirts

Q-1   Following are eight descriptions of t-shirts. Imagine that the shirts are available in your favorite style and color. For each shirt, please indicate in the space provided how likely you would be to purchase the described shirt. Your response can be any number from 0 (absolutely **would not** purchase) to 100 (absolutely **would** purchase this shirt).

Example:	
Fabric	45% organic cotton
Price	$15
Label	"Fair Trade" (fiber producers were paid fairly for their cotton)
Label	"Organic Processing" (the dyes and methods used to make the shirt meet organic standards)

How likely would you be to buy this shirt?   _____

(fill in an answer between 0 and 100 in the space: 0 = absolutely not, 100 = absolutely)

Shirt #1:	
Fabric	70% organic cotton
Price	$15
Label	"Cancer Research" ($1 from this purchase is donated to cancer research)
Label	"Eco-Friendly Processing" (the garment was made using low-impact synthetic dyes that reduce water pollution)

How likely would you be to buy this shirt?   _____

(fill in an answer between 0 and 100 in the space: 0 = absolutely not, 100 = absolutely)

Shirt #2:	
Fabric	45% organic cotton
Price	$15
Label	"Cancer Research" ($1 from this purchase is donated to cancer research)
Label	"Organic Processing" (the dyes and methods used to make the shirt meet organic standards)

How likely would you be to buy this shirt?   _____

(fill in an answer between 0 and 100 in the space: 0 = absolutely not, 100 = absolutely)

2

Shirt #3:

    Fabric   5% organic cotton

    Price $18

    Label   "Cancer Research" ($1 from this purchase is donated to cancer research)

    Label   "Eco-Friendly Processing" (the garment was made using low-impact synthetic dyes that reduce water pollution)

How likely would you be to buy this shirt?   _____

(fill in an answer between 0 and 100 in the space: 0 = absolutely not, 100 = absolutely)

Shirt #4:

    Fabric   45% organic cotton

    Price $15

    Label   "Fair Trade" (the fiber producers were paid fairly for their cotton)

    Label   "Eco-Friendly Processing" (the garment was made using low-impact synthetic dyes that reduce water pollution)

How likely would you be to buy this shirt?   _____

(fill in an answer between 0 and 100 in the space: 0 = absolutely not, 100 = absolutely)

Shirt #5:

    Fabric   45% organic cotton

    Price $18

    Label   "Cancer Research" ($1 from this purchase is donated to cancer research)

    Label   "Organic Processing" (the dyes and methods used to make the shirt meet organic standards)

How likely would you be to buy this shirt?   _____

(fill in an answer between 0 and 100 in the space: 0 = absolutely not, 100 = absolutely)

3

Shirt #6:

    Fabric   70% organic cotton

    Price $18

    Label   "Fair Trade" (fiber producers were paid fairly for their cotton)

    Label   "Organic Processing" (the dyes and methods used to make the shirt meet organic standards)

How likely would you be to buy this shirt?   _____

(fill in an answer between 0 and 100 in the space: 0 = absolutely not, 100 = absolutely)

Shirt #7:

    Fabric   45% organic cotton

    Price $18

    Label   "Fair Trade" (fiber producers were paid fairly for their cotton)

    Label   "Eco-Friendly Processing" (the garment was made using low-impact synthetic dyes that reduce water pollution)

How likely would you be to buy this shirt?   _____

(fill in an answer between 0 and 100 in the space: 0 = absolutely not, 100 = absolutely)

Shirt #8:

    Fabric   5% organic cotton

    Price $15

    Label   "Fair Trade" (fiber producers were paid fairly for their cotton)

    Label   "Organic Processing" (the dyes and methods used to make the shirt meet organic standards)

How likely would you be to buy this shirt?   _____

(fill in an answer between 0 and 100 in the space: 0 = absolutely not, 100 = absolutely)

4

Organic Fiber and Fabric Production

It is important for us to understand what you think about organic cotton, organic apparel production and the apparel industry. Please rate your agreement with the statements by circling one number next to each statement, even if you haven't purchased organic cotton apparel.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Organic agriculture is good for the environment.　　1 2 3 4 5 6 7

Sustainable agriculture is important to me.　　1 2 3 4 5 6 7

The dyes and chemicals used in apparel production can be harmful to the environment.　　1 2 3 4 5 6 7

I prefer to "buy locally".　　1 2 3 4 5 6 7

I am concerned about the impact of clothing production on the environment.　　1 2 3 4 5 6 7

I feel that I have an ethical obligation to purchase organic cotton apparel products.　　1 2 3 4 5 6 7

Cotton producers in foreign countries do not get a fair price for their cotton.　　1 2 3 4 5 6 7

I have a responsibility to purchase organic cotton apparel products.　　1 2 3 4 5 6 7

I would go out of my way to buy organic clothing.　　1 2 3 4 5 6 7

I would buy organic clothing to help support organic farming.　　1 2 3 4 5 6 7

Government subsidies of U.S. cotton producers are unfair to farmers in developing countries.　　1 2 3 4 5 6 7

I would go out of my way to buy clothing produced from fairly traded fibers.　　1 2 3 4 5 6 7

I am interested in organic products, but they seem expensive.　　1 2 3 4 5 6 7

I am personally obligated to purchase organic cotton apparel products.　　1 2 3 4 5 6 7

5

Consumer Concerns

What is your opinion of product labeling and advertising used to make environmental claims? Please rate your agreement with the statements by circling one number next to each statement.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Most environmental claims made on product labels or in advertising are true.　　　　1 2 3 4 5 6 7

Environmental claims made on product labels or in advertising are exaggerated.　　　　1 2 3 4 5 6 7

Consumers would be better off if environmental claims on product labels or in advertising were eliminated.　　　　1 2 3 4 5 6 7

Most environmental claims on product labels or in advertising are intended to mislead rather than inform consumers.　　　　1 2 3 4 5 6 7

I do not believe most environmental claims made on product labels or in advertising.　　　　1 2 3 4 5 6 7

Q-4　In order to help us understand your responses, it would be valuable to know how you view yourself. Please rate your agreement with the statements by circling one number next to each statement.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

I think of myself as someone who is concerned about social issues　　1 2 3 4 5 6 7

I think of myself as an 'environmental consumer'　　1 2 3 4 5 6 7

I think of myself as an 'organic consumer'　　1 2 3 4 5 6 7

I am a socially responsible consumer　　1 2 3 4 5 6 7

I think of myself as someone who is concerned about environmental issues　1 2 3 4 5 6 7

6

Q-5   The next time you go apparel shopping, how likely are you to purchase an organic cotton apparel product?

        1. V E R Y UNLIKELY
        2. UNLIKELY
        3. S O MEWHAT UNLIKELY
        4. N E U TRAL
        5. S O MEWHAT LIKELY
        6. LIKELY
        7. V E R Y LIKELY

Q-6   If you found an organic cotton apparel product the next time you went shopping for apparel, how likely are you to buy it?

        1. V E R Y UNLIKELY
        2. UNLIKELY
        3. S O MEWHAT UNLIKELY
        4. N E U TRAL
        5. S O MEWHAT LIKELY
        6. LIKELY
        7. V E R Y LIKELY

Q-7   Please circle a number to indicate your opinion.
        In general, purchasing organic cotton apparel is…

1	2	3	4	5	6	7
BAD						GOOD

Q-8   Most people who are important to me think I should purchase organic cotton apparel products.

        1. S T R ONGLY DISAGREE
        2. D I S A G R EE
        3. S O MEWHAT DISAGREE
        4. N E U TRAL
        5. S O MEWHAT AGREE
        6. A G R EE
        7. S T R ONGLY AGREE

7

Attitudes Towards Organic Cotton

Other people or groups may be interested in influencing your actions. Please indicate below how likely it is that the following groups think you should purchase organic cotton apparel products, even if their opinion isn't important to you.

How likely is it that the following groups think you should purchase organic cotton apparel?

1 Very Unlikely	2 Unlikely	3 Somewhat Unlikely	4 Neutral	5 Somewhat Likely	6 Likely	7 Very Likely

1. friends   1 2 3 4 5 6 7

2. family   1 2 3 4 5 6 7

3. religious organizations   1 2 3 4 5 6 7

4. environmental or social responsibility organizations   1 2 3 4 5 6 7

5. multinational corporations   1 2 3 4 5 6 7

6. retailers who stock organic cotton apparel products   1 2 3 4 5 6 7

Q-9b   **How often, in general, do the following groups influence your opinions or actions?**

1 Not at All	2 Seldom	3 Somewhat Seldom	4 Neutral	5 Somewhat Often	6 Often	7 Very Often

1. friends   1 2 3 4 5 6 7

2. family   1 2 3 4 5 6 7

3. religious organizations   1 2 3 4 5 6 7

4. environmental or social responsibility organizations   1 2 3 4 5 6 7

5. multinational corporations   1 2 3 4 5 6 7

6. retailers who stock organic cotton apparel products   1 2 3 4 5 6 7

8

Q-10 It would be beneficial to know what you believe would result from purchasing organic clothing. For each of the following outcomes, we would like you to answer two questions.

A. First, let us know if you **agree or disagree** that the purchase of organic cotton apparel will result in the each of the possible outcomes. Use the scale below.

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

B. Next, tell us how **important** each of the outcomes are to you, whether or not you agree that the outcome is a result of purchasing organic cotton apparel. Use the scale below.

1	2	3	4	5	6	7
Very Unimportant	Unimportant	Somewhat Unimportant	Neutral	Somewhat Important	Important	Very Important

A. The following would result from my purchasing an organic cotton apparel product.

B. How important is each of the following to you?

A		B
1 2 3 4 5 6 7	A fair price for organic cotton producers	1 2 3 4 5 6 7
1 2 3 4 5 6 7	More retailers selling organic cotton apparel products	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Purchasing a product which is more expensive	1 2 3 4 5 6 7
1 2 3 4 5 6 7	A reduction in the use of pesticides	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Increasing my peace of mind	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Improving my health or the health of my family	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Purchasing a product which is not readily available	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Supporting organic cotton producers	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Supporting pro-environmental companies	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Supporting organic farming	1 2 3 4 5 6 7
1 2 3 4 5 6 7	Purchasing a quality product	1 2 3 4 5 6 7

9

Choosing Organic T-Shirts

Suppose there were four types of t-shirts being sold at a store where you usually purchase apparel. Imagine that the shirts are available in your favorite style and color. Select and circle one shirt that you would wish to purchase for each set of shirts.

From the following 4 choices below, select the t-shirt you wish to purchase (circle one)

70% organic cotton $15 $1 donated to Cancer Research Eco-Friendly Processing	45% organic cotton $18 Fair Trade Organic Processing	15% organic cotton $18 $1 donated to Cancer Research Organic Processing	None of the Given

Circle one of the numbers to the right.	1.	2.	3.	4.

From the following 4 choices below, select the t-shirt you wish to purchase (circle one)

45% organic cotton $15 $1 donated to Cancer Research Eco-Friendly Processing	15% organic cotton $18 $1 donated to Cancer Research Organic Processing	15% organic cotton $15 Fair Trade Eco-Friendly Processing	None of the Given

| Circle one of the numbers to the right.	1.	2.	3.	4.

10

General Questions

Q-12   What is your age? (Please fill in the blank)

_____   YEARS

Q-13   What is your gender? (Please circle on number
1. M ALE
2. F EMALE

Q-14   Which is the highest level of education that you have completed? (circle the highest number you have completed)
1. C OMPLETED ELEMENTARY SCHOOL (grades 1 through 8)
2. C OMPLETED HIGH SCHOOL (grades 9 through 12)
3. 1-3   YEARS TECHNICAL, VOCATIONAL, OR COLLEGE
4. C OMPLETED BACCALAUREATE DEGREE
5. S O ME GRADUATE WORK
6. C OMPLETED GRADUATE DEGREE

Q-15   Do you have children under the age of 18 living in your home?
1. NO
2. YES

Q-16   What was your total household income before taxes in 2004? (Please circle one number)
1. L E S S THAN $10,000
2. $10,000 TO $24,999
3. $25,000 TO 49,999
4. $50,000 TO $74,999
5. $75,000 TO $99,999
6. $100,000 AND OVER

Thank you for your participation!

11

Thank you for taking the time to complete this questionnaire. Your assistance in providing this information is very much appreciated.

If there is anything else you would like to tell us about organic cotton apparel, or this survey, please do so in the space provided below.
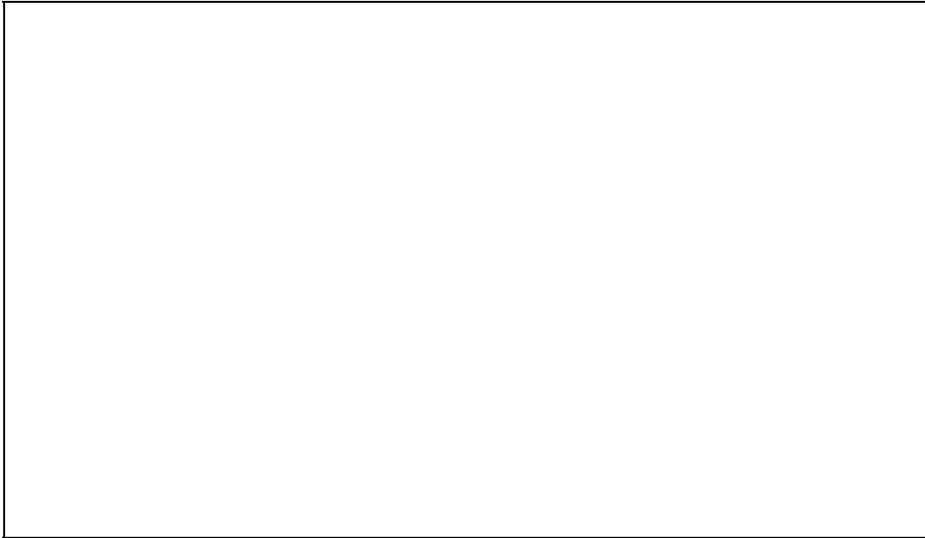
Please return your completed questionnaire in the enclosed envelope to:

The Department of Apparel, Textiles and Interior Design
Kansas State University,
225 Justin Hall
Manhattan, KS 66506

APPENDIX B: MAILING MATERIALS

«SN»

K·STATE
Kansas State University

Department of Apparel, Textiles,
and Interior Design
225 Justin Hall
Manhattan, KS 66506-1405
785-532-6993
Fax: 785-532-3796

«Fullname»
«Address1» «Address2»
«City», «ST» «Zip»

We hope that you will be willing to participate in our study. This survey is part of a research project to learn what consumers think about organic cotton apparel. While the popularity and availability of organic food products has expanded dramatically in the past ten years, farmers producing organic cotton have not had the same level of success. We know that some consumers are having difficulty finding organic cotton apparel products with the characteristics they desire and we know that companies interested in producing organic cotton apparel are not always sure of the best way to meet consumer needs. Your responses to this questionnaire are one way that you can help organic cotton farmers and companies with a desire to support organic farming. The time you take to participate in this study may also help to create the organic cotton apparel products you are interested in purchasing.

The study represents Gwendolyn Hustvedt's dissertation research. All responses are voluntary and will be kept confidential. Because your answers are confidential they will only be published as part of summaries in which no individual's answers can be identified. The number on the questionnaire is for record-keeping purposes only, and will be removed after return of the questionnaire. Your name will be deleted from the mailing list and not connected to the questionnaire in any way. This survey is voluntary. We hope you will complete all parts of the questionnaire as directed. However, if you feel uncomfortable with any portion of the questionnaire, you can quit at any time or leave any section blank. If for some reason you prefer not to respond, you don't have to. You can choose to let us know by returning the blank questionnaire in the enclosed mailing envelope.

Please respond to the questionnaire as quickly as possible. We have enclosed a postage-paid return envelope for your convenience. If you would be interested in having a summary of the results, please write "copy of results requested" on the back of the return envelope and print your name and address below it.

Thank you very much for helping with this important research study. If you have any questions, please feel free to contact us at (785) 532-1312. In addition, please feel free to contact the Kansas State University research compliance office at (785) 532-3224.

Sincerely,

Gwendolyn Hustvedt
Ph.D. Candidate
Kansas State University

Marsha Dickson
Professor and Department Head
Delaware State University

A reminder…

       We recently mailed you a questionnaire about your opinions about organic cotton clothing. If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If you have not already completed it, we hope that you will set aside some time today to do so. We are especially grateful for your help because it is only by asking people like you to share your perspectives that we can improve organic cotton apparel.

       If you did not receive a questionnaire, or have misplaced it, please call us at (785) 532-1312 and we will get another one in the mail to you today.

Thank you,

Gwendolyn Hustvedt   Marsha Dickson
Kansas State University   University of Delaware

«SN»

K·STATE
Kansas State University

**Department of Apparel, Textiles,
and Interior Design**
225 Justin Hall
Manhattan, KS 66506-1405
785-532-6993
Fax: 785-532-379

«Fullname»
«Address1» «Address2»
«City», «ST» «Zip»

About three weeks ago we sent you a questionnaire that asked about your opinions of organic cotton apparel. As of today, we have not received your completed questionnaire. If you have already returned it, we thank you.

The comments of people who have already responded are giving us a good picture of why people purchase organic cotton apparel and the characteristics of organic cotton that make products using organic cotton desirable. The Apparel Departments at Kansas State University and University of Delaware have undertaken this research study because we believe that the results are going to be very useful to organic farmers, companies that sell organic cotton products and consumers who are looking for organic cotton in their clothing. Your views are important to us even if you have not purchased or do not plan to purchase organic cotton clothing.

We are writing to you because of the importance that your questionnaire has for helping to get accurate results. Although we sent questionnaires to people living in every part of the United States, it's only by hearing from nearly everyone in the sample that we can be sure that the results are truly representative.

We also want to remind you again that your answers are confidential. A questionnaire identification number is printed on the back cover of the questionnaire so that we can check your name off of the mailing list when it is returned. The list of names will be destroyed so that individual names can never be connected to the results in any way. Protecting the confidentiality of people's answers is very important to us, as well as the University. If you have any questions about confidentiality, please feel free to contact the Kansas State University research compliance office at (785) 532-3224.

Just in case you did not receive the questionnaire, or if it has been misplaced, we have enclosed a replacement, along with a postage-paid mailing envelope. This survey is voluntary, if you feel uncomfortable with any portion of the questionnaire, you can quit at any time or leave any section blank. We hope that you will fill out and return the questionnaire soon, but if for any reason you prefer not to answer, you don't have to. You can choose let us know by returning a note or blank questionnaire in the enclosed envelope. If you have any questions, please feel free to contact us at (785) 532-1312.

Sincerely,

Gwendolyn Hustvedt
Ph.D. Candidate
Kansas State University

Marsha Dickson
Professor and Department Head
Delaware State University

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APPENDIX C: HUMAN SUBJECTS PROPOSAL

Committee for Research Involving Human Subjects (IRB)

Application for Approval Form

Last revised on May 2005

ADMINISTRATIVE INFORMATION:

- **Title of Project:** (if applicable, use the exact title listed in the grant/contract application)

  Consumer Preferences for Blended Organic Cotton Apparel

- **Type of Application:**

  ☒ **New,** ☐**Addendum/Modification,**

- **Principal Investigator:** (must be a KSU faculty member)

Name:	**Dr. Sherry Haar**	Degree/Title:	**Associate Professor**
Department:	**ATID**	Campus Phone:	**1309**
Campus Address:	**JU 339**	Fax #:	**3796**
E-mail	**haar@humec.ksu.edu**		

- **Contact Name/Email/Phone for Questions/Problems/Emergencies:**

  Gwendolyn Hustvedt
  Gh24647@ksu.edu
  785-532-1312

- **Does this project involve any collaborators not part of the faculty/staff at KSU?** (projects with non-KSU collaborators may require additional coordination and approvals)**:**

  ☐ **No**
  ☒ **Yes**

- **Project Classification** (Is this project part of one of the following?)**:**

  ☐ **Thesis**
  ☒ **Dissertation**
  ☐ **Class Project**
  ☐ **Faculty Research**
  ☐ **Other:**

- **Please attach a copy of the Consent Form:**

  ☐ **Copy attached**
  ☒ **Consent form not used**

- **Funding Source:** ☐ **Internal**   ☒ **External (identify source and attach a copy of the sponsor's grant application or contract as submitted to the funding agency)**

  ☐ **Copy attached**   ☐ **Not applicable**

  Funding is being sought from industry sources based on the pre-test, which will be self-funded. The IRB will be updated to reflect any funding received.

- **Based upon criteria found in 45 CFR 46 – and the overview of projects that may qualify for exemption explained at http://www.ksu.edu/research/comply/irb/about/exempt.html, I believe that my project using human subjects should be determined by the IRB to be exempt from IRB review:**

  ☐ **No**
  ☒ **Yes   (If yes, please complete application including Section XII. C. 'Exempt Projects'; remember that only the IRB has the authority to determine that a project is exempt from IRB review)**

If you have questions, please call the University Research Compliance Office (URCO) at 532-3224, or comply@ksu.edu

Human Subjects Research Protocol Application Form

The KSU IRB is required by law to ensure that all research involving human subjects is adequately reviewed for specific information and is approved prior to inception of any proposed activity. Consequently, it is important that you answer all questions accurately. If you need help or have questions about how to complete this application, please call the Research Compliance Office at 532-3224, or e-mail us at **comply@ksu.edu**.

Please provide the requested information in the shaded text boxes. The shaded text boxes are designed to accommodate responses within the body of the application. As you type your answers, the text boxes will expand as needed. After completion, print the form and send the original and one photocopy to the Institutional Review Board, Room 1, Fairchild Hall.

Principal Investigator:	**Dr. Sherry Haar**
Project Title:	**Consumer Preferences for Blended Organic Cotton Apparel**
Date:	

NON-TECHNICAL SYNOPSIS (brief narrative description of proposal easily understood by nonscientists):

My dissertation research is a mail survey of consumers of organic cotton apparel. The purpose of the research is to understand the attributes of apparel that are important to consumers when buying organic cotton apparel. Responses will be used to compare consumers who are willing to pay more for an increase in the percentage of organic cotton to those who are not. In addition, I will investigate how attitudes, social, and personal norms and self-identity relate to purchase behavior.

I.   **BACKGROUND** (concise narrative review of the literature and basis for the study):

The Azjen and Fishbein (1980) theory of planned behavior, the Schwartz (1977) theory of altruistic behavior, Shaw et al. (2000) and Dickson and Littrell's (1997) study of fair trade consumers suggest the theoretical interrelationship for the variables proposed for this study. The study proposes to measure the 1) variables of attitudes, personal and social norms, self-identity, and skepticism and 2) self-reported rating of likelihood of purchase for apparel products containing organic cotton. The analysis of these variables will examine how they could be used to predict future purchase intentions of blended organic cotton apparel.

Variables related to pro-environmental behavior, such as environmental concern, are often measured or conceptualized as part of a larger model of behavior, theories that suggest why or when behavior occurs. A theory of decision making popular in both psychology and economics, the subjective expected utility model of decision making (e.g. theory of planned behavior) assumes that an individual is motivated to choose the alternative (behavior or object) that affords the highest overall utility or value (Azjen and Fishbein, 1980).

The modeling of consumer behavior using the theory of planned behavior (Azjen, 1991) has become increasingly complex as researchers strive to improve the ability to predict consumer behavior. While commonly used and successful at predicting a great variety of behaviors (see Ajzen, 1991) not all researchers have considered the variables included in the theory of planned behavior to be sufficient for predicting behavior or behavioral intention in every case.

Sparks and Guthrie (1998) showed that self-identity is a variable that has been shown to influence behavior and behavioral intentions independently of attitude and the subjective norm. Defined as the "relatively enduring characteristics that people ascribe to themselves," in the case of consumers of organic cotton apparel, it might be possible that a self-identification as a "green consumer" or an "organic consumer" would have some impact on their behavior in addition to those explained by the theory of planned behavior (Shaw, Shui & Clark, 2000).

Schwartz (1977) demonstrates that in the case of behaviors that have a moral aspect, such as altruistic behavior, the normative component of the motivational construct for this behavior includes a personal (also called moral) normative variable in additional to the social (subjective) normative variable. Building on Schwartz's (1977) model of altruistic behavior, Osterhus (1997) showed that lack of trust (skepticism) moderated the impact of the personal norm on behavioral intention. The measure of consumer skepticism towards environmental claims in marketing communications developed and tested by Mohr, Eroglu and Ellen (1998) will be used in this study to determine if the variable of skepticism impacts either the behavioral intention of organic cotton consumers or their

evaluation of organic cotton apparel product attributes.
This study has been developed with two basic parts. The first component, mainly theoretical in focus, examines how variables such as attitude, self-identity, or the personal norm will influence the behavior of organic cotton apparel consumers. The second component of this study, with applications to the development of the organic cotton apparel products, is basically an experiment where respondents, potential consumers, are asked to evaluate hypothetical apparel products using written profiles. The literature related to product evaluation suggests that consumers have different evaluation tendencies depending on the nature of the product attributes. Conjoint analysis of product profiles has been used to measure consumer evaluation of other apparel attributes, such as fair labor labeling (Auger, Burke, Devinney, & Louviere, 2003; Dickson, 2001).

II. **PROJECT/STUDY DESCRIPTION** (please provide a concise narrative description of the proposed activity in terms that will allow the IRB or other interested parties to clearly understand what it is that you propose to do that involves human subjects. This description must be in enough detail so that IRB members can make an informed decision about proposal).

The involvement of human subject will be required for two stages of this project. A pre-testing of the survey instrument will be conducted primarily to determine the suitability of levels chosen for the conjoint portion of the survey. No more than 80 students from courses offered in the Apparel, Textiles and Interior Design department will be given the option of completing the survey during class time. The survey will be administered by someone other than the course instructor and students will be informed that the decision not to complete a survey will not impact their standing in the course in any way. Students who chose not to participate will be asked to quietly complete another course related activity (reading or homework) while the survey is conducted. Besides calibrating the conjoint, the pre-test will allow me to identify any questions that are not providing results in the expected range (because of wording or length).

Following refinement of the instrument, based on the pre-test and input from industry experts, the survey will be administered to 2,900 males and females, ages 18 and over, from across the United States. The names for the survey will be purchased from a national database company and will be randomly chosen from a pool of consumers who have indicated an interest in the health and natural food lifestyle. The mailing list will be stratified based on percentage of state population in the national population, in order to improve the likelihood that the list is geographically representative. The survey packet (attached) will be mailed to the respondents in a first class in a business size envelope. The survey packet will contain a cover letter, the questionnaire, and a business-size, postage-paid return envelope. Each letter used in the survey will be on departmental letterhead, addressed to the subject personally, and will be signed by Dr. Marsha Dickson and myself. The questionnaire will be marked with a tracking code to facilitate follow-ups and to keep track of the date of return for response analysis. One week after the first mailing, a personally signed thank you/reminder postcard will be sent to all subjects. The final mailing will be sent approximately one month after the initial contact to any non—respondents. This mailing will include a replacement questionnaire, a postage-paid return envelope, and a letter designed to suggest to the subjects that their response is important to the study. No incentive will be used.

III. <u>OBJECTIVE</u> (briefly state the objective of the research – what you hope to learn from the study)**:**

The purpose of this study is to further understanding of consumers who purchase apparel products made with a percentage of organic cotton. Objectives for the project include: (1) testing a model of variables related to altruistic consumer behavior and consumer skepticism, (2) determining the levels of organic apparel product attributes (e.g. percentage of organic cotton, certification type and price) salient to consumers, (3) comparing respondents willing to pay more to move to higher percentages of organic cotton to those who are not, in terms of the model of variables. Based on analysis of these results, a marketing approach will be suggested for apparel produced with blends including organic cotton.

IV. <u>DESIGN AND PROCEDURES</u> (succinctly outline formal plan for study)**:**

A.	Location of study:	**United States of America**
B.	Variables to be studied:	**Purchase intentions, attitudes, behavioral beliefs, outcome evaluations, subjective norm, normative beliefs, motivation to comply, personal norms, self-identity, intention to purchase based on conjoint product**

	profiles
C. Data collection methods: (surveys, instruments, etc – **PLEASE ATTACH**)	**Mail Survey**
D. List any factors that might lead to a subject dropping out or withdrawing from a study. These might include, but are not limited to emotional or physical stress, pain, inconvenience, etc.:	**None anticipated**
E. List all biological samples taken: (if any)	**N/A**
F. Debriefing procedures for participants:	**A summary of the results will be sent to any participant who contacts the researches separately by mail**

V.   RESEARCH SUBJECTS:

A.	Source:	**United States of America**
B.	Number:	**2980 (includes 80 students for pretesting)**
C.	Characteristics: (list any unique qualifiers desirable for research subject participation)	**Health and natural food interests**
D.	Recruitment procedures: (Explain how do you plan to recruit your subjects? Attach any fliers, posters, etc. used in recruitment. If you plan to use any inducements, ie. cash, gifts, prizes, etc., please list them here.)	**Names and addresses for the main study will be purchased from a reputable national mailing database firm. Students for the pretest will be recruited from classes offered in the college.**

VI.   RISK – PROTECTION – BENEFITS: The answers for the three questions below are central to human subjects research. You must demonstrate a reasonable balance between anticipated risks to research participants, protection strategies, and anticipated benefits to participants or others.

A. **Risks for Subjects:** (Identify any reasonably foreseeable physical, psychological, or social risks for participants. State that there are "no known risks" if appropriate.)
No known risks

B. **Minimizing Risk:** (Describe specific measures used to minimize or protect subjects from anticipated risks.)
No necessary measure.

C. **Benefits:** (Describe any reasonably expected benefits for research participants, a class of participants, or to society as a whole.)
Respondents will be given a complementary summary of the results of the study upon request. The results of the study will be published in a scholarly journal specific to the Apparel and/or Marketing discipline. This study will be beneficial to the participants because it will provide them an opportunity to express their opinions and gain greater insight into the issues surrounding the purchase of organic cotton apparel.

In your opinion, does the research involve **more than minimal risk** to subjects? ("Minimal risk" means that "the risks of harm anticipated in the proposed research are not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.")

☐ Yes   ☒ No

VII.   CONFIDENTIALITY: Confidentiality is the formal treatment of information that an individual has disclosed to you in a relationship of trust and with the expectation that it will not be divulged to others without permission in ways that are inconsistent with the understanding of the original disclosure. Consequently, it is your responsibility to protect information that you gather from human research subjects in a way that is consistent with

your agreement with the volunteer and with their expectations.   If possible, it is best if research subjects' identity and linkage to information or data remains unknown.

Explain how you are going to protect confidentiality of research subjects and/or data or records. Include plans for maintaining records after completion.

> **The subjects name will never be placed on the survey itself and all responses will be kept confidential. Identification codes will be marked on each survey for mailing purposes only. This will allow us to check off the subjects name on the mailing list when the survey is returned. Once the survey is returned, the name of the subject will be removed from the list matching identification codes to names on the mailing list. Once the survey is complete, both the mailing list and the identification code list will be destroyed.**

VIII. <u>INFORMED CONSENT</u>:   Informed consent is a critical component of human subjects research – it is your responsibility to make sure that any potential subject knows exactly what the project that you are planning is about, and what his/her potential role is. (There may be projects where some forms of "deception" of the subject is necessary for the execution of the study, but it must be carefully justified to and approved by the IRB). A schematic for determining when a waiver or alteration of informed consent may be considered by the IRB is found at http://www.ksu.edu/research/comply/irb/images/slide1.jpg and at http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm#46.116.   Even if your proposed activity does qualify for a waiver of informed consent, you must still provide potential participants with basic information that informs them of their rights as subjects, i.e. explanation that the project is research and the purpose of the research, length of study, study procedures, debriefing issues to include anticipated benefits, study and administrative contact information, confidentiality strategy, and the fact that participation is entirely voluntary and can be terminated at any time without penalty, etc.   Even if your potential subjects are completely anonymous, you are obliged to provide them (and the IRB) with basic information about your project. See informed consent example on the URCO website at http://www.ksu.edu/research/comply/irb/app.html). It is a federal requirement to maintain informed consent forms for 3 years after the study completion.

Yes   No   Answer the following questions about the informed consent procedures.

☐   ☒   a. Are you using a written informed consent form? If "yes," include a copy with this application. If "no" see b.

☒   ☐   b. In accordance with guidance in 45 CFR 46, I am requesting a waiver or alteration of informed consent elements (See Section VII above). If "yes," provide a basis and/or justification for your request.

> The survey will be distributed by mail; thus, a modified informed consent will be obtained by providing information to potential respondents.

☐   ☒   c. Are you using the online Consent Form Template provided by the URCO? If "no," does your Informed Consent document has all the minimum required elements of informed consent found in the Consent Form Template? (Please explain)

> The modified informed consent has the topics that are required by the URCO; Project title, dates of project, investigators information, contact information, the purpose of the research, the procedures to be used, the length of the study, a statement of no known risks, benefits, confidentiality, and age requirements.

☐   ☒   d. Are your research subjects anonymous? If they are anonymous, you will not have access to any information that will allow you to determine the identity of the research subjects in your study, or to link research data to a specific individual in any way. Anonymity is a powerful protection for potential research subjects. (An anonymous subject is one whose identity is unknown even to the researcher, or the data or information collected cannot be linked in any way to a specific person).

> The surveys will be identifiable based on a code during the period of data collection only, in order to facilitate the issuing of duplicate surveys. Once the data collection period has expired, the coding list that links names to specific instruments will be destroyed, rendering the respondents unidentifiable.

| ☒ | ☐ | e. | Are subjects debriefed about the purposes, consequences, and benefits of the research? Debriefing refers to a mechanism for informing the research subjects of the results or conclusions, after the data is collected and analyzed, and the study is over. (If "no" explain why.) |

* It is a requirement that you maintain all signed copies of informed consent documents for at least 3 years following the completion of your study. These documents must be available for examination and review by federal compliance officials.

IX. **PROJECT INFORMATION:** (If you answer yes to any of the questions below, you should explain them in one of the paragraphs above)

Yes	No		Does the project involve any of the following?
☐	☒	a.	Deception of subjects
☐	☒	b.	Shock or other forms of punishment
☐	☒	c.	Sexually explicit materials or questions about sexual orientation, sexual experience or sexual abuse
☐	☒	d.	Handling of money or other valuable commodities
☐	☒	e.	Extraction or use of blood, other bodily fluids, or tissues
☐	☒	f.	Questions about any kind of illegal or illicit activity
☐	☒	g.	Purposeful creation of anxiety
☐	☒	h.	Any procedure that might be viewed as invasion of privacy
☐	☒	i.	Physical exercise or stress
☐	☒	j.	Administration of substances (food, drugs, etc.) to subjects
☐	☒	k.	Any procedure that might place subjects at risk
☐	☒	l.	Any form of potential abuse; i.e., psychological, physical, sexual
☒	☐	m.	Use of surveys or questionnaires for data collection **IF YES, PLEASE ATTACH!!**

X. **SUBJECT INFORMATION:** (If you answer yes to any of the questions below, you should explain them in one of the paragraphs above)

Yes	No		Does the research involve subjects from any of the following categories?
☐	☒	a.	Under 18 years of age (these subjects require parental or guardian consent)
☐	☒	b.	Over 65 years of age
☐	☒	c.	Physically or mentally disabled
☐	☒	d.	Economically or educationally disadvantaged
☐	☒	e.	Unable to provide their own legal informed consent
☐	☒	f.	Pregnant females as target population
☐	☒	g.	Victims
☐	☒	h.	Subjects in institutions (e.g., prisons, nursing homes, halfway houses)
☒	☐	i.	Are research subjects in this activity students recruited from university classes or volunteer pools? If so, do you have a reasonable alternative(s) to participation as a research subject in your project, i.e., another activity such as writing or reading, that would serve to protect students from unfair pressure or coercion to participate in this project? If you answered this question "Yes," explain any <u>alternatives options</u> for class credit for potential human subject volunteers in your study.

The pretest portion of this project will involve volunteers from university classes. Students will not be given credit for participating, merely asked to volunteer. The questionnaire will be administered by someone other than the instructor, in order to make it clear that there are no repercussions for not participating. Students who do not wish to participate will be allowed to read or engage in any other activity that does not disturb the students taking the survey. The anonymity of all the students will be protected by using unmarked surveys.

XI.   **CONFLICT OF INTEREST:** Concerns have been growing that financial interests in research may threaten the safety and rights of human research subjects.   Financial interests are not in them selves prohibited and may well be appropriate and legitimate. Not all financial interests cause Conflict of Interest (COI) or harm to human subjects. However, to the extent that financial interests may affect the welfare of human subjects in research, IRB's, institutions, and investigators must consider what actions regarding financial interests may be necessary to protect human subjects.   Please answer the following questions:

Yes	No		
☐	☒	a.	Do you or the institution have any proprietary interest in a potential product of this research, including patents, trademarks, copyrights, or licensing agreements?
☐	☒	b.	Do you have an equity interest in the research sponsor (publicly held or a non-publicly held company)?
☐	☒	c.	Do you receive significant payments of other sorts, eg., grants, equipment, retainers for consultation and/or honoraria from the sponsor of this research?
☐	☒	d.	Do you receive payment per participant or incentive payments?
		e.	If you answered yes on any of the above questions, please provide adequate explanatory information so the IRB can assess any potential COI indicated above.

XII. PROJECT COLLABORATORS:

A. KSU Collaborators – list anyone affiliated with KSU who is collecting or analyzing data: (list all collaborators on the project, including undergraduate and graduate students)

Name:	Department:	Campus Phone:
Gwendolyn Hustvedt	**ATID**	**2-1312**
Dr. Sherry Haar	**ATID**	**2-1309**
Dr. Delores Chambers	**HN**	**2-0162**
Dr. Hikaru Peterson	**AGECON**	**2-1509**

B.   Non-KSU Collaborators: (List all collaborators on your human subjects research project <u>not</u> affiliated with KSU in the spaces below. KSU has negotiated an Assurance with the Office for Human Research Protections (OHRP), the federal office responsible for oversight of research involving human subjects. When research involving human subjects includes collaborators who are not employees or agents of KSU the activities of those unaffiliated individuals may be covered under the KSU Assurance only in accordance with a formal, written agreement of commitment to relevant human subject protection policies and IRB oversight. The Unaffiliated Investigators Agreement can be found and downloaded at (http://www.ksu.edu/research/comply/irb/forms/invagree.pdf). The URCO must have a copy of the Unaffiliated Investigator Agreement on file for each non-KSU collaborator who is not covered by their own IRB and assurance with OHRP. Consequently, it is critical that you identify non-KSU collaborators, and initiate any coordination and/or approval process early, to minimize delays caused by administrative requirements.)

Name:	Organization:	Phone:
Dr. Marsha Dickson	**University of Delaware**	**302-831-8714**

Does your non-KSU collaborator's organization have an Assurance with OHRP? (for Federalwide Assurance and Multiple Project Assurance (MPA) listings of other institutions, please reference the OHRP website under Assurance Information at: http://ohrp.osophs.dhhs.gov/polasur.htm).

☐   **No**
☒   **Yes**   **If yes, Collaborator's FWA or MPA #**   FWA00004379

Is your non-KSU collaborator's IRB reviewing this proposal?

☐   **No**

☒   **Yes**   **If yes, IRB approval #** _____

C.   **Exempt Projects:**   45 CFR 46 identifies six categories of research involving human subjects that may be exempt from IRB review. The categories for exemption are listed on the KSU research involving human subjects home page at http://www.ksu.edu/research/comply/irb/about/exempt.html. If you believe that your project qualifies for exemption, please indicate which exemption category applies (1-6). Please remember that only the IRB can make the final determination whether a project is exempt from IRB review, or not.

     Exemption Category: **2**

XIII. CLINICAL TRIAL ☐**Yes** ☒**No**

     (If so, please give product.)

If you have questions, please call the University Research Compliance Office (URCO) at 532-3224, or comply@ksu.edu

INVESTIGATOR ASSURANCE FOR RESEARCH INVOLVING HUMAN SUBJECTS
(Print this page separately because it requires a signature by the PI.)

P.I. Name: Dr. Sherry Haar

Title of Project: **Consumer Preferences for Blended Organic Cotton Apparel**

XII. ASSURANCES: As the Principal Investigator on this protocol, I provide assurances for the following:

    A.   **Research Involving Human Subjects: This project will be performed in the manner described in this proposal, and in accordance with the Federalwide Assurance FWA00000865 approved for Kansas State University available at http://ohrp.osophs.dhhs.gov/polasur.htm#FWA, applicable laws, regulations, and guidelines. Any proposed deviation or modification from the procedures detailed herein must be submitted to the IRB, and be approved by the Committee for Research Involving Human Subjects (IRB) prior to implementation.**

    B.   **Training: I assure that all personnel working with human subjects described in this protocol are technically competent for the role described for them, and have completed the required IRB training modules found at: http://www.ksu.edu/research/comply/irb/training/index.html.   I understand that no proposals will receive final IRB approval until the URCO has documentation of completion of training by all appropriate personnel.**

    C.   **Extramural Funding: If funded by an extramural source, I assure that this application accurately reflects all procedures involving human subjects as described in the grant/contract proposal to the funding agency. I also assure that I will notify the IRB/URCO, the KSU PreAward Services, and the funding/contract entity if there are modifications or changes made to the protocol after the initial submission to the funding agency.**

    D.   **Study Duration: I understand that it is the responsibility of the Committee for Research Involving Human Subjects (IRB) to perform continuing reviews of human subjects research as necessary. I also understand that as continuing reviews are conducted, it is my responsibility to provide timely and accurate review or update information when requested, to include notification of the IRB/URCO when my study is changed or completed.**

    E.   **Conflict of Interest: I assure that I have accurately described (in this application) any potential Conflict of Interest that my collaborators, the University, or I may have in association with this proposed research activity.**

    F.   **Accuracy: I assure that the information herein provided to the Committee for Human Subjects Research is to the best of my knowledge complete and accurate.**

_____   _____

    (Principal Investigator Signature)   **(date)**

TO: Sherry Haar   Proposal Number: 3594
         ATID
         339 Justin Hall

FROM: Rick Scheidt, Chair
         Committee on Research Involving Human Subjects

DATE: September 22, 2005

RE: Proposal Entitled, "Consumer Preferences for Blended Organic Cotton Apparel"

The Institutional Review Board (IRB) for Kansas State University has reviewed the proposal identified above and has determined that it is exempt from further review.

This exemption applies only to the proposal currently on file with the IRB. Any change affecting human subjects must be approved by the IRB prior to implementation and may disqualify the proposal from exemption.

Exemption from review does not release the investigator from statutory responsibility for obtaining the informed consent of subjects or their authorized representatives, as appropriate, either orally or in writing, prior to involving the subjects in research. The general requirements for informed consent and for its documentation are set forth in the Federal Policy for the Protection of Human Subjects, 45 CFR 46.116-117, copies of which are available in the University Research Compliance Office and online at http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm#46.116. In cases of remote oral data collection, as in telephone interviews, oral consent is sufficient and the researcher is required to provide the respondent with a copy of the consent statement only if the respondent requests one. The researcher must, however, ask the respondent whether he or she wishes to have a copy. The initiative in requesting a copy must not be left to the respondent. Regardless of whether the informed consent is written or oral, the investigator must keep a written record of the informed consent statement, not merely of the fact that it was presented, and must save this documentation for 3 years after completing the research.

The identification of a human subject in any publication constitutes an invasion of privacy and requires a separate informed consent.

Injuries or any unanticipated problems involving risk to subjects or to others must be reported immediately to the Chair of the Committee on Research Involving Human Subjects, the University Research Compliance Office, and if the subjects are KSU students, to the Director of the Student Health Center.

Chairman, Human Subject Review Board

Office of the Vice Provost for Research
210 Hullihen Hall
University of Delaware
Newark, DE 19716

This document outlines a request for exemption from review by the Human Subjects Review Board covered under category 2, "Research involving the use of educational tests (cognitive, diagnostic or achievement), *survey procedures*, interview procedures, or observation of behavior..".

The proposed dissertation research project is a mail survey of consumers of organic cotton apparel. The purpose of the study is to further understanding of consumers who purchase apparel products made with a percentage of organic cotton. Objectives for the project include: (1) testing a model of variables related to altruistic consumer behavior and consumer skepticism, (2) determining the levels of organic apparel product attributes (e.g. percentage of organic cotton, certification type and price) salient to consumers, (3) comparing respondents willing to pay more to move to higher percentages of organic cotton to those who are not, in terms of the model of variables. Based on analysis of these results, a marketing approach will be suggested for apparel produced with blends including organic cotton.

The involvement of human subject will be required for two stages of this project. A pre-testing of the survey instrument will be conducted primarily to determine the suitability of levels chosen for the conjoint portion of the survey. No more than 80 students from courses offered in the Apparel, Textiles and Interior Design department at Kansas State University will be given the option of completing the survey during class time. The survey will be administered by someone other than the course instructor and students will be informed that the decision not to complete a survey will not impact their standing in the course in any way. Students who chose not to participate will be asked to quietly complete another course related activity (reading or homework) while the survey is conducted. Besides calibrating the conjoint, the pre-test will allow identification of any questions that are not providing results in the expected range (because of wording or length).

Following refinement of the instrument, based on the pre-test and input from industry experts, the survey will be administered to 2,900 males and females, ages 18 and over, from across the United States. The names for the survey will be purchased from a national database company and will be randomly chosen from a pool of consumers who have indicated an interest in the health and natural food lifestyle. The mailing list will be stratified based on percentage of state population in the national population, in order to improve the likelihood that the list is geographically representative. The survey packet (attached) will be mailed to the respondents in a first class business size envelope. The survey packet will contain a cover letter, the questionnaire, and a postage-paid return

envelope. Each letter used in the survey will be on departmental letterhead, addressed to the subject personally, and will be signed by Dr. Marsha Dickson and myself. The questionnaire will be marked with a tracking code to facilitate follow-ups and to keep track of the date of return for response analysis. One week after the first mailing, a personally signed thank you/reminder postcard will be sent to all subjects. The final mailing will be sent approximately one month after the initial contact to any non—respondents. This final mailing will include a replacement questionnaire, a postage-paid return envelope, and a letter designed to suggest to the subjects that their response is important to the study. No incentive will be used.

In order to protect confidentiality, the following steps will be taken. The subjects name will never be placed on the survey itself and all responses will be kept confidential. Identification codes will be marked on each survey for mailing purposes only. This will allow us to check off the subjects name on the mailing list when the survey is returned. Once the survey is returned, the name of the subject will be removed from the list matching identification codes to names on the mailing list. Once the survey is complete, both the mailing list and the identification code list will be destroyed.

The request for exemption from review for this project is based on exemption category 2. Because of the steps being taken to ensure that information obtained about respondents in not linked, either directly or through identifiers to the subjects, the use of survey procedures on human subjects for this research project would be exempt from review. This request for exemption is also appropriate because none of the information sought in this survey could reasonably place the subjects at risk of criminal or civil penalties, or be damaging to the subjects' financial standing, employability, or reputation. Finally, the names of respondents purchased for this study will include only adults over the age of 18, meaning that no children will be involved in this study.

Dr. Marsha Dickson, Dept of Fashion and Apparel Studies (302-831-8714) is the supervising professor for this dissertation project. This request for exemption from review is also being made to the Human Subjects Review Board at Kansas State University, where the other study participants are located.

Thank you for your consideration,

Gwendolyn Hustvedt
Doctoral Candidate
Kansas State University
Dept of Apparel, Textiles and Interior Design
225 Justin Hall
Manhattan, KS 66506
(785) 532-1312

gh24647@ksu.edu

OFFICE OF THE VICE PROVOST
FOR RESEARCH

210 Hullihen Hall
University of Delaware
Newark, Delaware 19716-1551
Ph: 302/831-2136
Fax: 302/831-2828

September 9, 2005

Dr. Marsha Dickson
Department of Fashion and Apparel Studies

Dear Dr. Dickson;

Subject: Human Subjects Review Board approval for a research study entitled "Mail Survey regarding Consumers opinions about Organic Cotton Apparel"

The above-referenced proposal, which you submitted for Human Subjects Review Board approval, will qualify as research exempt from full Human Subjects Review Board review under the following category:

Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless (1) information obtained is recorded in such a manner that human **subjects can be identified, directly or through identifiers linked to the subjects, and** (2) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Please note that under university and federal policy, all research, even if exempt, must be conducted in accordance with the Belmont Report, copies of which are available from this office or on our website under history and background of human subjects policy. Changes in this project must be approved in advance by the Human Subjects Review Board.

Sincerely,

Richard D. Holsten
Associate Provost for Research
Chair, Human Subjects Review Board

/tc

APPENDIX D: CODING GUIDE

Column	Variable Name	Questionnaire Item
A	SN	Subject Number
B	Version	Version Number (1-4)

Ratings Based Conjoint

C	Shirt1	Rating of t-shirt profile (0-100)
D	Shirt2	Rating of t-shirt profile (0-100)
E	Shirt3	Rating of t-shirt profile (0-100)
F	Shirt4	Rating of t-shirt profile (0-100)
G	Shirt5	Rating of t-shirt profile (0-100)
H	Shirt6	Rating of t-shirt profile (0-100)
I	Shirt7	Rating of t-shirt profile (0-100)
J	Shirt8	Rating of t-shirt profile (0-100)

	Q2	General Attitudes and Personal Norm
K	Q2.1	Organic agricultural attitude
L	Q2.2	Sustainable agriculture attitude
M	Q2.3	Environmental impact of dyes attitude
N	Q2.4	Buy locally' attitude
O	Q2.5	Environmental impact of clothing attitude
P	Q2.6	Personal norm
Q	Q2.7	Fair price for cotton attitude
R	Q2.8	Personal norm
S	Q2.9	Organic inconvenience attitude
T	Q2.10	Support of organic farmers attitude
U	Q2.11	Unfair government subsidies attitude
V	Q2.12	Fair trade inconvenience attitude
W	Q2.13	Organic expense attitude
X	Q2.14	Personal norm

	Q3	Skepticism
Y	Q3.1	Claims are true
Z	Q3.2	Claims are exaggerated
AA	Q3.3	Claims should be eliminated
AB	Q3.4	Claims are intended to mislead
AC	Q3.5	Do not believe claims

	Q4	Self-Identity
AD	Q4.1	Social issues
AE	Q4.2	Environmental consumer
AF	Q4.3	Organic consumer
AG	Q4.4	Socially responsible
AH	Q4.5	Environmental issues

		Single Item Measures
AI	Q5	Purchase Intention-Look for product
AJ	Q6	Purchase Intention-Buy product
AK	Q7	Attitude-organic apparel purchase
AL	Q8	Subjective Norm-organic apparel purchase

	Q9A	Subjective Beliefs
AM	Q9A.1	Friends
AN	Q9A.2	Family
AO	Q9A.3	Religious organization
AP	Q9A.4	Environmental or social responsibility organizatior
AQ	Q9A.5	Multinational corporations
AR	Q9A.6	Organic cotton retailers

	Q9B	Motivation to Comply
AS	Q9B.1	Friends
AT	Q9B.2	Family
AU	Q9B.3	Religious organization
AV	Q9B.4	Environmental or social responsibility organizatior
AW	Q9B.5	Multinational corporations
AX	Q9B.6	Organic cotton retailers

	Q10A	Behavioral Beliefs
AY	Q10A.1	Fair price for producers
AZ	Q10A.2	More retailers
BA	Q10A.3	Expensive product
BB	Q10A.4	Reduction in pesticides
BC	Q10A.5	Peace of mind
BD	Q10A.6	Health of family
BE	Q10A.7	Product availability
BF	Q10A.8	Supporting producers
BG	Q10A.9	Supporting pro-environmental companies
BH	Q10A.10	Supporting organic farming
BI	Q10A.11	Quality product

	Q10B	Importance of Outcome
BJ	Q10B.1	Fair price for producers
BK	Q10B.2	More retailers
BL	Q10B.3	Expensive product
BM	Q10B.4	Reduction in pesticides
BN	Q10B.5	Peace of mind
BO	Q10B.6	Health of family
BP	Q10B.7	Product availability
BQ	Q10B.8	Supporting producers
BR	Q10B.9	Supporting pro-environmental companies
BS	Q10B.10	Supporting organic farming
BT	Q10B.11	Quality product

	Q11	Choice-based Conjoint
BU	Q11A	Choice A
BV	Q11B	Choice B

		Demographics
BW	Q12	Age
BX	Q13	Gender
BY	Q14	Education
BZ	Q15	Children at home
CA	Q16	Income

APPENDIX E: SPSS SYNTAX

1. Exploratory Factor Analysis

```
FACTOR
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 Q2.12 Q2.13
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FACTOR
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RELIABILITY
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 /CRITERIA ITERATE(25)
 /ROTATION VARIMAX
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VARIABLE LABELS Q3.1Pos 'Q-3.1(+)'.
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 /CRITERIA ITERATE(25)
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Q10B.4
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RELIABILITY
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2. Attitude and Subjective Norm

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EXECUTE .
COMPUTE Q10.2 = Q10A.2 * Q10B.2 .
EXECUTE .
COMPUTE Q10.3 = Q10A.3 * Q10B.3 .
EXECUTE .
COMPUTE Q10.4 = Q10A.4 * Q10B.4 .
EXECUTE .
COMPUTE Q10.5 = Q10A.5 * Q10B.5 .
EXECUTE .
COMPUTE Q10.6 = Q10A.6 * Q10B.6 .
EXECUTE .
COMPUTE Q10.7 = Q10A.7 * Q10B.7 .
EXECUTE .
COMPUTE Q10.8 = Q10A.8 * Q10B.8 .
EXECUTE .
```

```
COMPUTE Q10.9 = Q10A.9 * Q10B.9 .
EXECUTE .
COMPUTE Q10.10 = Q10A.10 * Q10B.10 .
EXECUTE .
COMPUTE Q10.11 = Q10A.11 * Q10B.11 .
EXECUTE .
COMPUTE Q9.1 = Q9A.1 * Q9B.1 .
EXECUTE .
COMPUTE Q9.2 = Q9A.2 * Q9B.2 .
EXECUTE .
COMPUTE Q9.3 = Q9A.3 * Q9B.3 .
EXECUTE .
COMPUTE Q9.4 = Q9A.4 * Q9B.4 .
EXECUTE .
COMPUTE Q9.5 = Q9A.5 * Q9B.5 .
EXECUTE .
COMPUTE Q9.6 = Q9A.6 * Q9B.6 .
EXECUTE .

COMPUTE SUMATT = SUM(Q10.1,Q10.2, Q10.3, Q10.4,Q10.5,Q10.6, Q10.7, Q10.8
 ,Q10.9,Q10.10,Q10.11)/11 .
EXECUTE .

COMPUTE SUMSN = SUM(Q9.1,Q9.2, Q9.3, Q9.4,Q9.5,Q9.6)/6 .
EXECUTE .

CORRELATIONS
 /VARIABLES=Q7 SUMATT
 /PRINT=TWOTAIL NOSIG
 /MISSING=PAIRWISE .

CORRELATIONS
 /VARIABLES=Q8 SUMSN
 /PRINT=TWOTAIL NOSIG
 /MISSING=PAIRWISE .

FACTOR
 /VARIABLES Q9.1 Q9.2 Q9.3 Q9.4 Q9.5 Q9.6  /MISSING LISTWISE
 /ANALYSIS Q9.1 Q9.2 Q9.3 Q9.4 Q9.5 Q9.6
 /PRINT INITIAL EXTRACTION ROTATION
 /FORMAT SORT
 /CRITERIA MINEIGEN(1) ITERATE(25)
 /EXTRACTION PC
 /CRITERIA ITERATE(25)
 /ROTATION VARIMAX
 /METHOD=CORRELATION .
```

```
RELIABILITY
 /VARIABLES=Q9.1 Q9.2 Q9.3 Q9.4 Q9.5 Q9.6
 /SCALE('ALL VARIABLES')  ALL/MODEL=ALPHA
 /SUMMARY=TOTAL .

FACTOR
 /VARIABLES Q10.1 Q10.2 Q10.3 Q10.4 Q10.5 Q10.6 Q10.7 Q10.8 Q10.9
 Q10.10 Q10.11  /MISSING LISTWISE /ANALYSIS Q10.1 Q10.2 Q10.3 Q10.4 Q10.5
Q10.6 Q10.7 Q10.8 Q10.9
 Q10.10 Q10.11
 /PRINT INITIAL EXTRACTION ROTATION
 /FORMAT SORT
 /CRITERIA MINEIGEN(1) ITERATE(25)
 /EXTRACTION PC
 /CRITERIA ITERATE(25)
 /ROTATION VARIMAX
 /METHOD=CORRELATION .

RELIABILITY
 /VARIABLES=Q10.1 Q10.2 Q10.4 Q10.5 Q10.6 Q10.8 Q10.9
 Q10.10 Q10.11
 /SCALE('ALL VARIABLES')  ALL/MODEL=ALPHA
 /SUMMARY=TOTAL .

RELIABILITY
 /VARIABLES=Q10.3 Q10.7
 /SCALE('ALL VARIABLES')  ALL/MODEL=ALPHA
 /SUMMARY=TOTAL .

RELIABILITY
 /VARIABLES=Q10.1 Q10.2 Q10.4 Q10.5 Q10.6 Q10.8 Q10.9
 Q10.10 Q10.11 Q10.3 Q10.7
 /SCALE('ALL VARIABLES')  ALL/MODEL=ALPHA
 /SUMMARY=TOTAL .
```

3. Other Variables

```
EXECUTE .
COMPUTE ENVATT = SUM (Q2.1,Q2.2,Q2.3, Q2.4, Q2.5)/5 .
EXECUTE .
COMPUTE CLOATT = SUM (Q2.10,Q2.12,Q2.9)/3 .
EXECUTE .
COMPUTE FAIRATT = SUM (Q2.11,Q2.7)/2 .
EXECUTE .
```

COMPUTE BEHBEL = SUM(Q10A.1,Q10A.2, Q10A.3, Q10A.4,Q10A.5,Q10A.6, Q10A.7,
  Q10A.8,Q10A.9,Q10A.10,Q10A.11)/11 .
EXECUTE .
COMPUTE SELFBEL = SUM(Q10A.1,Q10A.4,Q10A.5,Q10A.6, Q10A.11)/5 .
EXECUTE .
COMPUTE ALTBEL = SUM(Q10A.3, Q10A.7,
  Q10A.8,Q10A.9,Q10A.10)/5 .
EXECUTE .
COMPUTE COST = SUM(Q10B.3,Q10B.7)/2 .
EXECUTE .
COMPUTE BENEFIT =
SUM(Q10B.1,Q10B.2,Q10B.4,Q10B.5,Q10B.6,Q10B.8,Q10B.9
 ,Q10B.10,Q10B.11)/9 .
EXECUTE .
COMPUTE SELF = SUM(Q4.1,Q4.2,Q4.3,Q4.4,Q4.5)/5 .
EXECUTE .
COMPUTE PERNORM = SUM(Q2.6,Q2.8,Q2.14)/3 .
EXECUTE .
COMPUTE SUBBEL = SUM(Q9A.1,Q9A.2,Q9A.3,Q9A.4,Q9A.5,Q9A.6)/6 .
EXECUTE .
COMPUTE INFORBEL = SUM(Q9A.1,Q9A.2,Q9A.3)/3 .
EXECUTE .
COMPUTE FORMBEL = SUM(Q9A.4,Q9A.6)/2 .
EXECUTE .
COMPUTE MOTCOM = SUM(Q9B.1,Q9B.2,Q9B.3,Q9B.4,Q9B.5,Q9B.6)/6 .
EXECUTE .
COMPUTE SKEPTIC = SUM(Q3.1,Q3.2,Q3.3,Q3.4,Q3.5)/5 .
EXECUTE .
RECODE
  Q12
  (Lowest thru 24=1) (25 thru 44=2) (45 thru 64=3) (65 thru Highest=4)
   INTO AgeV .
EXECUTE .

4. Descriptives

FREQUENCIES
  VARIABLES=AgeV Q13 Q14 Q15 Q16
  /ORDER= ANALYSIS .
DESCRIPTIVES
  VARIABLES=Q12 CLOATT FAIRATT ENVATT SELFBEL ALTBEL BEHBEL
COST BENEFIT SELF PERNORM SUBBEL INFORBEL FORMBEL MOTCOM
  SKEPTIC Q5 Q6
  /STATISTICS=MEAN STDDEV MIN MAX .

5. Nonrespondents

```
ONEWAY
  Q12 Q14 Q15 Q16 ENVATT SKEPTIC SELF BY Returned
  /STATISTICS DESCRIPTIVES
  /MISSING ANALYSIS

CROSSTABS
  /TABLES=Returned  BY Q13
  /FORMAT= AVALUE TABLES
  /STATISTIC=CHISQ
  /CELLS= COUNT
  /COUNT ROUND CELL .

SORT CASES BY Returned .
SPLIT FILE
  SEPARATE BY Returned .
DESCRIPTIVES
  VARIABLES=Q12 Q13 Q14 Q15 Q16
  /STATISTICS=MEAN STDDEV MIN MAX .
```

6. Conjoint Model Comparison

```
COMPUTE Percent2 = Percent * Percent .
EXECUTE .

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Rating
  /METHOD=ENTER Price Social Proces ContentA ContentB  .

REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Rating
  /METHOD=ENTER Percent Percent2 Price Social Proces  .
```

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Rating
  /METHOD=ENTER Percent Price Social Proces  .
```

7. Individual Conjoint

```
SORT CASES BY RN .
SPLIT FILE
  SEPARATE BY RN .
DATASET DECLARE ConjointOutput.
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Rating
  /METHOD=ENTER ContentA ContentB Price Social Proces
  /OUTFILE=COVB(ConjointOutput) .
```

8. Cluster Analysis

```
QUICK CLUSTER
  ContentA ContentB Price Social Proces
  /MISSING=LISTWISE
  /CRITERIA= CLUSTER(2) MXITER(10) CONVERGE(0)
  /METHOD=KMEANS(NOUPDATE)
  /SAVE CLUSTER
  /PRINT INITIAL.
QUICK CLUSTER
  ContentA ContentB Price Social Proces
  /MISSING=LISTWISE
  /CRITERIA= CLUSTER(3) MXITER(10) CONVERGE(0)
  /METHOD=KMEANS(NOUPDATE)
  /SAVE CLUSTER
  /PRINT INITIAL.
QUICK CLUSTER
  ContentA ContentB Price Social Proces
  /MISSING=LISTWISE
  /CRITERIA= CLUSTER(4) MXITER(10) CONVERGE(0)
  /METHOD=KMEANS(NOUPDATE)
  /SAVE CLUSTER
  /PRINT INITIAL.
```

```
QUICK CLUSTER
  ContentA ContentB Price Social Proces
  /MISSING=LISTWISE
  /CRITERIA= CLUSTER(5) MXITER(10) CONVERGE(0)
  /METHOD=KMEANS(NOUPDATE)
  /SAVE CLUSTER
  /PRINT INITIAL.
```

9. Cluster Regression

```
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Rating
  /METHOD=ENTER ContentA ContentB Price Social Proces  .
SORT CASES BY QCL_1 .
SPLIT FILE
  SEPARATE BY QCL_1 .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Rating
  /METHOD=ENTER ContentA ContentB Price Social Proces  .
SORT CASES BY QCL_2 .
SPLIT FILE
  SEPARATE BY QCL_2 .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Rating
  /METHOD=ENTER ContentA ContentB Price Social Proces  .
SORT CASES BY QCL_3 .
SPLIT FILE
  SEPARATE BY QCL_3 .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Rating
```

```
   /METHOD=ENTER ContentA ContentB Price Social Proces  .
SORT CASES BY QCL_4 .
SPLIT FILE
  SEPARATE BY QCL_4 .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Rating
  /METHOD=ENTER ContentA ContentB Price Social Proces  .
SORT CASES BY QCL_5 .
SPLIT FILE
  SEPARATE BY QCL_5 .
REGRESSION
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT Rating
  /METHOD=ENTER ContentA ContentB Price Social Proces  .
```

10. Analysis of Cluster Differences

```
ONEWAY
  CLOATT ENVATT FAIRATT SELFBEL ALTBEL BEHBEL PURCHASE SUPPORT
SELF PERNORM SUBBEL INFORBEL FORMBEL MOTCOM SKEPTIC AgeV
  Q5 Q6 Q14 Q15 Q16 BY QCL_2
  /STATISTICS DESCRIPTIVES
  /MISSING ANALYSIS
  /POSTHOC = TUKEY ALPHA(.05).

CROSSTABS
  /TABLES=QCL_2  BY Q13
  /FORMAT= AVALUE TABLES
  /STATISTIC=CHISQ
  /CELLS= COUNT
  /COUNT ROUND CELL .
```

11. Multiple Regression of Theoretical Model

```
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
```

```
 /NOORIGIN
 /DEPENDENT PI
 /METHOD=ENTER SUMATT SUMSN  /METHOD=ENTER SELF PERNORM
/METHOD=ENTER
 SKEPTIC
 /RESIDUALS DURBIN NORM(ZRESID) .
```

12. Mediation or Moderation by Skepticism

```
REGRESSION
 /DESCRIPTIVES MEAN STDDEV CORR SIG N
 /MISSING LISTWISE
 /STATISTICS COEFF OUTS R ANOVA CHANGE ZPP
 /CRITERIA=PIN(.05) POUT(.10)
 /NOORIGIN
 /DEPENDENT SKEPTIC
 /METHOD=ENTER PERNORM
 /RESIDUALS DURBIN NORM(ZRESID) .


COMPUTE PERSKEP = PERNORM * SKEPTIC .
EXECUTE .

REGRESSION
 /DESCRIPTIVES MEAN STDDEV CORR SIG N
 /MISSING LISTWISE
 /STATISTICS COEFF OUTS R ANOVA CHANGE ZPP
 /CRITERIA=PIN(.05) POUT(.10)
 /NOORIGIN
 /DEPENDENT PI
 /METHOD=ENTER SUMATT SUMSN  SELF PERNORM  SKEPTIC
/METHOD=ENTER
 PERSKEP
 /RESIDUALS DURBIN NORM(ZRESID) .
```

13. Mediation by Attitude

```
REGRESSION
 /DESCRIPTIVES MEAN STDDEV CORR SIG N
 /MISSING LISTWISE
 /STATISTICS COEFF OUTS R ANOVA CHANGE ZPP
 /CRITERIA=PIN(.05) POUT(.10)
 /NOORIGIN
 /DEPENDENT SUMATT
 /METHOD=ENTER PERNORM
 /RESIDUALS DURBIN NORM(ZRESID) .
```

```
REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT SUMATT
  /METHOD=ENTER SELF
 /RESIDUALS DURBIN NORM(ZRESID) .

REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PI
  /METHOD=ENTER PERNORM  /METHOD=ENTER SUMATT
 /RESIDUALS DURBIN NORM(ZRESID) .

REGRESSION
  /DESCRIPTIVES MEAN STDDEV CORR SIG N
  /MISSING LISTWISE
  /STATISTICS COEFF OUTS R ANOVA CHANGE ZPP
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
  /DEPENDENT PI
  /METHOD=ENTER SELF  /METHOD=ENTER  SUMATT
 /RESIDUALS DURBIN NORM(ZRESID) .
```